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An exploration of final-year undergraduate nursing students' perceptions of general practice nursing

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An exploration of final-year undergraduate nursing students' perceptions of general practice nursing

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RN, BN (Hons)

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requirements for the degree of

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Thesis Certification

I, *Kaara Ray B. Calma*, declare that this thesis, submitted in fulfilment of the requirements for the degree of Doctor of Philosophy, the School of Nursing, Faculty of Science, Medicine and Health at the University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. This document has not been submitted, either wholly or in part, to any other educational institution.

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Kaara Ray B. Calma

Verification

This statement verifies that the greater part of the work in the named manuscripts is attributed to the Doctoral candidate. Kaara Ray B. Calma conceived and designed the study and undertook data collection and analysis. She prepared articles for submission to the relevant journals and led the response to reviewers' comments to finalise the manuscripts.

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"Alone we can do so little; together we can do so much" – Helen Keller

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Abstract

Background: The growing burden of chronic conditions and an ageing population has prompted an increased focus on health care services delivered in the community. General practice nurses (GPNs) have an important role in community-based care and significantly contribute to positive health outcomes. The increasing complexity of health care needs have amplified the demands for nurses in general practice. However, the GPN workforce is ageing with many GPNs approaching retirement. To ensure the GPN workforce has sufficient nurses to meet these demands it is important to understand how nurses new to practice perceive the role. To date, little is known about how undergraduate nursing students are prepared to work in this setting or their perceptions of general practice nursing as a career.

Aim: This thesis explores final-year undergraduate nursing students' perceptions of general practice nursing, and preparedness to work in general practice following graduation.

Methods: This sequential explanatory mixed methods study encompassed an online cross-sectional survey of final-year undergraduate nursing students, followed by telephone interviews with a subgroup of survey respondents.

The survey comprised validated tools, modified for use in general practice, and investigator-developed items. The modified Confidence and Interest in Critical Care Nursing (CICCN) tool[1] was used to determine predictors of confidence and interest to work in general practice. Intention to work in general practice was measured using the modified Attitudes, Subjective Norms, Perceived Behavioural Control, and Intention to pursue a career in Mental Health Nursing scale (ASPIRE) scale[2]. Finally, the modified 'Profession Scale' from the Scale on Community Care Perceptions (SCOPE) tool[3] evaluated perceptions of the general practice work environment and characteristics important in choosing an employment setting. Data were analysed using descriptive and inferential statistics.

Purposively selected survey respondents participated in semi-structured telephone interviews, conducted using a qualitative descriptive approach. These interviews were audio-recorded and transcribed verbatim before being analysed using thematic analysis[4].

Findings: Of the 355 survey respondents, 92.7% (n=329) identified as female. Respondents had a mean age of 28 years (Range 18-58 years). Some 34.1% had a clinical placement in general practice within the Bachelor of Nursing (BN) program. Survey findings revealed respondents had moderate interest to work in general practice. Clinical placement exposure and high confidence to work in general practice were significant predictors of interest and

intention to work in general practice. Exposure to general practice nursing within the BN program, and clinical placement experience in this setting also significantly influenced respondents' perceptions of the general practice work environment. Perceived work environment of general practice influences the views of undergraduate nursing students regarding career options.

Sixteen participants were interviewed. Responses confirmed the impact of exposure on perceptions of general practice nursing, demonstrated by the diversity of participants' perceptions of the GPN's ways of working, breadth of their role, and the nature of their relationships with patients. Participants identified a range of barriers that may impact their interest and intention to seek employment in general practice following graduation. Perceptions of limited opportunities for skill development that may later compromise future employment was a factor that did not make general practice nursing a priority career path Similarly, perceptions of current employment conditions in this setting, and perceived lack of support for transition to general practice for new graduate nurses in general practice, also influenced participants' views of general practice as a new graduate career choice.

Conclusions: Both survey and interview findings revealed an overall moderate interest to work in general practice at some point in their career. There were some concerns around the GPN's scope of practice, opportunities for advancement, and availability of transition support for new graduate nurses in general practice. However, these perceptions were often influenced by participants' indirect experience of general practice nursing. This suggests the need to evaluate BN programs and assess how theoretical general practice nursing content, as well as clinical experience in this setting, could be integrated within undergraduate education.

To improve new graduates' preparation and interest to pursue a career in diverse clinical settings, universities need to identify innovative strategies that provide clinical exposure beyond traditional hospital-based clinical placement models. Further research is needed to investigate models of transition support that might be used in general practice to improve the recruitment of new graduate nurses. Lastly, prioritisation of organisational, educational, and funding support for GPNs are crucial to improve perceptions relating to work conditions and therefore enhance undergraduate nursing students' interest and intention to pursue work in general practice.

Anthology of Publications

Peer-Reviewed Publications

1. Calma, K.R.B., Halcomb, E., & Stephens, M. (2019). The impact of curriculum on nursing students' attitudes, perceptions and preparedness to work in primary health care: An integrative review. *Nurse Education in Practice*, *39*, 1-10.

2. Calma, K. R. B., McInnes, S., Halcomb, E., Williams, A., & Batterham, M. (2022). Confidence, interest and intentions of final-year nursing students regarding employment in general practice. *Collegian*, *29*(2)*,* 220-227.

3. Calma, K. R. B., Halcomb, E., Fernandez, R., Williams, A., & McInnes, S. (2022). Understanding nursing students' perceptions of the general practice environment and their priorities for employment settings. *Nursing Open, 9*(5), 2325-2334.

4. Calma, K. R. B., Halcomb, E., Williams, A., & McInnes, S. (2021). Final-year undergraduate nursing students' perceptions of general practice nursing: A qualitative study. *Journal of Clinical Nursing*, *30* (7-8), 1144-1153.

5. Calma, K. R. B., Williams, A., McInnes, S., & Halcomb, E. (2021). New graduate employment in general practice: Perceptions of final-year nursing students. *Nurse Education in Practice*, *54* (1), 103115.

Other Publications

1. Calma, K., Halcomb, E., & Stephens, M. (2018). Primary health care future opportunities. *Australian College of Nursing 'The Hive'*, 10-11.

2. Calma, K. R. B. (2019). From the treadmill to Kazakhstan: my experience with the World Health Organization. *Australian Primary Health Care Nurses Association Primary Times*, *19* (2), 20-21.

3. Calma, K. (2019). Why primary health care nursing is coming up short. *World Health Organization Primary Health Care Young Leaders Blog.* https://www.who.int/primary-health/conference-phc/young-leaders-network/blog/young-leaders-blog

4. Calma, K. R. B., Halcomb, E., McInnes, S., & Williams, A. (2020). Final-year undergraduate nursing students' perceptions of general practice as a career path. *Australian Nursing & Midwifery Journal* (Oct-Dec 2020), 49.

5. Calma, K. R. B., Williams, A., McInnes, S., & Halcomb, E. (2021). Developing a career in primary health care. In Guzys, D., Brown, R., Halcomb, E., & Whitehead, D. (Eds.), *An introduction to community and primary health care* (3rd ed.). Port Melbourne, Victoria: Cambridge University Press.

6. Calma, K.R.B., Brown, L., Fernando, G.V.M.C., & Omam, L.A. (2022). Strengthening primary health care: Contributions of young professional-led communities of practice. *Primary Health Care Research and Development, 22*(e13), 1-5.

Conference Presentations and Posters

1. Calma, K., Halcomb, E., & Stephens, M. (2018). *An integrative review of the impact of undergraduate nursing curriculum on nursing students' attitudes, perceptions and preparedness to work in primary health care.* Illawarra and Southern Practice Research Network (ISPRN) Conference, Nowra, New South Wales.

2. Calma, K., Halcomb, E., & Stephens, M. (2019). *What impacts on nursing students' attitudes, perceptions and preparedness to work in primary health care.* Australian Primary Health Care Nurses Association Conference, Adelaide, South Australia.

3. Calma, K., Halcomb, E., & Stephens, M. (2019). *Understanding how undergraduate coursework shapes nursing students' attitudes, perceptions and preparedness to work in primary health care.* Australasian Association for Academic Primary Care, Adelaide, South Australia.

4. Calma, K., Halcomb, E., Williams, A., & McInnes, S. (2020). *Perceptions of pre-registration nurses of general practice nursing: a qualitative descriptive study.* Sigma Nursing Xi Omicron at Large HDR Networking Webinar, Online.

5. Calma, K., Halcomb, E., Williams, A., & McInnes, S. (2021). *Perceptions of Australian nursing students to work in general practice.* International Nursing & Midwifery Research and Education Conference (RCSI University of Medicine and Health Sciences), Online.

6. Calma, K. R. B., Halcomb, E., Williams, A., & McInnes, S. (2021). *What do nursing students think about working in general practice?* Australasian Association for Academic Primary Care Inc. Annual Research Conference, Online.

7. Calma, K. R. B., McInnes, S., Halcomb, E., Williams, A., & Batterham, M. (2021). *Preparedness and attitudes toward employment in primary care: The views of Australian nursing students.* 46th Biennial Convention Sigma Nursing, (Online) Indianapolis, USA.

8. Calma, K. R. B., Halcomb, E., Williams, A., & McInnes, S. (2021). *Pre-registration nurses' perceptions of nursing in general practice.* 46th Biennial Convention Sigma Nursing, (Online) Indianapolis, USA.

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Abbreviations

ANMAC	Australian Nursing and Midwifery Accreditation Council
ASPIRE	Attitudes, Subjective Norms, Perceived Behavioural Control, and Intention to pursue a career in Mental Health Nursing scale
BN	Bachelor of Nursing
CICCN	Confidence and Interest in Critical Care Nursing
COREQ	Consolidated Criteria for Reporting Qualitative Research
EN	Enrolled Nurse
GP	General Practitioner
GPN	General Practice Nurse
HREC	Human Research Ethics Committee
KMO	Kaiser-Meyer-Olkin
NMBA	Nursing and Midwifery Board of Australia
NSW	New South Wales
NZ	New Zealand
PHC	Primary Health Care
PHN	Primary Health Network
RN	Registered Nurse
SCOPE	Scale on Community Care Perceptions
SPSS	Statistical Package for the Social Sciences
STROBE	Strengthening the Reporting of Observational Studies in Epidemiology
WHO	World Health Organization
TPP	Transition to Professional Practice
UK	United Kingdom
USA	United States of America

Glossary

Bachelor of Nursing	An accredited program of study required for an individual to qualify as a Registered Nurse[5]. In Australia, pre-registration nursing programs are accredited by the Australian Nursing & Midwifery Accreditation Council[6].
Chronic condition	A condition that is long-lasting and has persistent effects throughout a person's life, generally needing long-term management by both the individual and their health providers[7].
Enrolled Nurse	An Enrolled Nurse is an individual who has completed a Diploma in Nursing[8]. Enrolled Nurses are required to work under either the direct or indirect supervision of a Registered Nurse[8].
General practice	General practice is the first point of contact the community has to the health care system[9]. Considered synonymous to 'primary care'[10], it is a subset of PHC that provides "person-centred, continuing, comprehensive and coordinated whole-person health care to individuals and families in their community"[11](p. 8).
General Practitioner	A General Practitioner is a medical doctor who provides health care in the general practice setting.
Multimorbidity	Multimorbidity is the co-occurrence of multiple health conditions in an individual. This has been associated with increased use of health and social care services, and poorer outcomes[12].
New graduate nurse	A new graduate nurse is a newly qualified Registered Nurse, who is transitioning from student to Registered Nurse.
Preceptor	A nurse preceptor is an experienced nurse that provides support and guidance to students, new graduate nurses, or a new nurse in their development of clinical skills, competence, and confidence to practice safely[13].

Registered Nurse   A Registered Nurse is an individual who has completed a Bachelor of Nursing (or equivalent) as recognised by the Australian Nursing & Midwifery Accreditation Council[6].

Chapter 1: Introduction

"The wisest mind has something yet to learn."

George Santayana, source unknown

Philosopher, Poet, Novelist

Chapter Introduction

New graduate baccalaureate-prepared nurses are qualified to work as Registered Nurses (RNs) regardless of clinical setting[14-16]. However, the World Health Organization (WHO)[17] reports concerns around the maldistribution of the nursing workforce between settings, given many nurses choose to work in hospital settings[15,18]. Outside of hospitals are a range of community-based settings where nurses play key roles in supporting the health of our community. Community-based services, in which the principles of primary health care (PHC) are embedded, operate with health promotion at the core of the approach as a means to maintain and improve health outcomes and reduce health disparity in communities[19]. In Australia, the majority of nurses working in PHC settings are RNs[20].

Health care outside of hospital settings has increasingly gained importance in the prevention and early detection of disease, first-line management of acute illness, and ongoing management of chronic conditions[21,22]. A subset of the PHC sector, general practice, delivers person-centred, comprehensive, and coordinated care across the lifespan[23]. General practice provides frontline health services and is the first point of contact people have with the Australian health system. Around 90% of Australian adults access general practice every year[9].

The general practice nurse (GPN) workforce in Australia has grown considerably over the last two decades[24,25]. Yet despite this growth, both community health needs, and workplace-related challenges have increased demands on GPNs[26-28]. For the GPN workforce to meet the evolving health needs of the community, there is a need to prioritise strategies to recruit and retain a skilled workforce. Given final year undergraduate nursing students are close to graduating, it is important understand their perceptions of, and self-perceived preparedness to work in general practice.

General Practice

General practice is the most frequently accessed health service in Australia, and individuals present to general practice for a variety of reasons such as preventive health care, screening, health assessments, immunisations, acute symptom management and ongoing chronic disease care[9].

Internationally, the ageing global population is the most significant medical and social demographic issue[29]. The ageing population, coupled with the growing burden caused

by chronic conditions have instigated a shift in the focus of health care delivery towards community-based care in settings such as general practice[30]. Although people in Australia and internationally are living longer, older people experience a substantial burden of ill health requiring complex care[29,31]. Chronic conditions account for almost half of potentially preventable hospitalisations, followed by acute conditions and vaccine-preventable conditions[31]. The WHO[32] reports that the impact of chronic conditions is a challenge being faced globally, causing the premature death of 15 million people between the ages of 30 to 70 years annually. Some 4.9 million Australians have two or more chronic conditions, with multimorbidity becoming more common as people age[33]. Increasing numbers of people living with chronic conditions and multimorbidity have led to more complex health care needs in the community requiring different approaches to management[34].

Comparable to countries such as the United Kingdom (UK) and New Zealand (NZ), Australian general practices are often owned by a single, or a group of General Practitioners (GPs) and the practices operate within a small business structure or as part of a larger corporate chain[27,35-37]. Income in general practices is predominately generated through publicly funded national insurance schemes or a combination of payment models with variable fee-for-service arrangements[38]. Under the current fee-for-service scheme, GPs in Australia receive rebates under the Medicare Benefits Schedule which is subsidised by the Federal Government[39].

Variations in health policy and funding models have transformed Australian general practices[25], and evolving models of patient care have motivated practices to employ nurses[25,40]. Team-based care arrangements in general practice allow for more comprehensive care for patients as unique perspectives of health care providers become involved[41]. Contemporary general practice teams typically comprise GPs, nurses, administrative staff, and managers[42]. To date, RNs make up the majority of the non-physician workforce in this setting[43,44].

General Practice Nursing in Australia

In Australia, three legally protected titles comprise the nursing profession: RN, Enrolled Nurses (ENs) and Nurse Practitioners (NPs)[45]. Most RNs work in hospital settings (63.7%), with fewer employed in residential aged care facilities (10.0%), community health (7.9%), and general practice (3.7%)[46]. RNs, ENs and NPs are all expected to

practise within a person-centred and evidence-based framework[45]. RNs have responsibility for determining, coordinating, and providing safe, quality nursing care. They are responsible for delegation and supervision of ENs, undergraduate nursing students and non-regulated Assistants in Nursing who support patient care delivery[47,48].

In Australia, the UK, and NZ, GPNs either hold a baccalaureate degree or equivalent (RN), a diploma (EN)[49], or a Master's degree (NP)[50]. Historically, GPNs were perceived as a doctor's "assistant", although this notion has evolved as GPNs' scope of practice and autonomy developed[26,34,49,51]. Contemporary GPNs now have a diverse role, involving health screening, health assessments, nursing interventions, patient and support person education, providing complex care of acute and chronic conditions, and managing care coordination[26,34,49]. Studies exploring the feasibility and sustainability of nurse-led initiatives in general practice, such as chronic condition clinics, have demonstrated acceptable and effective outcomes reported by patients, GPNs, and GPs[52-55].

