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EDITORIAL

Resilience: is it time for a rethink?

ABSTRACT

We often associate resilience with burnout and link this with an intention to leave in the nursing and midwifery profession. Some believe that nursing and midwifery students are not resilient and that this impacts the development of coping strategies which might be adopted to manage burnout. Students themselves describe their studies as stressful and many report high levels of anxiety. This can impact on the rate of course attrition and the health and wellbeing of students. Higher education providers are exploring ways of embedding wellbeing strategies which they hope will impact resilience, which will then help these students practice in challenging situations. In addition to considering the ways we teach and assist students, there is a growing focus on improving work cultures that move from individual notions of resilience towards the development of resilient workplaces, allowing nurses and midwives to flourish.

When considering the meaning of resilience and what it means to be resilient, we are presented with a myriad of definitions and inherent complexity in trying to form a definition. Resilience, in broad terms, is a process of adapting well in the face of adversity, stress, or tragedy, and can be described as a character trait that individuals use to develop strategies in order to bounce back in difficult situations.

Burnout is often linked with resilience, occurring when an individual can no longer manage the effects of stress,[1] and is one of the issues linked with an intention to leave among nurses and midwives. A growing dissatisfaction with the professions is often associated with a lack of resilience, particularly in early career nurse and midwives.[2]

The nursing and midwifery professions are often acknowledged as being stressful and emotionally demanding. The work demands care is provided to people who are often at some of the most challenging times of their lives, and this impacts on the individuals who seek to provide them with that care. These same challenges also impact nursing and midwifery students. Stress and low resilience have been found in nursing students and the subsequent impact of latent burnout is not clear.[3] Health professional students, including nursing and midwifery students, often perceive their education to be stressful and report increasing levels of anxiety, fatigue and a lack of motivation.[4] This is often linked to high levels of course attrition, and the health and wellbeing of students is a common discussion point among higher education providers.

There is growing recognition that nurses and midwives need assistance in developing the knowledge and skills to work in challenging and complex environments, and resilience is increasingly viewed as a core graduate capability.[5] Promoting resilience in students through targeted educational interventions might be one method to address workforce burnout. A critical review published in 2009 recommended that all health professional programs include a focus on resiliency.[6] This review recommended that higher educational providers provide opportunities that foster positive role modelling, mentoring, and coaching. In addition, the review reinforced the importance of instilling critical reflective and critical thinking skills in curriculum that assists students to foster altruism.

In the last ten years since this review was published, there has been minimal attention to the development of strategies or interventions designed to enhance resilience. This is surprising, given the obvious correlation between stress, burnout, and intention to leave the profession.[4] One of the barriers towards improving resilience in the student cohorts, is the lack of a shared definition, common theory or model of resilience. This makes it 'difficult to develop quality measures of resilience',[4(p70)] and to determine whether any strategies we develop are effective.

Resources that assist students to engage in identity building, capacity and strengths development, and leadership, are well placed to facilitate resilience, and when used have shown a shift towards proactive promotion of resilience.[4] However, many of these resources and their delivery methods were not well evaluated. Only one research study described a whole curriculum approach suggesting that while there are pockets of good work on developing resilience in the student population, further work must be achieved if real differences are to be made.[7]

Some educational providers have adopted approaches to foster student resilience including mentoring and coaching through linkage with industry providers. Some providers partnered final year students with those in earlier years,

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assisting students to share experiences, and providing avenues for final year students to provide tips which facilitated reflection and constructive thinking.[8] Mindfulness based stress reduction and conflict resolution training have also been found to positively impact on resiliency, as have training programs that promote self-regulation, self-care and interpersonal relationships.[1] Experiential learning, critical reflection and creativity have also been identified as useful methods for promoting resilience.[5]

While local strategics and resources have been used, it is clear that higher education providers must engage in transformative educational methods. Exploring how we teach, rather than what we teach is necessary if we are to facilitate the development of skills needed to promote resilience.

There is growing recognition of the need to move from individual notions of resilience towards the development of resilient workplaces in order for nurses and midwives to flourish. The impact of workplace culture and support is increasingly thought to impact on individual levels of resilience. For example, individuals who may have previously been 'resilient', may be susceptible to stress and burnout if the workplace environment is not supportive. Workplaces that support staff and students to have a sense of purpose, value person-centredness, and support the development of competencies and autonomy, are thought to support flourishing and reduce burnout.[9]

More recently, a qualitative study of community pharmacists highlighted that during the early stages of the COVID-19 pandemic, staff working in community pharmacies that invested in supportive actions such as changing shift length and providing sustenance were more able to respond and adapt to the stressful situation of working during a global pandemic.[10] There are lessons here for how we support students through clinical practice placements. Throughout the pandemic education providers have worked in tandem with health care providers to ensure the safety and support of students on placements while recognising the unique stresses that the clinical environment has been under.

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RESEARCH ARTICLES

Improving the quality of delirium practices in a large Australian tertiary hospital: an evidence implementation initiative

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ABSTRACT

Objective: The aim of the evidence implementation initiative was to improve the quality of care delivered to hospitalised patients at risk of, or with, delirium through the implementation of best practice recommendations.

Background: Delirium is a prevalent serious medical condition that remains unrecognised or misdiagnosed in acute hospitals and is therefore left untreated. This paper reports on a hospital-wide quality improvement project which was undertaken in recognition of the *Australian Delirium Clinical Care Standard* and as a response to the cumulative rate of hospital-acquired delirium within a health organisation in New South Wales, Australia.

Methods: The quality improvement project used the JBI (formerly known as Joanna Briggs Institute) evidence implementation framework. Briefly, the JBI evidence implementation approach is grounded in the audit, feedback and re-audit process along with a structured process for the identification and management of barriers to compliance with recommended clinical practices. Twelve nurses, who received support from external facilitators (implementation researchers), acted as delirium champions.

Results: Baseline audit of 143 patient notes showed poor compliance (range 6% – 67%) to recommended practices relating to screening, assessment, prevention and management of delirium. Barriers analysis revealed nurse-related (eg. lack of knowledge) and organisational level factors (e.g. absence of a hospital-wide policy/procedure for delirium management). A multicomponent strategy was implemented by all delirium champions in their respective units/wards. Follow-up audit of 151 patient notes demonstrated significant improvements in compliance with best practice recommendations for all aspects of delirium care.

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Discussion: The quality improvement activity highlighted that education remains one of the most important and critical first steps in facilitating change in clinical practice. Critical to the success of the project was the collaborative approach of the delirium champions across various specialties, which allowed for the sharing of expertise, knowledge and consensus-based decision making. The facilitation provided by the delirium champions and external facilitators was also a vital ingredient for the successful implementation of evidence-based practices.

Conclusion: The quality improvement activity has improved nurses' screening and assessment of patients at risk of or with delirium, leading to improvements in its prevention and management. Collaborative efforts within the organisation facilitated the development of a standardised, evidence-based tool for delirium screening, assessment, prevention and management, and staff education resources. Partnership with patients and/or their families through education remains an area for ongoing improvement, as with discharge planning for patients with current or resolved delirium.

What is already known about the topic?

- Delirium care is a major challenge among healthcare practitioners and therefore the condition remains prevalent in many acute hospitals. In Australia, delirium has been identified as a high priority area for quality improvement. The Australian Commission on Safety and Quality in Health Care released the Delirium Clinical Care Standard to ensure that patients at risk of delirium are identified early and receive preventative strategies, and that those with delirium receive optimal treatment to address their condition.

What this paper adds:

- This paper offers a detailed approach for evidence implementation to improve the quality of care delivered to hospitalised patients at risk of or with delirium. Key enablers were strong leadership support, sharing of experiences and knowledge, and the collective effort to problem solve and develop tools and resources for delirium.

Keywords: Delirium, evidence implementation, quality improvement, facilitation, audit and feedback

BACKGROUND

Delirium is a serious medical condition that can develop in hospitalised patients, particularly among older individuals over the age of 65, palliative care populations, oncology patients, and individuals who have undergone transplant or major surgical procedures.[1-3] Over 30% of hospitalised patients over 65 years of age will experience delirium in the medical ward setting and up to 88% of inpatients with advanced cancer.[4,5] Hospitalised patients who develop delirium are at an increased risk of serious adverse outcomes including long-term functional and cognitive decline, increased risk of falls and harm from falls, and medical complications, which can then lead to prolonged hospital stays, need for institutional care and reduced quality of life.[1,6-8] Previous studies have shown an association between delirium and premature death, with mortality rates ranging between 22 and 76% for those who developed delirium during hospitalisation. Delirium also imposes significant financial burden in the health system.[9,10] In Australia, for example, the total cost of delirium was estimated at AUD$8.8 billion in 2016–2017.[10] Given the significant morbidity and mortality, and the associated economic burden, it is important that delirium is identified early so that appropriate management and preventive measures can be implemented.

Delirium is a medical emergency, management of which requires early detection, identification of the cause and management of symptoms. The emphasis is on primary prevention using multicomponent, non-pharmacological interventions targeted to high-risk patients.[11,12] Various screening instruments, such as the Confusion Assessment Method (CAM), 4As Test (4AT), Delirium Triage Screen (DTS), Delirium Rating Scale (DRS) and Nursing Delirium Screening Checklist (NuDESC), have been developed to identify high-risk patients as well as diagnose and rate the severity of delirium.[13] Once delirium is detected, a comprehensive assessment is required and management strategies implemented. These include removal and/or treatment of causative factors and in the first instance, management of symptoms using non-pharmacological approaches, reserving pharmacological interventions only where required. Typically, the management of delirium involves a multicomponent approach that includes reorientation, adequate hydration and nutrition, sleep promotion, early mobilisation, reduction of psychoactive drugs and optimising use of vision and hearing devices.[12] It also requires an interdisciplinary approach that includes doctors, nurses and rehabilitation therapists along with well-informed and engaged families or caregivers. Families or caregivers, when provided with adequate information about the nature of delirium, symptoms and their integral role in the prevention

and management of delirium, can significantly assist in enabling healthcare professionals to provide patient-centred delirium care.[14] Patients with delirium require close clinical monitoring to ensure their safety, prevent complications, such as falls and pressure injuries, and to avoid emergence of factors that can worsen the delirium.[15]

Despite the high prevalence and associated adverse outcomes, and the potential to prevent occurrence, delirium remains unrecognised or misdiagnosed in acute hospitals and may therefore be left untreated.[16] Recent studies suggest that between 24 and 61% of hospitalised patients with delirium were undiagnosed and only about 13.6% of cases received a comprehensive care plan.[7,17,18] A recent study has also shown that there was significant variability in the way healthcare professionals respond to hospitalised patients with signs of delirium, that many actions were reactive instead of anticipative and preventive, and that the care provided was deficient and often not systematic and consistent.[19] Delirium recognition and management appears to be a major challenge among healthcare practitioners and barriers to early detection exist at an individual and organisational level. Individual level barriers consist of lack of education and awareness of delirium,[20-23] perception that it is not a priority,[20] and lack of confidence with delirium assessment.[21] Organisational barriers include a lack of guidelines or system integration translating delirium knowledge into the workplace,[22] lack of locally agreed screening, assessment and diagnostic tools,[22,23] the low priority assigned to delirium management,[20] perception of being an 'orphan' condition (i.e. delirium does not belong to a specific specialty),[20] heavy workload,[22] and lack of leadership support.[21]

Within Australia there has been a growing awareness and concern about delirium, with delirium being identified by the Australian Commission on Safety and Quality in Health Care (ACSQHC) as a high priority area for quality improvement. The Commission established the Clinical Care Standards program to develop clinical care standards on health conditions that would benefit from a national coordinated approach. In 2016, the ACSQHC released the *Delirium Clinical Care Standard* to ensure that patients at risk of delirium, during their hospital admission, are identified early and receive preventative strategies.[16] The Standard also ensures that patients with delirium at the time of presentation to the hospital receive optimal treatment to address their condition.

The quality improvement activity reported in this paper was undertaken in recognition of this Standard and as a response to the cumulative rate of hospital-acquired delirium within the health organisation. The project was conducted in a 360-bed metropolitan tertiary hospital in New South Wales (NSW), Australia. In 2018, 299 episodes of hospital-acquired delirium were recorded in the facility.[24] Rate of hospital-acquired delirium for the 2018/19 financial year was 8.1 occasions per 1,000 separations (admissions).[24] This rate was 3.0 occasions per 1,000 separations higher when compared to the NSW Hospital Peer Group.[24] Prior to undertaking the quality improvement activity, the organisation had already identified the following issues that impact on their delirium practices: a general lack of knowledge about delirium and its management, lack of a locally agreed screening and assessment tool, and absence of a hospital-based policy and procedure for screening, assessment, prevention and management of delirium. These were the impetus for change and prompted the nursing department of the hospital to launch a hospital-wide quality improvement project to facilitate the implementation of best practice in delirium care and optimise hospitalised patient outcomes.

AIMS OF THE QUALITY IMPROVEMENT PROJECT

The overall aim of the project was to improve the care delivered to hospitalised patients at risk of, or with, delirium through the implementation of evidence-based delirium practices. There were three specific objectives:

- To establish baseline practice in terms of delirium screening, assessment, prevention and management
- To develop and implement strategies for improving delirium practices based on identified barriers to compliance with best practice recommendations
- To evaluate changes in delirium practices following the implementation of identified strategies

METHODS

ETHICS

The project was registered as a quality improvement activity within the hospital, and therefore did not require ethical approval.

DESIGN

This quality improvement project used the JBI (formerly known as Joanna Briggs Institute) Evidence Implementation framework.[25] Briefly, the JBI Implementation approach is grounded in the audit, feedback and re-audit process along with a structured approach to the identification and management of barriers to compliance with recommended clinical practices. It consists of seven stages including: (1) identification of practice area for change, (2) engaging change agents, (3) assessment of context and readiness to change (i.e. situational analysis), (4) review of practice (i.e. baseline audit) against evidence-based audit criteria, (5) implementation of changes to practice, (6) re-assessment of practice using a follow-up audit, and (7) consideration of the sustainability of practice changes.

PROCESS

From the commencement of the project there was strong senior leadership support from the Executive team who consistently demonstrate commitment to continuous quality improvement and evidence-based health care. Nursing unit managers were actively engaged and agreed to ensuring protected time for staff involved in leading the project.

Following the identification of delirium as a priority area for improvement in the hospital, a call for expressions of interest were sought from registered nurses who were interested in acting as a change agent for each participating unit/ward. To be eligible, nurses (referred to as delirium champions) had to have a strong interest in delirium care and possess leadership skills. Their role as change agents involved participating in the JBI Clinical Fellowship Training Program,[26] organising a project team, developing a quality improvement project plan and leading the project at their local unit/ward level. Participating wards were known to represent patient groups at high risk of developing delirium and included: an emergency department, a specialty medical unit (comprising specialties including oncology, immunology, infectious diseases and other general medical specialties), haematology and bone marrow transplant, palliative care, heart and lung stream critical care wards, rehabilitation, mental health emergency services and an acute aged care ward.

As part of the JBI Clinical Fellowship Training Program, two experienced evidence implementation researchers were assigned to the project as 'facilitators' to assist with the development of local ward project plans, ensure projects progressed as planned and provide feedback and as-needed support (e.g. access to evidence-based resources, data analysis) to delirium champions. Monthly meetings between delirium champions and facilitators were organised to report project updates and discuss any issues that might impact the project.

DATA COLLECTION AND SAMPLING

Prior to the baseline audit, delirium champions collectively performed a situational analysis via round table discussions, and considered the following: resource availability, interdisciplinary relationships, workplace culture, leadership support, communication systems for information exchange, knowledge and skills of healthcare staff and commitment to quality management. These confirmed the organisation's overall readiness for change in terms of delirium practice.

Best practice recommendations from delirium clinical guidelines and the ACSQHC *Delirium Clinical Care Standard* were summarised and distilled into audit criteria (Table 1),[16,27-33] which served as the basis for undertaking the clinical audit (both for baseline and follow-up). Following the development of audit criteria, an audit guide was developed to ensure standardised and reliable data collection for each criterion. Delirium champions and the facilitators collaborated to determine the source of data, sample size and how each criterion was to be measured to determine compliance. For validation, the delirium champions pilot-tested the audit guide, and revisions to the guide were made accordingly after the pilot testing.

TABLE 1: AUDIT CRITERIA FOR BASELINE AND FOLLOW-UP AUDIT

01	Patients presenting to the hospital with one or more risk factors for delirium are screened using a validated tool.
02	Patients presenting to the hospital with one or more key risk factors for delirium (and/or their carers or healthcare providers) are asked about any recent changes in the patient's behaviour or thinking.
03	Patients who screened positive for cognitive impairment and/or demonstrated an acute change in behaviour are assessed for delirium using a validated tool.
04	Health professionals discuss delirium risk with the patient and their carer.
05	Carers of patients who are at risk of delirium are provided information about delirium and strategies to prevent/manage it.
06	Patients identified at risk of delirium are offered interventions to prevent delirium.
07	Patients identified at risk of delirium are monitored regularly for changes in behaviour, cognition and physical condition.
08	Patients with delirium undergo a comprehensive assessment to identify possible causes of delirium.
09	Patients with delirium receive a set of interventions to treat the cause/s of delirium, as identified during the comprehensive assessment.
10	Patients with delirium are screened to identify and manage the risk of falls.
11	Patients with delirium are screened to identify and manage the risk of pressure injuries.
12	Patients with delirium who are distressed receive non-pharmacological management as first-line therapy, and their cause of distress investigated.
13	Prior to discharge, patients with current or resolved delirium (and/or their carers) participate in the development of, and receive, an individualised care plan.

The baseline and follow-up audit was performed over three-month periods (April – June 2019 and Oct – Nov 2019) using the Clinical Excellence Commission's Quality Auditing Reporting System (QARS), which is a web-based audit hosting platform. Baseline and follow-up audit data were collected from clinical notes of patients admitted in the participating wards/units. A staff survey was also administered at baseline to determine nurses' knowledge and confidence in managing patients with delirium. The survey consisted mostly of Likert-type questions, with a few that asked the staff to list their answers (e.g. commonly used strategies for delirium). In addition, the rate of hospital-acquired delirium in the hospital was reviewed before and after the project, and compared with peer hospitals' rate of delirium.

DATA ANALYSIS

Descriptive analyses of baseline and follow-up compliance data, using frequency counts and percentages, were conducted using Microsoft Excel.

SUSTAINABILITY PLANNING

After the follow-up audit, delirium champions convened with the 'facilitators' to discuss strategies for ensuring practice improvements which were sustainable and plan for future audits. Areas of focus for further improvements in delirium care were identified and prioritised.

RESULTS

CHARACTERISTICS OF THE DELIRIUM CHAMPIONS

A total of 12 nurses participated in the project: four clinical nurse educators, two clinical nurse consultants, two registered nurses, two clinical nurse specialists, one nurse manager and one acting nurse unit manager.

BASELINE AUDIT

Baseline audit data were collected from the clinical notes of 143 patients admitted in the following wards/units: haematology and transplant unit n = 10; speciality medical unit n = 10; emergency department n = 14; rehabilitation units n = 26; mental health unit n = 4; palliative care unit n = 16; acute aged care unit n = 20; surgical unit n = 8; coronary care unit n = 16; cardiac surgery unit n = 10; neurology and stroke unit n = 10. At baseline, 172 nursing staff completed the survey. Clinical notes selected for audit contained either a delirium diagnosis code (based on the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification) or one of the delirium key risk factors outlined within the ACSQHC *Delirium Clinical Care Standard*.[16] Where possible, half of the clinical notes audited in each ward or unit were coded with a delirium diagnosis.

Initial compliance to the majority of audit criteria (n=10/13) was poor (range 6 – 67%), as shown in Figure 1; compliance was considerably higher (82 – 83%) for other criteria relating to monitoring of at-risk patients, and screening for and management of risk for falls and pressure injuries.

BARRIERS TO COMPLIANCE WITH RECOMMENDED DELIRIUM PRACTICES

Following the baseline audit, delirium champions held group sessions with their project teams to identify barriers to compliance with the recommended practices (as reflected in the audit criteria). Project teams consisted of key stakeholders from the specific wards including nursing staff, physiotherapists, occupational therapists, geriatric physicians and specialists. Barriers analysis revealed nurse-related and organisational level factors that hindered compliance to recommended practices in delirium care. Nurses generally lacked confidence in their assessment and management skills with respect to delirium. Survey responses indicated that they felt they had limited knowledge about delirium and its management, including screening, assessment, prevention and treatment. There was also a general lack of awareness regarding information resources about delirium and support for patients and their families, and a lack of access to these resources. On an organisational level, the lack of a locally agreed standardised tool to facilitate screening, assessment, prevention and management of delirium and the absence of a hospital-wide policy and procedure for delirium management were identified as key barriers.

MULTI-COMPONENT STRATEGY

The delirium champions convened to discuss strategies which could be implemented hospital-wide, to provide a collaborative approach to the development of resources. Given the multifactorial causes of non-compliance to recommended practices, a multicomponent strategy was implemented by all delirium champions in their respective units/wards. Table 1 outlines the different strategies targeted to the identified barriers.

TABLE 1: SUMMARY OF STRATEGIES ADDRESSING THE IDENTIFIED BARRIERS TO COMPLIANCE WITH RECOMMENDED DELIRIUM PRACTICES

Barriers to compliance with recommended practices	Strategies
Health practitioner level	
• Lack of confidence and limited knowledge about delirium and its management • General lack of awareness regarding information resources	• Education sessions and resources for nursing and allied health staff • Delirium display boards/ delirium brochures • Other ward-specific strategies (e.g. role-play sessions, delirium prompt cards)
Organisation level	
• Absence of a hospital-wide policy and procedure for delirium management and lack of a locally agreed standardised tool for screening, assessment, prevention and management of delirium	• Development, testing and implementation of tool for screening, assessment, prevention and management of delirium • Development of a hospital-specific policy and procedure for delirium care • Engagement with key stakeholders

All strategies focused on improving health practitioners' knowledge about delirium screening, assessment, prevention and management, and increasing nurses' assessment of patients who might be at risk of developing delirium. To achieve these outcomes, the following strategies were implemented:

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- A standardised tool for screening, assessment, prevention and management of delirium (*please contact authors for access to the tool)*: The delirium champions developed and tested a tool that addressed recommended practices for delirium screening, assessment, prevention and management. The tool was developed in collaboration with the hospital's 'Delirium and Cognitive Impairment Community of Practice,' which consists of a multidisciplinary group of experienced clinicians with a particular expertise in delirium. The tool comprised a validated screening and assessment tool (4AT),[13] a list of preventative strategies as well as assessment and management strategies for those presenting with an acute delirium. The tool provided a one-stop resource for nurses involved in managing patients who might be at risk of delirium. In some wards/units, the tool was incorporated in ward admission packs for ready access as well as serving as a prompt for nursing staff to screen for risk of delirium when admitting a patient.
- A hospital-specific policy and procedure for delirium care
- Education for nursing and allied health staff: a standardised PowerPoint presentation on delirium was developed by the aged care clinical nurse consultant. This included information related to the prevalence, types, risk factors and causes of delirium, including principles and strategies for screening, assessment, prevention and management of delirium. Additional information were included in the face-to-face in-services to tailor the training to participating specialty units. Education on the use of the delirium tool (mentioned above) was also provided to all relevant staff. Face-to-face sessions, which lasted from 30 minutes to an hour, were delivered over a 12-week period by the delirium champions and respective clinical nurse educators of the different clinical areas. During sessions, staff were encouraged to ask questions and were encouraged to seek further support if required. A total of 345 nurses (84% of the ward/unit workforce) and 20 occupational therapists (OT) (83% of total OT workforce) were educated during the course of the project. Informal education was delivered to junior medical officers focusing on the tool and the role of medical officers in delirium prevention and management. As this was an informal process there were no records kept of attendance. A delirium folder containing the resources used in the education sessions and delirium brochures were ordered and organised to provide access to delirium information. Delirium information posters were also displayed on wards to reinforce the education provided during face-to-face sessions.
- Resources for patients: a delirium brochure developed by the Agency for Clinical Innovation (ACI) was included in admission packs for dissemination to patients and their caregivers.[34] The brochure contains easy-to-understand information about the symptoms, causes and course of delirium, and how it can be managed.
- Display boards: The ACI delirium brochure and other delirium posters were used as reminders, provided ready access to information and raised delirium awareness.[34] The ACI CHOPS sunflower was displayed at the patient's bedside to collect important patient-centred information about the patient that can help re-orientate those who might have cognitive impairment.[35]
- Engagement with key stakeholders: flow manager discussed 'flagging' the high-risk patients on the patient flow portal in order to swiftly identify those patients at risk to nurse managers in charge of bed allocations and movements.
- Other ward-specific strategies: Staff of the aged care ward used ID flip cards that included best practice recommendations for delirium care. A role-play session was also conducted in this ward to demonstrate that the time requirements for completing the delirium tool is short and reasonable, which was contrary to the staffs' perceived burden of completing another assessment/form. To improve the orientation of their patients, the palliative care ward sought funding for the purchase of digital clocks and calendars. In the emergency department, Six-Minute Intensive Training tools were distributed to staff during morning or evening shift safety huddles and lanyard Delirium Risk prompt cards were also provided to all nursing and medical staff.