In 2003, there were around 2,349 nurses employed in Australian general practice[25]. This has grown to more than 13,100 nurses working in Australian general practices in 2019[56] with over 60% of general practices employing at least one nurse[57,58]. However, despite this workforce growth, the GPN workforce is considered unstable due to many GPNs nearing retirement[26,44]. Retention of GPNs and recruitment of new nurses to general practice has many challenges including poor remuneration[27,59,60], a high frequency of part-time and contract employment[26,28], and a lack of a clear career pathway for GPNs in Australia[59]. Unlike the UK and NZ where general practice nursing has distinct salary structures, career frameworks, and levels of nursing practice based on GPNs' experience[61,62], general practice nursing in Australia has a poorly defined career pathway[25].

There is an abundance of evidence exploring the profile[26,44] and working conditions of GPNs[27,60,63-66]. While there has been some research exploring new graduate nurses' experiences in general practice transition to practice programs[67,68], there is little insight into undergraduate nursing students' perceptions of general practice nursing[69]. Additionally, there is limited understanding of the extent to which they are prepared and are interested to seek employment in general practice following completion of the BN program.

The Bachelor of Nursing Program

Education of student nurses in Australia was predominantly undertaken within an apprenticeship system from the late 1800s until the mid-1980s, where student nurses were primarily expected to provide direct nursing care in hospitals during their training[70,71]. However, the evolving health needs of the community prompted a series of movements and policy changes to prepare a greater number of new nurses through the University education system[70]. Similar to the UK and the United States of America (USA), Australian nursing education was fully transferred into the tertiary sector by 1994[72,73].

To be eligible to register as an RN, an individual must complete a three-year accredited undergraduate BN program or equivalent[16]. In Australia, programs are accredited by the Australian Nursing and Midwifery Accreditation Council (ANMAC)[6]. ANMAC ensures that accredited programs respond to the needs of the population and services required of the health system, and prepare new graduate nurses to meet the Nursing and Midwifery Board of Australia (NMBA) RN Standards of Practice[6]. Within the Australian University curricula, BN programs cover a diverse range of subjects and broad content areas to equip undergraduate nursing students with the knowledge, skills, and competencies to work across diverse clinical settings[16]. In nursing, curriculum relates to a set of planned learning opportunities that guide the development of undergraduate nursing students' knowledge, skill, and competencies[74,75]. However, although curricula are regulated by an accreditation body, the design and delivery of programs is the responsibility of the individual institution and its academic staff[75-77].

Clinical placements are a key element of pre-registration nursing education internationally. Within most countries, undergraduate nursing students are prescribed a minimum number of clinical placement hours[16,78]. These hours vary and range from 2300 hours in the UK, 1100 to 1500 hours in NZ, and a minimum of 800 clinical placement hours in Australia[16,78,79]. Clinical placements are undertaken in a range of areas including general or specialist wards, critical care, emergency units, mental health services, residential aged care facilities, PHC settings, maternal and child health services, Indigenous medical services, and disability services[80,81]. The settings of clinical placement are influenced by many factors, including the geographical location of the University, availability, and capacity of health facilities, the relationship between universities and placement providers[16], accessibility to student supervision, and the extent to which diverse clinical learning opportunities are available[82]. While the

minimum requirement for clinical placement hours across Australian universities is set, the clinical settings for these clinical placements is not prescribed[16].

Undergraduate Nursing Students

Undergraduate nursing students often enter nursing programs with pre-conceived ideas and beliefs about where they want to work as RNs[83-85]. However, their perceptions, confidence, and career interests are further shaped during their undergraduate education[86-89]. While research has explored undergraduate nursing students' perceptions of settings such as aged care[90,91], mental health[84,92], and critical care[1,93,94], little is known about their perceptions of general practice[69].

Globally, the majority of nursing students are reported to express a preference to work in high technology acute settings, including operating theatres, intensive care and emergency departments[15,94,95], or maternity and paediatrics[94-96] immediately post-graduation. Mental health, aged care[15,86,95,96], and PHC[22,95,97] are described as being among the least preferred career pathways. Yet, these clinical settings have experienced high demand for services with the ageing population, growing prevalence of risk factors and rising burden of chronic disease[98-100]. It is therefore timely to explore the extent to which final-year undergraduate nursing students feel prepared and are interested to work in settings that face considerable growth in demand[9,25,40].

Work Preparedness

The term 'preparedness' is defined by a state of readiness and is considered synonymous with being 'equipped', 'in a fit state', 'primed', and 'willing'[101]. Järvinen et al.[102] identify that undergraduate nursing students' readiness to enter the "real-world" of clinical practice is shaped by both personal and educational factors. Apart from personal factors (gender, age, work experience, and career expectations), educational factors such as self-reported confidence, professional development, and perceived competence relative to clinical placement experience, can shape preparedness to work in a particular setting[102]. During clinical placement, undergraduate nursing students learn first-hand how nurses communicate, what they value, the culture of nursing in contemporary practice and the daily challenges nurses face[80]. Most importantly it is during clinical placements that undergraduate nursing students engage with and provide direct nursing care to patients and practice building therapeutic relationships[80]. It is these foundational experiences that shape future nursing practice and, potentially, career directions.

Entering the nursing profession after graduation involves a process of role transition from the role of the nursing student to the role of an RN[102]. New graduate nurses reportedly experience stress around perceived lack of experience and preparedness to meet role expectations in the workplace[103,104]. Support for transition to practice facilitates students to develop clinical and communication skills specific to their role and clinical setting and "acculturate to their new profession"[16]. However, there is currently no standard model for transition to practice programs for Australian new graduate nurses. These programs vary in length, structure, amount of supervision delivered, and the qualifications and role of the preceptor[16,105]. In Australia, completion of the BN program (or equivalent) leads to registration as a nurse. Unlike the case in other countries, no further transition program or period of preceptorship is required to work as a registered nurse[105]. Understanding the factors that influence undergraduate nursing students' preparedness to work in general practice, and their perceptions of work in this setting may have significant implications on enhancing the recruitment of new graduate nurses to general practice.

Motivations for Undertaking the Study

As a recent nursing graduate at the time of commencing my PhD, my experiences of undergraduate nursing education were fresh in my mind. I remember being particularly interested in community health following a clinical placement in a local community health facility in the second year of undergraduate studies. Despite this, I completed my new graduate year in a hospital setting as this is where most opportunities were available. While I found this experience enjoyable, it was during my hospital transition to practice program that I had realised that many of the patients discharged from the hospital still required long-term care in the community due to multimorbidity and complex chronic conditions. This observation reignited my interest to work in the community.

After my new graduate year, I moved back into the community to work in general practice. Although I have previously received care from a GPN, I had not been exposed to this area of work during my undergraduate education, nor was it the subject of discussion between my peers. Despite the support I received from colleagues at my workplace, my first few months as a new GPN were a steep learning curve.

Very early on I made three observations that were instrumental to the conception of this study. Firstly, I worked with several experienced GPNs. I realised that while I was able to practise and apply many of the foundational nursing skills I acquired during University

and in my first year as an RN, there were many general practice nursing skills I felt unprepared for. These skills include performing spirometry, immunisation or ankle-brachial pressure index measures, and conducting health assessments or mental health plans, to name a few. Secondly, I did not work with any other junior nurses, which was quite common across many other general practices within our area. It was then that I had started thinking about the 'hidden' nature of general practice nursing in my undergraduate education. My third observation was the number of individuals who accessed general practice services each day. So why then are new graduate nurses not choosing to work in general practice despite this setting being in high demand? Upon consultation with my primary supervisor Professor Halcomb, we decided to take a deep dive into the factors shaping nursing students' perceptions and preparedness to work in this setting. During my candidature, I have developed my role as an ambassador for PHC nursing and the issues around the preparation of undergraduate nursing students to work in general practice. The evolution of the research findings has informed my role as a WHO PHC Young Leader[106].

Theoretical Underpinnings

The pursuit to explore final-year undergraduate nursing students' perceptions of, and preparedness to work in general practice was informed by several theories[107-110]. While no single theory was sufficient to underpin the whole study, aspects of each of the following theoretical approaches informed the enquiry.

Lave and Wenger[108] explain that learning is a process that occurs in a participative framework and not merely the individual mind. In professions such as nursing, learning in the classroom and during clinical placement cannot be isolated from each other[111]. The theory of Situated Learning[108] informs the enquiry around the factors that influence final-year undergraduate nursing students' confidence to work in general practice and their perceptions of work in this area. Situational Learning is embedded within a "relational interdependency of agent and world, activity, meaning, cognition, learning and knowing"[108] (p. 50). In Situational Learning, it is acknowledged that individuals tend to transition from being 'newcomers' to more knowledgeable, skilled, and competent 'old timers' within a community of practice[108,112]. This aligns with the notions of role transition experienced by undergraduate nursing students as they progress towards becoming an RN[102]. However, Billett[113] explains that this path is not always straightforward given that new knowledge may not always be readily transferrable

between different settings, such as from University into the workplace. The gap between cognitive learning through theory, and sociocultural learning through practice, can be bridged through the theory of Situated Learning. In Situated Learning, the impact of acquiring knowledge through organised and procedural thinking activities and the practical immersion of the individual in the discourse and practices of the community of practice is acknowledged[113]. However, Lave and Wenger[108] warn that learning is not necessarily solely dependent on pedagogical structures or goals, but should also be understood within the context of the world at large. Furthermore, there is potential for evolving yet competing viewpoints between the 'old timers' and 'newcomers' as existing practices progress over time, influencing their identities over the course of their careers[108]. Situated Learning therefore highlights the importance of experienced practitioners that guide, support and facilitate new graduates' acculturation to the work environment[112], inviting newcomers' reflection on current practices whilst not extinguishing new contributions. These ideas directly relate to the transition to professional practice experienced by undergraduate nursing students as they progress into becoming a new graduate RN.

The nature of preparedness, or 'practice readiness', has been the topic of much debate[114,115]. El Haddad[109] asserts that a mismatch in the expectations of universities and industry regarding what makes a new graduate nurse 'practice ready' impacts perceptions of graduate readiness. While a standard list of skills or competencies for new graduate nurses are generally used by employers[16], 'Disparate Realities' between Nursing Unit Managers and Universities reportedly exist[109]. This is influenced by curricula priorities, workplace skill mix, and financial constraints[109]. As such, there remain challenges around which aspects of 'preparedness to practice' are used as a criterion for employment given the lack of consensus regarding its key features[109,116-118]. Little is known about the elements that prepare new graduate nurses to work in general practice. The theory of Disparate Realities in expectations regarding practice readiness is relevant to the exploration of students' preparedness to work in general practice. However, it is important to consider the evolving nature of the theory of Disparate Realities as it currently remains a "pragmatic explanatory", substantive theory developed to understand a specific social phenomenon, limited by the inherent lack of clarity around the expectations of what new graduate RNs should be able to do and the expected responsibilities they bear upon entry to practice[109].

Lastly, drawing from Bandura's model of interaction, termed Triadic Reciprocality[119], Lent et al.[110] posited three social-cognitive mechanisms that are of key relevance to career development, namely self-efficacy beliefs or perceptions of capabilities, outcome expectations, and career planning. Furthermore, Lent et al.[110] described the interlocking relationships of interest development, choice, and performance in their Theoretical Framework of Career Development[110]. What need to be considered, however, is the "temporal lag" between newly developed self-efficacy and motivation in activities, suggesting that it may require repeated exposure to experience for self-efficacy to establish new interests in such activities[110] (p. 92). The dynamic relationship between the elements of career development guided the investigation of final-year undergraduate nursing students' interest and intention to work in general practice following graduation, and the factors that shape their career planning and decision making to pursue a career in this setting.

Aim and Research Questions

This study sought to explore final-year undergraduate nursing students' perceptions of general practice nursing, and their confidence and intention to work in general practice. These aims have been achieved by answering four research questions:

1. What are final-year undergraduate nursing students' confidence, interest and intention to work in general practice? (Paper 2)[120]

2. How do final-year undergraduate nursing students' perceive the general practice environment and what are the factors they consider most important when choosing an employment setting? (Paper 3)[121]

3. What are final-year undergraduate nursing students' perceptions of general practice nursing? (Paper 4)[122]

4. How do final-year undergraduate nursing students' perceive general practice nursing as a new graduate career path? (Paper 5)[123]

Given the complex and multifaceted nature of the research questions, a mixed methods approach was used[124,125]. This approach allowed the researcher to use both qualitative and quantitative methods to explore the phenomenon of interest, allowing for a depth or exploration that would not have been possible using either method in isolation.

Significance of Research

Despite the shifting focus of health systems towards community-based care, universities continue to face challenges in aligning BN program content that prepares undergraduate nursing students to work in a range of clinical settings outside of hospitals[16]. Given students generally have greater certainty of their career intentions in their final year of study[86], exploration of final-year undergraduate nursing students' preparedness to work in general practice and their perceptions of this clinical setting will inform future development of nursing curricula. As an area of workforce need, understanding what can better prepare students to work in general practice could inform strategies to increase new graduate nurses' interest to work in general practice.

This mixed-methods thesis will provide several significant outcomes for nursing and general practice. Firstly, the exploration of undergraduate nursing students' preparedness to work in general practice will inform policy and nursing curricula by providing evidence of student-identified needs. Ensuring that undergraduate nurses feel prepared to work in general practice is an important strategy to attract nurses to work in these settings and meet workforce demands.

Secondly, this investigation will reveal factors that influence students' understanding of the general practice nurse's role. This thesis will provide recommendations for education and clinical practice regarding how Schools of Nursing can identify more innovative ways to ensure that students understand the range of career paths outside of hospitals.

Lastly, the findings of this investigation will report on the factors that influence students' intention to work in general practice following graduation. The qualitative outcomes of the students' attitudes towards a career in general practice can support the identification of gaps in content delivery and exposure to general practice nursing within the undergraduate nursing curricula. Addressing gaps within students' exposure to general practice will help boost the general practice workforce, increasing the allure of this area to meet the needs of the rapidly ageing community.

Structure of the Thesis

This thesis comprises eight chapters structured following the University of Wollongong[126] (UOW) Higher Degree Research Thesis by compilation policy[121] (Figure 1.1). Five peer-reviewed journal publications are included in the thesis. These papers are each situated as individual chapters. Consistent with the UOW policy, each

paper has been formatted to be consistent with the overall thesis. The Doctoral candidate led each publication, collecting the data, undertaking analysis, preparing the initial draft, and making revisions. Given their leading contribution, the Doctoral candidate is the first author of each paper. The supervisors are co-authors as they have met the criteria for authorship through their intellectual support of the Doctoral candidate, oversight of data collection and analysis, and work critically reviewing and revising each paper[127].

This first chapter has introduced the background to the study, explained the research problem, and presented the study aims. The motivations for undertaking the study were discussed and the significance of the research to nursing policy, education, and the workforce was explored.

Chapter Two comprises Paper One, '*The impact of curriculum on nursing students' attitudes, perceptions and preparedness to work in primary health care: An integrative review*', published in Nurse Education in Practice[69]. This review critically synthesises the international literature, underlining the current gaps related to undergraduate nursing students' perception and preparedness to work in PHC following graduation.

Chapter Three presents the methodology and research methods used in the study. Ethical considerations and processes for data storage, as well as the steps undertaken to establish the reliability/validity and rigour in the study.

The survey findings are reported in Chapters Four and Five. In Chapter Four, Paper Two explores respondents' *confidence, interest and intention regarding employment in general practice*[120]. Then, in Chapter Five, Paper Three describes respondents' *perceptions of the general practice environment and their priorities for employment*[121].

Chapters Six and Seven present the findings from the interviews. In Chapter Six, Paper Four describes participants' *perceptions of general practice nursing*[122]. Chapter Seven then presents Paper Five, which explores participants' *perceptions of a new graduate career in general practice*[123].