FOLLOW-UP AUDIT VERSUS BASELINE AUDIT

Follow-up data were collected from clinical notes of 151 patients (haematology and transplant unit n = 10; speciality medical unit n = 10; emergency department n = 20; rehabilitation units n = 9; mental health unit n = 15; palliative care unit n = 15; acute aged care unit n = 20; coronary care unit n = 20; cardiac surgical unit n = 24; surgical unit n = 8). Clinical notes were selected for audit using the same methodology outlined above in baseline audit. The compliance rate for all audit criteria improved (as shown in Figure 1) following the implementation of strategies.

DELIRIUM RATES

The rate of hospital-acquired delirium at this tertiary hospital decreased post implementation of the quality improvement activity. Rate of hospital-acquired delirium for the 2019/20 financial year was 7.1 occasions per 1,000 separations (admissions), compared to 8.1 the previous 2018/19 financial year.[24] This equates to a 12.3% decrease pre-implementation compared to post-implementation.

Further, the difference in rate of hospital-acquired delirium between the tertiary hospital and its NSW Hospital Peer Group was 3.0 occasions per 1,000 separations in 2018/19.[24] This difference narrowed to 1.7 occasions per 1,000 separations in the post implementation year 2019/20.

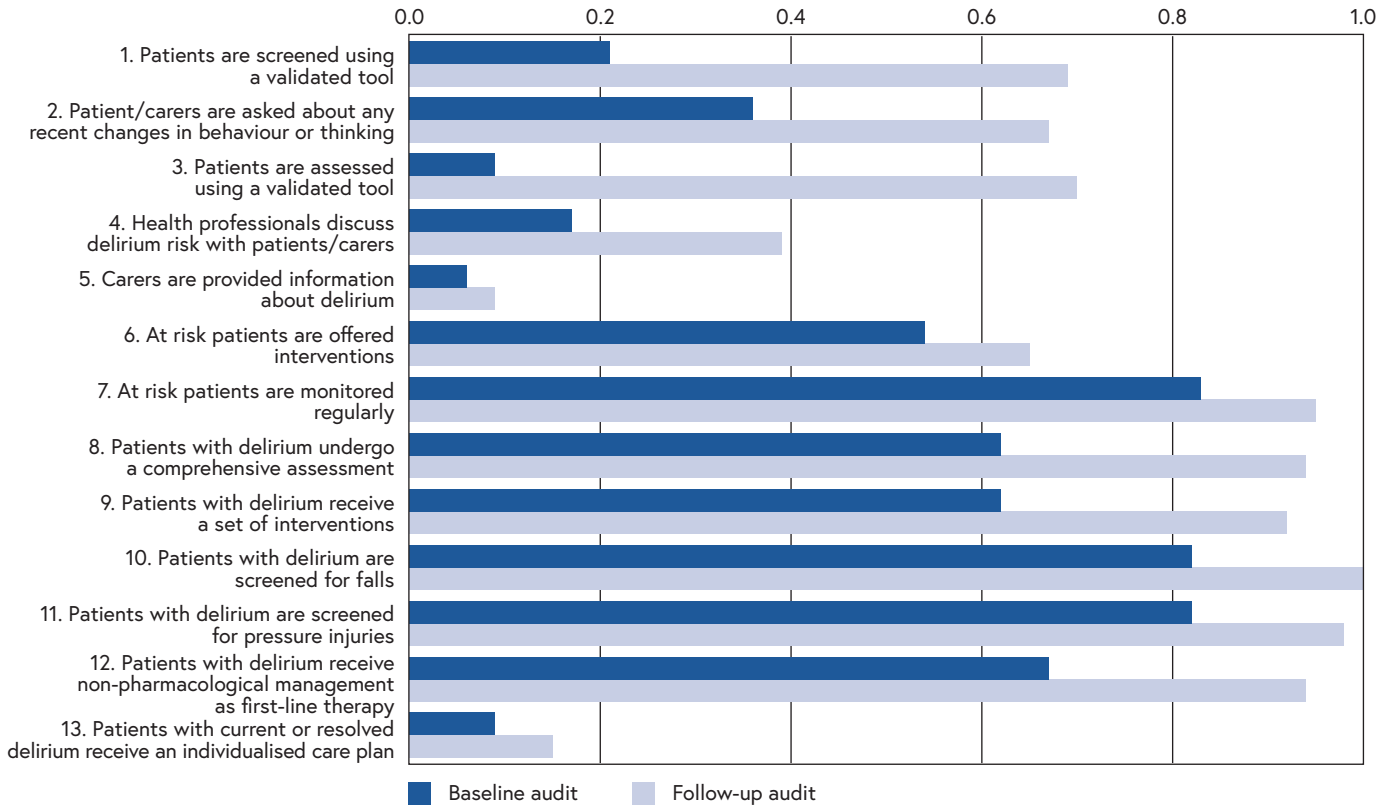

FIGURE 1: BASELINE AND FOLLOW-UP COMPLIANCE WITH AUDIT CRITERIA

DISCUSSION

This quality improvement activity achieved its aim of improving the care delivered to hospitalised patients at risk of or with delirium, as demonstrated by increased compliance to recommended practices for delirium care. As a result of this activity, a standardised tool for delirium screening, assessment, prevention and management has been implemented in the hospital along with a locally agreed policy and procedure for delirium care. This resource was key to increasing screening and assessment of patients at risk of developing delirium, which prompted early intervention for preventative measures. Also critical to the success of the project was the collaborative approach of the delirium champions across various specialties, which allowed for the sharing of expertise, knowledge and consensus-based decision making. Partnership with patients and/or their families through education remains an area for ongoing improvement, as with discharge planning for patients with current or resolved delirium.

One of the vital ingredients for successful implementation of evidence into practice is 'facilitation.' Facilitation has been defined as '*a technique by which one person makes things easier for others*',[36] and is both a process and a role (facilitator).[37] For this quality improvement activity, facilitation occurred internally via the delirium champions as well as externally through the facilitators who provided as-needed support to the champions. A core responsibility of the delirium champions was to drive the practice change and act as an ongoing resource person for the quality improvement activity. They also performed a range of other activities including education of staff about delirium, assessment of local practice through audits and barrier analysis, evaluation of practice change, and peer support. On the other hand, external facilitators provided evidence implementation education and technical research support, and ensured the project was on track. These activities are congruent with the findings of previous studies on facilitation, which highlighted that successful facilitation efforts in health organisations involve both internal and external facilitation.[38,39] As highlighted in the literature, internal facilitation capacity is critical in creating a sustainable infrastructure for implementation activities, while external facilitation is key for providing support to internal facilitators in creating organisational facilitation capacity.[40,41] This strategic partnership supports an integrated approach to promoting evidence-based practices, for which both implementation scientists and frontline clinicians agree is ideal for sustainable practice change.[42,43]

Effective health care delivery is highly dependent on teamwork that draws on the expertise of each team member and pooling this expertise to collectively deliver safe and high-quality health care. Key enablers for the current project were the constructive discussions, sharing of experiences and knowledge, and the collective effort to problem solve and develop tools and resources for delirium practice

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improvements. The complex nature of delirium suggests that the task required to improve clinical practice is also complicated and requires a team effort. One of the key strategies for this quality improvement activity was the delirium screening and assessment tool also outlining preventative and treatment interventions. The tool was developed and validated collectively by the delirium champions, with input from frontline clinicians and delirium specialists. This level of engagement by relevant stakeholders within the organisation highlighted a sense of ownership and a strong commitment to improve delirium practices. This is in line with the findings of a recent study which suggested that delirium care requires a '*choreographed dance of teamwork and integration across services*' in order to be effective.[44] Psychological and organisational research also supports the notion that improving teamwork is a viable strategy for enhancing care coordination and optimising the quality of health care outcomes.[45]

This quality improvement activity highlights that education remains one of the most important and critical first steps in facilitating change in clinical practice. Staff feedback at the commencement of the project identified that 'risk for delirium' was not common terminology, with only a few clinicians understanding the plethora of risk factors associated with this condition. Assessment for delirium was also unheard of by many nursing staff, with only a select few units, such as the aged care ward and the intensive care unit, performing routine cognitive assessments as part of their preventative and diagnostic pathways. Discussions about delirium risk and prevention were essentially absent from the nursing and medical handover terminology within the organisation. When it did occur, delirium was often informally diagnosed on the basis of a presenting history, collateral information from family members, carers or general practitioners, and relevant signs and symptoms. It is well-recognised in the delirium literature that informal, clinical delirium rating is inadequate for accurately detecting delirium.[46] It is for these reasons that education was the key strategy required to improve the current delirium practice. Research evaluating the effect of educational interventions on delirium recognition showed improved staff performance and adherence to delirium protocols.[47,48] Literature also identified effective enabling and reinforcing strategies for education and included the use of champions, feedback on staff performance and use of protocols, which were similar to the approaches used in the current project. Therefore, it appears that the most effective educational approaches to improving delirium practices are multifaceted and include other enabling strategies in addition to knowledge transmission.

Person-centred care is a hallmark of good quality clinical practice. It relies on reciprocal communication between the patient (and/or their family) and health professionals, and recognises the uniqueness and value of the individual.[49,50] Implementation of the delirium tool enabled nurses an opportunity to obtain relevant information from the patient's family that could then be used to individualise the care provided. However, it remains unclear whether nurses actually engaged and initiated discussions with patients and/or their families when they provided them with educational/information pamphlets or brochures. Patient and/or family participation in the development of care plans were also suboptimal. As with other conditions, it is important to ensure that patients and their families establish a meaningful interaction with their health practitioners, and are able to understand the information they receive and are provided opportunities to clarify and ask questions. The literature suggests that, although it can be quite challenging, person-centred delirium care can be delivered effectively using context-informed strategies.[49,51] The delirium champions have agreed that this should be the focus of their future audits, and consistent with the approach of the current project, addressing the factors that assist or hinder acceptance and implementation of person-centred care is a crucial step.

Although positive changes in delirium practice were achieved, there are still many areas of delirium care that are suboptimal and require attention. The reasons for this are likely multifactorial. Firstly, the documentation of some of the care provided to patients remains poor. For example, the delirium champions have observed that patients and carers were provided education by relevant staff, and yet there was poor documentation that this had taken place. Preventative measures such as regular mobilisation, orienting patients to time, place and person, and maintenance of hydration and nutrition, although common practice, were also not captured in patient records. Secondly, although the majority of relevant staff had received education, high staff rotation and employment of new staff meant that a number had not participated in any education session. Thirdly, it became apparent during data collection that some of the audit criteria required further clarification. For example, 'regular' monitoring for changes in behaviour, cognition and physical condition for patients at risk of delirium was interpreted in different ways by the data collectors. What constitutes as 'preventative strategies' was also raised by nurses, in that the tool which served as their one-stop resource did not have a comprehensive list of interventions. As such, some of the preventative measures that were administered to patients were not considered in the audit. Finally, there were a number of challenges experienced during the course of the project. Several other quality improvement initiatives occurred at the same time, which meant that gaining interest from staff who felt 'fatigued' with change was more arduous than expected. The introduction of the delirium tool was perceived by some staff as 'another piece of paper' that would take their time away from patient care needs, rather than a resource that could assist in decision making. Patients from culturally and linguistically diverse backgrounds were also a challenge as available patient and family resources were in English, and interpreters or family members that spoke English were not always readily available.

There are limitations to this quality improvement project that need to be considered. Firstly, the timeframe of nine months for the project was relatively short. The sample used was small and may not be representative of the population of interest, and may not also reflect the seasonal variations that might have occurred in terms of patient characteristics. In addition, the time spent to implement all the interventions may not have been adequate to expect changes in clinical practice. There may also have been a Hawthorne effect,[52] impacting on nurses' behaviour during the course of the project. Lastly, data for compliance with recommended practices were gathered exclusively from an audit of patient notes, which may not be sufficient to evaluate the effectiveness and success of the implementation strategies. In addition, no data were obtained directly from patients and/or their families, which would have validated the compliance data related to patients/carers receiving education/information and their participation in the development of an individualised care plan.

CONCLUSION

This quality improvement activity has improved nurses' screening and assessment of patients at risk of or with delirium, leading to improvements in its prevention and management. Collaborative efforts within the organisation facilitated the development of a standardised, evidence-based tool for delirium screening, assessment, prevention and management, and staff education resources, which improved nurses' knowledge and practice behaviour. However, there is still room for improvement particularly in areas related to patient and/or family education and participation, and discharge planning and care. Further audits will be undertaken in the future to explore these areas and determine sustainability of practice improvements.

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RESEARCH ARTICLES

"It's only the skin colour, otherwise we are all people": the changing face of the Australian nurse

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ABSTRACT

Objective: The aim of this paper is to report on the experience of racial discrimination by black sub-Saharan overseas qualified nurses working in rural Australia.

Background: The arrival of black African people as skilled professional migrants is relatively new in rural Australia. The presence of black sub-Saharan African nurses in Australian healthcare facilities is changing the face of the Australian nurse. Australia, like other developed countries, has been receiving migrant nurses from the African continent in a bid to reverse its critical nurse shortage. Literature has shown that globally, overseas qualified nurses of colour have encountered work challenges that have included racial discrimination.

Study design and methods: A qualitative hermeneutical phenomenological approach was used. Eighteen nurses were purposively selected using personal invite and a snowballing technique. Data collection involved individual face to face interviews and a focus group discussion.

Results: The exploration of experiences revealed issues of race and colour among colleagues and between patients and overseas qualified nurses. Overseas qualified nurses experienced incidents of discrimination based on race and skin colour from their colleagues and patients. They felt unwelcome, not trusted and undervalued. They adopted various coping strategies to adjust to being seen differently.

Discussion: The literature suggests that overseas qualified nurses tend to be discriminated against in their destination countries. In this paper the migration experience of black sub-Saharan African overseas qualified nurses has shown the power of welcoming people to their new country, the existence of discrimination by race at their healthcare facilities as well as showing the importance of trust and teamwork at the workplace. The study has also shown the resilience of black sub-Saharan African overseas qualified nurses in their time of adversity.

Conclusion: There are pockets of racial discrimination that need to be checked within the Australian healthcare system. These undermine the confidence of overseas qualified nurses in their professional practice.

Implications for research, policy and practice: The results provided insight into the existence of racism within the workplace. Black African nurses need to feel safe in their workplace and need more support to facilitate their integration.

Nurse managers need to be more vigilant in monitoring staff interactions in their Units. Understanding and support for diversity at the workplace by all nurses will improve patient and staff safety.

Keywords: Overseas qualified nurse, African nurses, discrimination, resilience, teamwork.

What is already known about the topic?

- There is a global shortage of nurses. Nurse migration between countries has been taking place for a long time, and the trend will continue.
- Discrimination against migrant nurses of colour has been identified in various destination countries.

What this paper adds:

- Findings from this study suggest existence of racism against black sub-Saharan African nurses in rural Australian workplaces.
- Black sub-Saharan African nurses need more support from nurse managers. They may get this through close monitoring of staff interactions in the workplace and intervention when racism is noted.
- Black sub-Saharan African nurses showed resilience in overcoming adversity in their workplace.

BACKGROUND

Migration of nurses between countries has been taking place for decades; and it is increasing. For the period 2011 to 2016 the number of foreign-trained nurses working in Organisation for Economic Co-operation and Development countries increased by 20%.[1] A critical global shortage of nurses, including in Australia, has resulted in an increase in migration where economically advantaged countries have increasingly depended on the recruitment of overseas qualified nurses.[2-5] Globalisation has facilitated this movement of nurses across international borders. Australia has received an increasing number of overseas qualified nurses from the African continent in recent years as the country wrestled with a nursing shortage particularly in their rural communities.[5-10]

Literature has shown extensive exploration of the experiences of overseas qualified nurses in their destination countries, Australia included.[11-17] However, literature shows minimal discussion of the experiences of overseas qualified nurses in the rural areas of their destination countries,[8,18] much less the unique experiences of African nurses working in rural Australia.[18] The ongoing dialogue regarding international nurse migration has been silent and has shown a gap regarding the experience of African nurses who migrated to rural Australia. Hence, this study explored the migration experiences of sub-Saharan African overseas qualified nurses living and working in rural Australia.

The three research questions that guided the study were:

1. What was the experience of the sub-Saharan African overseas qualified nurses as they migrated from their countries to rural Australia?
2. What is the experience of sub-Saharan African overseas qualified nurses as they live and work in rural Australia?
3. From the sub-Saharan African overseas qualified nurses' perspective, what does it mean to be a registered nurse living and working in rural Australia?

While overseas qualified nurses, who are usually in the minority, have benefitted from their migration, they have also faced some challenges in their destination countries. These challenges have included communication and cultural barriers, underutilisation of their skills and experiences of racial discrimination.[16,19-22] This paper reports on data that relates to the early migration experiences which were part of a broader study that was investigating the overall experiences of sub-Saharan African overseas qualified nurses working in rural Australia.

METHODS

This study methodology used hermeneutic phenomenology as the underpinning philosophy. Hermeneutic inquiry, as suggested by Heidegger and expanded by Gadamer guided the methodology as it enabled the exploration and interpretation of the experiences of overseas qualified nurses as they migrated and lived in rural New South Wales.[23,24] Hermeneutic phenomenology allowed participants to relate their stories. This approach allowed understanding of the nurses' migration life as experienced rather than conceptualised.[25] With regards to the concept of state-of-being in hermeneutic phenomenology, the presence of overseas qualified nurses in rural New South Wales was their state of being-in-the world. The hermeneutic phenomenological approach helped interpret the participant meaning of their being overseas qualified nurses in rural Australia. This interpretive paradigm allowed use of research methods that generated dialogue with participants.

THE PARTICIPANTS

The focus of the study was sub-Saharan African overseas qualified registered nurses working in rural New South Wales (NSW) who had migrated to Australia using the General Skilled Migration visa (Sub Class 457). A snowballing technique was used to purposively select 18 participants.[26]

An initial invitation advertisement in a local newspaper yielded no responses. The lead author directly approached the first three participants who were attending African cultural functions, to inform them of the study. These participants then referred prospective participants to the researcher and those prospective participants who were interested in participating in the study contacted or offered their contact details to the researcher. The numbers increased through snowballing.

Only black sub-Saharan African nurses responded to the invitation. Their home countries were former British colonies in Africa; English was one of the official languages of communication in their countries. Only one participant was male. Their professional experience and migration status are as shown in Table 1. All participants on the table were deidentified; those from individual interviews were given pseudonyms.

All participants had resigned from their fulltime employment as registered nurses when they left their countries for Australian jobs; with some having given up senior positions for example, clinical nurse educator and district nursing officer positions in their countries of origin. At the time of interviews all participants worked fulltime as registered nurses at either a public hospital or at an aged care facility. Some participants had moved from aged care facilities to hospitals. A few participants also worked as casuals outside their place of fulltime employment. None had been promoted to a senior level.

DATA COLLECTION

Data were collected in 2014 by the lead author via individual face to face interviews which were conducted in participant homes and one focus group discussion that was composed of participants who were not interviewed individually. A trial of the interview process was conducted between the lead author and one of the research supervisors prior to data collection. Semi-structured interviews and prompts to bring the discussion back to the study questions were used whenever required; otherwise participant stories guided the interviews. The use of focus group discussion fitted in well with Gadamer's philosophy of dialogue and fusion of horizons as this brought participants together allowing them to share experiences.[24] Focus groups assist in recalling information and they allow for development of group dynamics that can be synergistic in collecting information that may have not come up in one-to-one interviews. This approach was congruent with the African culture where people traditionally embrace discussion of life issues in gatherings.[27] The lead author who, by virtue of being an overseas qualified nurse from the same continent, shared similar ethnic and professional background, conducted the interviews which were approximately an hour in duration. Though the investigator had their own pre-understandings and migration experiences within the hermeneutic circle from their historicity, staying open during data analysis helped them to see things differently, expanding their horizons on the phenomenon. The investigator did not impose their own knowledge or experience on the migration stories narrated

TABLE 1: DEMOGRAPHICS OF PARTICIPANTS AT TIME OF INTERVIEW.

Pseudonym	Gender	Age range	Professional experience (years)	Time since arrival in Australia (years)	Migration status Australian citizenship/residency status
Noma	Female	41–50	15	5	Citizen
Lili	Female	31–40	12	4	Permanent resident
Betty	Female	41–50	26	11	Citizen
Mimi	Female	51–60	32	11	Citizen
Mpilo	Female	31–40	15	10	Citizen
Linda	Female	31–40	8	5	Permanent resident
Farai	Female	41–50	13	5	Permanent resident
Simba	Female	31–40	11	3	Temporary visa
Thabo	Male	31–40	10	8	Citizen
Bongani	Female	41–50	22	9	Permanent resident
Sindi	Female	31–40	10	4	Permanent resident
Ola	Female	41–50	19	3	Permanent resident
Mary	Female	41–50	20	11	Citizen
Focus Group Discussion Members	Female	31–40	16	10	Citizen
	Female	31–40	10	4	Citizen
	Female	41–50	23	10	Citizen
	Female	41–50	24	10	Citizen
	Female	51–60	27	10	Citizen

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by participants but expanded their own understanding of what it was like for other migrant nurses.

DATA ANALYSIS

Data from the recordings were organised and managed using the NVivo 10 software package.[28] The data were analysed as guided by Spiegelberg and Schuhmann's essentials in phenomenological investigations and Streubert's steps on data analysis.[29,30] The authors read the transcripts and listened to recordings several times, and then categorised the data according to the themes that were emerging. This re-reading and moving back and forth between the transcripts and the emerging interpretations was guided by the circular nature of hermeneutic analysis.[23,24] The immersion in the data allowed the authors to identify patterns as they engaged with the data.[31] The interpretation and final themes were agreed upon by all authors. Although participants told unique individual stories, interviews were stopped when the stories of the last two individual interviews showed a similar pattern to previous interviews.

Involvement of participants who experienced the study phenomenon increased the trustworthiness of the findings. Interviews were conducted by one researcher in order to strengthen dependability of findings and, the researcher remained open to different opinions to avoid personal distortions interfering with findings. The paper includes verbatim sections of participant stories so that their voices may surface. Transcripts were verified by participants.

ETHICAL CONSIDERATIONS

Ethics approval to undertake the study was obtained from the University Human Research Ethics Committee. The participants were a minority group within the Australian health workforce and, were considered vulnerable and marginalised and there was the potential for emotional distress from re-living some of their experiences. Participants were informed of the voluntary nature of the study and that they could terminate the discussion if they became distressed during the interview. They contacted the researcher after being informed about the study. Participants were assured of confidentiality. Names have been changed for interview extracts in order to ensure confidentiality.

RESULTS

The paper presents findings relating to early experiences which included participant arrival in Australia and their experience of early interaction with colleagues and patients as they settled into their workplaces. Participants described their positive experiences with management as they arrived in Australia, and the negative experiences as they settled into their new jobs in the clinical area. The presentation of the findings is illustrated with the voices of participants as they describe their experiences of starting a new life in Australia.

ARRIVAL EXPERIENCE

Reasons given by overseas qualified nurses for migrating to Australia related to socioeconomic decline in their countries, political and family factors as well as perceived opportunities for career advancement. Participants were welcomed by their migration agents and employers as they arrived in Australia. Participants were happy and excited with their reception by managers and Agents at airports and train stations as it provided for a smooth arrival. In some instances, the welcoming team included the hospital directors of nursing:

> *When I arrived at the train station, they were really nice; there were four of them waiting for me. It was so beautiful and they had flowers … The Director of Nursing and management staff were really nice, and they tried to make sure that I settled really well.* (Mpilo)

> *The DON [Director of Nursing] and District Nurse Educator made us feel very welcome … Yeah, they were all ready for us … The [reception] was good; people were quite willing to help us … There was a newspaper article on us; … so even the community was prepared to help us.* (Mimi)

> *At the airport, the hospital manager and my manager were holding my name; they were there with* **MY** *name! [In the house] I had a small fridge which was filled up … The following day they were driving me around showing me the town; that was nice.* (Bongani)

The overseas qualified nurses were humbled by the welcoming preparations made for them. They received positive support from their managers and some of their colleagues. Participants largely saw positives in their migration to Australia. However, they quickly encountered unexpected challenges in the workplace which, participants felt, were based on racial differences.