Finally, Chapter Eight presents the integration of the findings, together with a discussion of the findings within the context of the broader literature. Recommendations for practice, policy, education, and future research are also provided. The overall strengths and limitations of the study are discussed, and a conclusion is provided to highlight the new knowledge gained from this Doctoral thesis.
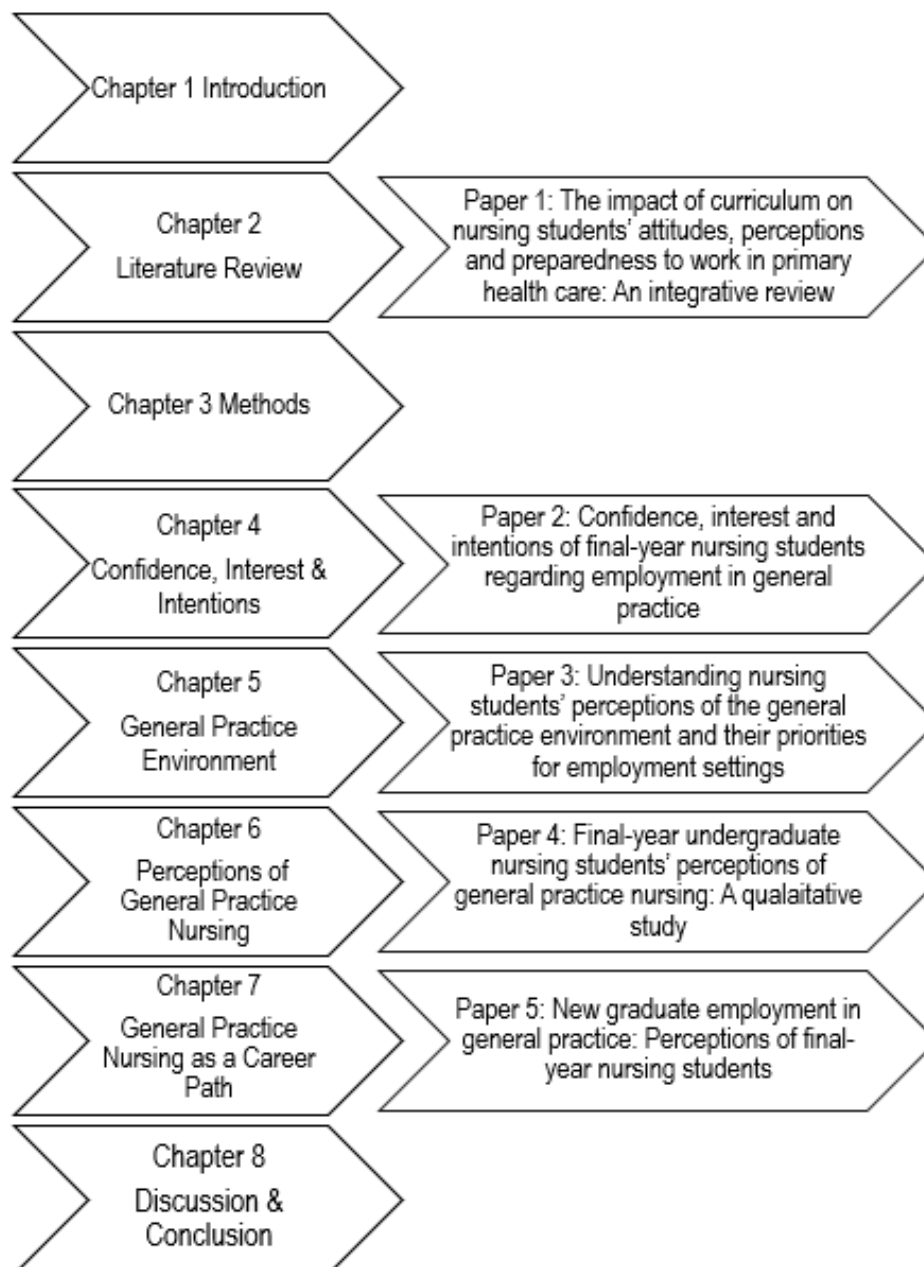
Figure 1.1 Structure of Thesis

Chapter Summary

This chapter introduced the background to the study and explained the research problem and study aims. The next chapter will present a critical review and synthesis of the international literature related to undergraduate nursing students' perceptions and preparedness to work in PHC following graduation, and the current gaps in research.

Chapter 2: Literature Review

"Acquire new knowledge while thinking over the old, and you may
become a teacher of others."

Confucius, source unknown

Teacher, Philosopher

Chapter Introduction

This chapter presents Paper 1[69] (Appendix A), an integrative review that explored the impact of undergraduate nursing curricula on nursing students' attitudes, perceptions, and preparedness to work in PHC. Given the limited literature that focussed specifically on general practice, a broader approach to PHC was taken and papers were included relating to all PHC settings. The paucity of literature highlighted the need to investigate undergraduate nursing students' perceptions of specific PHC settings, such as general practice. Paper 1 was published in Nurse Education in Practice (Impact factor: 2.281, Journal ranking by JCR: 29/181) as;

> Calma, K.R.B., Halcomb, E., & Stephens, M. (2019). The impact of curriculum on nursing students' attitudes, perceptions, and preparedness to work in primary health care: An integrative review. *Nurse Education in Practice, 39*, 1-10.

Permission to include this publication in this thesis has been granted by the publisher, Elsevier (Appendix A).

Abstract

Background: The ageing population and growing burden of chronic disease has increased demands for PHC services, necessitating the growth of this nursing workforce. Studies have explored strategies in retaining nurses, employment conditions in PHC, and transitioning of acute care nurses to PHC employment. Few studies have explored how undergraduate nursing students perceive and are prepared to work in this sector.

Aim: This review synthesises evidence on the impact of undergraduate curricula on nursing students' attitudes, perceptions, and preparedness to work in PHC.

Design: An integrative literature review guided the synthesis of evidence.

Data sources: Scopus, ScienceDirect, CINAHL, and MEDLINE were searched for relevant studies published between 2008 and 2018.

Review methods: 491 studies were identified from the database searches. Following the removal of duplicates, review of abstracts and keywords against the inclusion and exclusion criteria, 39 papers were subjected to full-text review. Twelve papers, including one thesis, met the inclusion criteria. Using an appraisal system, no paper was excluded based on methodological quality.

Results: Three themes were identified, namely: impact of curricula; knowledge and attitudes to PHC; and students' intention to work in PHC. The preparation of undergraduate nursing students to work in this area is inconsistent as curricula remain acute care focused. Negative perceptions about the PHC nursing role impact intention to work in this field.

Conclusion: This review highlights a need to implement strategies to improve the understanding of undergraduate nursing students of the PHC nursing role. In particular, providing students with the skills, knowledge and an understanding of working in this area through curriculum content and structure may provide undergraduates with the desire and confidence to seek employment in PHC following graduation.

Introduction

The demand for PHC has increased internationally over recent years due to an ageing population and the growing burden of chronic conditions[27,128,129]. The PHC sector is a broad umbrella "whole-of-society approach" to managing health and wellbeing in the community[21](p. 3). Health systems with strong PHC are more efficient, have fewer health inequalities, lower hospitalisation rates, better outcomes, and lower mortality[130].

This shift in health care delivery has a significant impact on the health workforce required to meet these changing needs. There is strong evidence that multidisciplinary models of care, where various health professionals can provide care within their scope of practice, are optimal in terms of balancing health care needs and resource consumption[131-134]. Nurses play an important role in PHC irrespective of country or setting, internationally[135] given their person-centred approach and role across health promotion, disease prevention, and chronic disease management.

The nursing role in PHC has developed at differing rates across the globe. While nurses in the USA, UK, and NZ are well established within PHC[136-138], nurses in Australia have only moved into primary care roles in substantial numbers over the last two decades[25,139]. While there are challenges in reporting data around the number of nurses working in PHC both locally and on a global scale[21,25,137], it is generally agreed that the PHC nursing workforce continues to experience pressure worldwide[25,138,140]. This is due to both an ageing nursing workforce and a shortage in nurse numbers[25,140,141]. In addition, fee-for-service schemes for physicians may hinder the role expansion of non-physician health professionals in PHC settings[138]. MacLean et al.[137] identify that issues such as poor

remuneration, long hours, high workloads, lack of workforce planning, and policy/political instability are key issues impacting the ability to sustain the PHC nursing workforce.

Within the literature, there has been significant attention given to the exploration of PHC nursing roles and the barriers and facilitators of nursing in PHC, particularly from an Australian context[25,142]. However, there has been limited focus on the recruitment and retention of nurses and their preparedness to work in this area[143,144]. Many nurses find themselves inadequately prepared to deliver PHC since nursing education programs worldwide have inconsistent records of success when it comes to integrating PHC knowledge and skills into their curricula[137]. Therefore, an exploration of how student nurses are prepared to work in PHC is important if the PHC workforce is going to be able to meet the growing demand for its services.

Background

Almost thirty years after moving out of the hospital-based training model, nursing education has been firmly established in the tertiary sector internationally[145]. Graduates' career choices and their confidence and preparedness to work in a particular setting are impacted by several factors, including curricula[86], school and workplace cultures, and perspectives studied by lecturers and clinical instructors[86], personal and placement experiences[146-148] and preconceived ideas of settings[83,84]. While there has been research undertaken examining the preparedness of undergraduate nursing students in some specific clinical areas, such as aged care[149], critical care[1], and mental health[84,150], PHC has received far less attention[151]. Given the growing need to recruit graduate nurses into PHC either directly following graduation or in the future[143,144], it is important to understand the factors that impact their career choices, confidence, and preparedness to work in PHC settings.

Current literature has largely focused on the employment conditions of PHC nurses[27,152,153] and their job satisfaction[66,154-156], as well as the experiences of nurses transitioning from acute care to PHC employment[157-159]. Some studies of PHC graduate programs have begun to emerge[67,160], but these report early experiences of such programs. There remains limited exploration of undergraduate preparation of nursing students to work in PHC.

Aim

This paper aims to review available literature that reports on how current undergraduate coursework shapes nursing students' perceptions of and preparedness to work in PHC. More specifically, this review aimed to critically synthesise the published literature on the impact of undergraduate nursing coursework on students' attitudes, perceptions, and preparedness to work in PHC settings.

Method

Research Design

This review was informed by the five-step methodological framework described by Whittemore and Knafl[161]. This framework provides for; a clear identification of the problem; a rigorous and auditable search strategy; a comprehensive evaluation; interpretation and critical analysis of the primary data collected; and the synthesis and appropriate presentation of the findings[161]. This approach permits the simultaneous review of both empirical and theoretical research and allows for a rich understanding of the topic of interest.

Search Strategy

The electronic databases, Scopus, ScienceDirect, CINAHL, and MEDLINE, were searched using various keyword combinations and Boolean operators (OR and AND). Key search terms included: "nursing student", "undergraduate nurs*", "undergraduate nursing student", "undergraduate student nurs*", "career intention", "readiness", "preparedness", "primary care", "primary health care", "family practice" and "community". Reference lists of identified studies were also reviewed, while relevant journals and theses repositories were hand-searched.

Search Criteria

Papers or theses that reported primary data about undergraduate nursing students' knowledge, attitudes, and career intention to work in PHC, as well as studies that reported primary data on the PHC content in the current nursing curricula, were included (Table 2.1). Studies that focused solely on PHC clinical placement experience were excluded as this represents an issue parallel to the review aim. Given the changing trends around the nursing workforce and the undergraduate nursing curricula, results were limited to studies published between 2008 and 2018. Only papers or theses published in the English language were included due to resource restrictions that precluded translation.

Table 2.1 Inclusion and Exclusion Criteria

Inclusion criteria	Exclusion criteria
Primary research published between 2008 and 2018	Literature reviews, editorials, discussion papers
Peer-reviewed papers or theses	Reported data on nursing students' clinical placement experience in PHC
Published in the English language	Described experiences of new graduate nurses transitioning from acute care to PHC
Reported primary data about PHC content in nursing curricula, undergraduate nursing students' knowledge, attitudes, and career intention to work in PHC, or preceptors' views about the preparedness of students to work in PHC.	

Search Outcomes

The 491 results from the database searches were exported into Endnote[©] Version X9[(162)] (Figure 2.1). Following the removal of duplicates (n=97), and analysis of the titles and abstracts by one reviewer (KC), 355 sources were assessed to not meet the inclusion criteria, and so these were excluded.
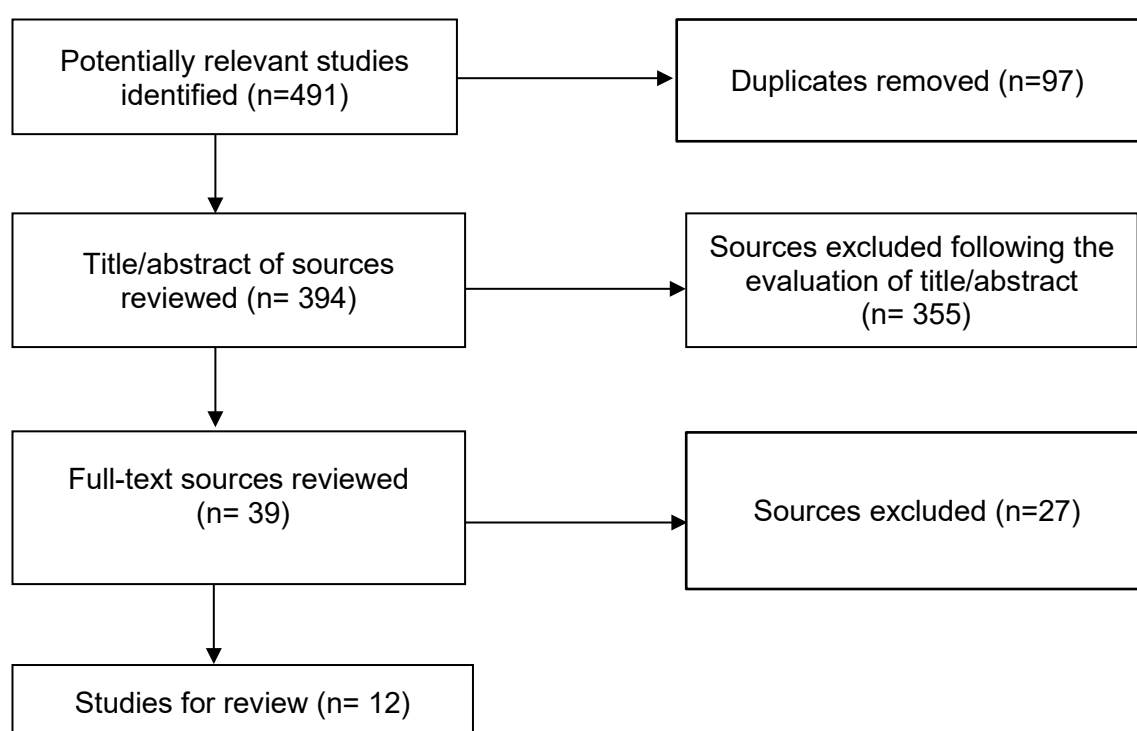
Figure 2.1 Prisma Flow Diagram of Study Selection

Papers were excluded if they did not report primary research, were published in a predatory journal, focused on clinical placement experiences only, or described experiences of new graduate nurses transitioning from acute care to PHC. The remaining 39 sources were then reviewed in full text by three researchers (KC, EH, MS) against the inclusion criteria to achieve consensus. This process excluded a further 27 sources as they did not address the review aims. Twelve sources, including 11 published papers and 1 thesis, met the inclusion criteria. As the thesis did not have any publications in the peer-reviewed literature reporting results it was decided to include this source in the review.

Quality Appraisal

The scoring system developed by Pluye et al.[163] was used to appraise the included studies. The initial stage of appraisal assessed the presence of a clear aim and a comprehensive description of the data collection methods. Qualitative studies that clearly described the participants and context and acknowledged the minimisation of researcher bias were considered to be of high methodological quality. Quantitative studies had to have high response rates and appropriate sampling methods and should include descriptions of validity measures. The combination of quantitative and qualitative methods of analysis and integration of data were appraised in mixed methods studies[163].

In using this appraisal system, it was unanimous among all three reviewers that all included studies had a similar level of high methodological quality. Studies that adopted a quantitative design had appropriate sampling methods, while qualitative studies had detailed description of the context, participants, and data collection and analysis methods. Finally, studies that adopted a mixed methods approach used a variety of data collection methods and provided a justification for the design approach[163]. Therefore, no paper was excluded based on its methodological quality.

Data Abstraction and Synthesis

All relevant data from included studies were extracted into a summary table (Table 2.2). Due to the heterogeneity of the studies, a constant comparison approach was used to synthesise results[161]. In doing so, the included studies were compared and contrasted to detect patterns, variations, themes, and relationships[161]. Findings from all included studies were read and coded, line by line. Data were carefully reviewed and categorised using an inductive approach until no new concepts were discovered. The display of data in a summary table allowed for more manageable identification and comparison of

themes; and eventually, the synthesis of the patterns identified[161]. The tabulation of both quantitative and qualitative results in a single matrix allowed for the integration of statistical and narrative data, which subsequently facilitated the identification of patterns across sources[161].

Results

Of the 12 included studies, 58.3% (n=7) adopted quantitative methodologies[3,22,97,129,164-166], 33.3% (n=4) used qualitative approaches[151,167-169] and 8.3% (n=1) used a mixed methods approach[170] (Table 2.2). Studies were conducted in Australia (41.7%, n=5), UK (25%, n=3), USA (16.7%, n=2), NZ (8.3%, n=1), and Canada (8.3%, n=1). Samples sizes ranged from eleven[169] to 1,058 undergraduate nursing students[3], with some studies involving four university educators and four nurse educators[167], larger PHC trusts [168] and universities as their participants[129,151,164].While some studies focussed on a single university[169,170], others included institutions across the country[22,97,129,151,164-167]. The majority of studies were reported by RNs, however, some papers included other health care professionals as authors, such as nurse practitioners[129], as well as researchers in public health[151], sociology[151], educational sciences[3] and educational psychology[3]. Few studies provided an explicit theoretical framework. However, Duah[169] described using Naturalistic Inquiry in their study as foundation to the exploration of their participants' perceptions and experiences[170].

Three key themes were identified from the included studies, namely: 1) impact of curricula; 2) knowledge and attitudes to PHC; and 3) students' intention to work in PHC.

Impact of Curricula

Six studies explored how the BN curricula prepared nursing students for PHC practice. Of these, four studies investigated the PHC content of curricula[129,151,164,170]. Two studies explored nurse educators' perceptions of PHC content in an undergraduate program[167], and nurses' perceptions of graduates' preparedness for PHC employment[168]. One study, which focused on PHC career intentions, also reported data on the exposure of undergraduate nursing students to PHC[97].

a) Course is Acute Care-focused

Most included studies raised concerns about the nature of curricula being too acute care-focused. Ali et al.[168] reported mixed feelings amongst UK nurses around graduate nurses' preparedness for PHC employment. Both UK papers described current

undergraduate nursing courses as being too acute care-focused[167,168]. Similarly, Keleher et al.[151] described how preparation for PHC was patchy across undergraduate nursing courses in Australia. Interestingly, in the USA, Wojnar and Whelan[129] found that some schools avoid delivering PHC content with a belief that undergraduate programs prepare students for an acute care career. Only in NZ, did Betony and Yarwood[164] report that over three-quarters of academic institutions felt that their programs adequately prepared students for PHC employment.

b) *PHC Content within Curricula*

The nature of PHC content within curricula was variable. Bloomfield et al.[97] reported that 92.8% of their final-year undergraduate nursing student participants had some educational exposure to PHC during their degree, and 87.1% completed a PHC clinical placement. Keleher et al.[151] identified various ways in which PHC was covered, including being embedded in health units covering broader topics; as a standalone unit; delivered within Indigenous health subjects; or as a unit focused on public or population health. Most of the audited courses covered PHC as a topic within the curriculum[151,164].

Two studies described the implementation of PHC within undergraduate nursing curricula. The NZ study revealed that over three-quarters of surveyed institutions embedded PHC concepts throughout the program[164] while US universities implemented student community-based projects or online PHC programs[129]. It was clear from both studies that some tertiary institutions are experiencing a curricular shift. This indicates some progress in terms of increasing PHC content delivery, however, there is insufficient evidence that this shift is sufficient to address the gaps identified in this review.

In contrast, Cooper et al.[170] described their experience in offering a dedicated community health BN program. Despite the potential allure of this program, many students reportedly did not see the importance of PHC content to their practice, and few were inclined to want to work in PHC following graduation. This raises significant questions about the effectiveness of this strategy for enhancing PHC within undergraduate nursing programs.

Table 2.2 Summary Table

Reference / Country	Focus	Sample	Methods	Significant Findings	Strengths and Limitations
Albutt et al.[167] UK	Nurse educators' perceptions of education in preparing nurses for PHC practice	4 University educators & 4 nurse educators from 2 primary care trusts	Telephone (n=6) and Face-to-Face (n=2) Interviews	• Key barriers to student learning and preparedness for PHC employment were shortages of clinical placements and a lack of mentors for students. • BN education was perceived as inadequate due to limited clinical experience. • The current nursing curriculum was seen as acute care-focused. • Recommendations made to increase PHC placements duration, involve PHC nurses in BN programs to increase curriculum relevance to PHC and provide a more structured preceptorship program to improve the transition into PHC employment.	• Snowball sampling allowed timely and cost-efficient recruitment. • Analysis involved two researchers. • Small sample size but from two primary care trusts.

Ali et al.[168] UK	Nurses' perceptions about the PHC role and their preparedness for PHC work	14 primary care trust nurses from 3 primary care trusts	Telephone Interviews	• There was a mixed response around preparedness – some nurses felt that the curriculum adequately prepares nurses for PHC work; others felt it did not prepare them at all.
				• BN curriculum is acute care-focused lacking practical aspects.
				• Novice nurses lack understanding of PHC structures and roles, communication skills, and confidence to practice independently.
				• Recommendations included:
				  - Better preceptorship / mentorship programs
				  - Focus on preparing students for the changing health care system
				  - More PHC placements to enhance understanding of PHC structure and processes
				  - A focus on PHC content delivery, in the beginning, progressing to acute care
				• Greater involvement of PHC nurses in the undergraduate curriculum
					• Analysis involved two researchers.
					• Participants recruited across three primary care trusts.
					• Non-verbal cues could not be noted during telephone interviews.

Reference / Country	Focus	Sample	Methods	Significant Findings	Strengths and Limitations
Betony and Yarwood[164] NZ	Exposure of undergraduate nursing students to PHC nursing	14 institutions that provide a BN program	Cross-sectional Survey	• 11 institutions embedded PHC throughout the BN program. • 86% taught PHC specific skills including health promotion, community / family assessment. • There was a variable understanding of PHC across institutions • In 9 institutions all academics had PHC experience, many clinicians delivered PHC content. • 79% 'agreed' / 'strongly agreed' that the program prepares students for PHC employment. • Issues raised included: Lack of PHC placement availability, Placements in health centres seen to have a greater preference for medical students, Reluctance of staff to supervise a student; Impact on workload, Nursing students did not see the relevance of PHC placement, Students were acute care-focused • Innovations in place: a revised curriculum embedding PHC concepts throughout the program and Increased PHC placements capacity	• The survey comprised a combination of nine questions, and options to make free-text comments. • The concise design of the survey impacted on the clarity of some responses.

Reference / Country	Focus	Sample	Methods	Significant Findings	Strengths and Limitations
Bloomfield et al. [97] Australia	Intentions of final year nursing students to enter PHC after registration	456 final year nursing students from 14 universities	Cross-sectional Survey	• 90.6% were enrolled in a BN program; 9.4% in BN accelerated, combined degree / MN • 91.9% expected to undertake a new graduate transition program • 73.2% expected to work full-time in their first year • 22.8% ranked PHC setting as their first priority work setting following registration • 96.6% considered learning about the PHC nursing role during their undergraduate degree as "moderately important" or "extremely important" • 92.8% had educational exposure to PHC • 87.1% completed a PHC clinical placement during their course • 76.85% reported being "moderately" or "extremely familiar" with the PHC nurse role • Preferred workplace was not associated with undergraduate learning about PHC (p=0.49). • Placements in PHC did not influence the choice of PHC work after registration (p=0.53)	• The first Australian study to investigate the views of nursing students towards a PHC new graduate transition program. • Final-year nursing students from across 14 universities across Australia participated.

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Reference / Country	Focus	Sample	Methods	Significant Findings	Strengths and Limitations
Bloomfield et al. [22] Australia	Factors associated with final year nursing students' intention to work in PHC	530 final year nursing students from 14 universities	Cross-sectional Survey	• 16% intended to work in PHC • Gender was not a significant predictor (p=0.073), although more females wanted PHC work. • Older participants had significantly stronger intention to work in PHC (p<0.001) • Students at a University offering a PHC placement were more likely to want to work in PHC (p=0.078) • Participants who thought it was important to learn about the PHC RN role at University were more likely to desire to work in PHC (p=0.068) • Those who considered employment conditions to be of greater importance were more likely to desire to work in PHC (p=0.026) • Participants who considered workplace support to be of greater importance were less likely to express intent to work in PHC (p=0.012)	• Respondents from 14 universities across Australia. • Did not explore the reasons behind respondents' intention (or lack thereof) to work in PHC settings.
Cooper et al. [170] Australia	Evaluation of a Bachelor of Nursing (Community Health) degree	Enrolment data: 90 nursing students Focus groups: 38 nursing students	Enrolment data Focus groups	• 23 were in first year and 15 were in second year of their degree • Few students wanted to work in PHC despite being enrolled in a PHC focused program • Community and PHC units were seen as the least relevant to future nursing practice. • Clinical laboratories were valued as these linked theory to practice • Students preferred nurse academics to those from other professions • Many students wanted more support to adjust to University learning • The course had an 11% attrition rate.	• The focus groups allowed exploration of participants' perceptions, which supported the quantitative data. • Qualitative analysis involved all three authors. • Data originated from one university.

Reference / Country	Focus	Sample	Methods	Significant Findings	Strengths and Limitations
Duah[169] Canada	Nursing students' perspectives of a community health nursing career	11 1st and 4th year nursing students from one University	Interviews / Focus Groups	• 1st-year students had less insight due to limited exposure • Students believed community nurses looked at the big picture; teaching patients, promoting health, and linking resources within the community as a whole • A perception that community nurses can dress nicely and do not get involved in difficult and dirty procedures • Students believed community nursing is a lesser form of nursing and an easy way out • Stereotypes caused some to feel reluctant to work in the community - people try to change their minds if they talk about PHC employment • A belief that community health is for older nurses approaching retirement – since skill foundations are cultivated in hospitals	• Two focus groups followed individual interviews for the purposes of member checking These established the validity of data interpretation. • All participants female, enrolled in a single university.

Keleher et al.[151] Australia	The extent of professional socialisation and educational preparation of nurses for PHC	38 BN nursing courses	Audit	• Preparation for PHC was patchy across courses
				• Four types of curriculum content were identified in which PHC is covered:
				  – Embedded health units covering broad topics such as sociology, psychology, health care systems, professionalisation, or age-related content
				  – Indigenous health units
				  – Stand-alone units in community health/PHC/social determinants/social model
				  – Units with content on public/population health, prevention, health behaviour, and health promotion
				• There was not always a clear distinction between units of PHC and health promotion
				• Some courses reflected a philosophy of PHC within the curriculum, but most covered PHC and health promotion as a topic within the curriculum
					• Wide range of courses across Australia included.
					• Information about unit content was inconsistent across universities.
					• Online course handbooks provided limited information.
					• PHC clinical placement components could not be ascertained.

Reference / Country	Focus	Sample	Methods	Significant Findings	Strengths and Limitations
Larsen et al.[165] USA	Public health career intentions among undergraduate nursing students	165 junior and 189 senior nursing students from 2 institutions	Cross-sectional Survey	• 90.4% of participants were female • 246 (69.5%) reported having completed public health coursework • 95 (26.8%) completed a clinical placement in traditional public health agencies and 142 (40.1%) undertook their placements in non-traditional sites (school, prison, campus health, women's shelter, outpatient treatment facility, or international experience) • 21.1% indicated they would be likely or very likely to consider a job in public health after graduation; 26.4% 1 year after graduation; 35% >1 year after graduation • Most important recruitment strategies as rated by students: Comparable wages to a hospital (96%); flexibility in scheduling (94.6%); tuition reimbursement (95.2%) • Enrolling institution (p=0.008) and placement in non-traditional setting were factors likely to contribute to public health employment immediately following graduation • Those completing a public health theory class were less likely to seek public health employment	• Survey tool reviewed by a panel of public health faculty and leaders in public health and was based on frameworks by O'Reilly and Caldwell[171] and White[172].

Reference / Country	Focus	Sample	Methods	Significant Findings	Strengths and Limitations
Mackey et al.[(166)] Australia	Knowledge and attitudes of nursing students embedded in PHC focused courses	286 nursing students from 2 universities	Cross-sectional Survey	• 18 to > 50 years of age; 90.5% were female; 51% were born overseas • 95.8% were in their first year • Knowledge scores ranged from 19.68 - 95.78 (mean 69.19) • Attitude scores ranged from 33.12 - 93.88 (mean 70.45) • 94.4% knew that "accessibility to health care is a basic concept of PHC" • <6% knew that "PHC focusses on setting targets & plans of action to meet national health goals" • Attitude items with the highest mean scores: "access to good health care is a fundamental right of all people" (3.73) and "helping people learn to stay well is an important role for nurses" (3.67) • Mean knowledge (p=0.01) and attitude scores (p=0.001) of Australian-born students were significantly higher than overseas-born students • Mean knowledge scores of metropolitan University students were significantly higher than those enrolled in the rural University (p=0.002) • Older students' mean attitude scores were significantly higher than younger students' (p≤0.005) • There was an overall knowledge deficit relating to the application of PHC concepts.	• More than half of the participants were born overseas. • Two universities included.

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Reference / Country	Focus	Sample	Methods	Significant Findings	Strengths and Limitations
van Iersel et al.[3] UK	Perceptions of 1st year nursing students of community care	1,058 1st year nursing students from 6 universities	Cross-sectional Survey	• 71.2% would choose to go to a hospital for a clinical placement; 5.4% indicated they would go to a community centre. Elderly care was the least preferred area (4.1%) • Most participants considered community care to be important (mean=8.39), meaningful (mean=8.43), and good (mean=8.32) • Items 'attractive' (mean=5.36), 'comfortable' (mean=5.85) and 'interesting' (mean=5.88) scored relatively low • Enjoyable relations with patients and family, variety in caregiving, and opportunities for advancement are most vital in choosing a placement • Community care is perceived to be looking after mostly older patients (mean = 8.72) with limited variety and advancement opportunities • Perceptions of community care sector were incongruent to what students considered important • Community nursing was perceived as a low-status job • Students had a limited idea of what community nursing entails	• A large sample size and high response rate. • The diversity of the sample implies high representativeness. • 6 universities included • Respondents were only permitted to choose clinical placements from a limited number of options.

Reference / Country	Focus	Sample	Methods	Significant Findings	Strengths and Limitations
Wojnar and Whelan[129] USA	Barriers, enablers, and current state of PHC content delivery in nursing programs	529 institutions delivering pre-licensure and RN-to-BSN online education	Cross-sectional Survey	• 76.8% in the BN and Masters entry to practice program indicated some PHC content in the curriculum • 6.6% indicated that they have implemented or are in the process of implementing PHC content in both theory and clinical practice • Enablers of PHC content delivery included: Senior leadership and progressive thinking of the faculty (42.3%), Collaborating with clinical partners (19.2%), Current trends in health care (10.9%), Insufficient number of acute inpatient care sites (9.2%), Combination of some of these forces (47.6%) • The biggest barriers to PHC content included: Lack of faculty interest (29.1%), More students than PHC placements (24.5%), Lack of RN preceptors in PHC (23.8%), Student expectations to receive clinical education solely in acute care (23.1%), Student perception of losing skills in PHC (22.1%) • Undergraduate education prepares students to work in acute care, while postgraduate MN students are prepared to work in PHC.	• Large sample size of institutions across the United States. • Data collected directly from university staff.

Barriers and Enablers to PHC Content

A number of barriers were identified in delivering PHC content within undergraduate nursing curricula. Limitations around clinical placement availability impacted skills consolidation and socialisation into PHC settings[129,164,167]. Other barriers were related to lack of academic staff with PHC expertise[129,167], variable understandings of PHC, the tension between embedding concepts and discrete units of study[129,151], and student expectations[129,164,170].

A need to engage PHC nurses in curriculum development and a more structured preceptorship program were identified[167,168]. Senior leadership, faculty interest, collaboration with clinical partners, and insufficient acute inpatient facilities were enablers to PHC content delivery[129]. Some enabling innovations have already been attempted, such as increased PHC placements[164]. But while students in a BN program with a community health focus commented that clinical laboratories linked theory to practice, the program was not successful in recruiting the graduates to PHC[170].

Knowledge and Attitudes to PHC

Three studies reported data specifically around undergraduate nursing students' knowledge and attitudes toward PHC[3,166,169], while three other studies reported knowledge and attitudes as part of a broader study[97,129,170].

a) Knowledge about PHC Nursing

In the only study to measure knowledge of PHC amongst nursing students, Mackey et al.[166] reported students had an overall understanding that PHC is an important aspect of people's health care. Knowledge scores were shown to be higher in Australian-born students and those enrolled in a metropolitan University[166]. Participating undergraduate nursing students appreciated the societal importance of PHC[3,166], and correctly associated community nursing with health promotion, education, and low patient acuity[169]. However, others have reported that nursing students underestimate PHC nursing and consider this to be the least relevant in their degree[3,129,164,170]. Some studies reported that PHC content should be delivered either as an elective[170] or as postgraduate content[129].