FEELING UNWELCOME IN THE WORKPLACE

For the first few months of her starting work, Farai felt unwelcome by colleagues she perceived as not wanting to interact with her:

> *You could see there were staff who didn't want to see you … there were racists among the staff … some of them didn't even want you to touch their cup. Even if you went to the staff room sometimes you were isolated. They didn't even want to associate with you.* (Farai)

Similarly, their patients showed discomfort in being nursed by black nurses:

> *There is also the issue of working with patients who have never been exposed to blacks … I was on night shift and I remember a patient who screamed when I went to her room. I said, "It's only me, I'm just checking on you". Then, when I went back the second time, she screamed, "Aaaaahhh!" I said, "Oh, why?" she said, "It's you". "What have I done?" "I'm scared of you". "What's wrong?" "Because you're black".* (Focus Group Discussion)

Many of these incidents were not reported to management as some of the African nurses involved felt they needed to deal with these issues alone. Some instances concerned relatives of patients who did not want their loved ones to be looked after by a black nurse. In this instance the African nurse was attending to a patient with a white nurse:

> *She [relative] said to the nurse I was working with, "Excuse me nurse, I don't want my mother to be nursed by a black person … in our family we don't do that; we don't associate with them". I was there!! But because we had a supportive Nurse Unit Manager, she made sure that I kept on looking after the mother until the relative ended up liking me.* (Focus Group Discussion)

The participant did not like what her patient's relative said especially in her presence. The participants also did not like how, soon after arrival, they would be asked when they would return to their countries. Such discriminatory questions gave participants a feeling of being unwelcome in Australia.

FEELING UNDERVALUED AND NOT TRUSTED IN THE WORKPLACE

Participants felt they were not trusted nor were their nursing skills recognised or valued by their colleagues and patients. There were instances when participants needed to convince patients that they were receiving appropriate care; that it was just the difference of skin colour, as they could do whatever anyone with white skin could do.

> *When we were new here and doing the medication round, … they didn't take the medication … and then when an Australian girl passed through, they would ask her if they should take that medication and then they took it … Obviously, you knew that they didn't take the medication because they didn't trust you.* (Mpilo)

Participants attributed this to their being of African origin. Participants also felt their colleagues did not trust them either and attributed this mistrust to racism:

> *It [racism] will always be there, … I remember the times when I was in charge [of a shift], the doctors would come and talk to my juniors, then those juniors would come and give me the orders; until I started saying, "I'm not taking any orders from anyone. If the doctors want to tell me anything they can come and talk to me, I do understand English". That's when it stopped. Otherwise, it was just someone talking to someone else and then me.* (Focus Group Discussion)

As this participant in the focus group indicates, participants generally felt that they needed to deal with such issues themselves. However, sometimes this mistrust resulted in 'dobbing in' due to doubts and suspicion among staff:

> *There was a lot of 'dobbing in'… people going to the office … and then there were those, of course, who were looking for errors in everything you did. Yeah, but anyway, we soldiered on.* (Thabo)

Other participants felt their colleagues were sceptical about their performance as registered nurses:

> *Ahh, these people… they treated me like trash when I started here, I used to be so stressed with the way things were going on; I would cry.* (Sindi)

Despite such a reaction, Sindi felt unable to ask managers for assistance to deal with such issues. Some staff under the supervision of overseas qualified nurses were defiant and not respectful of their positions of authority:

> *…and, being a black person, and you're leading Assistants in Nursing, and most of them were Australians. Some of them looked down upon you. … Sometimes you would delegate to the staff and the staff wouldn't do it, you ended up doing it yourself. They didn't expect an African to be educated and come in and work as their team leader … I remember when I asked one of the cleaners to come and clean in the office because the bin was spilling over, … and then she said, "Do you think you can tell me what to do?"* (Farai)

This insubordination was interpreted by Farai as due to her being black and of African origin. She felt her professional skills and supervisory position were not valued, not even by a general worker. The mistrust made it very hard for participants to render nursing care as they would seek help from enrolled nurses or assistants in nursing to convince patients that they were receiving correct medications. Their patients did not mind black nurses providing them with lower level personal care though.

Participants detailed situations where they were hindered from professional development courses particularly those run by the College of Nursing and sponsored by their hospitals. They claimed that local nurses got information before they did, and the spots would be full by the time they applied. They were also not happy with the promotion processes. Betty was one of the participants who had been in Australia for some years having come with many years of nursing experience. They felt frustrated for being sidelined for promotional opportunities, without consideration for their professional experience:

> *As registered nurses, they should give us chances to be promoted as well … Why are they taking so long to promote us? It is very annoying because we also want those promotions. …When you ask why I am not being promoted they tell you, "Oh! it's because we're still trying to see how much you can do". How much I can do, when I've been mentoring the person that has been promoted? When you go for a [performance] appraisal every box is ticked, so you wonder why.* (Betty)

Participants wanted to be allowed to advance in their chosen careers just like everyone else, more so for those who had migrated for that purpose and felt discriminated against when this did not occur. Although some of this discrimination came from subordinates and peers, when it came from managers it was reinforced to the participants

that assistance to deal with it would not be forthcoming. For this reason, some participants did not act through the organisational hierarchy.

COPING WITH BEING SEEN DIFFERENTLY

The participants identified various coping strategies as they responded to the discrimination by their colleagues and patients. Some participants suggested alternative carers for their patients:

> *Sometimes you find clients who are racist as well and I would say, "OK, if you don't want me to look after you I will find someone else to look after you because I can't change who I am". So yeah, it's unfortunate really.* (Sindi)

Others decided to stay out of the spotlight and would block their minds of the negative behaviours and focus on their migration goals:

> *It's like, we knew why we came here, … so you know, you can't go back because of those situations and you also want your children to have a better life here, to have a better education; so, you sort of … [*pause*] … humble yourself; I can say accept, telling yourself you're just here to work and you just do; yes, you do your work and then go home.* (Focus Group Discussion)

Still others would not accept this so easily without countering these racist behaviours; they reciprocated the negative behaviours and, this impacted patient care:

> *In our ward, it's each man for himself and God for us all. No one is willing to help you with heavy loads. It's your patients, it's your problem; you have to deal with it. In our ward, there's a 'float' person but the floating part of it is selective … They choose the 'white area' [where the white nurses are allocated]. Yeah, they go to the 'white area' and leave the 'black area' … and you just suffer by yourself. But now I also do that too; when I've got my black ones, I go to the 'black area' to help with heavy patients. What can you do? Once you point it out, you get labelled.* (Focus Group Discussion)

The 'float' person was expected to assist nurses with heavier patient loads during the shift. However, participants observed that this help was offered selectively as it was based on the colour of the nurse. This behaviour by the float person adversely affected not only the nurse, as this stressed them physically and mentally, but also patient care. According to participants, these racially based behaviours occurred on a day-to-day basis, exposing them to an adversity that threatened their newly acquired jobs and mental health. Some participants downplayed such incidents without officially reporting incidents to authorities. Participants would reach out and support each other including organising social functions together for opportunities to de-stress and improve their resilience.

The findings above show participants perceiving their experience as being positively welcomed by their managers while they were largely not welcome or trusted by some of their colleagues and patients. They felt their professional skills were not valued. Participants reacted differently in adjusting to these negative responses.

DISCUSSION

This study explored the migration experience of sub-Saharan African overseas qualified nurses in rural New South Wales. As results have shown, the nurses were welcomed by management, however, as they entered their workplaces in hospitals and aged care facilities, they experienced discrimination and disadvantage based on their race and skin colour. Their experiences have shown the power of welcoming, the existence of discrimination by race at their healthcare facilities as well as showing the importance of trust and teamwork at the workplace. Participants described various ways of coping with the negative responses they received from their colleagues and patients. They have also shown their resilience and determination to achieve their migration goals as they have not relented.

Welcoming others is the right thing to do; this gesture significantly impacts the life of newcomers as they feel they are valued, and they belong.[32] The reception of overseas qualified nurses by their employers emphasised the power of welcoming migrants into a new country and how that lays the foundation for them to feel secure and accepted in their new land. Overseas qualified nurses will work better in an environment where they feel welcome. Literature on migration has highlighted the importance of welcoming people to their new country.[33-36] Through multicultural groups and the Refugee Council of Australia, the country has committed to welcoming new migrants and supporting cultural diversity.[37] Föbker, Temme, and Wiegandt noted that skilled migrants are attracted to countries with a welcoming work culture.[38] The welcome these nurses received made them feel at home.

RACE AND COLOUR: BEING VISIBLY DIFFERENT

The presence of the visibly different African registered nurses in Australian healthcare facilities is relatively new and, has changed the face of the Australian nurse. The participants were black nurses from sub-Saharan Africa. They spoke English with a different accent from the Australian one. The differences were visible for everyone to see. Colic-Peisker and Hlavac noted that where black people are a minority they will be 'visibly different' for everyone to see.[39]

Participants attributed their feelings of being unwelcome and discriminated against by some of their colleagues and patients to their being of different colour and coming from Africa. It did not matter how much nursing experience the participants had, they were still marginalised by some of their colleagues and patients. They felt as outsiders, that they did not belong. This resulted in loneliness and stress.

Discrimination based on racism has been reported in studies of overseas qualified nurses.[7,40-42] Moyce, Lash and de Leon Siantz echoed similar findings on racism and discrimination where nurses have attributed this to their skin colour.[19] The Australian situation is not a new phenomenon for black Africans to be excluded. The sources of discrimination are similar in all studies; these being from patients and their relatives, colleagues and sometimes supervisors.

Discrimination based on race has no place in the nursing workforce. It is a result of people who are not aware of the beauty of diversity and the fact that it should instead be celebrated. Celebrating diversity incorporates understanding, respecting and accepting everyone as unique and recognising their differences regardless of race. At organisational level it drives innovation and excellence.[43] These African nurses added to the cultural diversity in the nursing workforce. Colleagues could have taken advantage of and gained from the nursing experience the participants had and the cultural diversity they provided; unfortunately, this was a missed opportunity for all, particularly at a time when society is becoming more culturally diverse. The multicultural activities that take place in various communities to promote harmony and social cohesion can serve as a platform for the nursing workforce/healthcare institutions to similarly celebrate diversity in workplaces and to bring staff together.[44] Healthcare sector staff need to treat overseas qualified nurses of colour as colleagues. Australia is known for its good spirit of multiculturalism. The Australian Indigenous philosophy of life, *yindyamarra winhanganha* —'the wisdom of respectfully knowing how to live well in a world worth living in' blends in well with the African philosophy of *Ubuntu*,[45] the spirit that drives humaneness and, which encompasses respect, kindness, trust, caring, generosity, community and sharing.[46,47] These life philosophies emphasise respect for each other and they challenge us to live well in a world that is worth living in.

MISTRUST AND BEING UNDERVALUED

The issue of not being trusted by patients and colleagues could have negatively impacted the nursing care given by overseas qualified nurses. Trust among team members builds teamwork. Positive nursing care outcomes are built on trust between nurses and patients. It is near impossible for teams to share the same values and common goals when trust is conditional.[48] Team members can only respect and accept each other through trust. It is the trust that strengthens interpersonal relationships and binds teams together. Team members experience a feeling of belonging in a trusting environment and, the resultant team collaboration helps achieve better patient health outcomes. Participants were not trusted by their colleagues and patients. Colleagues needed to value their professional knowledge and experience and, their supervisors could have trusted their potential to advance in their profession. Participants needed to belong to this team; to be seen beyond their dark skin. This mistrust may have explained the judgement participants received where doctors and patients sought third party assistance to interact with them. Participants interpreted this as racism.

The findings of being undervalued and not being welcome by some of their colleagues and patients are similar to those of Likupe and Archibong and Likupe in the UK National Health Service where black African nurses faced racism, discrimination and unequal opportunities.[40,49] This was confirmed by nurse managers who participated in their study. However, findings on professional development differed from those of Likupe where African nurse migrants in the UK were described as not 'bothered about developing themselves' (p. 237).[49] Participants in this study have shown their desire to take up courses as well as promotion opportunities and, have struggled to overcome the hindrances. It should be noted that some participants had migrated for career advancement purposes.

RESILIENCE AND PERSISTENCE

Participants needed to work harder to be accepted as professionals in their own right. They were not giving up on their hopes and aspirations; they remained resilient and persistent as they were determined to achieve their migration goals. Mansouri and Lobo noted that individuals who are racially discriminated against can get more resilient.[50] Participants needed to remain optimistic and draw on their individual tenacity to overcome. After all, going back was not an option for most of them. The position by management not to tolerate any form of discrimination of the overseas qualified nurses by anyone helped participants to maintain their resolve to soldier on at their workplace.

In accordance with Section 7 of the *Anti-Discrimination Act 1977* and other institutional policies,[51] Australian health institutions do not sanction discrimination at the workplace. However, participants still felt excluded by their colleagues and patients. Essed,[52] asserted that racism is not always overt; it can be integrated into everyday practices without being questioned, particularly if it is seen as normal by the dominant group. Essed refers to this as 'everyday racism'.[52(p50)] For participants, it was these 'everyday' interactions that hurt the most.

It seems the issue here was not just being an overseas qualified nurse; it was about being black and being an undesirable. Regardless of participants possessing the required qualities and skills, some people had problems with this dark skin. The subtle discriminatory behaviours of patients and their relatives avoiding care from black nurses, nurses not providing help to their black colleagues with heavier workloads or managers limiting opportunities for black nurses to advance their careers, is not acceptable. The rejection of their nursing care by patients had nothing to do with their competence. They were qualified registered

nurses, they were registered with Nurses and Midwives Board of Australia and, some of them brought with them many years of postgraduate nursing experience. Such behaviours impacted the participants' trust in their capabilities, undermining their self-esteem. It is accepted that patients may have experienced cultural shock in being nursed by black nurses as some of these overseas qualified nurses were the first ones to work in those institutions. Black nurses were a new skilled migrant group in rural Australia; this may have increased their visibility. Alexis noted that nurses from Africa faced more discrimination and tended to receive less help compared to other overseas qualified nurses.[53]

Participants also showed an element of silence regarding everyday racism. They downplayed such incidents or developed their own coping mechanisms without officially reporting incidents to authorities, authorities that had declared no tolerance for racism or violence. This silence on everyday racism confirms similar findings by Essed and Mapedzahama et al.[52,7] Mapedzahama et al described racism in the workplace as a form of violence.[7] Nurses facing discriminatory behaviours based on race need to speak up against this violence.

IMPLICATIONS FOR RESEARCH, POLICY AND PRACTICE

Results of this study give new insights into the experience of sub-Saharan African overseas qualified nurses in rural Australia. Even though health services did not tolerate racism, more proactive processes could have been put in place to identify and prevent such racist intolerance. Nurses and nurse managers need to acknowledge that racial discrimination exists in their Units. Nurse managers could closely monitor professional practices in their Units and, be more alert in identifying these negative interactions among patients and nurses from different ethnic backgrounds. These incidents may be happening below their radar. Nurse managers could allow regular debriefing sessions for their staff to mitigate disadvantage and discrimination based on race. Black sub-Saharan African overseas qualified nurses are put at greater risk for errors if their professional competencies are always questioned.

A workplace that promotes teamwork is a safe working environment. There is need to invest in teamwork and cultural diversity training and to support the overseas qualified nurses especially in their first few months of arrival. The local multicultural health services could help with involving healthcare staff in their multicultural social events to facilitate racial integration. Further research focussing on the effectiveness of such initiatives would be useful.

Given that Australia still needs to continue recruiting overseas qualified nurses to sustain their nursing needs, there is need for healthcare staff to accommodate these nurses as colleagues and recognise their contribution to the Australian healthcare system. Early integration is important to their overall migration experience. Australia is a multiracial society that should be strengthened by diversity. Black sub-Saharan African overseas qualified nurses need more workplace support due to the discrimination and disadvantage they tend to face.

Policies that monitor and assess negative interactions between nursing staff could be put in place. The support should be aimed at making the first few months at their new workplace the most memorable. Further exploration of experiences in other geographical areas may be useful for comparison.

STRENGTHS AND LIMITATIONS

A strength in this study was that all data were collected by the lead researcher who is a black sub-Saharan African nurse migrant herself leading to better understanding of the conversations. The fusion of horizons between the researcher and participants allowed a clear dialogue and interpretation of their experiences. It was not by design that the participants in the study were all black nurses; they self-selected through the snowballing process. The study was open to all sub-Saharan African overseas qualified nurses, but the absence of participants from other races deprived the study of their experiences.

CONCLUSION

The evidence suggests that there are pockets of racial discrimination that need to be checked in the Australian healthcare system. Under the Anti-Discrimination Act 1977, it is unlawful to discriminate against other persons based on race; and that includes the black African race. Institutional policies have expressed zero tolerance to all forms of violence particularly towards the Australian Indigenous peoples. There is another black face now in the workplace. Such violence undermines the confidence of black African nurses in their professional practice. Findings indicated that there were nurses who did not engage in such behaviour, nurses who saw and heard these racist incidents but did not act to prevent them. A little more support would move those nurses a little higher above being just nonracist and being responsive to such incidents. While the detailed experiences show the extent of discrimination and disadvantage, they also show the determination of participants in overcoming and achieving their migration goals. It is important for managers to be vigilant in monitoring staff interactions.

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RESEARCH ARTICLES

Shift-Work-Play: Understanding the positive and negative experiences of male and female shift workers to inform opportunities for intervention to improve health and wellbeing

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ABSTRACT

Objective: Our primary study aims are to (i) examine positive and negative aspects associated with shift work, and (ii) identify any gender differences that exist in a healthcare workforce. A secondary aim of the study was to identify opportunities for intervention, particularly in males given they have greater exposure to shift work across the population.

Background: Shift work has been associated with detrimental physical and psychosocial outcomes in many studies; however, there has been little consideration of any positive perceived aspects associated with shift work. Additionally, while there has been less consideration of gender differences in medical settings such as nursing where there is a higher proportion of females working shifts.

Study design and methods: Our study utilised mixed-methods, comprising a cross-sectional workforce survey given to both shift workers and non-shift workers (N=1398), and a co-design workshop aimed at male nurses, in order to identify opportunities for intervention among this group.

Results: Shift workers were more likely than their non-shift work counterparts to report poorer overall health, to have higher levels of psychological distress, and to engage in greater levels of unhealthy behaviours (e.g. higher alcohol consumption, and greater levels of smoking), with these differences highest in male shift workers.

Discussion: Analysis of the shift work experience revealed that the majority of responses were negative (affecting sleep, diet, exercise, mental health), however one-in-five statements were positive with flexibility, and the ability to engage with services highlighted. Examining both positive and negative elements is important for providing a balanced insight into shift workers' lives, and to inform targets for improving their health and wellbeing.

Conclusion: Through identifying positive and negative elements associated with shift work it is possible to intervene to minimise the negative elements, and maximise positive elements. Our analysis highlights the importance of considering gender differences in both individual and organisational-level responses.

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Implications for research, policy, and practice:
To effectively address the negative aspects of shift work, interventions at multiple levels involving both organisations and individuals that simultaneously target multiple outcomes (sleep, diet, exercise, opportunities to connect with peers) are likely to be more effective than individual measures alone.

What is known about the topic?
- Shift work is common across many different industries, and is an integral part of the nursing profession, where nurses and midwives make up almost 50% of the worldwide shift working workforce.
- Shift work has been associated with negative impacts on individual physical and psychological health and performance outcomes such as increased error rates.

What this paper adds:
- This study confirms that shift work is associated with negative impacts however there are positive elements associated with shift work and these include flexibility and financial benefits.
- Gender differences were apparent with risky alcohol use, higher smoking rates, and poorer health noted in males compared with females.
- Our co-design workshop identified the potential for a holistic response based on the three pillars of health: sleep, diet and exercise as likely to be more effective than an intervention addressing only one of these domains.

Keywords: Shift work, nurses, survey, co-design, gender

OBJECTIVE

Recent decades have seen increases in the proportion of the population engaged in employment outside of the traditional nine-to-five day in many jurisdictions including Australia and North America.[1,2] Approximately 20% of the worldwide labour force are classified as shift workers, with this work pattern common across many industries including health,[3] mining,[4] and transport.[5] Shift work is an integral part of the nursing profession, and nurses and midwives make up almost 50% of the worldwide shift working workforce,[6] which is important given that nurses provide care to patients 24h a day, seven days a week.[7] Shift work negatively impacts on both the health and wellbeing of individuals, and also their performance.[8,9] For example, a New Zealand study reported that both shift timing and sleep history were predictive of fatigue-related errors in the past six months.[10] It is therefore important to identify opportunities to intervene to minimise performance decrements given that errors made in hospital and nursing environments can impact on patient care and recovery.[11]

This paper presents the findings of a mixed-methods study comprising a workforce survey of staff at a metropolitan hospital in Melbourne, Victoria, and a subsequent co-design workshop aimed at identifying positive and negative elements of shift work and relevant gender differences, and using these to identify opportunities for intervention to improve the lives of shift workers.

BACKGROUND

SHIFT WORK AND ADVERSE OUTCOMES

Shift work presents a challenge to underlying human physiology, which has biologically adapted to the light-dark cycle.[12] Opposing the endogenous circadian drive is detrimental to an individual's physical and psychosocial health.[13] For example, shift workers have a higher incidence of obesity,[14] type II diabetes,[15] decreased mental health,[16] and increased isolation,[7,17,18] when compared with day workers. These negative outcomes have been attributed to multiple mechanisms including poor sleep quality and quantity, increased stress, and the adoption of unhealthy lifestyle factors.[17]

In addition to direct health effects, shift work also affects employee productivity and performance,[19] being associated with an increase in adverse events and employee absenteeism.[20] Outside of the work environment, shift workers have reported feeling isolated,[21] and experiencing disrupted social lives, particularly in balancing work/life demands.[2] Together, these health, occupational and social outcomes have implications for an individual's emotional and social welfare.[7,17] Opportunities for shift workers to participate in health-promoting and/or social activities outside of their workplace may also be adversely affected by irregular work schedules and sleep patterns.[22]

Despite the plethora of negative outcomes associated with shift work, other researchers have suggested that some individuals are better able to adapt to shift work without experiencing adverse consequences. Individual personality factors including greater flexibility, low neuroticism, high extraversion, and an internal locus of control were associated with higher tolerance to shift work,[23,24] with one prospective study in nurses identifying that hardiness predicted increased tolerance to shift work across a two year period,[25] and another recommending that nurses' attitudes toward rotating shift work (objectionable, constructive or ambivalent) be taken into account with respect to organisational roster design.[26]

Others studies have noted that increased organisational support (e.g. greater collegiality between staff),[27] and shift structuring (e.g. in terms of the direction of the rotation pattern, number of consecutive night shifts, opportunities to promote cohesion between workers), and food and beverage intake patterns by shift workers may reduce negative health outcomes associated with shift work.[21]

While males have greater exposure to shift work across the population,[28] this differs in some medical settings such as nursing given the higher proportion of females employed as nurses. While some studies have reported increased tolerance to the deleterious effects of shift work in males,[24] this is largely dependent on occupation and role. For example, Tuckett and colleagues reported that male nurses tended to have poorer clinical outcomes (greater BMI and cardiovascular symptoms, to be more sedentary, report poorer sleep, and were more likely to smoke, while women reported greater levels of feeling worn out),[29] and in a comparative analysis across different occupations male nurses reported the highest rates of sick leave.[30] Gender differences in the context of shift work may be compounded given that males typically report greater social isolation,[31] and social connection is an important factor protective against suicide, depression, and anxiety, and is particularly relevant for men who are overrepresented in suicide statistics. Hence, the present paper specifically examines the experiences of male and female shift workers, with the goal to inform opportunities for intervention to improve health and wellbeing.

While research has focussed on negative health and productivity costs associated with shift work, there has been little consideration of the perceived positive aspects associated with shift-work gained from male and female shift workers themselves. Examining both positive and negative elements together is important for providing a balanced insight into shift workers' lives, and to inform targets for improving their health and wellbeing. Given that effective interventions have been argued to be context dependent, especially in healthcare settings,[18] this study considers shift workers in a metropolitan health network.

METHODS

This study utilised a mixed-methods design, comprising a workforce survey (given to both shift workers and non-shift workers) and a subsequent co-design workshop aimed at male nurses to discuss their reflections on the survey results and identify opportunities for intervention.

SURVEY

Participants were recruited from a major metropolitan health service in Melbourne, Australia, which oversees three major hospitals and multiple outpatient clinics and services. Participants were invited to complete a workforce survey, which received approval from the Eastern Health Human Research Ethics Committee (LR91-2016). Invitations to participate were sent via email messages, and were included on employee payslips and newsletters sent by HR and senior management. Prior to beginning the survey, a written description of the project, a hyperlink to the online survey, and contact details of researchers was provided to participants. The email invitation was sent from a generic hospital address to minimise any perceived personal relationships and/or perceived coercion to participate from senior management. Participants who completed the survey were not provided with a direct incentive, however were entered into a prize draw to win one of ten gift vouchers (worth AUD$100 each).

CO-DESIGN WORKSHOP

Following completion of the survey, the authors ran a half-day co-design workshop, with five male nurses to: *(a)* explore how well the survey results reflected their individual experiences and reality of shift work; *(b)* examine the impacts of shift work on social connectedness and isolation; and *(c)* identify opportunities for intervention to overcome negative effects of shift work.