Bloomfield et al.[97] reported that over three-quarters of their student participants were familiar with the PHC nurses' role. However, van Iersel et al.[3] described that participants had limited understanding of the PHC nursing role. They also reported that student

participants believed community nurses are mostly involved in caring for the elderly. This gap in knowledge was reflected in an Australian study where less than 6% of students surveyed knew that PHC focuses on target setting and action plans to meet national health goals[166]. These misconceptions reportedly led to ambivalence in subsequent career choices[169].

b) *Attitudes to PHC Nursing*

There was variation in student attitudes to PHC, as well as a disconnect between students' appreciation of PHC in society, and their attitude towards it in a more personal way[3]. Some studies described an overall positive attitude towards PHC among students[166], such as students who valued learning about the PHC nursing role[97]. In contrast, others reported that students viewed PHC nursing as not 'real nursing'[3,169,170].

Potentially arising from these stereotypes are perceptions that a PHC career is an easy way out[169] and a low-status job[3]. Two studies described perceptions that working in PHC can limit opportunities for practising clinical nursing skills and diminish the potential for career advancements[3,129]. A belief that PHC is for older more experienced nurses who otherwise have accumulated sufficient acute care nursing skills was also reported[97,169]. Nursing student participants also described PHC nurses as those who can look pretty and do not engage in complicated 'dirty' clinical procedures[169]. Interestingly, Mackey et al.[166] reported that attitude scores of older students were significantly higher than younger students.

Students' Intention to Work in PHC

Three studies specifically explored undergraduate nursing students' intention to work in PHC[22,97,165]. There is some evidence that attitudes to PHC nursing can impact career intention, with participants who valued learning about the PHC nurses role more inclined to seek PHC employment[22].

a) *Age as a Predictor for PHC Career Intention*

Both Bloomfield et al.[22] and Bloomfield et al.[97] reported that less than a quarter of participants intended to work in PHC in the near future. Bloomfield et al.[22] reported that age was a significant predictor for career intention, with older students more inclined to want to work in PHC. Additionally, Larsen et al.[165] identified that participants did not see themselves working in public health until they were further along in their careers.

b) Curriculum Exposure / Clinical Placements

There is variable evidence of the impact of PHC clinical placements and curriculum exposure on nursing students' intent to work in PHC. Bloomfield et al.[22] reported that placements were a predictive factor and that students who had a PHC placement during their undergraduate education were more likely to intend to work in PHC upon graduation. However, Bloomfield et al.[97] reported that PHC placements did not influence career intention.

Larsen et al.[165] identified that placement location impacted students' career intention. Furthermore, nursing students' limited exposure to nursing courses in their first year may limit insight into community nursing roles, which can further lead to misconceptions about this area of nursing[3]. The institution in which the students were enrolled in a BN was also a significant variable influencing career intention[165], which may indicate that other factors about the program and its delivery may be important influences.

c) Employment Conditions

Perceived employment conditions contributed to student nurses' intention to work in PHC[22,165]. Participants who considered employment conditions to be important were more likely to desire to work in PHC[22]. Indeed, Larsen et al.[165] identified comparable wages, schedule flexibility, and tuition reimbursement as the top three recruitment strategies. However, Bloomfield et al.[22] identified that students who valued workplace support, including preceptor support, were less likely to intend to work in PHC.

Discussion

This integrative review has provided insight into the impact of undergraduate nursing curricula on students' understanding and perceptions of, as well as their preparedness to work in PHC settings. It has drawn together international evidence and synthesised findings to highlight gaps in knowledge for future research. The findings highlight the acute care focus of current undergraduate nursing curricula, and the gaps that exist in undergraduate nursing students' knowledge about PHC despite the shift of the health workforce. These may be important factors contributing to the low career intention to work in PHC among graduate nurses internationally. Given the need to continue to grow and sustain the PHC nursing workforce, findings highlight the need for urgent attention to the preparation of new graduate nurses for PHC employment.

The finding that undergraduate nursing curricula remain acute care-focused supports previous evidence that contemporary nursing education falls short in responding to the shifting focus of health care delivery from hospital to the community[167,168,173]. As health systems shift to have stronger PHC services, we need to build and maintain a strong PHC nursing workforce to meet community demands. It is vital to engage accreditation agencies in driving undergraduate nursing curricula to meet current and emerging clinical trends. Accreditation bodies should monitor collaboration between universities and PHC organisations to ensure that students are influenced by clinically relevant role models who can provide an accurate representation of contemporary PHC and integrate PHC theory and clinical practice[174]. Additionally, accreditation bodies should ensure that entry-to-practice competencies apply to undergraduate nursing students across practice settings to assist in theoretical knowledge translation[175]. The fact that the focus of curricula for many universities has not yet shifted to include PHC, emphasises the need for accreditation bodies and curriculum developers to be more agile in responding to trends in health service delivery. There is a real need to ensure that curricula keep pace with evolving trends to future-proof the nursing profession[176].

A lack of academics experienced in PHC was identified as one of the biggest barriers in preparing students for a PHC career[129,167,168]. The PHC nursing role has developed significantly in recent years and, as such, is not necessarily well understood by the broader nursing profession[49]. This is an important consideration as nurse academics are strong role models for students[177]. The gap highlights the need to ensure that nurses with PHC expertise are engaged to develop and deliver PHC content. Strategic appointments of nurses with PHC expertise is an important step in building the career pathway and capacity within curricula. However, much like clinical nursing, there are workforce shortages of academic staff. Clearly, strategies implemented to recruit academics need to consider not only cultural and ethnic diversity[178] but also diversity of clinical expertise to ensure that nursing students are exposed to a range of influences during their education.

The final key finding was around the negative perceptions of the PHC nurse role[3,169]. Nursing students have previously been shown to have a limited understanding of PHC nursing and the complexities of the role[179,180]. These beliefs also resonate with previous work on clinical placements which revealed that student nurses believe hospital experience is required before working in general practice[143], as well as in studies on transition and career expectations following registration[67,160].

Interestingly, McInnes et al.[143] found that these negative perceptions were significantly shifted once students had the opportunity to experience high-quality PHC clinical placements. Clinical experience is an important tool in shaping students' attitudes to their learning, professional role development, and clinical skills[181], and it is the combination of theoretical and clinical experience that can influence career intentions[86]. Exposing nursing students to high-quality PHC clinical experiences can aid preparation and stimulate interest in PHC[128]. Universities must strengthen clinical placement programs across PHC settings and continue to promote PHC as a feasible career option[128]. Ensuring that all undergraduate students undertake a quality, well-supported clinical placement in PHC is one strategy for promoting career opportunities in this setting. However, the small business structure of general practices and relatively small nursing numbers seen in many PHC settings adds complexity to providing such clinical placements, particularly in programs with large student cohorts[173].

To ensure that clinical placements promote PHC as a feasible career option, it is also important that the nurses within these settings have a positive perception of their role and perspectives about a career in PHC. There is some evidence that PHC nurses lack a sense of identity, are challenged by articulating their role and its value[160,182]. Strategies to build the identity of PHC nursing and increase its visibility within the nursing profession have the potential to not only improve the confidence and contribution of current PHC nurses but can also help to build student exposure through increased awareness of the issues and more positive introductions to the setting.

While various strategies have been trialled at a local level with variable success, this review highlights that there is still more to be done to address key issues. Gaining the support of policymakers, professional organisations, and accreditation bodies is vital to achieving real change in undergraduate nurse preparation. Such support requires robust evidence from the perspectives of education providers, PHC workplaces, and nursing students/graduates to guide strategic planning. Perhaps one of the challenges is that much of the evidence comes from studies that broadly examine PHC across relatively disparate clinical settings, which may have different and unique issues[166,183]. Further research should concentrate on students' preparedness to work in key PHC settings where large numbers of nurses work, such as general practice, or rural/remote health services.

Limitations

This review has several limitations. Despite systematic searching, only 12 studies from five countries were identified. Geographically, studies reviewed were mostly published in developed countries. Consequently, the structure of the PHC sector and how PHC content is delivered within the undergraduate nursing curricula in other parts of the world were not represented. The included studies explored PHC in the context of community or public health, or as a whole sector, but specific clinical areas such as general practice which make up a large section of the PHC sector were not explored separately.

Conclusion

The acute care-focused nature and inconsistencies in PHC content delivery in undergraduate nursing curricula may contribute to low numbers of students intending to work in PHC following graduation. Collaboration between accreditation bodies, universities, and experienced PHC nurses, is crucial in the development of a more inclusive curriculum. Future strategies should focus on challenging perceptions of PHC and the PHC nurse role to improve the allure of this important area of practice. Equipping students with required skills and knowledge, as well as an understanding of working in this area through curriculum content and structure may provide undergraduates with the desire and confidence to seek employment in PHC following graduation. Given the importance of a strong PHC nursing workforce to meet the demands of chronic and complex disease, the review highlights the need for urgent attention towards the preparation of nursing graduates for PHC employment.

Chapter Summary

This chapter critically synthesised the available literature on the impact of undergraduate nursing curriculum on students' attitudes, perceptions, and preparedness to work in PHC settings. The findings highlighted the need for further research around student nurses and their perceptions of nursing and employment pathways in the community. There was a need to focus on specific community-based practice settings. It was this gap that this doctoral project set out to fill. The next chapter will present the methodology and research methods used in the study to achieve this aim.

Chapter 3: Methodology and Research Methods

"*Methods, the middle, more or less follow from the questions…Mixing paradigms will often require the inquirer to hold mutually exclusive beliefs; that is to have multiple minds. Having multiple minds is not all that difficult. All we have to have is multiple people involved in a dialogue at least at the points of question generation and inference making: a truly integrated design.*"

Bliss[184] Researcher

Chapter Introduction

This chapter describes the methodological approach and the research methods used in this study. It provides an overview of the study aims, research process, and the theoretical underpinnings of the study. The chapter also describes the study design, recruitment, data collection, management, and analysis. The reliability and validity of the quantitative component and the rigour of the qualitative phase are discussed. Finally, the chapter reviews the ethical considerations in undertaking the study.

Aim and Research Questions

This study sought to explore final-year undergraduate nursing students' perceptions of general practice nursing, and their confidence and intention to work in general practice. These aims have been achieved by answering four research questions:

1. What are final-year undergraduate nursing students' confidence, interest, and intention to work in general practice? (Paper 2)[120]

2. How do final-year undergraduate nursing students' perceive the general practice environment and what are the factors they consider most important when choosing an employment setting? (Paper 3)[121]

3. What are final-year undergraduate nursing students' perceptions of general practice nursing? (Paper 4)[122]

4. How do final-year undergraduate nursing students' perceive general practice nursing as a new graduate career path? (Paper 5)[123]

Research Paradigm

This study is supported by a research paradigm comprising the researchers' philosophical stance, and the research methodology, research design, and methods used to address the research aims. The philosophical stance of the researcher underpins the methodology. The research design related to this stance and methodology are then discussed, and the appropriate methods used to collect and translate data into practice are described[124].

Philosophical Stance

It is essential to establish the researcher's philosophical stance when designing a study, as it identifies the philosophy behind the chosen methodology[185]. A researcher's philosophical stance reflects their beliefs about what counts as knowledge and their relationship with the known (epistemology), and about what the world is and what can be

known (ontology)[186]. Pragmatism is a paradigm or lens through which the study was accomplished. This paradigm seeks to use methods 'that work' to solve a problem[187]. Emerging in the early twentieth century in the works of Peirce[188], James[189], Dewey[190], and Quine[191], pragmatism was founded on the view that "values and visions of human action…precede a search for descriptions, theories, explanations, and narratives"[192](p. 13). In this paradigm, the value of an idea is determined by its outcome in practice[187]. Pragmatism arises out of possible actions, situations, and consequences rather than precedents[124,192]. In other words, pragmatic research is primarily driven by a commitment to the unknown and openness to the emergence of unexpected results[125,192], utilising the best methodological approach to answer the research questions. Pragmatism is considered a 'philosophical partner' for mixed methods research, which is a methodology that allows multiple approaches to data collection to address complex problems[125]. However, a pragmatic approach to research has not been without criticism, previously dubbed as a 'method-centric' approach[193]. The process of problem identification requires different vantage points, which Hall[193] argues need to be supported by past and current directives by which the broader problem has been addressed. It is therefore crucial for researchers who use a mixed methods approach to establish not only the methods for collecting and analysing data, but the reasons as to why quantitative and qualitative data would need to be 'mixed' and why this approach is best to address the research questions[124]. Given the multi-faceted nature of the study aims, this study employs a mixed methods approach underpinned by pragmatism.

Mixed Methods

Mixed methods research uses the strengths of both quantitative and qualitative methods to address complex problems[194]. In mixed methods research, researchers rely on the importance of collecting different types of data as opposed to using either quantitative or qualitative data alone[124]. As such, mixed methods research enables the research question to drive the inquiry, acknowledging that knowledge is something that is constructed and is based on the reality individuals have experienced[125]. The evolution of mixed methods research in health care, including nursing, has occurred alongside a global increase in the complexities of health care delivery[195,196]. Mixed methods research has been broadly used in health research owing to the multifaceted nature of human experiences, and the complexity of issues faced by healthcare professionals[197-199].

A mixed methods approach to research was chosen to address the complexities of the research problem and to provide a more comprehensive understanding than would be possible with a single approach[124,125]. There are many reasons for using mixed methods research. Not only does it enable one method to elaborate the results from another method, known as 'complementarity'[200,201], mixed methods research can expose contradictions and new perspectives in the findings from the other method[200-202]. Furthermore, mixed methods research can extend or 'expand' the breadth of the inquiry by using different methods for distinct parts of a study[200,201].

There are several issues to be considered when using a mixed methods approach. Firstly, there is a need for the researcher to have a range of skills in terms of understanding differences in qualitative and quantitative research and managing the volume of the data collected[203]. Other considerations involve the time required for data collection, and the skills needed by the researcher to analyse different datasets and report these within the mixed methods study[204,205]. Failure to plan the timeline for data collection and analysis could risk the timeliness of study completion, and the collection of multiple data sets may increase the workload for the Doctoral candidate[203]. However, the range of skills to which the candidate is exposed can be seen as a positive in a Doctoral program. The challenges that accompany mixed methods research was considered given the need for a multidimensional view to address the research problem[203].

Study Design

This study adopted a sequential explanatory mixed methods design (Figure 3.1)[124]. The first phase was a quantitative cross-sectional online survey of final-year undergraduate nursing students. This was followed by semi-structured interviews with a subgroup of survey respondents (Phase 2). In this study, the qualitative data enabled the researchers to explore the experiences of a subgroup of survey respondents and hence explain the numeric data in more detail than could be gained from the survey alone[124]. In this sense, the sequential explanatory mixed methods approach increases the richness and depth of the study findings[125,200,201]. In this thesis, the final-year undergraduate nursing students who completed the survey are referred to as 'respondents', and the sub-group of students who participated in the second phase interviews are referred to as 'participants'.
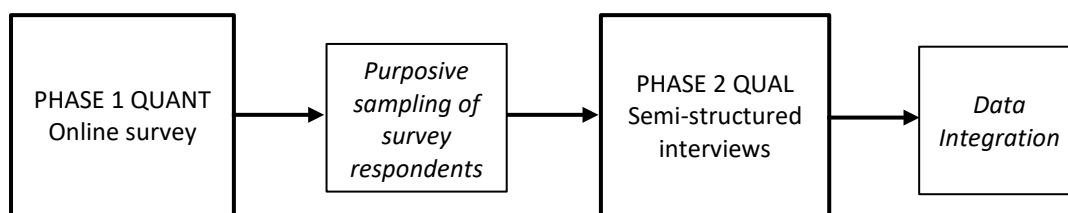
Figure 3.1 Study Design

Adapted from Ivankova and Stick[206] and Creswell and Creswell[124]

Although data collection was undertaken sequentially, the analysis and interpretation of the quantitative and qualitative results were given equal priority. Table 3.1 presents the aims, data collection methods and analysis, and paper reporting the findings.