Co-design is a process that enables communities – in this case male shift workers – to participate in design processes through the workshopping of ideas that could be developed to meet the needs of communities. As such, co-design workshops are increasingly being employed and documented in healthcare and health promotion practice and research.[32,33] Staff were selected by the organisation's Chief Nursing and Midwifery Officer to represent junior and senior male nursing staff from across the organisation, and the co-design workshop was facilitated by the Consumer Participation & Patient Experience office of Eastern Health. The co-design workshop was targeted towards male participants given that our survey results revealed that they were more likely to be negatively affected by shift work than females, and are useful given that the majority of qualitative survey responses were received from female participants, and we were seeking to engage male participants in identifying and confirming solutions to the burden associated with shift work. Workshop participants comprised three nurses and two nurse unit managers. Participant's number of years working in a shift work role varied, ranging from two to 30 years' experience. The mean number of years working a shift work role was 14.6 years.

MEASURES

Participants completed an online wellbeing survey which assessed the following domains based on their previous association with shift work: physical health; physical activity engagement and preferences; diet and nutrition; health and wellbeing; alcohol and tobacco use; sleep; work roles and demographics. The survey included the K-6, a six-item measure which asks participants to rate each item on a five-point Likert-type scale.[34] It is an abbreviated version of

the K-10, and provided a measure of psychological distress drawing from depressive and anxiety related symptomology. The survey also included the AUDIT-C, a brief three-item alcohol screen that identifies hazardous drinking.[35] Participants were asked how often they smoked cigarettes, as well as single Likert-type measures of general wellbeing and life-satisfaction. In addition to these general items, we also asked participants "How shift work had impacted on their overall wellbeing (either positively or negatively)? Participants provided written responses to this question ranging from a sentence to a paragraph of text.

The co-design workshop began with self-reflection about shift work, recorded in workbooks supplied to participants following presentation of the main survey results by the senior author. Consistent with recommendations for optimal group sizes,[36,37] the number of workshop participants (n=5) was selected to enhance comfort and facilitate active participation in the workshop. Larger workshop groups can be uncomfortable for some participants and can act as a barrier to sharing ideas and opinions.[36] As is a common technique in co-design, we divided participants into two groups to further encourage active participation and engagement.[37] We subsequently divided participants into two groups to allow participants to reflect on their work and internal discussions as best as possible around creating cognitive and contextual maps around identifying opportunities for intervention to improve health and wellbeing for shift workers.[38]

DATA ANALYSIS

Independent t-tests and chi-square tests were used to assess differences between shift workers and non-shift workers, and male and female shift workers for ratio and categorical-level data. We next investigated open-ended survey and co-design workshop responses and qualitatively analysed them using the Framework approach to thematic analysis.[38] This approach encourages themes to emerge inductively from the data in addition to being deductively derived from the study aims, therefore making it suitable for applied and practice relevant research.[38] The first two authors initially coded a number of responses into themes. These were then discussed and additional themes added to the framework based on our knowledge of the literature, and a final thematic framework was agreed upon. Subsequent responses were coded by the first author using the thematic framework, and interpretations of the data further discussed by all authors. We also calculated the proportion of responses that were coded in each category and the overall number of positive and negative responses.

RESULTS

One thousand eight hundred and twelve survey attempts were recorded, with 1,398 containing data for >75% of all fields (579 shift workers, SW), which were retained for the present analysis. The majority of participants were female (*n*=1,101, 84.1%; SW: n=492, 85%), with 193 males (14.7%, SW: *n*= 83, 14.3%) and 15 others (1.1%, SW: *n*=4, 0.7%). The age distribution of participants was as follows: (≤30 years: *n*= 215 (SW: n=156), 31-39: *n*=237 (SW: *n*=91), 40-49: *n*=253 (SW: *n*=101), 50-59: *n*=309 (SW: *n*=115), 60+ years: *n*=70 (SW: *n*= 30), 275 not stated (SW: *n*= 101). Table 1 describes the work and shift pattern of participants, with comparisons between shift workers and non-shift workers. Table 1 also shows that the majority of the sample were nurses, followed by medical and allied health professionals and corporate/administrators.

TABLE 1: WORK AND SHIFT PATTERN OF PARTICIPANTS COMPLETING THE "SHIFT-WORK-PLAY"

	N (%) non-SW	N (%) SW
Average weekly hours worked (past month)		
0	13 (1.0)	6 (1.0)
1-40	1,001 (74.5)	490 (82.7)
>40	311 (24.5)	98 (16.3)
Worked in current role		
≤ 5 years	719 (63.9)	297 (52.3)
6-10 years	289 (17.3)	129 (22.7)
11-15 years	105 (8.5)	60 (10.6)
16-20 years	64 (5.1)	38 (6.7)
>20 years	64 (5.1)	44 (7.7)
Currently a shift-worker		
Yes	–	594 (44.8)
No	731 (55.2)	–
Role		
Nursing	597 (45.1)	463 (77.9)
Medical	100 (7.5)	51 (8.6)
Allied health	247 (18.6)	37 (6.2)
Other health	42 (3.2)	7 (1.2)
Administration/Corporate	193 (14.6)	31 (5.2)
Other	146 (11.0)	5 (0.9)
Types of shift worked in past month	–	
Day (6am-7pm)		500 (84.2)
Evening (3pm-12am)		493 (83.0)
Night (10pm-8am)		360 (60.6)
Freq. of night shifts (10pm-8am)	–	
Nearly every day		16 (2.8)
2-4 times per week		128 (22.1)
3-4 times per month		132 (22.8)
1-2 times per month		92 (15.9)
Rarely/Nearly never		211 (36.4)
Freq. of rotating shifts	–	
Nearly every day		227 (39.2)
2-4 times per week		133 (23.0)
3-4 times per month		63 (10.9)
1-2 times per month		55 (9.5)
Rarely/Nearly never		101 (17.4)

SW=shift worker

TABLE 2: DIFFERENCES IN WELLBEING, HEALTH, ALCOHOL USE AND PSYCHOLOGICAL DISTRESS BETWEEN SHIFT WORKERS AND NON-SHIFT WORKERS. MEAN (SD)

Measure	Non-shift worker	Shift worker	Difference
AUDIT-C	3.18 (1.83)	3.44 (1.96)	$t(1,170)=2.41$, $p=.016$
Smokers	Yes = 41 (5.6%)	Yes = 53 (8.9%)	X^2 (1df)=5.46, $p=.019$
Overall Health			X^2 (4df)=14.46, $p=.006$
Poor	22 (42.3)	30 (57.7)	
Fair	124 (49.8)	125 (50.2)	
Good	278 (53.9)	238 (46.1)	
Very Good	256 (59.1)	177 (40.9)	
Excellent	51 (68.0)	24 (32.0)	
K-6	4.13 (3.90)	4.57 (4.09)	$t(1,323)=1.96$, $p=.05$
Life satisfaction			X^2 (2df)=1.66, $p>.05$
Dissatisfied	97 (13.3%)	76 (12.8%)	
Neutral	59 (8.1%)	60 (10.1%)	
Satisfied	575 (78.7%)	458 (77.1%)	

TABLE 3: DIFFERENCES IN WELLBEING, HEALTH, ALCOHOL USE AND PSYCHOLOGICAL DISTRESS BETWEEN MALE AND FEMALE SHIFT WORKERS. MEAN (SD)

Measure	Males (*n*=76)	Females (*n*=420)	Difference
AUDIT-C	4.08 (2.31)	3.18 (1.83)	$t(494)=3.09$, $p=.002$
Smokers	Yes = 16 (19.5%)	Yes = 54 (11.0%)	X^2 (1df)=4.75, $p=.029$
Overall Health			
Poor	6 (7.2)	24 (4.9)	X^2 (4df)=10.93, $p=.027$
Fair	27 (32.5)	91 (18.5)	
Good	26 (31.3)	205 (41.7)	
Very good	20 (24.1)	154 (31.3)	
Excellent	4 (4.8)	18 (3.7)	
K-6	5.13 (4.08)	4.46 (4.02)	$t(573)=1.41$, $p>.05$
Life satisfaction			
Dissatisfied	15 (18.1%)	60 (12.2%)	X^2 (2df)=2.165, $p>.05$
Neutral	8 (9.6%)	50 (10.2%)	
Satisfied	60 (72.3%)	382 (77.6%)	

Differences between shift workers and non-shift workers on measures of health, wellbeing, alcohol use and psychological distress are given in Table 2. Shift-workers were more likely than non-shift workers to report: higher AUDIT scores, being smokers, and overall poorer health.

Differences between male and female shift workers are provided in Table 3. Male shift-workers were more likely than female shift workers to report: higher AUDIT scores, being smokers, and overall poorer health.

Positive and negative impacts of shift work

In response to the open-ended statement on how shift work had impacted overall wellbeing, 615 statements were provided. Two broad main themes were identified including whether impacts were 'negative' (493, 80.2%) or whether impacts were 'positive' (83, 13.5%). In addition, 39 (6.3%) responses were coded as 'neutral'. Figure 1 shows the frequency of sub-themes related to the 'negative' and 'positive' main themes.

There was not much overlap between positive and negative aspects of shift work. However, social elements featured in both groups. Other than this, the most common negative sub-themes centred on sleep, and health outcomes, while positive sub-themes centred on flexibility.

To further examine these differences, we examined the positive and negative statements based on gender and occupation (see Table 4). Female staff, and nurses were more likely to provide examples of both positive and negative aspects of shift work.

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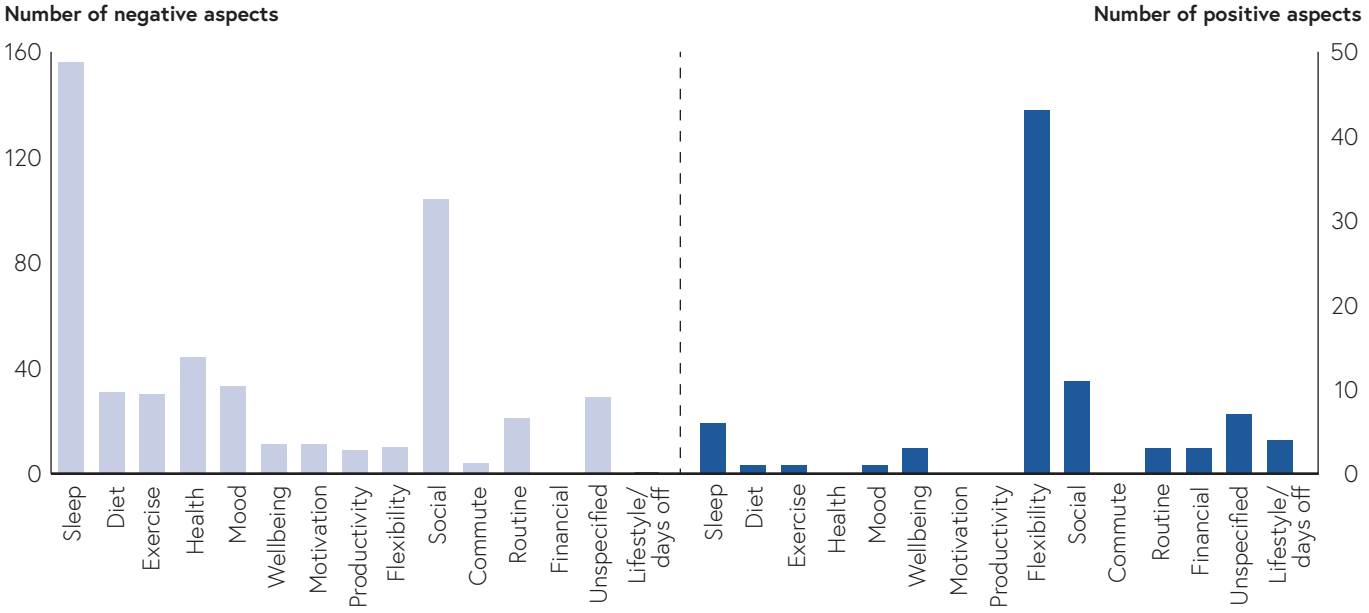

FIGURE 1. NUMBER OF POSITIVE AND NEGATIVE ELEMENTS ASSOCIATED WITH SHIFT WORK

TABLE 4: NUMBER OF POSITIVE AND NEGATIVE ASPECTS OF SHIFT-WORK BY GENDER (A) AND OCCUPATION (B)

	Positive	Negative
(A) Gender		
Male	14 (16.9%)	75 (15.4%)
Female	69 (83.1%)	412 (84.6%)
Total	**83**	**487**[a]
(B) Occupation		
Nursing	64 (77.1%)	397 (80.5%)
Medicine	5 (6.0%)	44 (8.9%)
Allied health	7 (8.4%)	21 (4.3%)
Admin	5 (6.0%)	21 (4.3%)
Other	2 (2.4%)	10 (2.0%)
Total	**83**	**493**

[a] Three negative comments were provided by staff who identified as non-binary, and three comments did not specify gender (data ns).

NEGATIVE IMPACTS

Sleep loss was consistently reported as a major negative aspect of shift work, which often subsequently impacted on other areas of life as illustrated by the following quotes with **emphasis** added by the researchers to denote themes.:

> *"My **sleep pattern is disrupted** and I **wake up a couple of times even when I am not on call** that night. I would prefer to sleep at the same time each day at around 10:30 pm.* (Female, age 58, Allied Health)"

> *"I believe shift work has had a big negative impact because if I work an evening shift & then morning shift**, I get a maximum of 5 & 1/2 hours sleep**. This makes me extremely tired."* (Male, age 61, Nurse)

> *"I believe **shift work has done significant damage to me (sic) sleep cycle**. Because my body gets used to staying up/ being switched on until 11pm-12am on a late shift I find it hard to get to sleep on a day off. When I do am shifts, my body gets used to waking up at 5am and on a day off **I find it hard to sleep past that time**. This has caused me to feel like I have chronic fatigue. Also, being on a rotating roster, **I constantly worry I will forget to turn up for a shift**, or turn up for a shift at the wrong time – this makes me very anxious on a constant basis…"* (Female, age 32, Allied Health)

> *"Negatively as I'm getting older and **I have less ability to cope with less sleep which impacts my health and mental wellbeing**. I feel isolated from friends as I cannot participate in social events on weekends due to work so I slowly disengage from them and I feel they do not understand my circumstances."* (Female, age 32, Nurse)

The first two of these quotes demonstrate the impact that shift work has on the underlying circadian system, with the third also noting that this can feed into mental health (anxiety)-related symptomology, while the latter notes the impact on one's ability to socialise.

POSITIVE IMPACTS

While participants predominantly reported negative impacts some also mentioned positive impacts. One of the main positive impacts noted centred upon flexibility, particularly with respect to services that can be difficult to engage with outside of business hours (e.g. banks, post-office), or childcare:

> *"**Positively when you get a longer stretch of time off** e.g.- early finish to a late start. Negatively when on a late early. Shift work also **gives me more opportunity to access day time facilities** – e.g. banks."* (Female, age not provided, Nurse)

> *"Wasn't of benefit, now since having a child is more positive as this* ***allows more flexibility e.g. taking weekdays off****."* (Male, age 30, nurse)

However, these positive outcomes were rarely mentioned in isolation, and tended to carry a cost or caveat, negatively affecting a person's ability to ensure healthy lifestyle habits such as diet and exercise:

> *"Some* ***positive*** *aspects of shift work are being able to do things when the crowds are not there,* ***however the tiredness that comes from varied shift hours*** *contributes to poor eating habits at times and inability to exercise consistently"* (Female, age 60, nurse)

SOCIAL ASPECTS OF SHIFT WORK

Interestingly, social aspects of shift work were viewed both positively (first two quotes), and negatively (second two quotes)"

> *"Does allow for* ***more time spent with family outside of business hours****, while maintaining a decent amount of worked hours"* (Female, age 37, nurse)

> *"makes it* ***easier to catch up with other nursing friends****, but* ***harder to catch up with other non-nursing friends*** *and have lost friends because of this".* (Female, age 27, nurse)

> *"It has impacted mostly negatively.* ***When I do night shifts, I do not see my partner for a few weeks. When I work weekends. I do not have time to participate in social events with my friends****. When I work morning shift. I feel too tired after I go home. I do not cook. And I need to nap for 2-3 hours."* (Female, age 30, nurse)

> *"****I constantly miss out on social family and friend get-togethers and people have to change their arrangements to try to include me****. Changing rosters is difficult with limited ability to change so often I don't even try. Arrangements must be made at least 7-8 weeks in advance so being spontaneous is limited…"* (Female, age not provided, nurse)

The positive impacts, again carried caveats and sometimes also emerged as negative impacts. For example, while shift work may have perceived positive impacts in terms of socialising or accessing services during quieter periods, they negatively impacted on relationships outside of work settings.

> *"Some positive aspects of shift work are being able to do things when the crowds are not there, however the* ***tiredness that comes from varied shift hours contributes to poor eating habits at times and inability to exercise consistently****".* (Female, aged 60, nurse)

CO-DESIGN WORKSHOP: IDENTIFYING OPPORTUNITIES FOR MEN

Given the dearth of literature that has examined male nurses despite negative health outcomes reported in a group of Australian and New Zealand males compared to females,[29] and the relative increases in social isolation in males compared with females, we identified an opportunity to engage men through a physical activity program that could address issues related to physical health, sedentary behaviour, and provide opportunities to socialise with peers. Findings from the survey were first presented by the facilitator and viewed as consistent with the experiences of shift workers participating at the co-design workshop. Of particular note was the interconnection and often competing pressures identified in the qualitative analysis of survey responses. For example, participants endorsed the finding that shift work reduced opportunities to connect with friends and family, but also highlighted that they often wanted to sleep or have 'alone' time rather than socialise after completing a shift. The theme of exhaustion or fatigue following a shift also was linked to lack of motivation (or availability) to engage with services such as a gym which limited physical activity and led to poorer eating habits.

Participants saw an opportunity to address both their perceived lack of social connectedness and lack of exercise/physical activity through a group-based physical activity to address loneliness and isolation for male shift workers in particular. A nurse unit manager who had been engaged in shift work for over 10 years stated that such an activity:

> *"…will reach a population of workers who* ***otherwise might not know that there are 10 other guys just like him*** *who are crying out for a shift work gym buddy"* (Male, co-design participant).

Participants suggested that such a mechanism was a good way of promoting social connectedness, as group-based physical activity is able to provide opportunities for individuals to work on skills at their own pace, and derive broader health benefits through interacting with others. They supported the idea that increased socialisation can begin through attendance of an exercise group program, and could lead to further opportunities to socialise and reduce isolation. For instance, a clinical nurse who had been a shift worker for 26 years stated:

> *"A group-based exercise program will provide a vehicle for me to get active…****it actually considers the stressors and pressures of a shift worker juggling work*** *while also doing some good for my health. It'll help a number of us to get together before work to 'play'"* (Male, co-design participant)."

DISCUSSION

The present study found that shift workers were more likely than their non-shift work counterparts to report poorer overall health, and to have higher levels of psychological distress, supporting findings of previous research.[13,17] We also identified that shift workers also engaged in greater levels of unhealthy behaviours than non-shift workers, including higher alcohol consumption, and were more likely to be

smokers. These results are concerning from an overall health standpoint given shift workers are reportedly more likely to engage in unhealthy patterns of alcohol consumption (e.g. binges),[39] with a recent Australian study also reporting that many nurses do not adhere to healthy lifestyle recommendations regarding diet, exercise and alcohol use.[40] Taken together findings from both the current study and the previous literature have implications for long term health outcomes of shift workers, given alcohol's role in the burden of disease.[41] These findings may also impact on productivity as alcohol consumption has been found to reduce subsequent work productivity especially in combination with night shifts. Higher rates of smoking in this shift work group are also of concern given the health consequences associated with smoking,[42] and that a recent report found that one third of shift workers reported smoking in order to stay awake.[43] Smoking to stay awake in this study was associated with an increased propensity to make errors associated with fatigue, to report greater sleepiness, and to increase stress and burnout. [43]

NEGATIVE IMPACTS LINK SLEEP TO WELLBEING AND OVERALL HEALTH

Analysis of the shift work experience reported by participants in our study predominantly revealed negative impacts. More than four-in-five responses were coded as negative, and centred on poorer sleep and health outcomes. While reports of poor sleep in this group are not surprising given previous work in this area,[44,45] results of our study reinforce the important role of good sleep health, which has been postulated to significantly improve an individual's tolerance to shift work.[24] Indeed, our present analysis revealed that sleep problems were rarely mentioned in isolation by shift workers, and were often reported in the context of other physical and mental health issues that they were experiencing. This finding supports literature demonstrating the complex interactions between these factors.[12]

POSITIVE IMPACTS CAME WITH CAVEATS

Interestingly, almost one-in-five responses provided by our participants revealed positive impacts of shift work on wellbeing, and overall life-satisfaction was not significantly different between shift workers and non-shift workers. This does not reflect the overall balance of literature which has focused on negative outcomes associated with these patterns.[46] The majority of positive coded statements reflected elements associated with flexibility,[47,48] such as the ability to engage with services that operate during business hours (e.g. banks, post office), or allowing for increased time with children, and decreased external childcare costs. Interestingly, some social elements were viewed as positive, particularly in the ability to socialise with other shift workers. However, the positive aspects of shift work tended to carry a cost, and were rarely presented without caveats or related negative impacts. For example, while socialisation was regarded as possible with other shift workers (as they were awake at the same time), it was also associated with less family time, and a decreased ability to attend social events outside the workplace, placing a large impact on home life.[9,49] Additionally, while flexibility was viewed positively, the associated costs were often framed in terms of the three pillars of health as recognised by the National Sleep Foundation: sleep, diet, and exercise.[50] One important aspect of this is likely differences in individual physiology which may drive the perceived negative aspects of shift work. For example, a study in police officers reported that those who preferred longer spells of night shift work reporting that their experience of these shifts were less demanding, that they were able to have better sleep at different circadian phases, and more frequently identified as evening types.[51]

GENDER DIFFERENCES AND OPPORTUNITIES FOR INTERVENTION

The present study also included a significant effort to address male shift workers' needs, given the lack of literature in this space. Consistent with the limited data available, we found increased risky alcohol use and smoking rates compared with females, and a greater likelihood to report poorer overall health.[29] These findings are also consistent with previous work demonstrating greater utilisation of sick leave by male compared with female nurses.[30] Programs that tackle multiple areas of burden (socialisation, physical activity and wellbeing) were received positively. Indeed, given the health, performance and negative social consequences associated with shift work interventions that operate at multiple levels involving both organisations and individuals that simultaneously target many outcomes (sleep, diet, exercise, opportunities to connect with peers) are likely to be more effective than any individual measure.[52]

CHALLENGES FOR IMPLEMENTATION

This also highlights the difficulty in implementing effective health-related interventions,[53] and organisational driven responses. For example, use of non-pharmacological measures to counter sleep issues is commonly recommended for shift workers (e.g. light therapy and opportunities for naps for the individual, and better rostering for organisations),[54] or recommendations to implement education about the links between shift work, poor sleep and metabolic disorders.[55] Results from both components of the present study suggest that countermeasures for shift work may be best conceptualised as holistic, especially in targeting multiple, interconnected behaviours. Indeed, previous research reported limited efficacy when employees were allowed to self-select their work shifts, as people tended to consider both individual impacts on their own health and family as well as their organisations.[56] By contrast, the present study suggests combining these competing needs by scheduling interventions complementary to the shift work period. A group-based opportunity for physical activity

(facilitated and scheduled at different times to suit shift workers' schedules), that allows for individual attainment of exercise goals, but also affords opportunities for socialisation, was seen as a positive and systematic approach to be explored. Indeed, such a program could also incorporate education on healthy sleep and diet as demonstrated to be effective in previous studies.[57] A recent systematic review reported that training emergency services personnel and other shift workers about fatigue and its consequences can improve health and safety outcomes,[51] and the present study suggests that embedding this within a physical activity may provide a holistic approach to improve shift worker health and wellbeing.[57] Interventions that focus on physical activity rather than explicitly focussing on mental health may be more palatable to men in particular given traditional masculine norms around stoicism and stigma associated with seeking help for mental health issues.[58]

LIMITATIONS AND FUTURE DIRECTIONS

The survey used self-assessment of physical and health outcomes, and may be subject to a non-report bias which affects the generalisability of the study results. However, previous studies using both cross-sectional and prospective designs have reported similar outcomes with respect to shift workers, and non-shift workers, and in addition to our qualitative work we embedded validated tools such as the K-6 and AUDIT-C to evaluate study outcomes, allowing comparison with previous work. A further limitation is the multitude of organisational and individual factors which impact working hours including occupation (e.g. doctors and nurses work different shifts, and this can vary even between different wards because of operational factors), and any intervention study aimed at shift working cohorts should consider this in addition to other factors such as gender discussed in this manuscript.

While the number of participants in the co-design workshop was small and limited to male participants, the experience and role of shift workers that participated allowed for representation across different levels of the hospital hierarchy, and participants did endorse the survey's main findings. This is important given that in order to make changes to complex and entrenched social issues or systems (such as hospital bureaucracies) we need to have conversations that incorporate the experiences of all involved from a different lens to that which is captured only using survey methods. Additionally, despite being cross-sectional in design, the qualitative arm of the survey allowed for coding of >500 statements about the positive and negative elements of shift work. The large number of completed open-ended responses and the length of responses (as long as a paragraph in some instances) highlights high levels of participant engagement and the value of the data in terms of generating a large number of relatively rich insights.

However, other study designs including longitudinal studies containing interviews over time may provide in-depth data and an opportunity for further exploration and follow-up questioning that is not possible through surveys, and could be conducted with larger and/or more diverse groups. Future studies could also include prospective work to examine how changes in shifts are associated with outcomes over time, and also evaluate the feasibility of running organisational-level responses to enhance shift workers health (such as the physical activity component) to complement existing education on sleep and general health.

CONCLUSION

Shift work has both positive negative impacts that affect individual health and wellbeing, as well as performance. These decrements are of particular relevance to nurses given that they are responsible for patient care and recovery 24-h a day, seven days a week. Furthermore, our study highlights the importance of considering gender differences in both individual and organisational-level responses to address shift work in nursing settings.

IMPLICATIONS FOR RESEARCH, POLICY, AND PRACTICE

While there are some positive aspects associated with shift work, in order to effectively address the negative aspects, interventions that operate at multiple levels involving both organisations and individuals that simultaneously target multiple outcomes (sleep, diet, exercise, opportunities to connect with peers) are likely to be more effective than individual measures alone. This supports a recent review that noted that fatigue management interventions for nurses is currently fragmented and lacks overall cohesion.[6]

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RESEARCH ARTICLES

Nurse managers' perceptions of mentoring in the multigenerational workplace: a qualitative descriptive study

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ABSTRACT

Objective: To examine how nurse managers in metropolitan healthcare organisations in Western Australia perceive intergenerational mentoring and its place in the contemporary workforce.

Background: Mentoring in nursing has benefits for professional career success, new role transition and as a strategy to mitigate negative workplace influences.

Study design and methods: A qualitative descriptive study with 20 nurse managers from public and private health services. Face to face semi-structured interviews were held at a neutral location. The interview schedule included 10 questions which were audio-recorded and transcribed verbatim. Thematic analysis was applied to data to generate themes and present the results.

Results: Four main themes were identified: conceptualising mentoring, adding value, influences and support mechanisms, and workforce investment. The nurse managers described the positive and negative aspects of their understanding of intergenerational mentoring practice in the contemporary clinical setting.

Discussion: The nurse managers highlighted the importance of life experience in mentoring relationships and how mentoring was generationally bi-directional. As part of everyday nursing practice mentoring was evident despite clinical and organisational challenges. Clear benefits identified were the creation of a positive workforce, promotion of quality patient-centred care, and retention of staff. Mentoring has traditionally occurred face to face however, the recent coronavirus pandemic has provided a catalyst for increasing the use of online mentoring across all generations.

Conclusion: The nurse managers were willing to be involved in intergenerational mentoring in either a mentor or mentee role or both. This view of practice occurred throughout the professional work life of nurses with benefits for all generations and the continuity of organisational values.

Implications for practice: Mentoring is a practice necessary for promoting best practice in patient care and effective relationships in teams of staff. Consideration of accessibility through e-mentoring could increase involvement and take mentoring forward in the digital age.

What is already known about the topic?
- Nursing shortages are predicted
- There are multiple generations in the nursing workplace which can contribute to issues in communication and workplace harmony
- The term mentoring is applied to numerous programs and practices in the contemporary workplace

What this paper adds:
- Current Western Australian clinical nursing managers perspective on the value of intergenerational mentoring in their workplace
- Exploration of intergenerational mentoring as a strategy for retention and succession planning in nursing
- Mentoring in action supports the promotion of quality patient-centred care and positive workplace relationships

Keywords: Mentoring; nurse managers; workplace; intergenerational; clinical support

OBJECTIVE

The contemporary healthcare system is a challenging environment for all nurses. Increasing demand and costs, inequities and complexities in resource allocation affecting performance, and quality and safety of patient outcomes are well documented issues.[1] In this environment, the nurse managers (NM) as senior nurses are responsible for the 24-hour management of a ward or group of wards in a hospital. The NMs also act as the liaison between the organisation executive and the patient by taking responsibility for ward operational needs and ensuring the provision of patient-centred care.[2] For NMs, the internal and external influences are connected to the rapid expansion of global health, where social, cultural and political factors have significant influence on modern healthcare practices.[3]

The NMs have a unique role in setting the tone of their workplace by supporting and valuing the contribution of the team members in providing quality patient care. A dynamic and productive team is known to invest not only in their own personal and professional development, but also in that of their colleagues.[4] Mentoring in nursing is generally recognised as a mutually beneficial relationship between an experienced nurse and a less experienced nurse. Through which the less experienced nurse's knowledge and skill set is materially enhanced, and their self-concept and self-efficacy are fostered.[5] The purpose of mentoring is identified as professional development, engagement, enhancement and advancement.[6] Mentoring programs support healthy workplaces and provide a framework to engage both new and experienced nurses in learning.[7] Indeed, mentoring can impact on recruitment, retention and succession planning,[8] job satisfaction, positive patient outcomes and cost savings.[4] In many workplaces, culture is a substantial concern with nurses experiencing burnout, work stress and bullying.[9] Therefore, NMs who champion mentoring in the multigenerational workplace can play a key role in ameliorating these negative impacts, and support retention goals, foster positive workplace relationships, increase skill and knowledge development, and enhance patient safety.[5]

Mentoring is defined as lifelong professional learning for engagement, sharing of best practice, support, sustainment of employment and career progression.[5,10] In this study, the term intergenerational mentoring is used to acknowledge the valuable, differing experience and perspectives that all nurses bring to a bi-directional mentoring relationship, regardless of their age or career stage. The NMs in this study were interviewed in order to understand their perspective on current practices of mentoring in their workplaces and the value they placed on intergenerational mentoring. This knowledge could then be used to inform contemporary Western Australian (WA) healthcare organisational nursing practices, if it is found to be viewed as a beneficial workplace structure to both retain and attract staff.

BACKGROUND

A sustainable, adaptive, contemporary nursing workforce is required to meet the demands of the healthcare system. The demands include an ageing population, increasingly complex and chronic conditions, consumer expectations, and challenging financial constraints.[11] Mature nurses are integral to sustaining the multigenerational workforce and contribute their unique wisdom underpinned by years of experience, knowledge and skill in the changing health environment.[12] In the clinical setting, maintenance of age diversity adds value through the sharing of wisdom in the workplace and benefits nurses' overall capacity and patient outcomes at the frontline of care.[10] A study by Roche and colleagues highlighted the importance of retention of mature nurses, as the average cost of turnover to the organisation per full time equivalent in Australia was $49,255.[13] This figure is higher in comparison to Canada and England. Such a financial outlay for recruitment is of significant concern to organisations, and strategies such as improved workplace practices with a focus on sharing knowledge and skill, are needed for ongoing quality patient care.[14]

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The benefits of effective mentorship have remained a static theme in research. The benefits cited include an apparent increasing capacity for career enhancement and advancement,[15] an increase of retention in early career nurses,[16] new role transitions and engagement and confidence in workplace practices.[17] The literature also provides insights into efficacious models for mentoring. For instance, Cottingham and colleagues suggest formal mentoring programs are more effective than informal or adhoc sessions.[18] Jakubik and colleagues highlighted mentoring as a career continuum, the time and purpose changes from the beginning of the nurses' career to retirement.[5] Such formal mentoring programs frequently aim to address nursing shortages through a focus on new graduate nurses' transition to successful practice.[19] In addition, mentoring programs also address the retention of valued members of staff by channelling skilled and loyal staff towards more senior roles.[20] Hungerford and colleagues suggested those who share respect, kindness and consideration – goodwill – is a feature of mentorship necessary for professional career success.[21] Anecdotally, this is often the case in informal mentoring programs that rely on the generosity of nurses who give their time willingly to share their knowledge and skills to enhance practice.

Intergenerational mentoring has gained momentum over recent years as nurse retention has become a workforce priority.[22] Present in the clinical environment are four generations of nurses, which can be characterised as Traditionalists, Baby Boomers, Generation X and Generation Y or Millennials.[23] The variety of generations has implications for NMs' management and leadership styles, staff productivity, job satisfaction and positive patient care outcomes.[24] Some intergenerational differences in the workplace are identified as the gap between worldviews, the ability to relate and the varied perceptions of clinical risk.[25,26] The differences between generations can also create a general lack of tolerance to variations in personal characteristics and incorporate susceptibility to bullying and intergenerational conflict.[27,28] Consequently, the impact of generational discord affects organisations through performance issues, absenteeism and increased staff turnover.[29] In addition, generational arrogance in the workplace negatively influences team harmony and undermines patient-centred care strategies.[30] Thus, discord between nurses at different ages and stages of their careers can contribute negatively to workplace culture and workforce retention.

Intergenerational mentoring can mitigate this discord with communication of knowledge and experience, pivotal in increasing confidence and reducing generational conflict.[31] Moreover, mature nurses can be the inspiration needed when newer nurses' ability to meet daily clinical challenges is questioned impacting on retention.[32] Nelsey and Brownie suggested generational harmony in the workplace improves when effective mentorship has a two-way impact on clinical practice and teamwork.[23] Thereby creating empowered nurses who provide quality patient care and remain in healthcare. Thus, intergenerational mentoring is a strategy that may address some of the negative influences commonly found in the nursing workplace.[28]

More needs to be understood about the extent to which the contemporary Australian workforce context is supportive of, and conducive to intergenerational mentoring. The NMs were chosen as the focus of this study as their perspective was key to understanding the value placed on intergenerational mentoring in the contemporary workplace. In their leadership role, NMs have access to resources, are willing to invest in staff,[33] and are in a position to foster both formal and informal mentoring practices.[4]

Despite the benefits of the mentoring relationship listed in literature, the reality is that nurses often have extra responsibilities and activities that are beyond already overwhelming workloads.[18] Without organisational sponsorship, time for mentoring during workhours is often non-existent, being viewed as exceeding the requirements of the job. Also, the ever-changing environment of complexity, financial and workforce demands affect active participation in a mentoring relationship.[25] Reflection on the COVID-19 pandemic, for example, reported an increased concern for newly qualified nurses and nurses returning from retirement, entering the workforce without appropriate support.[34] The point of need in these challenging times may see a reimagining of mentoring formats. As a result, mentoring relationships may increasingly take the form of e-mentoring,[7] which allows people to be involved in and out of hours and despite distance or multi-campus organisations. E-mentoring platforms – software used to host a mentoring application or service – support not only one-on-one relationships but can allow for small group mentoring to take place increasing accessibility.[35]

The Western Australian Chief Nursing and Midwifery Office articulated the nursing and midwifery strategic direction for 2018–2021,[36 (para4)] as inclusive of workforce excellence by 'building leadership capacity and capability to optimise performance, outcomes and the development of cultures that prioritise compassionate care and patient safety'. In addition, the demand for nurses exceeding supply in the near future will present financial challenges in recruitment and retention, thus strategies that reduce voluntary turnover are valuable to an organisation.[12] Therefore, intergenerational mentoring may be a key strategy to positively affect workforce retention, reduce the impact of a negative clinical environment, and achieve a cohesive culture of quality patient care.[15] The purpose of this study was to describe NMs perceptions of the factors that enabled or constrained intergenerational mentoring in their workplace.

STUDY DESIGN AND METHODS

A single stage qualitative descriptive research design using semi-structured interviews was employed to explore mentoring in the nursing context from the NMs perspective. Qualitative research is favoured by health researchers interested in social areas that are evolving and changing, such as the multigenerational health care workplace.[37] Features of this design included an interpretation of naturalistic inquiry with the sample of participants chosen as being able to describe the 'who, what and where of events or experiences'.[38] The NMs experiences and perceptions were summarised and presented systematically to provide a comprehensive account of mentoring engagement in intergenerational learning relationships in the clinical environment. This study adhered to the National Statement on Ethical Conduct in Human Research,[39] demonstrating the core principles of respect and ethical conduct. This guided the informed, voluntary consent process and the protection of participants through the use of codes to minimise identification potential. University ethical clearance was granted for the study (ND017172F/ECU20173).

SAMPLE

The target population were NMs from metropolitan public and private hospitals in Western Australia (WA). To be included in the study the NMs were required to represent and provide support for nursing staff at ward level to deliver quality and safe nursing care and be responsible for ward management functions. NMs were excluded if they were primarily administrative or executive and did not provide support for nursing staff at ward level. The purposive sample was anticipated to be small enough to achieve data saturation which occurred when no new data emerged from individual participants.[40] The NMs were recruited through health service networking contacts with each potential NM receiving an email invitation that contained the study information and researcher contact details.

DATA COLLECTION AND ANALYSIS

Data collection continued until a total of 20 NMs from both public and private WA hospitals were interviewed, at which point saturation was reached.[41] The interview schedule comprised of 10 mentoring questions derived from a preliminary literature review with eight designed with a closed/open ended question sequence and two open ended questions (see Table 1). The use of the initial closed question allowed the participants to respond with a positive or negative position, from which supplemental prompts were used to ensure the productive collection of data.[42] Spontaneous follow up questions were also used to encourage the participants to add further information.[43] Face validity of the questions occurred with two educational researchers and a NM colleague with changes made to ensure clarity of wording and flow from topic to topic.[41] A pilot test of the interview was also considered necessary to aid timing and make further adjustments to the questions.[42] Interviews were no longer than 60 minutes in duration, were audio-recorded on a digital recorder and held at a neutral location outside the NMs' workplace.

Participation was voluntary, NMs were provided with a comprehensive information sheet and informed written consent was obtained. Pseudonyms were used from the time of recording and throughout data analysis and reporting for anonymity. Scientific rigour was considered through the lens of trustworthiness, a key dimension in evaluating a qualitative study.[41] The following strategies were demonstrated in this study: researchers independently reviewed the transcripts identifying initial themes prior to collaborative discussion to achieve consensus, and a record of the data coding, management and reporting provided evidence of accuracy of findings.

TABLE 1: INTERVIEW SCHEDULE

	Question	Prompts
1	How would you define intergenerational mentoring?	Is it a commonly used term in your workplace? What terms are used to describe intergenerational mentoring in your workplace?
2	Do you personally believe that intergenerational mentoring is important?	Why/why not?
3	Do you believe intergenerational mentoring is viewed as important by your employer?	Why/why not? What has led you to believe this? Any specific strategies that are endorsed?
4	Are there barriers to intergenerational mentoring in your workplace?	If yes, please provide examples. If no, why do you think this is the case?
5	What do you see as the benefits of mentoring for an organisation?	A hospital? Staff? Patients?
6	In your current role as an NM, do you actively support intergenerational mentoring?	If yes, how do you do this? Please provide explicit examples. Do you feel that your efforts are successful? If no, why not?
7	Were you mentored as an early career nurse?	If yes or no, do you feel this influenced your confidence and competence as a nurse? If yes or no, has this influenced your attitude toward the value of intergenerational mentoring?
8	Did you have training in intergenerational mentoring as a pre-registration nurse?	Is this adequate?
9	Does your workforce provide support for both mentors and mentees?	Is this adequate? Are there gaps that need to be addressed?
10	Does intergenerational mentoring have an influence on attrition in your workplace?	If yes, why? If no, why not?

The interviews were transcribed verbatim, the written text read and reread to illuminate language and cultural nuances.[44] The data were entered into the NVivo 11 tool to support systematic text-based data organisation, management and analysis.[45] A methodical process of categorising the data was used to identify the categories and themes from the transcribed interviews. Braun and Clarke's thematic analysis framework provided a clear step by step process to focus and present data in an accessible form.[46] The six phases of thematic analysis included familiarity with the transcribed data; systematic coding of interesting features of intergenerational mentoring; searching for potential themes, reviewing the potential themes against the original data, naming the themes, and producing the narrative.[46] The resulting themes highlighted the NMs perceptions of intergenerational mentoring and its place in the contemporary workforce.

RESULTS

The participants characteristics, of which the majority are female, aged in their 40s and with more than 20 years of experience in nursing, are detailed in Table 2.

TABLE 2: NURSE MANAGER CHARACTERISTICS

Characteristic	in sample (n = 20)	in sample (%)
Gender		
Female	16	80
Male	4	20
Other	0	0
Age Group		
20-29	1	5
30-39	3	15
40-49	11	55
50-59	3	15
60-69	2	10
Country of Origin		
Australia	10	50
United Kingdom	7	35
Other	3	15
Years in Nursing		
0-9	1	5
10-19	6	30
20-29	6	30
30-39	4	20
40-49	3	15
Years in Management		
0-9	10	50
10-19	9	45
20-29	1	5

The focus of this study was on the intergenerational transmission of knowledge and skill. However, in practice the NMs considered the term 'mentoring' as a broader concept consisting of a relationship between two nurses, with either nurse the beneficiary of the other's skill set and experiences or both benefiting from the relationship. The analysis identified four main themes: conceptualising mentoring, adding value, influences and support mechanisms, and workforce investment. These four themes are explored below, with the inclusion utilising transcribed participant commentary. This shows the participants' understanding of the positive and negative aspects of intergenerational mentoring in the contemporary clinical setting.

CONCEPTUALISING MENTORING

The first theme identified the variance in the understanding and application of the term intergenerational mentoring. Many of the participants were unaware of this term, though clear on what mentoring meant to them; "Mentoring is mentoring, so it's passing on your skills, knowledge, attitudes and behaviours to other members of staff". Some participants though, were able to articulate their understanding of mentoring as transmission of learning across generations: "Like your Baby Boomers … Generation X's and the Millennials, or the Zs" and "based on age and the different age groups of the mentors we have on the ward, and not only from an age perspective, but also from experience".

Mentoring was more commonly described by participants as a strategy where age was immaterial and life and nursing experience important: "There are a lot of mature-age students coming through and so it's definitely a case of age is irrelevant … they can have a whole career before coming into nursing". Participants commented on the mutually shared generational middle ground where junior nurses brought new knowledge, skills and technology to the workplace and more senior nurses shared their expertise: "Because everyone's learning from each other; the older nurses have more to bring sometimes to the stage that the younger ones can actually learn from, and vice versa … so they kind of balance each other out". Thus, active mentoring was seen as generationally bidirectional, "Mentoring up or mentoring down … there's lots of nurses who are older than me that I would mentor and vice versa". NMs saw mentors who could offer something more, "A mentor that I could associate better with, that was a bit younger, a bit more contemporary".

ADDING VALUE

The second identified theme was around the positive value that mentoring added to the contemporary workplace. Mentoring was described as a part of everyday nursing activity, rather than a formally defined additional role; "It is around nurturing … and helping that person grow in what they're doing, whether it's clinical, or whether it's leadership, or some other element of nursing". In discussing

intergenerational mentoring specifically, the generations were considered important to mentoring as "More newer to nursing are more theoretical … the older generation, maybe a bit more practical". Mentoring provided the vehicle to integrate the generations through sharing knowledge, practical skills and expertise. The NMs encouraged the older generation of nurses in the workplace to impart their unique perspective of their speciality area, especially in relation to practical experience; "How to read a scenario, situational awareness" which "Isn't anywhere in a textbook, they're the things that come with experience". NMs mentioned the deficits produced from a lack of practical experience during the current nurse training; "There's a lot now that isn't taught in universities that our older nurses can teach us … especially bedside skills are lacking because there is such a reduction in the time that students have on practicum". Another NM highlighted that time spent talking to patients, once regarded as basic nursing care, was now considered by the older generation of nurses as a skill to pass on; "I still think that we need to be able to demonstrate and instil in the next generations that that's a huge part of our nursing … I think often gets missed". Regardless of the generational differences the importance of mentoring was recognised as a way to value multigenerational staff;

> "If you want to get the best out of your staff, you need to be able to interact with them … in a way that's meaningful to them … by understanding the things that different generations find important … so that they feel supported, they feel like they're able to contribute … they feel valued".

Challenges in the clinical environment such as higher patient acuity, quick patient flow and added technological requirements influenced contemporary nursing care. NM participants explained that nurses were often "far too busy to look after other nurses" and "so focused on tasks, doing things and getting things done" that they avoided using these times as learning opportunities.

The NMs valued the knowledge junior nurses brought; "Younger people can also mentor people who have been in nursing for much longer because they're actually current; up to date with research and up to date with current changes". The provision of technological expertise was particularly noted in the advantages of intergenerational mentoring, "The young ones can actually teach them [the older nurses] about new technology".

INFLUENCES AND SUPPORT MECHANISMS

The third identified theme highlighted the place of mentoring in shaping the experiences of those in the profession. Mentoring, across the generations through role modelling and leadership provided an opportunity to visibly incorporate nursing skills and attitudes. Participants suggested mentoring in their workplace was worthwhile to "foster respect", provide "pastoral care", show "appreciation" and to prevent "burnout and compassion fatigue … for sustainability of nurses". Smaller and salient details of mentoring can make a difference to the individual nurse of any generation; "Show you the ropes, to allow you to have that sense of belongingness, and show that you do fit in in the environment that you're in, making sure that your name is on the board, somebody to look out for you". Professionalism is also affected by the culture of the workplace and the positive impact mentoring can have, "It's about the supportive workplace, it's about a culture that supports your peers". However, participants indicated that mentoring across generations was not always successful. NMs commented that this may be in relation to apathy, "I can try and instil something into them, and they nod their head but they walk away, and it doesn't get done" or a difference in intergenerational priorities, "The slightly older nurses have a better understanding and requirement of what the job requires, e.g. rosters, whereas, generally, the young people, want weekends off because they want to go to parties".

Support for any type of mentoring in the participants' workplace was variable. Many participants suggested budget constraints as limiting the opportunities for mentorship, "No [support] – because of the financial implications". Lack of time was indicated as an additional barrier, "I just think people are too busy and it just kind of maybe got too hard". Formal opportunities for mentoring training were less available and more directed at staff looking after new graduates; "We have … a four-hour education session for our mentors who are taking on our grads". Informal mentoring was more widely discussed with many suggesting mentoring was a personal choice rather than an organisational imperative; "You're kind of sort of left to find your feet …and find your own sort of mentors".

WORKFORCE INVESTMENT

The final identified theme focused on the importance of creating a positive workforce, through intergenerational mentoring which integrated the culture and vision of the hospital and provided consistency and continuity, "You actually teach them your culture and the way we want people valued, respected, the way we work as a team". Mentoring as a concept, was highlighted as an influence in the provision of the desired quality patient-centred care;

> Being part of quality and improvement of the nursing care … and patient satisfaction and your satisfaction – you work in a job where you find people are not there to gun you, but actually to work with you and help you grow.

Improving intergenerational team dynamics and cohesion was a goal for participants. Mentoring was recognised as a way to achieve this; "Any time you can unite a team through mentoring and give people the opportunity to have someone to debrief with and self-reflect with is

always a good thing". One consequence of a dynamic intergenerational team was patient safety and quality of care, "You have a safer team, because they are communicating, if they're unsure about anything, and with the mentoring … if everybody in the room knows what they're doing, then you don't have mistakes". In addition, mentoring across generations targeted nurses working in challenging and stressful situations which led to positive outcomes; "They act as a mentor … in terms of how to cope with things, coping strategies, stress relief, taking time out". Therefore, mentorship is an investment in all ages of nurses and leads to retention and reduced turnover in the organisation; "If people feel welcome, they feel supported, they want to stay here, it's a happy environment for them, they feel safe and happy coming to work … they feel like part of the team".

Time pressures during work time were noted as impacting on mentoring and affecting the investment in staff. Pressures included "clinical urgency", increased workloads "just too exhaustive", administration "it's a very, very significant thing that we do" and time management "we are a very busy ward". Despite these constraints, participants expressed how mentorship of the newly qualified graduate nurses by experienced nurses with knowledge and skill was an investment in the future. Graduates who have been mentored provided a useful recruitment pool of available, well-trained and flexible staff;

> Most of the new employees I hire, I always look, first and foremost, at the graduates who have just finished … because we've put so much work and effort into them, teaching them new skills, but also getting to know the people, the system and the staff.