Table 3.1 Overview of Study

Aim	Research Questions	Data Collection	Results
To explore final-year undergraduate nursing students' perceptions of general practice nursing, and preparedness to work in general practice.	1. What are final-year undergraduate nursing students' confidence, interest, and intention to work in general practice?	Survey	Paper 2[120]
	2. How do final-year undergraduate nursing students' perceive the general practice environment, and what are the factors they consider most important when choosing an employment setting?		Paper 3[121]
	3. What are final-year undergraduate nursing students' perceptions of general practice nursing?	Interviews	Paper 4[122]
	4. How do final-year undergraduate nursing students perceive general practice nursing as a new graduate career path?		Paper 5[123]

Setting

This study was conducted in New South Wales (NSW), Australia. Five universities from metropolitan, regional and rural settings were recruited to participate to ensure representation of nursing students from various geographical locations. All participating universities offered BN programs to both domestic and international students.

An individual must complete a three-year accredited BN program, or equivalent, to register as an RN[16]. BN programs are evaluated by the ANMAC to ensure that they meet accreditation standards, are relevant to the demands of the health system, and are preparing students to meet the RN Standards of Practice following graduation[6].

Phase 1 – Quantitative

Phase 1 comprised a cross-sectional, descriptive online survey. The primary purpose of this phase was to explore final-year undergraduate nursing students' confidence, interest, and intention to work in general practice, their perceptions of the general practice environment, and the factors they consider most important when choosing an employment setting (Research Questions 1 & 2). An online survey was considered the most appropriate method of data collection to address the aims, given the large numbers and geographical dispersion of potential respondents[207].

Respondents and Recruitment

Final-year undergraduate nursing students from participating universities were invited to participate in the survey. Given these students were closest to transitioning into professional practice, it was anticipated that they would possess greater insight into their preparedness to work and career intentions[86,208]. Variations in University policies concerning student recruitment for research required two different methods to recruit respondents: (1) direct email to students via a faculty member; and (2) indirect contact with students through the promotion of the study on the School learning platform (Appendix B). All but one University disseminated the survey information and link via direct email. The participant information sheet was the first page of the survey. Information was succinct, yet informative, detailing the study aim, commitment required, and risks of participation (Appendix C).

Given the time constraints of the PhD program, the survey was open for a period of 16 weeks and efforts were made to maximise participant recruitment during this period at all sites. Given the descriptive nature of the survey, as many participants as possible were sought. However, as the exact number of students currently engaging with their institution at the time of the study was unclear it was not possible to calculate a response rate. Several strategies were used to optimise survey participation and promote the completion of the tool. To improve recruitment, students who included their contact details at the end of the survey were included in a blinded draw to win a $100 gift voucher (one for each University). Additionally, a prompt was sent to each University contact person to send out three reminders to the final-year undergraduate nursing students during the data collection period. To optimise the completion rate, the survey was concise, taking an average of 16 minutes to complete. The survey also appeared professional yet visibly appealing to the target respondents[209-211] which further supported completion.

Survey Research

Surveys are familiar as a data collection tool among nurses and University students and online surveys have evolved within the broader professional environment[212]. The use of online surveys has grown as the barriers to internet use decrease[207,213]. Advantages of this mode of data collection include the reduction in travel, time, and costs, accessibility to student respondents who have easy access to the internet, and ease of survey link dissemination[207,214,215]. Online surveys can also assist in making respondents feel more comfortable to disclose sensitive topics or ideas, such as preparedness for transition into the workplace, due to the level of anonymity afforded[207,215,216].

Some potential challenges to the successful use of online surveys remain. For instance, University students can experience survey fatigue due to the volume of internet-based studies and marketing invitations they receive, which can impact students' motivation to participate[217]. To overcome difficulties associated with survey research, respondents in this study were briefed about how the research might benefit them and they were provided with an incentive to participate[218].

Survey Tool

The survey tool was developed using a combination of existing validated tools[1-3] and questions derived from the literature around PHC, undergraduate nursing student preparedness, and the input of PHC nursing experts.

Permission to use and modify the validated tools for use in general practice setting were sought from the respective authors (Appendix D). Tools were only modified by changing references to the clinical setting to reflect general practice. Questions varied, from tick-box items to Likert scales, rankings, and short-answer questions. Demographic questions were situated in the final survey section to decrease partial response rates[219]. The survey was delivered via SurveyMonkey[©][220] and comprised six sections (Appendix C)(Table 3.2). Further details about the tool are provided in the published papers.

Table 3.2 Survey Tool

Section	Items
1	Personal experiences of general practice
2	Exposure to general practice within the BN program • theoretical exposure to general practice nursing content, • clinical placement experience in general practice
3	Preparedness to work in general practice • modified Confidence and Interest in Critical Care Nursing (CICCN) tool[1] 9-items in two subscales (confidence and interest) underpinned by broad literature
4	Expectations of the general practice environment and the factors considered most important when choosing a place of work: • modified 17-item Profession Scale from the Scale on Community Care Perceptions (SCOPE) tool[3] underpinned by broad literature
5	Intention to pursue a career in general practice: • modified 14-item Attitudes, Subjective Norms, Perceived Behavioural Control, and Intention to pursue a career in Mental Health Nursing scale (ASPIRE) scale[2] underpinned by the Theory of Planned Behaviour
6	Demographic characteristics – • age, gender, indigenous origin, • place of residence, • enrolment status (domestic or international), the country where the majority of pre-University education was completed, and whether nursing was their first choice of degree at University

Data Management and Analysis

Quantitative data were imported directly from SurveyMonkey[©(220)] into the Statistical Package for the Social Sciences (SPSS) Version 25 for Windows[221]. Respondent contact details were removed from the main survey data file to preserve anonymity. Data were checked for completeness and cleaned for accuracy. Responses with significant incomplete data or absent demographic data were removed. The data were summarised using descriptive statistics including means, percentages, and standard deviations.

To establish the predictors of students' confidence, interest and intention to work in general practice, multiple regression analysis of the CICCN[1] and ASPIRE[2] tools were conducted. Confidence scores from the CICCN 'confidence about working as a Registered/GPN subscale were also used as a variable to determine if it predicted interest and intention to work in general practice. The strength of relationships between variables was measured using Pearson's correlation coefficient (r). An r value that was <0.30 were

considered negligible; 0.30-0.50 a low correlation; 0.50-0.70 a moderate correlation; 0.70-0.90 a high correlation; and 0.90-1.00 very high correlation[222]. A p-value of <0.05 was considered statistically significant[223].

An exploratory factor analysis method was adopted using Principal Components Analysis with Varimax Rotation to explicate the factor structure of the modified Profession Scale ('work environment' excluded as it was measured on a different scale)[223,224]. The Kaiser-Meyer-Olkin (KMO) index was used to determine if the sample size was adequate for factor analysis, and assess the overall suitability of the data for this analysis method[223]. To evaluate correlations between variables, Bartlett's test of sphericity was used[225]. Variables with a factor loading of greater than 0.40 were retained[223]. A two-tailed t-test was undertaken to determine the association between demographic characteristics and respondents' perception of the general practice environment.

Reliability and Validity

Reliability refers to the consistency in measurement, that is, the extent to which a measurement is free from error and if results would be the same if the survey was to be repeated[223]. All validated tools had a Cronbach's alpha above 0.77, indicating good internal consistency[226] (CICCN α= 0.84, 'Confidence' subscale α= 0.86, 'Interest' subscale α=0.78[1]; SCOPE α= 0.892, Profession Scale α= 0.799[227]; ASPIRE α=0.90[2]). Other strategies used to establish the overall reliability of the survey tool included standardising the instructions for data collection and method of survey administration, and conducting correlation tests between respondent and outcome variables[228].

Validity pertains to the degree to which an instrument measures the construct it intends to measure[205]. Face validity was established through a two-stage review of the tool to determine and address any structural and design issues[205]. The first stage involved disseminating the survey tool to three academics who were purposefully selected for their experience in research and teaching. The academics were asked to evaluate the survey content, ease of comprehension of questions, and time required to complete the survey tool. The revised tool was then uploaded onto SurveyMonkey©[220]. Two final-year undergraduate nursing students and two recent BN graduates completed the revised survey and provided feedback regarding the wording of questions, formatting, and ease of completion. Feedback was received either via email or verbal discussion and was used to refine the survey language and formatting before dissemination.

Phase 2 - Qualitative

Phase 2 involved semi-structured interviews with purposively selected survey respondents to explore issues raised by the survey data. The primary purpose was to explore final-year undergraduate nursing students' perceptions of the GPN role, and their views of general practice as a new graduate career path (Research Questions 3 & 4).

Participant Recruitment

Interview participants were purposively selected from survey respondents who provided their contact details at the end of the survey. Purposive sampling is commonly used in the qualitative phase of a mixed methods study, enabling the researchers to select "information-rich cases"[205] (p. 587). It also allows exploration of participants who may hold different but important perceptions owing to differences in geographical areas, age group, and previous experience[229].

The 296 survey respondents who indicated a willingness to be interviewed were stratified into groups of low, mid, and high intention to work in general practice based on their ASPIRE[2] scores. In addition to the purposive selection of participants from across the five universities, recruiting students who had varying ASPIRE[2] scores ensured that perceptions and experiences were explored from a diverse mix of respondents with variable career intentions.

The Doctoral candidate contacted potential interview participants directly via telephone or email to confirm their willingness to participate in an interview. During this initial conversation, information was provided about the interview and verbal consent was acquired. Fifteen potential participants declined to participate when contacted. A detailed information sheet and consent form were then provided to those who agreed to participate, which were attached in an email describing the benefits and potential risks to participation (Appendix E). Once written consent was received from participants via return email, a time and date for the interview were agreed upon. Recruitment of participants continued until data saturation was reached and redundancy of data was observed[230]. Due to the time constraints of the Doctoral program additional interviews were not feasible.

Qualitative Descriptive Research

The interviews used a qualitative descriptive approach. Qualitative descriptive approaches are appropriate for research where detailed descriptions of respondent narratives are needed, or where there is little pre-existing evidence available on the

topic[231]. This approach presents raw descriptions of the experiences by describing an experience using the participants' own words and integrating these in the report[231,232]. Qualitative descriptive research often involves interviews as a data collection strategy. It characteristically adopts purposeful sampling techniques to ensure the collection of broad yet rich information[233]. Through qualitative descriptive research, the researchers can "stay closer to their data and the surface of words and events"[231](p. 336).

Interviews

Interviews seek to understand the world from the participant's perspective and allow participants to share their views and experiences in their own words[234]. The interview method leads to an "in-depth shared understanding… [of] situated accounts that must be understood in their social context"[235](p. 241). Semi-structured interviews are commonly used in health research, given they allow reciprocity between the interviewer and participant and enable the interviewer to ask follow-up questions based on the participant's narratives[236]. This method of interviewing provides both flexibility and structure to data collection and provides space for open-ended yet guided responses[236].

An investigator-developed semi-structured interview schedule was developed, informed by an integrative literature review[69] and analysis of survey findings[120,237](Figure 3.2). The schedule was piloted by nurse academics with experience in PHC before data collection. In addition, the first two interview participants were asked to provide feedback on the interview questions. Transcripts of these first two interviews were also reviewed by the supervision panel to confirm the appropriateness of the interview questions.

Due to the geographic dispersion of participating universities and participants, all interviews were conducted via telephone. Telephone interviews offer extended access to potential participants and provided greater flexibility than face-to-face interviews[238,239]. Furthermore, participants in a telephone interview also tend to feel more comfortable sharing sensitive experiences as this mode of participation offers an element of anonymity[240,241]. However, Opdenakker[239] argues that the diminished visibility of body language and social cues in telephone interviews may reduce the impact of auxiliary information. The lack of non-verbal cues meant that the interviewer needed to further explore participants' emotional and cognitive experience by asking direct questions like "why do you think that?" and "how did this make you feel?"[238]. The Doctoral candidate also remained alert to the participants' voice and intonation.

1. What area of nursing are you interested in working in following graduation?
   - *What influenced this decision about where to work?*
2. Tell me about your understanding of nursing in general practice.
   - *What might have influenced these perceptions?*
3. In what way do you think your experiences in the BN course have shaped your view of nursing in general practice?
4. How do you feel about general practice nursing as a career choice for new graduate nurses?
   - *Would you feel prepared to work as a nurse in general practice after you graduate? Why/Why not?*
5. Can you see yourself working in general practice at some point in your career?
   - *Tell me about the reasons why you might or might not choose to work in general practice.*

Figure 3.2 Interview Schedule

Before commencing the interviews, the Doctoral candidate reaffirmed some details from the information sheet to each participant. Participants were asked to confirm their consent for the interviews to be audio-recorded and were reminded that they could cease the interview at any time should they feel uncomfortable or confronted by any of the questions. Although all the interviews were undertaken via telephone, the Doctoral candidate sat in a private and quiet location. During and immediately after each interview, the Doctoral candidate wrote field notes and personal reflections to keep a record of key information discussed during the interview including keywords, how participants discussed topics, and any questions that emerged from the interviews with regards to the overall focus of the study.

Data Management and Analysis

The interview recordings were transcribed verbatim by a professional transcription company. Each transcript was given a unique pseudonym, with the first letter of each pseudonym representing the ordinal number of the participant (i.e.. a pseudonym with 'A' as a first letter for the first participant interviewed, 'B' for the second interview participant etc). Transcripts were imported into Microsoft Word[242] and analysed using the thematic analysis approach described by Braun and Clarke[4] (Figure 3.3).
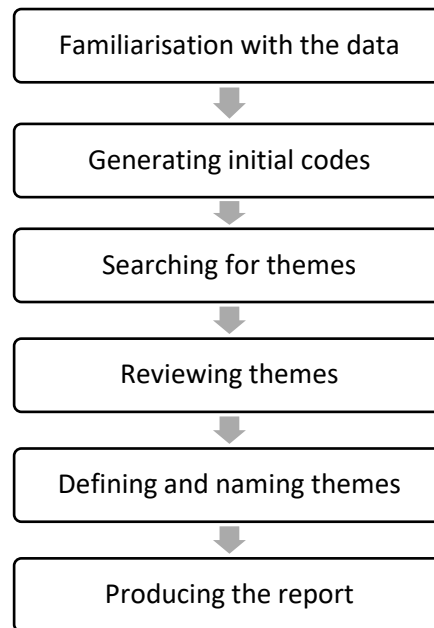
Figure 3.3 Thematic Analysis Approach[4]

Data analysis involved an inductive process of coding the data without trying to fit it into an already existing coding frame or any preconceptions from the researcher[4,124]. This approach allowed for the themes to be strongly linked to the data themselves, rather than being directly related to the specific questions asked of the participants or the researcher's topic of interest. As such, themes were driven by the data[4].

The Doctoral candidate familiarised herself with the data through a process of continuous re-reading of the transcripts[4]. The "reading and re-reading" process occurred while listening to the recordings to establish accuracy. Throughout the analysis process, the Doctoral candidate and research supervisors continued to re-read transcripts multiple times against the developing coding framework to establish congruence[205].

Initial codes, patterns, and meanings were identified and cross-checked by the supervisors. Coded interview extracts were manually collated, and codes were organised into draft themes and subthemes (Appendix F). Together with the supervisors, the Doctoral candidate worked through a process of reviewing the draft themes and their congruence with the patterns forming, and if these draft themes reflected the broader meaning of the data[4]. The theme names and 'meanings' were discussed until consensus was achieved. After this, a finalised version was produced in the form of manuscripts for publication, where carefully selected extracts from the data were included. Embedding participant narratives in their own words contributed to the validity and merit of the analysis[4].

Rigour

The rigour of the qualitative phase was demonstrated using the criteria for trustworthiness described by Lincoln and Guba[243]. Trustworthiness evaluates the truth value (credibility), applicability (transferability), consistency (dependability), and neutrality (confirmability) of qualitative research[243,244].

a) Credibility

Credibility refers to the confidence in the truth of the data, which depends on the research design, study context, and participants involved[243,244]. The Doctoral candidate was working as a GPN at the time of the study, and has previous experience in qualitative research, while other research team members have extensive experience in PHC research and a range of research methodologies. All research team members were involved in peer debriefing during the analysis process, examining each other's perspectives and clarifying interpretations[243].