DISCUSSION

This study adds to the contemporary picture of mentoring in a multigenerational healthcare workforce. The NMs observed intergenerational mentoring as an important practice and a critical approach to investing in nurses to meet the organisational goals of quality patient-centred care. The NMs, who despite a lack of time and funding from their employer—which limited formal mentoring—still prioritised mentoring as a valuable workplace practice. They explained that nurses engaged in the adhoc practice of mentoring because they were personally invested in the quality and safety of their patients' care. From the data, it was clear that effective mentoring was not about age, but the core beliefs about the value of mentoring in the workplace, shown by the willingness to share knowledge and skills and influence attitudes. In the clinical setting, with up to four generations of nurses working together, there are likely to be frequent misunderstandings that affect job performance.[47] Thus, intergenerational mentoring provided for consistency and continuity around organisational values and ethos and how this is demonstrated in patient care and teamwork in the workplace.[48] Therefore, allowing nurses to have 'buy-in' around organisational direction will also lead to an increase in long term retention.[23]

Competing priorities for mentors are frequently cited in literature.[18,25,49] Negative aspects highlighted by the NMs centred around the paucity of time related to increased clinical workloads and underlined the focus on completing tasks over mentorship in any form. Mentoring is seen as an additional activity. Despite the positive outcomes reported, mentoring was relegated to outside work hours for those who were committed to the beneficial aspects of the mentor/mentee relationship. Regardless of the needs of the multigenerational workplace and the mitigating benefits of mentoring, the lack of support remains problematic.[49]

Frequently discussed as an antidote to the common 'sink or swim' experience for many new nurses,[50] mentoring is also a way of relating that builds bridges between new and experienced colleagues of all ages. Although, not all new nurses are Millennials, this generation of nurses has been identified as less attached to traditional practices. Highlighted by Price and colleagues,[32] specific investment is required for the Millennial nurses who show a greater interest in a work-life balance that favours social interaction. However, the social media savvy and technological confident Millennial cohort, do contribute to the workplace by actively reverse mentoring when sharing their technological practices and recently gained evidence-based knowledge.[51] The use of e-mentoring is also better suited to the real time, spontaneous needs of this generation, and their mobile devices. Practical experience of the online communication occurring through video conferencing during the COVID-19 pandemic, may have provided the impetus for change in the generations of nurses who have held onto the traditional face to face forms of mentoring. The rapidly acquired skills and confidence in conducting gatherings, meetings, and presentations remotely in the online space, has been a positive catalyst for advancing mentoring practice beyond the workplace.[52]

The results of this study show mentoring is viewed by the NMs as a meaningful practice. Two clear benefits were promotion of best practice patient care and positive relationships among teams of staff. Mentoring is viewed as a career enhancing practice, as described by Jakubik and colleagues,[5] as 'horizontally within or across a role and vertically into more advanced roles'.[5(p.150)] Many NMs would have welcomed a more formal focus on intergenerational mentoring from their organisations. Thus, NMs or nursing management could collaborate with their organisations to formally adopt mentoring programs which will have a positive impact on nursing socialisation, retention, and patient quality of care. Since nursing as a profession embodies the art of caring and is relational in nature, the formal and supported practice of intergenerational mentoring in the clinical setting would effectively allow for a

greater shaping of the nursing profession moving forward.[53] While, intergenerational mentoring may continue in its current state; however, with technological advances and freely available social video communications, and in view of financial challenges to current staffing and organisational structures, e-mentoring may be more fully utilised in the future.

STUDY LIMITATIONS

In using a qualitative approach, this study had a limited sample of participants from one metropolitan area in one state of Australia. While being able to capture and reveal the perceptions of NMs in the context of their leadership and management role responsibility, the study may not be transferable more broadly across Australia or internationally. The NMs were enthusiastic in their responses and provided detail in stories and experiences that highlighted their understanding of nurses engaging in intergenerational mentoring in their area. However, the NMs self-report can also be considered limited by issues of bias and recollection. With the focus of the study only on the NMs, the inclusion of the varied generations of nurses themselves in the NMs clinical settings would have provided a more complete picture of the reality of intergenerational mentoring in the study context.

CONCLUSION

This qualitative descriptive study has provided an understanding of how NMs perceive intergenerational mentoring and its place in the contemporary workforce. The findings clearly demonstrate a willingness by the participants to be involved in mentoring in either a mentor or mentee role or both, with a view that it is a practice which happens throughout the professional work life of nurses. Intergenerational mentoring, both in face to face and e-mentoring mode has positive benefits for all ages and career stages of the individual nurse and for the professional nursing workforce in the clinical setting.

IMPLICATIONS FOR PRACTICE

The results of this study may indicate that mentoring is a practice that could be formally adopted by organisations as a possible way of promoting best practice in patient care, establishing effective relationships amongst teams of staff and thus increasing retention. Further research on mentoring practices with nurses involved in workplace mentoring programs will provide a more complete picture of the possible benefits to both employers and employees. Given the impact that the COVID-19 pandemic has had on the workplace and nurses in particular, further research on the e-mentoring would be timely. While, mentoring may continue in its current state, it is thought that with the advent of further technological advances and changes to current staffing and organisational structures that platforms which allow for e-mentoring may be a worthy adjunct to face to face mentoring practices.

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RESEARCH ARTICLES

Nursing undergraduates' perception of preparedness using patient electronic medical records in clinical practice

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ABSTRACT

Objective: To investigate third-year undergraduate nursing students' perceptions and views on being prepared for using patient electronic medical records (EMR) in clinical placement after using only paper-based documentation during their education program; and their opinion on the introduction of EMR in the university simulated learning environments to be work ready.

Background: Contemporaneous clinical practice in many countries now requires nurses to competently use patient EMR including electronic observation and medication charts. However, Australia has been slow in introducing this learning into undergraduate nursing programs. For this reason, there is a knowledge gap examining nursing students' viewpoints on learning EMR in their undergraduate program in preparation for the clinical environment and future registered nurses in Australia.

Methods: All third-year students enrolled in the undergraduate nursing program at one regional metropolitan university in New South Wales (including three campuses) were invited to complete an electronic questionnaire. This survey included questions on the students' perceptions on their confidence and preparedness using EMR in clinical practice based on their current paper-based learning in the university simulation laboratories; and their opinions on the benefits of integrating EMR learning into the undergraduate nursing curriculum.

Results: Seventy third-year nursing students completed the questionnaire, a response rate of 13.2%. Most respondents (71.1%) did not feel prepared to use EMR in the clinical setting after only learning paper-based documentation and 81.7% did not feel confident accessing patients EMR the first time. Nearly all students (98.5%) believed they would be more confident using EMR initially in their clinical placements if there had been opportunity to practice using EMR in the university simulation laboratories. There was a significant difference with female participants perceived improved confidence accessing patients EMR, if EMR was integrated into the university simulated laboratories compared to the male participants ($p=0.007$).

Conclusion: In this study, third year nursing students believed that learning to use an EMR program in the university simulated environment will increase

their confidence and preparedness when on clinical placement and be work ready as registered nurses.

Implications for research, policy and practice: This study showcases the importance of preparing nursing students for entering the workforce as confident and competent new graduate registered nurses and integrating health informatics and digital health technologies universities in undergraduate nursing programs in Australia. Future studies on Australian student's experience with the introduction of an academic EMR program is recommended.

What is already known about the topic?
- Using patient electronic medical records (EMR) is included in the nurse's scope of practice in healthcare services worldwide.
- This scope of practice requires that nursing students learn the skills to use EMR in a safe environment.

What this paper adds:
- Third year nursing students are not being prepared to use EMR in the clinical setting based on paper-based learning
- Majority of students identified the need to learn to use EMR in university simulation labs prior to clinical placement
- Effective integration of EMR into nursing undergraduate curriculum in Australia is essential

Keywords: Nursing education, electronic health records, student nurses, clinical skills/competency.

OBJECTIVE

This study investigated third year undergraduate nursing students' perceptions and views on being prepared for using patient EMR in clinical placement after using only paper-based documentation during their education program; and their opinion on the introduction of EMR in the university simulated learning environments (SLEs) and being work ready.

BACKGROUND

Contemporaneous clinical practice in many countries now requires registered nurses to competently use patient electronic medical records (EMR) including observation/vital signs and medication charts.[1-4] In those countries that have introduced EMR, it has been demonstrated to reduce adverse events due to miscommunication, or incomplete information and to provide guidance for data, clinical assessments and best practice decision-making.[5] With the improvement in patient safety, and better patient outcomes, EMR has now be introduced into most Australian public hospitals with a reported 48% of integrated EMR systems rolled out across the public healthcare sector in 2017.[6]

Research, in the USA, Canada, Singapore, South Korea and UK where EMR has been implemented into the undergraduate nursing program, has shown that nursing students are better prepared for clinical placement with skill mastery in accessing patient electronic data and documentation after using e-documentation programs in an academic learning environment.[7-12] However, digital health technology using EMR and electronic patient observation charts have yet to be fully integrated into the teaching of clinical skills and simulation labs in undergraduate nursing university curricula in many countries including Australia.[13, 14] A recent scoping review found only two Australian studies published on education and training on EMRs for healthcare professionals and students in the 19 year period, however both studies focused on medical students (January 2000-October 2019).[4] This apparent lack of curricula integration of digital health technology in Australian nursing programs has the potential to leave nursing students under-prepared for their clinical experience in both public and private healthcare facilities.[14, 15] In Australia, the Australian Nursing and Midwifery Accreditation Council (ANMAC) has identified that "it is essential that the management of information and use of digital technology should be a priority in entry-to-practice higher education nursing programs" (p.19)[16].

An integrated review by Mollart et al. recommended that the implementation of an EMR program in an academic setting has the potential to increase the nursing student's capacity for graduate employment, with the opportunity to build on professional attributes and develop transferable skills that are common to a range of nursing roles in health services.[15, 17] Research studies have reported that electronic medical records provide the student nurse with detailed digital access to the patient history and health condition and encourage the use of critical thinking and clinical decision making.[8, 18, 19] Simulation conducted in university clinical laboratories provides the ideal place for nursing students to familiarise and explore electronic EMR information system whilst in a safe and supported environment.[2, 8-10, 18-23] Currently, there is no research exploring Australian nursing students' viewpoints on the challenges using EMR in the clinical setting with paper-based learning, and their opinions on the integration of EMR into the undergraduate curriculum that might better prepare them for clinical practice. The aim of this study was to explore third year undergraduate nursing students' personal perception of their preparedness

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to use patient medical records and charts based on their educational curriculum.

METHOD

DESIGN AND SAMPLE

A cross-sectional descriptive study design with a self-administered questionnaire was used for this study. A convenience sample of all third-year nursing students (n=530) enrolled in the undergraduate nursing program at a regional metropolitan university in NSW, Australia (which included three campuses) were invited to participate. The inclusion criteria were undergraduate nursing students enrolled in year three, thus the only exclusion criteria were students not enrolled in third year of the undergraduate nursing program.

DATA COLLECTION

After receiving university ethics approval (UON HREC 2018-0488), an invitation email was sent to all third-year nursing students. The email outlined the study and asked for voluntarily participation by students completing a short 10-minute electronic anonymous questionnaire (via SurveyMonkey) between 1 March to 31 May 2019. In addition to the email, the study invite was posted on the electronic Blackboard (Bb) 3rd year course site and posters were displayed at the three campuses. Reminder emails and Bb announcement occurred two weeks after original invitation to encourage participation. The study invitation included the study information sheet which outlined that students had the right to withdraw from the study without explanation, however depending on the stage of the study, withdrawal of provided data would not be possible due to de-identified questionnaire results being aggregated and anonymised. Informed consent was implied when the student completed the online questionnaire.

SURVEY TOOL

The survey tool was developed based on the integrated review by the authors as there is no validated tool currently.[15] The questions attempted to gather the third year undergraduate nursing students' personal perceptions on their preparedness for using EMR in clinical practice modelled on the current paper based learning delivered in SLEs; and the possible impact of integrating EMR learning in university SLEs on their confidence and preparedness for hospital clinical placements. The questionnaire had three sections: 1) demographic details and training during clinical placement using EMR; 2) Likert style questions and open ended questions on: student's perception of confidence and preparedness when starting clinical placement using EMR and electronic Standard Adult General Observation [eSAGO] chart after learning to use paper-based patient records, observation charts and the medication information booklet (MIMS); and 3) Likert and open-ended question asking for their personal view on usefulness of learning EMR, eSAGO chart, and electronic medicines information in the university SLEs, in preparation for hospital clinical experience.

To ensure that the student participants' responses were anonymous, the option to collect computer IP addresses was switched to 'No' and confidentiality was maintained by not using a shared account. The study information on the first 'page' of the participant information sheet included researcher contact details, reasons for the research and the individual participant's right to withdraw at any point by exiting the questionnaire. The chief investigator (LM) was not involved in teaching third year nursing students or involved in SLEs or clinical placement (minimising bias).

DATA ANALYSIS

The student questionnaire scores were collated and analysed using descriptive and inferential comparative analysis. Quantitative data was analysed using the Statistical Package for Social Science V24.0 (SPSS). Non-parametric Mann-Whitney U test was used to test for mean ranking differences for dependent variables (age group, gender and campus site). Age and gender were chosen as dependent variables based on previous research.[3, 24, 25] Levels of significance are reported at $p< 0.05$. Age groups was further categorised into two groups i.e. 37 years and under and over 37 to have sufficient numbers to allow further analysis with non-parametric Mann-Whitney U test.

The open-ended question was analysed using a qualitative thematic approach. Content analysis of the comments was undertaken using the method described as fundamental or generic qualitative description, which aims to discover and understand a phenomenon, or the perspectives of people, with themes generated from cumulative counts of like comments.[26, 27] Following the general principles of qualitative data analysis and to establish reliability, two of the authors (LM, RN) first familiarised themselves with the data by reading through students' comments and reflecting on them using margin notes, highlighting keywords and then counting the number of key findings to generate initial themes to compare so that the analysis was reflexive and interactive.[26] Open discussions were held with all authors to refine and re-conceptualise themes until reaching consensus.

RESULTS

DEMOGRAPHICS

From a possible 530 students, 70 students completed the survey, a response rate of 13.2% which is reflective of other studies response rates surveying students with online questionnaires.[28, 29] As shown in Table 1, participant ages ranged from 20–55 years of age (Median 23 years, SD:10) and over half of participants (56.5%) had previously received

training as Assistants in Nursing (AIN), and four (5.8%) as Enrolled Nurses (ENs). Most respondents were female (87.14%) which is consistent with the nursing student population and spanned across the three university campuses.

TABLE 1: RESPONDENTS DEMOGRAPHICS (N=70)

Characteristics		Frequencies n (%)
Age (years)	20–24	20 (28.6)
	25–29	11 (15.7)
	30–34	15 (21.4)
	35–39	8 (11.4)
	40–44	4 (5.7)
	45–49	6 (8.6)
	50–55	6 (8.6)
	Total	**70 (100)**
Gender	Female	61 (87.15)
	Male	9 (12.9)
Enrolment status	Domestic student	68 (97.1)
	International student	2 (2.9)
Other qualifications	Assistant in Nursing	39 (56.5)
	Enrolled nurse	4 (5.6)

Just over half of student participants (55.7%, n=39) had received preliminary training in using the EMR and SAGO chart (51.4%, n=36) during their clinical placement at a public hospital at some point in the previous three years. There were no statistically significant differences found between receiving preliminary hospital training in EMR and confidence accessing EMR (p=0.891) and documenting in EMR (p= 0.754) in the clinical setting.

Reflecting upon their level of confidence in accessing and documenting using electronic files, most respondents (81.7%) did not feel confident accessing patient EMR the first time in clinical placement, and documenting (65.2%) in patient EMR (Table 2). There were no statistically significant differences with participants EMR confidence levels and gender, however respondents aged 20 to 37 years were more confident accessing EMR the first time, than participants over 37 years of age (p=0.047). Reflecting on their confidence using eSAGO charts, 60% students did not feel confident (29% not at all confident, 31.9% not so confident) and 59.4% didn't feel confident documenting observations in eSAGO charts (Table 2). No statistically significant differences were found with confidence using eSAGO charts and variables of age and gender.

Nearly three quarters (71.1%) of participants did not feel prepared to use EMR in the clinical setting based on learning paper-based documents at the university SLE (Table 2). Additionally, student participants were asked for their opinion on how useful it would be to familiarise themselves with using EMR in the university SLEs in preparation for their clinical placement experience. In response to this question 98.5% of respondents believed that learning EMR in the simulation environment would be extremely (76.1%), or very useful (22.4%). Most participants (83.6%) believed learning e-observations charts would be extremely useful (59.7%) or very useful (23.9%).

Participants were asked to reflect on their education program, and nearly all thought they would have been more confident accessing a patient's EMR for the first time on clinical placement, if they had learnt EMR (98.5%) or eSAGO charts (95.5%) in SLEs as preparation for practice. There was a significant difference with female participants perceived, improved, confidence accessing patients EMR, if EMR was integrated into the university SLEs, compared to the male participants (p=0.007). There was no significant difference with age (p=0.49).

THEMES

Most participants (82.8%) provided their opinion in the open-ended question on what they perceived was *the impact of only learning to use paper-based documentation in university SLEs for student preparedness to use EMR in their first clinical placement*. Four main themes emerged from the qualitative open-ended data: 1) paper-based learning provides a foundation for using EMR in clinical practice; 2) feeling unprepared for using EMR; 3) need to learn both paper-based and EMR; and, 4) paper-based system is outdated.

The first theme *paper-based learning gave me a foundation for using EMR in clinical practice* was identified with 13 respondent comments. Student respondents viewed paper based learning as providing a basic understanding of recording information and learning experience in preparation for clinical placement, with one student commenting "*I think*

TABLE 2: CONFIDENCE AT FIRST CLINICAL PLACEMENT USING ELECTRONIC DOCUMENTATION

Confidence	Not at all confident N (%)	Not so confident N (%)	Somewhat confident N (%)	Very confident N (%)	Extremely confident N (%)
Accesiing patient EMR	22 (31.9)	33 (47.8)	8 (11.6)	5 (7.3)	1 (1.5)
Documenting in patient EMR	16 (23.2)	29 (42)	19 (27.5)	4 (5.8)	1 (1.5)
Using e-SAGO chart	20 (29)	22 (31.9)	21 (30.4)	4 (5.8)	2 (2.9)
Documenting observations in e-SAGO chart	15 (21.7)	26 (37.7)	24 (34.8)	1 (1.5)	3 (4.4)

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learning paper-based documentation provided some prerequisite foundation for understanding how to use e-documentation because the categories and titles are (mostly) similar [to EMR]" (S35) and another student *"Paper documentation may be useful in first year to get a grounding as it has all instructions on them- will also help when placed at a hospital that is still paper based"* (S38).

The second theme *feeling unprepared for EMR* was reflected by 25 students' comments. The participating students used words to describe their feelings such as "inadequate", "nervous and unsure" when attending clinical placement where EMR was the norm. Comments included:

> *"I was not prepared, I felt out of my depth. It was like I had spent a solid amount of time learning something that would not be applied"* (S46).
>
> *"I was not really prepared using the EMR as I was not trained to use it in SLE. Felt a bit lost and lack confidence"* (S53).
>
> *"I actually feel like a fish out of water in labs and on the ward because I'm not prepared for using the medchart (eSAGO)"* (S45).

The third theme *Need to learn both paper and electronic* was identified by 12 student respondents with comments such as "*As some charts are still on paper in the NSW health facilities, it has been useful to use paper charts in SLE's" (S70)* and *"Paper based training is still worthwhile as the principles remain the same, however, it would be worthwhile having training in university using EMR".* (S69)

The fourth and final theme *paper-based learning is outdated* was expressed by five student comments. Students believed that learning paper-based documentation was not providing them with contemporary relevant clinical skills to make them work ready, with comments such as:

> "*Paper-based documentation is becoming more irrelevant to clinical application as most hospitals are moving to EMR… Now, when graduating nurses begin practicing, they will already be behind having not used EMR." (S23),*
>
> *"Using paper-based documentation in SLE is pointless because no hospitals are using paper any more, everywhere has EMR. First time going on placement you have no idea how to use it because you get taught on paper and it's not relevant to the clinical setting"* (S17)
>
> *"We need to practice exactly what we will do in a job, practicing void practices is a waste of great learning time/experience"* (S15).

DISCUSSION

Research studies have investigated nursing student's attitudes in the use of information technology in clinical practice as opposed to the university setting [30-32]. However, this study is the first to explore nursing student's confidence and skill using patient EMR documents prior to the introduction of EMR into their undergraduate curriculum, and their perception on the usefulness and preparedness of integrating EMR into undergraduate simulation learning. Although a low response rate, the sample completing the survey was representative of gender and years of age distribution based on other studies conducted with third year students in Australia.[33, 34]

Both public and private healthcare facilities are introducing EMR in the clinical setting and it is recognised that student nurses need to be able to access and use the EMR programs and become knowledgeable and skilled in the use of electronic healthcare systems.[35] While education providers currently teach clinical paper-based documentation as a mandatory requirement of safe effective clinical care, many countries are still not teaching undergraduate nursing students how to use EMR in readiness for clinical practice.[4, 13, 14]

According to Nursing Informatics Australia and Health Informatics Society of Australia (NIA & HISA), education of undergraduate nurses in readiness to enter the workforce must include theoretical and practical tutoring on digital information and practical application in the healthcare setting.[36] Our study reported that 44% of third year students had received some basic EMR training from the hospitals and only 29% felt "somewhat" or "very prepared" to use EMR for the first time in the clinical setting. This finding is similar to a study conducted with 215 UK first to third year nursing and midwifery students who had completed at least one clinical placement.[37] Baillie et al. found 60% had not received any training from the hospitals and only 16% of students felt prepared to use EMR.[37] The responsibility for preparation of student nurses to meet future health, aged care and disability needs of the community should be a shared responsibility across the tertiary education system and the healthcare sector in conjunction with professional bodies.[36]

Our study findings identified that many student participants felt underprepared in accessing and using EMR based on their paper-based university learning (71.1%) which potentially could have a negative impact on their ability to provide person-centred care and respond appropriately to patient condition deterioration, or improvement.[38] Previous research has recommended that having EMR education in undergraduate programs improves the student's ability to detect critical cues and apply critical thinking.[8, 19] As healthcare organisations use a variety of EMR informatic programs, it is recommended that universities use a fit-for-purpose academic EMR program so the skills students gain can be applied to any EMR program in the clinical setting, and meaningful 'real-life' scenarios can be scaffolded in the three year program.[5, 15, 23]

The qualitative findings of our study identified themes on the lack of preparedness for clinical placement, which are similar to Bailie et al. study with focus group sessions.[37]

In their focus groups, student participants believed it was beneficial to learn to use EMR in the undergraduate education program, as some students would complete their pre-registration program with no practice of EMR and then be ill-prepared as a newly qualified nurse.[37] It is concerning that third-year students in this study did not feel confident or prepared, in using or documenting using the hospital electronic documentation system due to the lack of pre-requisite education in their undergraduate curricula. Also, of concern is that these students will be registered nurses within the next eight months and be required to practice safely, effectively and collaboratively, as per the Nursing and Midwifery Board of Australia (NMBA) Code of Conduct for Nurses.[39] If third year student nurses are not work ready in the use of EMR then they may be unable to respond appropriately in a safe and effective manner as outlined by the recently released NMBA *Decision-making framework for nursing and midwifery.*[40]

Over half of the students (55.7%) had received some basic training in EMR at a hospital and yet they did not feel confident accessing or documenting patient's EMR. The reasons and barriers cited by students include lack of access to EMR on the wards; and, mentors and supervising nurses have difficulty finding time to teach students to use EMR in busy wards.[21,37] Whereas nearly all respondents (98.7%) believed that learning to use EMR should be integrated into the university simulation laboratory sessions. The integration of EMR into the curriculum, both theory and simulation learning, would better prepare them for the real world of clinical practice. EMR systems and educational programs have been successfully integrated into undergraduate nursing curriculum in other countries such as USA,[19, 21,41] Canada,[10] South Korea,[7,18] and Singapore,[24] however it is unclear why there has been a delayed interval in Australian universities. The Australian Nursing and Midwifery Accreditation Council (ANMAC) accreditation standards makes specific mention of prioritising the development and application of knowledge and skills in health informatics and health technology in the undergraduate nursing program content.[16]

Healthcare organisations are wanting nurses to be skilled in the use of the technology and information management relating to patient care.[18] However, it is recognised that using EMR systems can be time consuming tasks for new nurses as they assimilate into the healthcare system.[11] To successfully implement a specific academic EMR program, it is recommended that integration is done in five stages: planning, product demonstration, faculty development and training, curriculum threading and implementation and evaluation.[42] Our study findings demonstrated that students recommended EMR learning should commence in the first year of the program, this in turn would help the student to learn in a supportive scaffolded educational environment, rather than on clinical placement when nursing staff have limited time to provide teaching and students feel they are a burden. Other studies have also recommended that EMR is introduced to the first-year students, and then scaffolded learning to occur over the course of the three-year degree.[9, 43] This could be achieved by introducing increasing complexity and real-life scenarios with additional electronic forms from first year through to the end of the undergraduate program.[5, 10]

LIMITATIONS

The third-year students were asked to reflect upon their first-year clinical placement using EMR to complete some sections of the survey, and recall bias may have influenced their answers and possible selection bias (those who responded and those who did not). Many students of the third-year cohort did not opt into the study despite receiving personal emails, posters displayed on campus and posting on the course announcement Blackboard page. Other studies have also shown low response rates when asking students to respond to online surveys.[28, 29] This study's findings are tentative and can't be generalised to the whole population of nursing students due to low response rate and using an opinion-based questionnaire compiled from the extant literature. However, the combined data provides an illustration of the importance of providing EMR education and supplement with paper-based documentation.