Researchers need to be self-aware and transparent about the "contextual intersecting relationships between the participants and themselves", which is achieved by being reflexive on how their perceptions, values, and beliefs may impact the research[245](p. 220). Given the Doctoral candidate's experience in general practice nursing, it was important to remain sensitive to any personal biases and ensure that these did not impact the collection and analysis of data. The Doctoral candidate remained reflexive throughout the research process through continuous reflective practice through writing critically reflective field notes and having critical discussions with supervisors. Such strategies have facilitated reflexivity both on a personal and team level[246], which assisted in establishing research credibility and deepening the understanding[245]. Finally, the cross-checking of audio files against transcriptions established congruence and credibility[243].

b) Transferability

Transferability is the degree to which the findings can be applied and have meaning in other settings or groups[244]. The description of the conceptual framework, research design and methods, the participants, data analysis process, and data collected enhanced the transferability of the findings[243,247]. These details provide the reader with an understanding of the context in which this study was conducted to enable them to determine if the findings are transferable to their contexts.

c) Dependability

Dependability refers to the stability of data over time and explores if the findings of an inquiry will remain the same if it were to be repeated with the same or similar participants in a similar context[243]. Since credibility cannot be achieved without dependability, and vice versa, dependability is arguably established in this study[243]. A transparent, auditable description of the research process, from the study aim, participant selection criteria, methods of data collection, and the presentation of findings and interpretations, has been presented. This 'step-wise replicability' allows other researchers to examine the research process and therefore, determine the dependability of the study[243,248].

d) Confirmability

Confirmability is established when the data truthfully represents the information participants provided, and that the researcher's interpretations nor the findings reported were not invented[205]. The documentation of notes, initial codes, interview tool development information, and storage of audio recordings and verbatim interview transcripts, established the auditability of the findings, which enhances data confirmability[243]. The Doctoral candidate kept field notes throughout the data collection and analysis process to remain reflexive of her own biases[249,250]. All members of the research team agreed on the interpretation and analysis of themes through simultaneous review of the data. These further enhanced the confirmability of findings[243].

Data Integration

Data integration is an important component of mixed methods research as it maximises outcomes by ensuring data sets support each other in the analysis and interpretation[251]. In this study data integration was guided by Creswell and Creswell[124]. Specifically, the 'connection' model was used given it is considered most appropriate in sequential explanatory mixed methods studies[124]. In this model, quantitative results were connected to the qualitative findings[124,252]. Not only did the survey data inform the sampling of interview participants, but interview questions were also shaped and driven by the survey data. In doing so, one dataset explained the other[124]. Following this model, preliminary quantitative analysis was undertaken before the interviews were conducted[124]. Integration of the two datasets is presented in the discussion chapter (Table 8.1). This provides an opportunity to see the connections and contrasts between the datasets[253].

Ethical Considerations

Before commencing data collection, approval to conduct this study was gained from the University of Wollongong Human Research Ethics Committee (HREC 2018/556) (Appendix G). All participating universities provided reciprocal approval for the research to be undertaken at their institution. The study was conducted following national guidelines and codes which govern the appropriate processes in undertaking studies ethically, including the Australian Code for Responsible Conduct of Research[254] and the National Statement on Ethical Conduct in Human Research[255].

a) Beneficence, Justice and Respect

Any research should be designed to provide benefits to its participants and the broader community, and these benefits should ultimately outweigh any possible harm[205,256]. This study was of low risk as there were limited anticipated risks to the survey respondents, interview participants, or researchers. The survey was of moderate duration in that took an average of 16 minutes to complete. Respondents could cease the survey at any time and were able to maintain their anonymity by not providing contact details if they chose not to. The respondents who added their contact details at the end of the survey were included in a blinded draw to win a $100 gift voucher (one for each University). This incentive was sufficient to encourage participation without being an inducement to participate. Despite the time taken for interview participation, this was at a mutually agreed time and was conducted via telephone.

b) Consent

No academics involved in the study had any direct relationship with the respondents and all students participated voluntarily. Students who participated in the survey provided informed consent by marking the item 'Yes' in the first question (Appendix C). This indicated that they had read the study information and consented to participate. As survey data were de-identified, respondents were not able to withdraw their responses.

Potential interview participants were provided with an information sheet about the study (Appendix E). They were informed that all interviews were to be audio-recorded and transcribed verbatim for analysis and that they were able to withdraw from the interview or withdraw their data after the interviews should they feel uncomfortable. Participants signed and returned a consent form before commencing the interview (Appendix E).

c) Confidentiality

Survey respondents and interview participants were informed that all data were to be used solely for the research. While survey respondents who indicated interest to participate in the interviews were asked to provide contact details at the end of the survey, this was removed from the survey dataset. Interview participants' names were replaced with pseudonyms, and any other potential identifiers (University, rurality, etc.) in the transcripts were removed before the publication of these data to preserve confidentiality. Interview participant details were also kept separately from the survey data.

d) Data Storage

All transcript and audio files were stored securely in electronic format on password-protected computers restricted to the Doctoral candidate and the supervisors. Any hard copy data and consent forms were stored in a locked filing cabinet for five years following the publication of results [257].

Conclusion

This chapter has described the philosophical underpinnings and methodological approach of this mixed methods study. It has also explained the research methods used to collect both the quantitative and qualitative data. This chapter has presented the sequential process behind the combination of an online survey and telephone interviews, which provides a way to view the research problem and uncover new information.

Chapter Summary

This chapter discussed the methodology used in the study, the steps taken to develop tools for data collection, and the sequential processes in the collection and analyses of these data. Ethical considerations were described in detail, as well as methods to establish the reliability, validity and rigour of the study. The next chapter will present findings from the survey, which explores respondents' confidence, interest and intention regarding employment in general practice.

Chapter 4: Confidence, Interest, and Intention to Work in General Practice

Chapter Introduction

This chapter includes Paper 2[120] (Appendix H), which explored final-year undergraduate nursing students' confidence, interest, and intention to work in general practice, and the predictors of these elements. Data reported in this paper were drawn from responses to the modified CICCN[1] and ASPIRE[2] tools, and respondents' perceptions of their exposure to PHC and general practice nursing content within the BN program. Paper 2 was published in Collegian (Impact factor: 2.573, Journal ranking by JCR: 28/181) as:

> Calma, K.R.B., McInnes, S., Halcomb, E., Williams, A., & Batterham, M.
> (2022). Confidence, interest and intentions of final-year nursing students
> regarding employment in general practice. *Collegian, 29,* 220-227.

Permission to include this publication as part of this thesis has been granted by the publisher, Elsevier (Appendix H).

Abstract

Background: Rising health care burdens have increased demand for general practice nurses. Exploring final-year undergraduate nursing students' perceived level of confidence, interest, and intention to work in this area in Australia can inform the preparation and recruitment of new graduates into this workforce.

Aim: To explore final-year undergraduate nursing students' confidence, interest, and intention to work in general practice.

Methods: Final-year undergraduate nursing students from five universities situated in NSW, Australia were surveyed between March and June 2019. The survey comprised investigator-developed questions and previously validated tools adapted for use in general practice.

Findings: Of the 355 included responses, 34.1% of respondents had a clinical placement in general practice. Work experience was a significant predictor of perceived confidence in working as a Registered or General Practice Nurse. Being enrolled as an international student, clinical placement in general practice, and high confidence to work in general practice, were significant predictors of interest and intention to work in this setting. Analysis showed a strong positive relationship between interest and intention to work in general practice and a small but positive relationship between confidence and intention to work in general practice.

Discussion: Despite generally positive views around their confidence, interest, and intention to work in general practice, some respondents indicated uncertainties around these and the usefulness of their undergraduate preparation towards PHC employment. This may be attributable to the inconsistent exposure to general practice nursing within Australian undergraduate nursing programs.

Conclusion: Increasing students' theoretical and clinical exposure to general practice enhances confidence and interest to pursue a career in this setting.

Introduction

Internationally, there has been an increased focus on the provision of health care in the community to meet the health needs of an ageing population and growing chronic disease burden[49]. As the world's population dramatically increases in size, many people will experience at least one chronic condition[24]. Community-based, PHC services are essential in the early identification and ongoing management of chronic conditions[30]. These health services include a range of specialist and generalist services, such as women's health clinics, refugee health services, and school-based clinics. General practice, also known as family practice or primary care, is a subset of PHC. It is the frontline health service for the diagnosis and management of chronic conditions, as well as for other health needs such as acute injury and illness, infectious disease, and preventive health care such as health assessments and vaccinations[9].

In Australia, GPs predominately own and operate general practices, either as an independent business or within a larger group of corporations[68]. General practices are the first point of contact the community has with the health care system and almost 90% of the Australian adult population access general practice services annually[9]. Nurses comprise the majority of the non-physician workforce in general practice[24]. The role of the GPN has evolved over the past two decades, moving from a "doctor's assistant" towards a broader scope of practice including preventive health, health assessment, coordination of care, and management of both acute and chronic conditions[49].

The GPN workforce faces challenges with recruitment and retention, attributable to limited career pathways, and an ageing workforce[59]. Indeed in a recent Australian survey of PHC nurses, 48.6% were aged 50 years or over[44]. Currently, nurses primarily enter general practice employment after gaining some nursing experience in a hospital setting[158], with few nurses seeking employment in this area immediately post-

graduation[68]. To meet the contemporary health demands of the community, there is a need to expand a skilled nursing workforce in general practice. Recruiting new graduate RNs (or 'new graduate nurses') into general practice employment is one strategy to build the GPN workforce.

Background

There is limited literature that reports undergraduate nursing students' interest in employment in PHC settings, including general practice[22,69,97]. The literature indicates that most undergraduate nursing students prefer to work in hospitals following graduation and that PHC settings are not a priority career path immediately following graduation for many graduates[15,97]. Commonly, undergraduate nursing students express a preference to work in high technology areas such as intensive care and emergency departments[15], and maternity and paediatrics[96]. Undergraduate nursing students' beliefs around the need to consolidate professional skills in hospitals may be an important contributor to student preferences[15,123]

Exposure to PHC nursing during undergraduate education can influence career intentions. Undergraduate nursing students who value learning about PHC nursing roles within their undergraduate education, tend to be more inclined to seek work in PHC settings[22]. However, pervasive negative attitudes exist towards working in PHC[3], which may be influencing the numbers of undergraduate nursing students who intend to seek PHC employment. Some studies have reported that students perceive PHC as being limited in supporting career development and clinical skill consolidation which are considered important by new graduate nurses[3]. Furthermore, some undergraduate nursing students perceive PHC as a less exciting career option than high technology areas[3] and more appropriate for experienced or older nurses who are nearing retirement[97].

Commonly, undergraduate nursing curricula remain predominately acute care-focused[167]. PHC content within BN programs tends to differ significantly between universities both in Australia and other parts of the world, such as the UK and USA[69,258]. In Australia there is no requirement for students to undertake clinical placements specifically in PHC. While students may have a degree of choice around final placements, clinical placement allocations are influenced by the capacity of health facilities, geographic location of the University and university affiliation with placement providers[16,82]. This is particularly concerning given that curriculum focus, insufficient

knowledge of the practice area, and clinical placement experience are all factors reported to influence nursing students' career choices[3,69].

Much of the research around career intentions, however, has focused on the broader PHC sector or community health. To date, there has been little attention given to undergraduate nursing students' perceptions about confidence, interest, and career intentions to work in general practice. Given the growing demands faced by general practice today, it is timely to explore the factors that may be influencing undergraduate nursing students' perceptions of, and intentions to work in general practice. Understanding such factors have the potential to optimise the preparation and recruitment of new graduate nurses in this setting, and thus support the maintenance of a critical workforce.

Aim

This study aimed to explore final-year undergraduate nursing students' confidence, interest, and intention to work in general practice.

Method

Study Design

A cross-sectional, descriptive online survey was conducted from March and June 2019.

Respondents and Recruitment

Nursing students were invited to participate if they were enrolled in the final year of a BN program in one of five participating universities in NSW, Australia. The participating institutions were selected based on having a Nursing School that delivered a BN program, being in geographical proximity to the research team, providing a spread of metropolitan, regional and rural areas, and willingness of the Nursing School to participate in the research. A contact person from each University was engaged to distribute study information and the link to the online survey via SurveyMonkey©[220] to potential respondents. Invitations to participate were distributed either via a direct email, or promotional material on the targeted School of Nursing e-learning platform. The contact person was prompted to send out three reminders throughout the data collection period. A survey poster was also provided with the second and third reminder to increase response rates.

Data Collection

A survey was purposefully designed for the study using both investigator-developed questions and existing previously validated tools to meet the aims of the study. The survey

had six sections. The first two sections explored respondents' personal experiences of general practice and exposure to PHC and general practice within the BN program. The third section explored preparedness to work in general practice, using the 9-item CICCN tool[1] modified for use in general practice. The CICCN tool comprises two subscales, namely; confidence about working as a Registered / General Practice Nurse (6 items), and interest in seeking employment as a General Practice Nurse (3 items). Each item was rated on a 5-point Likert scale from 'strongly disagree' to 'strongly agree'.

Section four comprised the modified 18-item 'Profession Scale' from the SCOPE tool[3]. The SCOPE tool was used to explore respondents' perceptions of how much of the items provided would be present in the general practice work environment. Items were scored on a 10-point Likert scale, from 1 being 'very little' to 10 being 'a lot'. Respondents were then asked to rate the level of importance of aspects of general practice in their career decisions on a 5-point Likert scale ('not important' to 'very important').

The fifth section included the 14-item ASPIRE scale modified to measure intention to pursue a career in general practice[2]. Each item was rated on a 7-point Likert scale from 'strongly disagree' to 'strongly agree'. The highest possible score is 98, with a higher ASPIRE score indicating greater intention to work in general practice.

Demographic data, including age, gender, the country where the majority of pre-University education was completed, indigenous origin, enrolment status (international or domestic), current place of residence, nursing as a first choice at University, and average grade within the BN program were collected in the final section of the survey.

This paper reports on the confidence, interest, and intention of the respondents to work in general practice resulting from responses to the ASPIRE and CICCN tools. Perceptions of the work environment of general practice measured by the SCOPE tool address a distinct research question and therefore is reported elsewhere[121].

Ethical Considerations

The conduct of this study was approved by the Human Research Ethics Committee of the University of Wollongong (HREC 2018/556) and reciprocal approval was received from participating universities. Survey data were aggregated for reporting and any identifying material was removed before analysis.

Data Analysis

Data were imported from SurveyMonkey[©(220)] into SPSS version 25.0[(221)] for analysis. Data were cleaned and checked for accuracy. Descriptive statistics were used to summarise the data and inferential statistics were used to explore the differences between groups[(223)]. A multiple regression analysis was undertaken to determine which variables predicted the outcomes from the subscales of the CICCN, and ASPIRE scores (Table 4.3), which indicated confidence, interest, and intention to work in general practice respectively. Predictor variables were dichotomised for the regression analysis. These variables were age (Mean=28.35), place of residence (Urban/Rural), enrolment status (International/Domestic), exposure to general practice nursing within BN (Yes/No), work experience in general practice (Yes/No), clinical placement in general practice (Yes/No), and received care from a GPN currently or in the past (Yes/No). Pearson's correlation coefficient was used to measure the strength of relationships between confidence, interest and intention scores. A p-value of <0.05 was considered statistically significant.

Validity and Reliability

High internal consistency was reported for both modified tools with Cronbach's alpha (α=0.900 for the ASPIRE, α=0.84 for the total CICCN, α=0.86 for the 'Confidence' subscale, and α=0.78 for the 'Interest in seeking employment' subscale[(1,2)]. This reflects good internal consistency for both the modified tools.

The face validity of the survey was established through a review of the survey tool. The survey was reviewed by three nurse academics with experience in PHC research and teaching, two final-year undergraduate nursing students, and two RNs who had recently graduated from a BN Program. Feedback from both groups was used to revise the survey wording for ease of comprehension and flow prior to dissemination.

Results

Respondent Characteristics

While 494 responses were received, 106 (21.5%) respondents completed less than 50% of the survey, and 33 (6.7%) respondents provided no demographic information. Following the removal of these data, a total of 355 responses (71.9%) were included in the analysis. As the response denominator was not known, it was not possible to calculate a response rate.

Most respondents identified as female (n=329, 92.7%), with a mean age of 28 years (Range 18-58 years)(Table 4.1). Many respondents reported living in an urban area (n=247, 69.6%). Two-thirds (n=232, 65.4%) of respondents completed most of their pre-University education in Australia and nearly three-quarters were enrolled as a domestic student (n=265; 74.6%).