CONCLUSION AND IMPLICATIONS FOR RESEARCH, POLICY AND PRACTICE

As nursing clinical practice shifts from paper-based patient record documentation to electronic record-keeping worldwide, there is an imperative need to include EMR in Australian nursing undergraduate education. Students are understandably anxious when they attend their first and arguably other clinical experiences, as the experience is time-limited. One could suggest that their anxiety about not knowing how to use EMR, is also a reflection on their overall anxiety about preparedness for clinical practice generally and this possibly warrants further research. The majority of third year students in this study found the integration of EMR into educational instruction in the first year of study and, if scaffolded, would build on their confidence and preparedness for clinical practice. In the context of this study the qualitative comments provide a strong justification for further developing the simulation environment curricula activities to include EMR in all case based and practice scenarios, as it is now considered the norm in clinical practice.

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RESEARCH ARTICLES

Diabetes care in the early primary school setting: narratives of Australian mothers

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ABSTRACT

Objective: To explore the experiences of Australian parents caring for a child using intensive insulin therapy in the early primary school setting to identify facilitators of this therapy and implications for parents.

Background: Young children with type 1 diabetes require adult support when administering insulin in the early primary school setting, yet availability of school support, such as from nurses, is inconsistent across Australia. This increases the burden on parents and in some circumstances, insulin is avoided at school.

Study design and methods: This study was a qualitative research design using narrative inquiry. Mothers (*n*=14) from six Australian states/territories with children attending Government, Catholic and Independent schools participated in semi-structured telephone interviews between December 2014 and September 2016. Narrative analysis was used to interpret the interview data.

Results: Nine narrative threads told the collective story of mothers' experiences supporting their child with intensive insulin therapy at school. Facilitators of intensive insulin therapy were collaborative partnerships between parents and school staff, diabetes education for school staff, reasonable adjustments for integrated care and the use of continuous glucose monitoring systems. Implications for mothers were the stigma of advocating, being worried about their child's safety in other people's care, restricted employment, wanting their child to be like everyone else, and providing 24/7 care behind the scenes. Despite these challenges, all children received intensive insulin therapy at school.

Discussion and conclusion: The findings of this study indicate that the Australian education system lacks appropriate health support structures required for children with type 1 diabetes. In order to facilitate diabetes care at school non-nursing staff are trained to administer or supervise insulin and the overall responsibility is transferred onto parents.

Implications for policy and nursing practice: Nurses working as diabetes educators need to be aware of the burden on parents and advocate for more supportive practices to facilitative intensive insulin therapy in the early primary school setting. Parents, in collaboration with health and education departments, should demand the allocation of appropriately qualified school nurses to legally provide high quality diabetes care that children are entitled to. If current practices, dictated by insufficient resources continue, the Australian Government will make the assumption that existing systems are adequately meeting the needs of students with type 1 diabetes.

RESEARCH ARTICLES

What is already known about the topic?
- Children with chronic health conditions have a high risk of poor educational outcomes.
- Most Australian schools do not employ nurses. Teaching and administration staff are frequently used for healthcare support including the management of diabetes.

What this paper adds:
- This study is the first to provide qualitative insight into the experience of Australian mothers supporting their child with type 1 diabetes using intensive insulin therapy in the early primary school setting.
- The findings highlight the significant physical, emotional and financial impact on mothers who support intensive insulin therapy.
- This paper provides an awareness of the disconnect between mandatory school attendance, accessing education on the same basis as others according to the Disability Standards for Education, and the availability of school nurses to legally administer insulin.

Keywords: Chronic illness; diabetes; nursing; nurse; primary school; parenting

BACKGROUND

Type 1 diabetes mellitus (T1DM) is a metabolic disorder characterised by a deficiency in insulin secretion leading to hyperglycaemia.[1] Approximately 96,000 children aged less than 15 years develop T1DM worldwide each year and around 500,000 children are currently living with T1DM.[1] The mean annual incidence for Australian children aged 0-4 years is 15.1 per 100,000 and 26.4 per 100,000 for children aged 5-9 years.[2] In 2019, approximately 7,000 Australian children aged 0-14 years were living with T1DM.[3]

Like other childhood chronic conditions T1DM affects quality of life including physical, social and emotional development and increases a child's vulnerability when entering and progressing through the school system.[4,5] Children with chronic health conditions have a high risk of poor educational outcomes related to disrupted class attendance and the possible cognitive impacts of their underlying condition.[6]

The recommended treatment for T1DM is intensive insulin therapy (multiple daily injections or an insulin pump) supported by carbohydrate counting and regular blood glucose level testing.[7,8] This reduces the risk of microvascular and macrovascular disease and should be initiated at diagnosis.[8-11] Despite the obvious benefits, intensive insulin therapy (IIT) creates challenges for early primary school children (the first three years of compulsory school), due to the complexity of insulin treatment and their young developmental stage, necessitating the reliance on adult support for diabetes care during the school day.

School attendance is compulsory in Australia and most Western countries.[12,13] T1DM is recognised as a disability in The Australian Disability Standards for Education based on the Disability Discrimination Act 1992.[14,15] According to these standards schools have legal obligations to make reasonable adjustments for students with T1DM to enable participation in the curriculum on the same basis as their peers. This is consistent with the law in a number of other countries.[16-19]

However, reasonable adjustments for early primary school (EPS) students with T1DM can be complex due to the need for insulin administration, a prescription only medication with limited legal rights for possession (medical practitioners and endorsed nurses).[20-23] A parent or "Agent" of the parent, for example non-nursing school staff, may also be legally authorised when nurses are not available.[24-27] Parents can grant Agency (after informed consent) to a school staff member who has; (a) freely volunteered, (b) completed appropriate training and (c) been deemed competent by the parent. This applies to both supervision and administration of insulin therapy. The limited availability of school nurses in Australia and therefore the need for an "Agent" creates problems, as non-nursing school staff must freely volunteer. The reluctance of school staff to provide support is often due to the invasive nature of IIT and fear of liability, as health procedures are outside the scope of practice of non-nursing staff.[28] In most countries, there is no legal duty for non-medical personnel to administer or supervise medication.[29,30]

When support for diabetes care is not provided by school staff, often parents or the student administer insulin.[6] Ongoing provision of care has significant impacts on parental employment, socioeconomic status,[31,34,35] and emotional wellbeing.[13, 31-33] If support from school staff or parents is unavailable, and the student is unable to self-care, insulin is avoided for some children and has potential negative consequences for immediate and long-term health and wellbeing.[6,31]

Although there are a number of studies about parental concerns around the care of T1DM at school,[13, 31, 32, 34-38] qualitative research focusing specifically on EPS and IIT in the Australian context is limited. This paper explores the experiences of Australian parents caring for a child using IIT in the EPS setting to identify facilitators of this therapy and implications for parents. It is part of a larger body of research and published work encompassing the experiences of diabetes educators[39] and primary school teachers.[40]

It is important for nurses to understand the facilitators and implications of IIT support from the parents' perspective. Parents as advocates and legal guardians of their child are the end users of the health system. They provide a significant amount of diabetes care for children in the EPS age group and are central to their overall wellbeing. Findings from this study have the potential to benefit nurses from various settings including diabetes education services, hospital paediatric wards, child and family health services and schools. In particular, parental perspectives from this study are important for speciality nurses employed as Credentialled Diabetes Educators[41] working closely with children, families and significant others such as school staff. Understanding the narratives of other stakeholders involved in facilitating IIT in the EPS setting enhances family centred care, partnership and collaboration.

Findings from this study will inform both the education and health sectors to guide resource allocation to improve both diabetes care for EPS children and parental health and wellbeing.

METHOD

METHODOLOGY

Narrative inquiry methodology was used in this study. Explanatory stories collected from interview data, provide knowledge of particular situations in an attempt to understand individual personal experiences.[42] Examining how and why a particular outcome occurred by collecting descriptions of past events and actions, enables planning for future action and informs practice.[43] Unlike quantitative data, qualitative interview data provide rich descriptions of personal experiences. Narrative inquiry methodology has been widely used in both health and educational research.[44-48]

PARTICIPANTS

Participants were purposively recruited between December 2014 and September 2016. The inclusion criteria were parents caring for a child with T1DM who was:

- attending an Australian primary school in Kindergarten, Year 1 or 2
- using IIT (insulin pump or multiple daily injections)
- receiving an insulin bolus or injection at school

Participants were also required to speak English. Parents were recruited via posts on ten Facebook diabetes support groups. Twenty one mothers responded to the Facebook posts and fourteen participated in the study. There was no response to this recruitment method from fathers.

Ethical approval for this study was gained from the Western Sydney University Human Research Ethics Committee (Approval number H10811). A research information sheet was emailed to interested participants and discussed prior to the interview. Written consent for the study was documented by a signed consent form.

PROCEDURE

The geographical distribution of participants precluded face-to-face interviews. Therefore, telephone interviews were conducted by the first author, a nurse practitioner, Credentialled Diabetes Educator and skilled interviewer. Open-ended questions and a semi-structured interview guide were used to stimulate discussion about participants' experiences of supporting IIT in the EPS setting. The interview guide was developed after review of the literature and consisted of six broad questions to address the study aims (Table 1).[28] Additional questions and probes from the interviewer were based on individual participant responses.

TABLE 1. INTERVIEW GUIDE

1. What happened when your child returned to/started school after being diagnosed with diabetes?
2. Who was involved with the transition to school?
3. How did you feel about the process?
4. Can you tell me about your experience of using insulin injections or insulin pump therapy for your child at school?
5. What are the challenges of using this therapy at school, if any?
6. How does this therapy impact on you as a parent?

DATA ANALYSIS

Narrative analysis, as informed by narrative cognition, involves noting difference and diversity within interactional and temporal contexts to provide an understanding of human action.[44,49] This method was used to interpret the interview data to produce explanatory stories from descriptions of events and actions (narrative elements).[44] Narrative cognition results in 'good stories' that are detailed, sequential and oriented towards action; they deal with the particulars of experience in time and place.[49] The data analysis process and trustworthiness are summarised in Tables 2 and 3.

TABLE 2. DATA ANALYSIS PROCESS

Data collection	Participants were interviewed via telephone and digitally recorded. Recordings were transcribed verbatim by a professional transcription service to a Word document. Transcripts were checked for accuracy by the first author by comparing them to the recorded interview.
Outcome	Individual transcripts and audio recordings were reviewed a number of times by the first author. The central outcome was identified: Children with T1DM received IIT in the EPS setting.
Narrative elements	Questions were asked – Why were these children able to receive IIT in the EPS setting? What did mothers do? How did they work with the school? What impact did this have on mothers? Data from individual participant interview transcripts were then analysed looking for narrative elements that contributed to the outcome: provides an explanatory answer to the questions above (connections of cause and influence). Elements were highlighted in the Word document and information that did not contribute to the outcome was removed. The most common elements were: 1. Supportive school principal 2. Parental support 3. Diabetes health service support 4. Teacher/aide/nurse support 5. Planning diabetes care 6. Implementing diabetes care 7. Ongoing support 8. Challenges Narrative elements were discussed with the research team until consensus was reached.
Re-story	Elements from each individual participant interview transcript were reorganised into a chronological sequence. Research participants do not always provide information in chronological order.[50,51] Details are often fragmented, some events are in the forefront and others are in the background or absent.[52] Re-storying involves reorganisation of stories into key elements and a chronological sequence – beginning, middle and end.[53] Arrangement of elements to craft a coherent story gives meaning to the data as contributors to an outcome and demonstrates links among the data elements.[49,50] Mothers spoke of a similar journey over time 1. Before: preparation for the student's commencement or return to school 2. Commencement: daily diabetes routines 3. After: impact on the parent and ongoing support Data from participant interview transcripts were individually re-storied following this chronological order. Participants' stories were discussed with the research team until consensus was reached.
Synthesis - Composite narrative	Participants' whole stories were compared, looking for similar and dissimilar characteristics (narrative threads). When searching for meaning embedded in the narratives of mothers, the following questions were asked: 1. What facilitated IIT in the school setting? 2. What was the impact of providing this support on mothers? Individual stories were then synthesised into an interpreted collective narrative[54] with emphasis on the participant's voice as the narrator. Individual stories testify to the experience as it is lived, whilst collective stories enable enhanced understanding of those particular experiences and situations.[50,55] The outcome is narrative truth created by the accrual of narratives.[54] The composite narrative was discussed with the research team until consensus was reached.

TABLE 3. DATA TRUSTWORTHINESS

Credibility	The first author reflected on potential bias due to personal experience as a Diabetes Educator throughout the research process. To minimise bias, regular review and discussion with members of the research team was conducted (two registered nurses – who were not Diabetes Educators and one teacher educator).
Dependability	The research design, data collection and analysis are clearly stated, demonstrating transparency in the decision making process.
Confirmability	Raw interview data were frequently reviewed during analysis. An audit trail of the decision making process is provided in the methods section. Findings and conclusions reflect the study aim and have clear connections to the interview data.
Transferability	Recruitment procedures and participants are described and the sample is from six out of eight Australian states/territories. Rich participant narratives have been included and findings are comparable to other research literature and settings.

FINDINGS

CHARACTERISTICS OF PARTICIPANTS

Study participants were female (mothers *n=14*) with children in either the first year of school, Grade 1 or Grade 2, from five Australian States and the Australian Capital Territory, and included various school types and geographical locations (Table 4). Nil participants withdrew from the study, there were no adverse events to report, and pseudonyms for both mothers and children have been used in this paper to maintain anonymity.

Nine narrative threads were evident during the synthesis process (Table 5). The findings are presented as a composite (collective) narrative with emphasis on the participants' voice (in italics) as the narrator, rather than the researcher. This approach allows the 'telling of the story' in the mothers' own words and aims to give the reader a deeper, more personal understanding of their experiences.

TABLE 4. PARTICIPANT DEMOGRAPHIC DATA: MOTHERS (N = 14)

	Mother	State/ Territory	Geographic Location	School type	School grade	Insulin delivery device	Insulin administration	Student gender
1.	Susan	NSW	RA2 inner regional	Government	2	Injections	Mother/student in school office	Female
2.	Rhonda	NSW	RA1 major city	Independent	1	Injections	School nurse in the classroom	Female
3.	Rebecca	NSW	RA1 major city	Government	1	Pump	Student with teacher aide supervision in the classroom	Male
4.	Amy	NSW	RA1 major city	Government	1	Pump	Student with class teacher supervision in the classroom	Female
5.	Jaylene	QLD	RA1 major city	Catholic	2	Pump	Student with class teacher/ aide supervision in the classroom	Female
6.	Sharon	QLD	RA1 major city	Government	2	Pump	Student with class teacher supervision in the classroom	Male
7.	Maria	VIC	RA1 major city	Catholic	1	Pump	Student with class teacher/ aide supervision in the classroom	Male
8.	Louise	QLD	RA2 inner regional	Government	1	Pump	Student with teacher aide supervision in the classroom	Male
9.	Elizabeth	QLD	RA2 inner regional	Government	2	Injections	Teacher's aide in classroom	Male
10.	Rachel	VIC	RA1 major city	Government	Preparatory*	Pump	Registered Nurse in the classroom	Male
11.	Melissa	WA	RA3 outer regional	Catholic	1	Pump	Class teacher in the classroom	Male
12.	Cassie	QLD	RA2 inner regional	Government	Kindergarten*	Injections	Mother in the classroom	Male
13.	Emma	SA	RA1 major city	Government	Reception*	Pump	Student with class teacher supervision in the classroom	Male
14.	Kate	ACT	RA1 major city	Independent	1	Pump	Class teacher/aide in the classroom	Male
Total n=14		**NSW 4 QLD 5 SA 1 VIC 2 WA 1 ACT 1**	**RA1 9 RA2 4 RA3 1**	**Govt 9 Catholic 3 Ind. 2**	**Prep/Rec/K 3 Grade 1 7 Grade 2 4**	**Pump 10 Injections 4**		**M 10 F 4**

New South Wales (NSW) South Australia (SA) Western Australia (WA) Victoria (VIC) Queensland (QLD) Australian Capital Territory (ACT)
Major city (RA1) Inner regional (RA2) Outer regional (RA3)
*First year of compulsory school attendance aged 5 by April–June depending on Australian state/territory

TABLE 5. RESULTS: NARRATIVE THREADS IN THE COMPOSITE NARRATIVE

Facilitators of intensive insulin therapy in the early primary school setting	Collaborative partnerships between parents and school staff
	Diabetes Education: Parent or Nurse (Diabetes Educator, Education Department, community nurse)
	Reasonable adjustments for integrated care: Insulin pumps, support from the class teacher, aide, Registered nurse, mother
	Continuous glucose monitoring system (CGMS)
Implications of intensive insulin therapy in the early primary school setting for mothers	The stigma of advocating
	Worried about safety in other people's care
	Restricted employment
	Wanting their child to be like everyone else
	Providing 24/7 care behind the scenes
Outcome	Children with T1DM received IIT in the EPS setting

FACILITATORS OF INTENSIVE INSULIN THERAPY SUPPORT

Collaborative partnerships between parents and school staff

A collaborative relationship between parents and school staff enabled a smooth transition back to school after diabetes diagnosis or when starting school for the first time. Initial contact was usually with the school principal and a number of mothers spoke positively about these experiences. Principals were described as interested, supportive, accommodating and reassuring. These mothers felt the principal understood the seriousness of T1DM which facilitated the use of IIT for their child. Mothers worked in partnership with school staff and were readily available to provide ongoing support for their child. They made themselves available at the beginning of each school year to physically attend the school or take phone calls.

Most mothers had a non-demanding approach and did not '*expect too much*' from the school. Four mothers were school teachers and understood '*the way schools work*' and were mindful that '*a school is a school*'. Mothers described their relationship with school staff as one of mutual respect and trust. They knew that staff were '*doing their best and sometimes mistakes happen*'. They felt staff went '*above and beyond*' for their child and mothers '*were eternally grateful*'. Often these schools had a community feel where '*everyone knows everyone*'.

In contrast, some mothers expressed their frustration when the principal put up '*road blocks*' and '*didn't want to deal with diabetes at all.*' These principals had a negative, non-accommodating approach, without parental collaboration. This appeared to be driven by '*safety concerns*' and potential legal issues related to the use of needles in the classroom for insulin injections and glucose testing.

> *Sadly, schools are constrained by too much red tape, a risk aware, health and safety workplace madness. Common sense just seems to go out the window. His blood glucose meter is lifesaving medical equipment. You wouldn't ask someone to leave a wheelchair at the main office to be brought down to class when they needed it.* (Cassie)

Mothers who were previously known to the school experienced less problems than those who were new. Mothers described some teachers as fearful, panicked and worried about '*doing the wrong thing*'. Whilst others, were too blasé and '*didn't understand the seriousness of the condition*'. The attitude of school staff was more positive once they gained experience and knew the student with diabetes was cooperative and pleasant.

Diabetes Education

Nurses external to the school system assisted both parents and school staff by providing diabetes education, support with care planning and promoting IIT. Support from nurses was particularly important when the student was newly diagnosed, and information was new to parents. Eight mothers reported that diabetes education and support was provided by either a diabetes educator from the hospital, a community/regional nurse, or a nurse from the Queensland Education Department. Nurses knew '*what the school was capable of doing*' and provided '*peace of mind*' for mothers and school staff. Nurses, as qualified health professionals, provided credibility to requests for the accommodation of IIT rather than from '*just a panicked mother.*' Six parents provided diabetes education to school staff mainly due to under resourced diabetes services or the impression that the parent was capable of providing their own education.

> *The diabetes educator at the hospital didn't want anything to do with the school as she was under resourced. It made it very difficult. I feel that if there had been the face of the nurse in front of the school then they would have been called to account and things would have been different.* (Rhonda)

Reasonable adjustments for integrated care

All mothers expected reasonable adjustments to accommodate IIT at school. When there was not a supportive, collaborative relationship with the school principal and teaching staff, mothers had to advocate more extensively for their child.

> *We were told that a child with diabetes is not entitled to the same care at school that they get at home. As a parent, I'm always going to advocate for my son. I know what he's entitled to and I'm willing to stand up and have those arguments.* (Rachel)

> *The spirit of the disability discrimination legislation is that the child must be able to access education on the same basis as others. Well, having to walk up to the administration office and miss out on part of your lunch or playtime is not on the same basis as others.* (Cassie)

Thirteen mothers reported that their child was receiving IIT in the classroom and integrated into normal routines. Eight students (53%) administered their own insulin with supervision. Insulin pumps were easier for young students and staff to manage. Pumps were perceived as less '*risky*' than injections and provided more flexibility. For the majority of students (nine), classroom-based diabetes care required support from either the teacher (seven) and/or teacher's aide (six). Allocation of a teacher's aide provided '*an extra set of hands to take the pressure off class teachers.*'

> *The teacher's aide went to every specialist class and was there at lunchtime to assist with diabetes care. Because the aide was assigned for him I could talk to her every day if I needed to. I didn't feel like I was hassling the classroom teacher all the time.* (Maria)

The long-term allocation of a teacher's aide was not guaranteed, however, as funding for aide support was often

not specifically for the student with diabetes. Rather, the aide was shared amongst a number of students with varied additional needs. When this support for diabetes care was not available, workload and stress levels increased for both the class teacher and mothers.

Initially, most mothers attended the school daily and administered or supervised insulin until their child, or a school staff member could take over care. Two mothers were attending the school on an ongoing basis to administer insulin via injection.

> *At the moment I wouldn't be willing to hand over the insulin injection to the school because I don't have that level of confidence in them and somebody has to be willing to volunteer.* (Cassie)

Two students had assistance from a Registered nurse; a Year 1 student on insulin injections at an Independent school in NSW and a kindergarten student from a Government school in Victoria.

> *We didn't request that the teacher inject insulin. We enrolled her in a College that has two fulltime Registered nurses in a clinic. You don't get the gardener to come in and teach reading groups for Year 1. Let's give appropriate jobs to the appropriate staff.* (Rhonda)

> *The school refuses to administer insulin, and I cannot blame them for that. I had to go to the Minister and threaten the Education Department with legal action to fund a Registered nurse to administer insulin via a pump at school. The good thing about having a nurse is that they're obligated to manage my child. You can completely and confidently handover to them. The Education Department said after six months they expect my son to give insulin himself. He can't do it; he can't read the numbers properly.* (Rachel)

Continuous glucose monitoring system

Four students were using continuous glucose monitoring systems. This technology saved time, improved student safety and provided peace of mind to both teachers and parents who could access information '*at a glance*' and remotely.

> *Having that alarm for the teachers took a lot of pressure off them. Instead of doing four or five glucose levels during the day when he kept saying he wasn't feeling well, they can look at the pump screen and say, oh look, you're about right.* (Emma)

IMPLICATIONS OF INTENSIVE INSULIN THERAPY SUPPORT

The stigma of advocating

All mothers expressed concern about being labelled as the '*nutcase helicopter parent*' when advocating for their child's needs.

> *You feel like you're treading that very fine line, especially when you've just started at a school, of becoming known as the parent who's the absolute pain and every teacher ducks their head when they see you coming to advocate for your child.* (Cassie)

Worried about safety in other people's care

Mothers spent a significant amount of time planning for the transition to school or a new class teacher. This process created anxiety and uncertainty for mothers who were worried about safety and trusting school staff to assist with their child's diabetes care.

> *Her teacher this year has told the teacher for next year that Stephanie's quite capable of doing by herself. That actually scares me a bit. She was talking about it once and said mum, I put 81 into the pump instead of 18.* (Amy)

> *Just because Steven's the first thing on my mind, doesn't mean that they're thinking about him 24/7 like I am. Which is a harsh reality when you've got this kid that needs constant monitoring. It's hard to come to terms with the fact that they're not anywhere near as in tune with him as you are, and they're not taking it as seriously. It's a tug of war on your heart and your brain, 24/7.* (Maria)

Restricted employment

Mothers discussed the impact on their employment due to the need to be '*on call*' to attend the school for emergencies and special events or to answer questions over the phone.

> *It's just what you do isn't it? I go to swimming or anything where there's sport or exercise. The teacher's eyes have to be everywhere, and my eyes are only on Sam and in that situation, I know the glucose level can drop really quickly. If I didn't have such a wonderful boss I would have had to quit.* (Sharon)

> *There was one day where he cried to his aide and she rang me. She said Jacob doesn't want to go on his dance rehearsal tomorrow because he doesn't know who's going to look after him. I don't want him to miss out – so I took a day off work to take him. Sometimes I've had to make those sacrifices. I would do it in a heartbeat, but I just felt if I had more support, or if he felt confident with the people that were caring for him then he'd want to do more things.* (Rebecca)

> *I don't work. I could go to work but I can guarantee at least two nights a week I'll be up until three o'clock in the morning. I would probably duck up to school three or four times a week. Some weeks I've been up there 10 times a week. Who wants to employ someone that has to leave for 20 minutes here or there?* (Melissa)

Wanting their child to be like everyone else

Mother's expressed feelings of sorrow, they wanted their child to be '*normal*' and participate in all school activities like children without diabetes. They were, however, mindful of the fact that having diabetes meant that their child was

affected differently by activities that others could do without planning, testing blood glucose levels, adjusting insulin, or risking hypoglycaemia.

> *I feel really sad. I know it's a ridiculous word really to put to it. I don't care about doing the extra work. I care that it means that he is a little bit different.* (Sharon)

> *I've been to the hospital to talk to a social worker, I get myself all frustrated because I sometimes think I'm doing all I can do, but maybe that's not enough because the teacher isn't coping. I really think the teacher is scared. I understand that totally. But he deserves a good life too, and not to be different. So, I just have to fight for him because no-one else will.* (Rebecca)

> *You want him to be completely normal, but you know all those things that the other kids are doing, are going to affect his sugar level.* (Maria)

Providing 24/7 care behind the scenes

In addition to providing direct school support, the planning required '*behind the scenes*' to manage diabetes took a significant toll on mothers, physically and mentally.

> *It does end up taking over your day. Yesterday the school rang me because his glucose was high. I spoke to the school nurse, the diabetes educator and then I look at the clock and say to my daughter, it's time for your sleep, little one. I haven't spent any time with you this morning. You're trying not to make it all about diabetes but in reality, it's always there because you have to be aware of what they're eating, what activity they're doing, have they had insulin. My analogy is - it's like the duck, it looks absolutely beautiful, peaceful and graceful on top of the water, but under the water those legs are going 19 to the dozen, that's what it's like managing a child with diabetes. It is life and death.* (Cassie)

> *Behind the scenes is 99% of it. What people see - him finger prick and the injection; they'd be like 'oh gee he has to have an injection'. I'm like, that takes three seconds. The 23 and a half hours of the rest of the day, is thinking about what he's going to eat, when he's going to eat it, how it's going to affect his sugar level. Is it going to be hot, are we going for a swim today, what time's snack going to be? Oh my god these are the things that send you nuts.* (Maria)

Mothers spoke about hiding their feelings of stress related to planning and managing diabetes care at school from their child. They felt that having diabetes was enough to deal with already and they didn't want their child to see them upset.

> *I do a lot of the worrying out of sight, I don't worry about it in front of him. I don't let him see me thinking how many grams of carbohydrates is that sausage roll, how am I going to add this up. I don't want him to think that his condition is a burden on me.* (Maria)

DISCUSSION

FACILITATORS OF INTENSIVE INSULIN THERAPY SUPPORT

Diabetes Education

Mothers in this study identified diabetes education as a facilitator of IIT support. Historically, diabetes education in Australia was provided by nurses from hospital based diabetes services on school grounds.[39] However, withdrawal of this support has recently occurred due to the increased number of children with T1DM and the lack of additional staffing.[39] Alternative options evolved, including Diabetes Australia education seminars,[39] Education Queensland nurses,[39] private diabetes educators,[39,40] and parents.[39,40] Some school teachers used internet sources when they were unable to gain support from a diabetes educator.[40] This is concerning considering reports about teacher's limited diabetes knowledge affecting their confidence in supporting students with diabetes.[56] These varied options highlight an adhoc and inconsistent approach to diabetes education in Australia with impacts for the overall schooling experience for children with diabetes.

Diabetes education is the foundation for IIT support, providing knowledge and skills to enable understanding and increased confidence.[40] It provides theoretical knowledge and an understanding of concepts for problem solving. However, skill development for IIT support requires training and real-life practice to develop and maintain competence.[40] The benefit of formal diabetes training has been highlighted in the literature.[57] Skills training and ongoing assistance from diabetes educators could potentially reduce feelings of stress, anxiety and burden of responsibility for teachers who volunteer to assist with IIT.[40]

The Australian Paediatric Society recommend three levels of diabetes education and training: (1) Introductory education for all school staff, (2) Intermediate education for school staff responsible for the child with T1DM and (3) Individualised skills training for staff supervising or administering insulin.[58] Standardised diabetes training should be provided before the child commences school, with follow-up training if required.[56] This is essential to ensure teachers feel adequately prepared, children are safe, and parents have confidence in the school. Yet, diabetes educators are unable to provide this level of school support in all areas.[28,59]

The Australian Government has recently funded the T1D Management in Schools Program.[60] This national program includes online training and education available to all school staff (Levels 1 and 2) and individualised face-to-face skills training (Level 3) for selected schools where students have high needs. This program provides a nationally consistent approach for three levels of training.[61] Level 3 training on school grounds is individualised for a particular student and provided by a health professional from their usual diabetes team where possible.

This program aligns with the Australian National Diabetes Strategy Implementation Plan; to promote awareness of T1DM symptoms and management in schools.[62] However, the government is yet to fully address strategies for improving workforce capacity to make schools diabetes safe environments.[63] Rather than only allocating level 3 diabetes training for selected schools, additional funding is required to increase the number of diabetes educators so that all school staff, parents and students can receive the necessary level of specialised support for IIT.

Reasonable adjustments for integrated care

The majority of mothers reported that schools made reasonable adjustments to facilitate integrated diabetes care. Class teachers, aides and nurses supported IIT, but there was no guarantee of ongoing support. This lack of consistency is comparable to other research and created uncertainty for mothers.[39,40]

The medical aspects of diabetes care have been reported by teachers as overwhelming and associated with increased burden of responsibility when working outside their usual scope of practice.[39] Their attention was diverted away from core teaching responsibilities when assisting students with diabetes care.[64,65] It is unreasonable to expect class teachers to be responsible for IIT in addition to providing a duty of care for the remaining students in the classroom without additional staff assistance.

Mothers in this study spoke about the benefit of a teachers' aide to provide consistency for diabetes care and relieve the pressure off class teachers. School teachers also reported reduced burden when diabetes care was shared with a teacher's aide.[40] Unfortunately, the long-term funding and allocation of a teacher's aide was not guaranteed for children in this study, and the aide was often shared amongst a number of students. When aide support was not available, workload and stress levels increased for both the class teacher and mothers. Furthermore, the availability of teacher's aide support for students with T1DM varies across Australia.[31] The lack of a consistent approach creates inequality and has the potential for negative health and educational outcomes for students.

IMPLICATIONS FOR MOTHERS

This study highlights that when a child with T1DM enters the Australian school system, a consistent, formal support structure is lacking. Care is negotiated on a case-by-case basis and is dependent on the availability of a staff member to volunteer to administer or supervise insulin therapy. Parents were expected to provide consent for non-health professionals to administer or supervise insulin for their child at school. The lack of qualified registered nurses places undue pressure on mothers to constantly be on call to make clinical decisions, with implications for emotional and physical wellbeing as well as potential social and economic disadvantage. The uncertainty of ongoing volunteer support from non-nursing school staff also creates distress for mothers and potentially their children.

There is an obvious disconnect between mandatory school attendance, accessing education on the same basis as others according to the Disability Standards for Education, and the availability of school nurses to legally administer insulin.

Schools are mandated to make reasonable adjustments for students with T1DM. However, many schools lack adequate resources to provide this individualised support and the burden falls on to mothers. Other studies found that parents were always on alert, in a chronic vigilant state, which caused feelings of panic, worry, fear and anxiety.[30, 66] The inability to confidently hand over care during the school day and the requirement to always be on call has significant emotional and physical impacts for mothers.

The added burden of diabetes care on mothers during the EPS years when children require the most support results in social and economic disadvantage as they put their lives on hold until their child is more independent. Lower levels of life satisfaction, socioeconomic status and labour force participation have been reported in parents caring for children with disabilities.[67,68] Carer responsibilities were associated with fatigue and stress with significant impacts on parental mental health.

Some mothers in this study were required to administer insulin at school each day. They sacrificed employment or family commitments to attend special school events due to concerns about hypoglycaemia and the lack of available school staff supervision. Likewise, parents in other studies experienced disruptions to their employment due to the inadequacy of school support.[34,35,37,70] Parents should not be expected to fill the gap in appropriate health support when resources are inadequate.[69]

SCHOOL NURSES

Although support from a class teacher or aide was available for many students in this study, it was on a voluntary basis. The benefit of a school nurse is that they are employed specifically for the purpose of healthcare, they have appropriate qualifications and legal coverage for insulin administration. A registered nurse would enhance safety for the student with diabetes and reduce the burden on parents.[30,71] In addition, improvements for children in quality of life, classroom participation and diabetes control,[72] increased productivity of class teachers and parents, and reduced healthcare costs have been reported.[73]

There are 9,769 schools in Australia[74] and approximately 1,500 school nurses,[75] clearly highlighting a shortage in services. According to the Australian National School Nursing Professional Practice Standards, the role of school nurses includes formulating care plans and providing healthcare.[76] However, the majority of schools nurses are not

available to assist with the direct management of chronic health conditions. It is unclear why all Australian schools do not have full time nurses on site, but it is most likely due to limited budgets and the lack of awareness about the importance of the role. For example, school nurses were removed from Queensland due to health service budget constraints.[77] As an alternative, the State Schools Nursing Service was funded by the Education Department.[78] However, these nurses do not provide direct care or health screening, rather, they assess health conditions, develop care plans and train non-nursing school staff to directly support students.

In contrast, the Tasmanian Government have committed to fund school nurses across all government schools.[79] However, these full-time school nurses are responsible for a number of schools which limits their ability to physically assist with the individual management of chronic health conditions. NSW have funded a school-based nursing program focused on mental health for selected schools deemed most in need.[80] These recent budget commitments from individual Australian State Governments demonstrate an appreciation of the important role of school nurses. Yet, additional funding is required so that every school has the appropriate number of full-time registered nurses to provide the necessary level of specialised support for all students, including children with T1DM.

STRENGTHS AND LIMITATIONS

This study is the first to provide qualitative insight into the experience of Australian mothers supporting their child with T1DM using IIT in the EPS setting. Data were collected from a small group of participants from six out of eight Australian states/territories, regional and city geographical areas, Government and non-Government schools, and students from kindergarten/reception/preparatory, Grade 1 and 2, with both insulin injections and pump therapy.

Limitations of the study include lack of input from the remaining two Australian states/territories and fathers. Recruitment via Facebook may not have been the appropriate method to target fathers. With the sample size and methods used, the findings may not capture all mothers' narratives related to IIT support in EPS. For example, mothers who are not well educated or unable to speak English.

CONCLUSION AND IMPLICATIONS FOR NURSING AND HEALTH POLICY

The findings of this study indicate that the Australian education system lacks appropriate health support structures for children with T1DM. It is beyond the school workforce's scope of practice to provide specialised healthcare that is required to participate fully and safely in the school experience. In order to facilitate IIT at school non-nursing staff are trained to administer or supervise insulin and the overall responsibility is transferred onto parents. Parents are expected to provide consent for non-nursing staff to support diabetes care and ultimately, accept substandard diabetes care contradictory to what is expected in the home environment.

Nurses working as diabetes educators need to be aware of the burden on mothers and advocate for more supportive practices to facilitative IIT in the EPS setting. Parents, in collaboration with health and education departments, should demand the allocation of appropriately qualified school nurses to legally provide high quality diabetes care to which the children are entitled to. If current practices, dictated by insufficient resources continue, the Australian Government will make the assumption that existing systems are adequately meeting the needs of students with T1DM.

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CASE STUDIES

Improving vaccination uptake with the implementation of an immunisation Nurse Practitioner

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ABSTRACT

Patients at increased risk of vaccine preventable diseases require additional vaccines that are not licensed for Nurse Immunisers to administer without a prescription. An Immunisation *Nurse Practitioner (NP)* at the Royal Children's Hospital (RCH) Melbourne was introduced to address deficiencies in the current management of these patients. NP endorsement requires successful completion of a Masters level study program, plus the equivalent of three years (5,000) hours full-time experience in advanced clinical nursing. The Immunisation NP was endorsed in May 2017 and since then, the Immunisation service at RCH has recorded a 140% increase in uptake of Meningococcal B vaccine as well as improved delivery of immunisations to special-risk patients. In addition, there was improved access to specialist immunisation advice as well as improved opportunistic immunisation of inpatients. New initiatives were implemented including immunisation of needle phobic patients using nitrous oxide sedation. This paper describes the outcomes of employing an Immunisation NP at the RCH, Melbourne.

What is currently known about the topic?

- Nurse Practitioners provide excellent, patient-centred care whilst also contributing to research, education, leadership and management.
- There is much literature on describing Nurse Practitioner specialty roles however, none in the area of Immunisation.

What this paper adds:

- A Nurse Practitioner (NP) role in the specialty field of immunisation can contribute to improving hospital inpatient rates of immunisation, facilitate uptake of non-scheduled vaccines and decrease pressure on wait times for a specialist clinic appointment.
- The Immunisation NP reflects the full diversity of nursing practice and addresses the many service gaps in the previous delivery model, that can be emulated by paediatric nurses in other specialist areas.

Key Words: immunisation, nurse practitioner, hospital, vaccine

INTRODUCTION

Vaccinations have reduced morbidity and mortality from a multitude of infectious diseases and are one of the most effective public health interventions to date.[1] In Victoria, Australia, accredited nurse immunisers deliver approximately 23% of vaccinations in local government/council clinics, whilst 65% of vaccinations are administered in general practice (this includes by practice nurses).[2] Nurses have the knowledge, time and skills to help families make informed decisions about vaccinations and can strengthen adherence with immunisation schedules.[3] "Fully immunised" coverage rates in Australia are 94.3% at 12 months of age, and 94.5% at 60 months of age.[2]

The role of the Nurse Practitioner (NP) can improve access to health services and offer diversity and flexibility in service provision. This paper is aimed at describing the Immunisation NP role at the Royal Children's Hospital (RCH), Melbourne.

SETTING

The RCH, a tertiary children's hospital established the first dedicated Immunisation Service in Australia, with support from the Department of Health – Immunisation Section, Victoria. Established in 2001, the RCH Immunisation Service, including a Drop-in centre, provides opportunistic vaccines to patients and visitors as well as expert clinical advice, predominantly provided by the nursing staff. This can be challenging, particularly with the introduction of new vaccines, increasing complexities of the National Immunisation Program and Australian mandatory vaccination policies. These policies require children to be fully vaccinated, on a catch-up schedule or medically exempt from vaccination in order to receive certain government-subsidised family assistance payments ('No jab, No pay') or access childcare and/or kindergarten ('No jab, No play').

CLINICAL SERVICE ACTIVITY

There has been a steady increase in the number of consumers attending the Drop-in Centre over the past 13 years (Figure 1). The Nurse Practitioner role was implemented in May 2017 and there has been a significant growth in activity from July 2017 onwards.

NEEDS ANALYSIS LEADING TO THE INTRODUCTION OF A NP-MODEL

An NP is a registered nurse educated and authorised to function autonomously and collaboratively in an advanced and extended clinical role.[4] The rationale for implementing an Immunisation NP role was the gap in the existing immunisation service delivery model, primarily in the provision of vaccines outside the scope of the accredited nurse immuniser.

As of March 2021, there were 501 Nurse Practitioners endorsed in Victoria, which represents 23% of NP's in Australia.[5] However, there are only six endorsed Immunisation NP's in Australia, with three in Victoria, two in Queensland and one in South Australia. This is significant, as nurses are considered pivotal to the success of immunisation programs, because their knowledge is sought after, and they invest a substantial amount of time with families.[6]

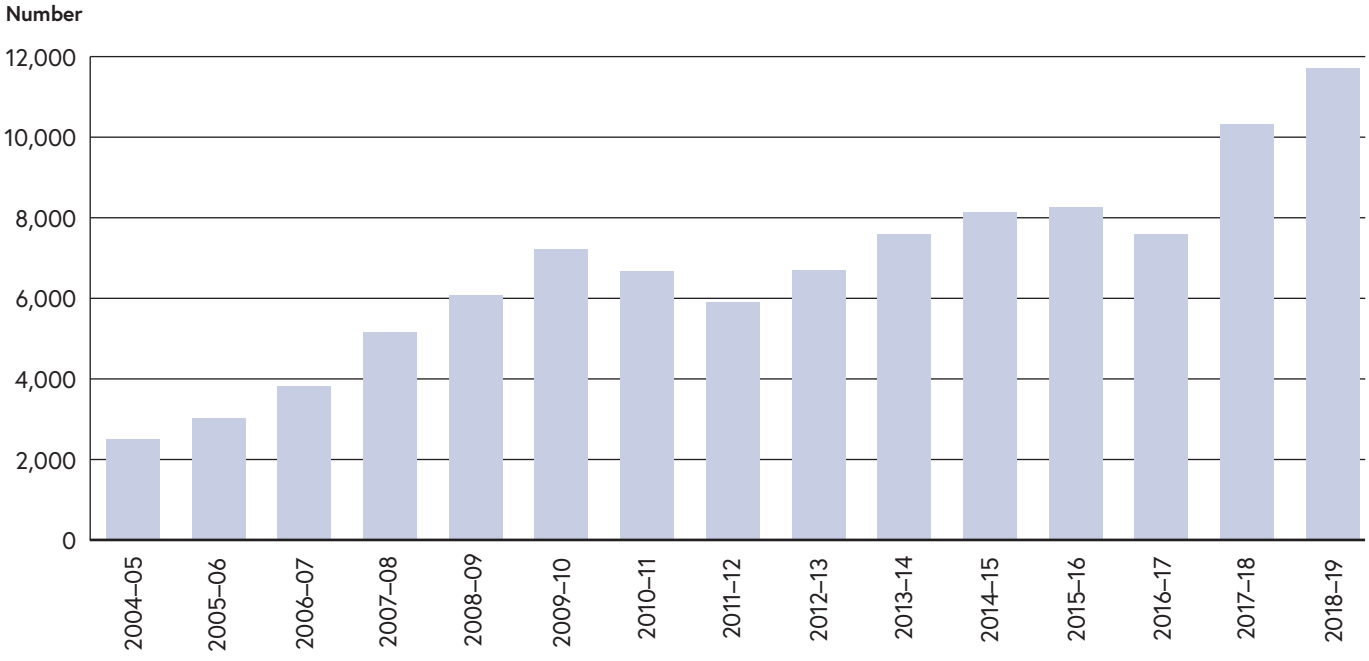

FIGURE 1: NUMBER OF CONSUMERS IMMUNISED BY 12-MONTH PERIOD

 https://doi.org/10.37464/2020.382.264

It was identified that significant gaps in the immunisation service model at the RCH existed. First, vaccine hesitancy (people who delay or refuse vaccines) was a growing challenge for immunisation providers. These families were referred to the specialist outpatient clinic for discussion with an immunisation paediatrician. Vaccine hesitancy referrals to this clinic were increasing, reflected in a study by Forbes and colleagues which described that 28% of referrals to the specialist immunisation clinic were for vaccine hesitancy and 10% of these patients failed to attend.[7]

Second, special risk patients (Table 1) often required an outpatient clinic appointment to discuss individualised vaccination plans with an immunisation paediatrician. These complex patients require serology as well as additional vaccines not on the National Immunisation Program (NIP) or licensed for Nurse Immunisers to administer without a prescription. At times there were significant delays in getting an immunisation outpatient clinic appointment, (four weeks for a new/review appointment) which had the potential to either delay live vaccines or immunosuppressive treatment until the appointment date.

TABLE 1: ADDITIONAL VACCINES NOT ON THE NATIONAL IMMUNISATION PROGRAM (NIP) OFTEN REQUIRED BY SPECIAL RISK PATIENTS

Vaccine	Indication for use
Meningococcal ACWY	Solid Organ Transplant Recipient (SOTR) Inflammatory Bowel Disease (IBD)
Meningococcal B	SOTR Oncology IBD Aboriginal and Torres Strait Islander
Hepatitis A and B combined	SOTR IBD
Hepatitis A	SOTR Cystic Fibrosis IBD

Nurse Immunisers are approved under regulation 8(1) and regulation 161 of the Drugs, Poisons and Controlled Substances Regulations 2017 to administer specified vaccines.[8] Patients who attend the Drop-in centre for vaccination often required vaccines that were not on this list (Table 1). These vaccines require orders in the Electronic Medical Record (EMR) to be completed by the Immunisation paediatricians including a prescription to collect the vaccine from the hospital pharmacy. This was not time-efficient given the Immunisation paediatrician's were not always hospital based or busy with other roles.

SERVICE DELIVERY BENEFITS OF AN IMMUNISATION NP

In 2017, a Victorian nurse became the third in Australia to attain endorsement as an NP in the field of immunisation, working in the RCH Immunisation service. Since implementing the Immunisation NP in the Drop-in Centre, the wait times for the outpatient clinic reduced from four weeks to one to two weeks (a 50% reduction). In the first six months, the Immunisation NP also consulted 44 patients in the outpatient setting alongside the medical staff and attended post-clinic meetings to discuss the patients and their plans of care.

In terms of prescribing rights, the NP directly prescribed vaccines in the EMR allowing ward based Registered Nurses to administer the vaccines. This could be done by a prescriber within the treating team, however a previous study has shown that during admission, one quarter of inpatients are not up-to-date with routine scheduled immunisations and 42% of those inpatients were opportunistically vaccinated.[9] Since the employment of the NP role, the number of inpatients opportunistically immunised has improved to 57%, an increase of 15%.

In 2016, 283 Meningococcal B vaccines were administered to special risk patients. In 2017, the year of NP endorsement, the numbers increased to 697 and in 2018, 683 doses administered. Whilst there may be other contributing factors to this increase, e.g. improved parental awareness, this vaccine requires a prescription to allow it to be administered. This increase of 140% in two years, demonstrates that access to this important vaccine by the most vulnerable patients at RCH is being achieved. Similarly, Hepatitis A/B vaccine uptake for transplant recipients and other immunosuppressed patients has increased by 50% in the two years.

An area not anticipated to be a point of difference with the role introduction, was immunisations under sedation via the Drop-in Centre. From 2012-2016, the Immunisation service offered immunisations under sedation for paediatric patients with anxiety disorders, needle phobia, developmental or behavioural disorders in the RCH Day Medical Unit (DMU).[10] This involved an appointment in the specialist outpatient clinic, and then a subsequent booking in DMU. With the Immunisation NP having the ability to prescribe nitrous oxide, medical gases were installed in the Drop-in Centre and from 01/08/2018–31/01/2020, 113 patients were successfully immunised at the time of first presentation, decreasing overall number of visits.

The NP role not only benefitted patients and families, but had the added advantage of improving revenue. With 81 sedation admissions in the first 12 month period, this generated over $138,000 in Weighted Inlier Equivalent Separation (WIES) activity based funding. In 2018, a total of 973 doses of Meningococcal vaccine were administered, with 290 of these for parents wishing to purchase the vaccine, as it is not on the NIP and their child was not in a special risk group. This enabled the Immunisation service to generate revenue of over $8,000 from vaccine sales in 12 months.

There are limited findings regarding the economic impact of NP's, and difficulty in comparing NP costs and health

care costs.[11] However, it is important for NPs to demonstrate financial benefits with the implementation of the role in order to ensure sustainability.

There is much discussion in the literature about NP relationships within the multidisciplinary team and collaboration.[12,13] The Immunisation NP role was developed in conjunction with the Immunisation Paediatricians and nursing staff. Regular meetings were established to determine Clinical Practice Guidelines as well as the medication formulary, and this provided the opportunity for key stakeholders to discuss and define the NP role. This is crucial to effective collaborative care, as described in the qualitative study by Hurlock and colleagues.[12]

CHALLENGES

It was anticipated that there may be issues impacting the implementation of the Immunisation NP, particularly the relationship of the NP with the other Immunisation nurses. Burgess & Purkis identified that team members are often unprepared to welcome and support the new NP role.[14] Considering the small team, the NP needed to communicate effectively, involving them in decision making and maintaining clinical visibility. This not only ensured the success of the role, but has now motivated others to consider NP endorsement in the field of immunisation.

A mentoring partnership, in which NPs are supported to manage concerns and challenges is vital in role development.[14] The Immunisation NP was provided with an appropriate medical mentor as well as networking opportunities with other NPs from the organisation. The Immunisation paediatricians are the direct mentors to the NP and role model the style of consultation in a way that demonstrates collaboration not competition.

Challenges with implementation of the role that have not been successfully resolved includes backfilling the NP position during periods of leave. This has resulted in decreased Meningococcal B vaccine delivery as well as no booked admissions for immunisation under sedation during these periods.

CONCLUSION

In Australia, there are very few Nurse Practitioners in the field of immunisation and this is not unique to specialty areas of nursing. Since the introduction of the NP role there has been improved hospital inpatient rates of immunisation, enhanced uptake of non-scheduled vaccines and decreased pressure on wait times for a specialist clinic appointment. Additional benefits, such as the sedation service were identified, demonstrating that the role has further enhanced the excellent service provided to RCH patients and the wider community. It is anticipated that advanced practice nurses will pursue the NP role if the need is identified in their area of practice where clear objectives and potential benefits are explored.

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