Table 4.1 Demographic Characteristics

Characteristic	n	%
Age Range 18-58; Mean 28.35; SD 8.2		
≤ 20 years	45	*12.7*
21-30	200	*56.3*
31-40 years	74	*20.8*
41-50 years	30	*8.5*
51-60 years	6	*1.7*
Gender		
Female	329	92.7
Male	26	7.3
Aboriginal or Torres Strait Islander origin		
No	348	98.0
Yes – Aboriginal or Torres Strait Islander	7	2.0
Current place of residence		
Metropolitan centre	247	69.6
Rural area	94	26.5
Remote area	14	3.9
Country where the majority of pre-University was completed		
Australia	232	65.4
Nepal	43	12.1
India	22	6.2
China	14	3.9
Other	44	12.4
Enrolment status		
Domestic	265	74.6
International	88	24.8
Missing	2	0.6
Employment in health		
Assistant in Nursing/Support Worker/Carer	211	59.4
Never worked in health	72	20.3
Enrolled Nurse	42	11.8
Administration assistant/Receptionist	9	2.5
Wardsperson	2	0.6
Other health-related roles	19	5.4

Work experience in general practice		
Previous general practice work	177	49.9
No Previous general practice work	178	50.1
Nursing first choice at University		
Yes	285	80.3
No	70	19.7

University Exposure to Primary Health Care and General Practice

Most respondents reported being exposed to PHC content in the first (n=251, 70.7%) and second-year (n=187, 52.7%), with only 39.7% (n=141) of respondents exposed to PHC content in their final year of undergraduate study. Just under half of the respondents (n=177, 49.9%,) reported having a clinical placement in PHC sometime during their degree.

Nearly two-thirds of respondents (n=218, n=61.4%) were exposed to content specifically related to general practice nursing during their undergraduate study. However, only 34.1% (n=121) described completing a clinical placement in general practice during their course. Despite this, 62.8% of the respondents (n=223) agreed or strongly agreed that new graduate nurses should be employed in general practice.

Personal Exposure to General Practice

Almost half of the respondents (n=162, 45.6%) described having a family member or close friend working as a GPN, and 10.1% (n=36) had a family member or close friend working as a GP. Some 58.9% of the respondents (n=209) recounted having received care from a GPN. Only 4.5% (n=16) of the respondents stated that they had not attended a general practice in the last 12 months.

Confidence and Interest to Work in General Practice

Confidence and interest to work in general practice were measured using the modified CICCN tool[1]. Means for both subscales reflect a generally positive effect. The sub-sections below report on the two subscales separately and explore predictive characteristics.

a) Confidence to work in general practice

Many respondents agreed or strongly agreed that they would have sufficient knowledge (n=243, 68.5%) and clinical skills (n=234, 65.9%) to be a competent beginning nurse in general practice (Table 4.2). Some 54.4% (n=193) of respondents agreed or strongly

agreed that their undergraduate studies prepared them to work in general practice. Less than half of the respondents reported that the PHC subject/unit in their BN program increased their knowledge (n=159, 44.8%) and clinical skills (n=146, 41.1%) related to general practice nursing. Similarly, 47% (n=167) of respondents agreed or strongly agreed that the PHC content within their BN program increased their confidence to work in general practice nursing.

Table 4.2 Confidence and Interest to Work in General Practice

	Strongly Disagree/ Disagree		Neutral		Agree/ Strongly Agree		Mean (SD)
	n	%	n	%	n	%	
Component 1: Confidence about working as a Registered or General Practice Nurse							
I feel that I will have sufficient knowledge when I graduate to perform as a competent beginning RN	25	*7.0*	87	*24.5*	243	*68.5*	*3.79 (0.92)*
I feel that I will have sufficient clinical skills when I graduate to perform as a competent beginning RN	34	*9.6*	87	*24.5*	234	*65.9*	*3.69 (0.97)*
I feel my undergraduate nursing studies have prepared me to enter general practice	55	*15.5*	107	*30.1*	193	*54.4*	*3.48 (1.01)*
PHC subject / unit increased my confidence to work in general practice	64	*18*	124	*34.9*	167	*47.0*	*3.35 (0.99)*
PHC subject / unit gave me sufficient knowledge to work in general practice	58	*16.4*	138	*38.9*	159	*44.8*	*3.34 (0.94)*
PHC subject / unit gave me sufficient clinical skills to work in general practice	76	*21.4*	133	*37.5*	146	*41.1*	*3.22 (1.00)*
Component 2: Interest in seeking employment as a General Practice Nurse							
I am interested in seeking employment in general practice after I have had some clinical experience as an RN	52	*14.6*	98	*27.6*	205	*57.7*	*3.59 (1.09)*
PHC subject/unit increased my interest in general practice	65	*18.3*	128	*36.1*	162	*45.6*	*3.36 (1.02)*
I am interested in seeking employment in general practice after graduation	83	*23.3*	117	*33*	155	*43.6*	*3.30 (1.13)*

Respondents who had work experience in general practice (Mean = 21.76, Unstandardised β = 1.291, *p* = 0.019) were more confident about working as a Registered/General Practice Nurse than those who did not (Table 4.3). Other demographic factors including age, place of residence, enrolment status, exposure to general practice nursing within the BN program, clinical placement in general practice, and care received from a GPN were not found to be significant predictors of confidence to work in general practice.

b) *Interest in Working in General Practice*

One hundred and fifty-five respondents (43.6%) were interested in general practice employment directly after graduation. Some 57.7% (n=205) agreed or strongly agreed that they were interested to work in general practice after gaining clinical experience (Table 4.2). Less than half (n=162, 45.6%) of the respondents reported that their undergraduate program increased their interest in general practice nursing.

Students who had experienced a clinical placement in general practice during their BN program (Mean=11.12, Unstandardised β=0.710, *p*=0.028) and those enrolled as an international student (Mean=11.17, Unstandardised β=0.855, *p*=0.006) were significantly more likely to be interested in working in general practice following graduation (Table 4.3). Students who also had a higher confidence score (Unstandardised β=0.310, *p*=0.000) had a statistically significant higher mean interest score for working in general practice following graduation. Age, place of residence, exposure to general practice nursing within the BN program, work experience in general practice, and care received from a GPN were not significant predictors of interest to work in general practice.

Intention to Work in General Practice

The mean total ASPIRE score, which indicated respondents' intention to work in general practice, was 64.79 (SD=13.80, Range: 19-98). The responses to the ASPIRE tool are summarised in Table 4.4.

Significant predictors of intent to work in general practice were University enrolment on an international visa (Mean=70.33, Unstandardised β=6.190, *p*=0.000), clinical placement experience in general practice during the BN program (Mean=69.10, Unstandardised β=4.173, *p*=0.013), and confidence to work in general practice (Unstandardised β=1.153, *p*=0.000). Age, place of residence, exposure to general practice nursing within the BN program, work experience in general practice, and care received from a GPN were not significant predictors of intention to work in general practice.

Relationship between Confidence, Interest & Intention to Work in General Practice

Using Pearson's correlation coefficient there was a strong positive relationship between interest and intention to work in general practice (*r*=0.722, *p*<0.01). Analysis also showed a positive relationship between confidence and intention to work in general practice, with a small effect (*r*=0.428, *p*<0.01).

Table 4.3 Characteristics and Experience as Predictors of Confidence, Interest, and Intention to Work in General Practice

Variable	Confidence to work in general practice			Interest to work in general practice			Intention to work in general practice		
	Unstandardized β (95% CI)	t	p	Unstandardized β (95% CI)	t	p	Unstandardized β (95% CI)	t	p
Age	0.292 (-0.71-1.30)	0.571	0.568	0.177 (-0.33-0.69)	0.684	0.494	-1.145 (-3.79-1.50)	-0.852	0.395
Place of residence	-0.660 (-1.72-0.40)	-1.221	0.223	-0.022 (-0.56-0.52)	-0.082	0.935	-1.405 (-4.21-1.40)	-0.986	0.325
Enrolment status (International / Domestic)	0.164 (-1.04-1.36)	0.268	0.789	0.855 (0.25-1.46)	2.768	0.006*	6.190 (3.03-9.35)	3.856	0.000*
Exposure to general practice nursing within BN	0.722 (-0.44-1.88)	1.223	0.222	0.047 (-0.54-0.64)	0.157	0.875	1.145 (-1.92-4.21)	0.735	0.463
Work experience in general practice	1.291 (0.21-2.37)	2.353	0.019*	0.024 (-0.53-0.58)	0.087	0.930	0.088 (-2.77-2.95)	0.060	0.952
Clinical placement in general practice	0.705 (-0.55-1.96)	1.108	0.268	0.710 (0.08-1.35)	2.203	0.028*	4.173 (0.88-7.47)	2.490	0.013*
Received care from a GPN currently or in the past	-0.046 (-1.06-0.96)	-0.089	0.929	-0.136 (-0.65-0.38)	-0.522	0.602	2.189 (-0.47-4.85)	1.620	0.106
Confidence to work in general practice	-	-	-	0.310 (0.26-0.36)	11.381	0.000*	1.153 (0.88-1.43)	8.143	0.000*

*indicates statistical significance p<0.5

Table 4.4 ASPIRE Scale

	Strongly Disagree		Disagree		Somewhat Disagree		Neither A/D		Somewhat agree		Agree		Strongly Agree		Mean (SD)
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	
My family and friends would be very supportive of me choosing a career in general practice nursing	4	1.1	7	2.0	12	3.4	74	20.8	79	22.3	109	30.7	70	19.7	5.32 (1.30)
Working as a GPN would be a very positive experience	2	0.6	8	2.3	11	3.1	74	20.8	74	20.8	130	36.6	56	15.8	5.32 (1.23)
People whose opinions I value would approve of my pursuing general practice nursing as a career	4	1.1	8	2.3	14	3.9	105	29.6	68	19.2	105	29.6	51	14.4	5.10 (1.30)
I am confident that, if I wanted to, I could work as a GPN when I graduate	4	1.1	8	2.3	25	7.0	71	20.0	102	28.7	103	29.0	42	11.8	5.07 (1.28)
The role of the GPN appeals to me	14	3.9	20	5.6	25	7.0	86	24.2	86	24.2	89	25.1	35	9.9	4.74 (1.50)
If I wanted to, I could get a job in general practice nursing when I graduate	5	1.4	18	5.1	27	7.6	112	31.5	93	26.2	74	20.8	26	7.3	4.68 (1.31)
I regard general practice nursing as a highly desirable career option	18	5.1	22	6.2	36	10.1	82	23.1	71	20.0	78	22.0	48	13.5	4.67 (1.63)
People I care about would encourage me to pursue a career in general practice nursing	6	1.7	16	4.5	31	8.7	131	36.9	56	15.8	81	22.8	34	9.6	4.67 (1.38)
If I decide to pursue a career in general practice nursing I should have no difficulty in getting a job in general practice when I graduate	8	2.3	31	8.7	42	11.8	140	39.4	64	18.0	41	11.5	29	8.2	4.30 (1.40)
I intend to work as a GPN when I graduate	23	6.5	43	12.1	36	10.1	91	25.6	67	18.9	57	16.1	38	10.7	4.29 (1.70)
It is unlikely that I will seek employment as a GPN when I graduate	22	6.2	67	18.9	27	7.6	97	27.3	52	14.6	63	17.7	27	7.6	4.09 (1.71)
People who are important to me would like me to pursue a career in general practice nursing	31	8.7	51	14.4	25	7.0	108	30.4	58	16.3	55	15.5	27	7.6	4.08 (1.70)
I am planning to become a GPN when I graduate	26	7.3	46	13.0	37	10.4	125	35.2	43	12.1	53	14.9	25	7.0	4.05 (1.62)
I have no intention of pursuing a career in general practice nursing	46	13.0	89	25.1	49	13.8	87	24.5	34	9.6	29	8.2	21	5.9	3.41 (1.71)

Discussion

This study used a quantitative approach to explore the confidence, interest, and intention of final-year undergraduate nursing students regarding employment in general practice. As such, it fills a gap in evidence in the published literature regarding the factors that encourage or discourage undergraduate nursing students to seek employment in general practice following graduation. Gaining a better understanding of the factors that influence undergraduate nursing students' confidence and perceptions of working in general practice can help inform universities and academics in the preparation of undergraduate nursing students to work in such areas following graduation.

Findings of this study indicate that respondents had generally positive views around their confidence and interest to work in general practice. Such favourable views are in contrast with previous literature reporting undergraduate nursing students' understanding and competence around PHC nurse roles. In their study, McInnes et al.[143] reported that the undergraduate nursing students did not understand the role or feel confident about general practice nursing, particularly before commencing their clinical placements in this setting. Previous literature has also evidenced undergraduate nursing students' negative perceptions of PHC[3,170], and their lack of interest to work in this setting[22,97]. The more positive findings seen in this study highlight a shift among undergraduate nursing students towards seeing general practice nursing as a potential employment opportunity. Given confidence to work in general practice influences intention to work in this setting, future research needs to explore strategies to improve undergraduate nursing students' confidence and preparedness for general practice employment.

Despite predominately positive responses around confidence and interest to work in general practice, a considerable number of respondents indicated uncertainty around perceived confidence, knowledge, and clinical skills to work as a GPN. The variations in perceived preparedness, as well as interest to work in general practice, are likely influenced by personal exposure to this setting[143], or the opinion of others[174]. Uncertainties were also apparent when respondents were asked whether PHC subjects/units increased their overall preparedness and interest to work in general practice. This may be indicative of inconsistent and sometimes inadequate delivery of PHC content within BN programs[69,258]. As such, undergraduate nursing students frequently consider PHC content as the least relevant component of the BN program[170]. Gaps in undergraduate nursing students' knowledge and inconsistencies in PHC content

within acute care-focused curricula contribute to undergraduate nursing students' low intention to seek PHC employment[69]. Universities have a significant role in ensuring undergraduate nursing students are supported to make informed career choices. One way for universities to achieve this role is to provide theoretical and clinical placement opportunities that reflect the realities of nursing roles in PHC, such as in general practice nursing[3], delivered by experienced nurse academics.

Only a third of respondents reported experiencing a clinical placement in general practice during their BN program. Contemporary literature reports that most undergraduate nursing students spend the majority of their clinical placements in hospital settings[259]. In this study, clinical placement experience within the BN program was a significant predictor of respondents' interest to work in general practice. Indeed, clinical placement experiences enable students' socialisation to the setting and the role, which can ultimately shape career interest[260]. However, there has been a shortage of clinical placements in community settings such as general practice. The small size of general practices means that they often can only accommodate limited numbers of nursing students at any one time which is problematic in the large nursing cohorts seen in Australian universities[180,182]. Future research needs to explore models of clinical placement and associated funding to enhance placement opportunities in this setting.

Despite increasing interest, our study found that clinical placement experience during the BN program was not a significant predictor of confidence to work in general practice. This finding conflicts with literature reporting that levels of self-confidence and competence in a particular setting increase following clinical placement experience[143]. It is important to note that most of the respondents in this study were exposed to PHC content in the first year of their degree, with fewer students exposed to PHC in the latter part of their BN program. The timing of students' theoretical and clinical exposure to PHC may be a factor influencing their confidence to work in this setting, as they potentially perceive that the GPN's role was beyond their scope of practice early in their degree.

Clinical placements in the final year have the most significant impact on undergraduate nursing students' career choices immediately following graduation[81]. This is attributable to the fact that undergraduate nursing students' scope of practice is generally at its most advanced in their final year, and students can exercise a wider range of skills that may

reflect the nurse's role better. GPNs practice with a unique level of self-direction within the multidisciplinary team, such as when managing and coordinating care for people living with multiple chronic conditions[49], providing disease-specific health education, and engaging in the complex process of eliciting behaviour change in patients[24]. Given the diverse scope of the GPN role, it is worthwhile noting the importance of timing as a factor that may be influencing students' experiences of their clinical placement, and hence its influence on their perceived confidence to work as new graduate nurses. Given universities have an important role in building the health workforce in areas of shortage, further research is needed in considering the strategic timing of clinical placements to ensure graduate nurses are prepared for diverse clinical settings. Careful consideration is needed in terms of clinical placement timing since clinical placement choices are often based on experiences in the earlier parts of the BN program. Increasing exposure to general practice later in the program may allow students to better consolidate skills and practice with greater autonomy, thereby gaining a more a realistic 'work' experience of the GPN role and hence building confidence to work in this setting following graduation.

The third main finding revealed that respondents enrolled on an international visa were significantly more likely to be interested in seeking employment in general practice following graduation than domestic respondents. Given international respondents in this study have come from different countries, the diversity in their own country's health systems may have influenced their understanding of, and the value placed on PHC. Additionally, many international undergraduate nursing students face challenges transitioning into clinical roles due to poor communication skills, limited English language proficiency, and lack of self-confidence[261]. Some international undergraduate nursing students also report experiencing isolation and discrimination from their peers[262] and nurses on clinical placement[263], which may make them feel less inclined to seek work in the 'larger' teams often found in hospital settings. Job security is also a priority for many undergraduate nursing students regardless of cultural orientation[143]. However, many international undergraduate nursing students pursue a nursing degree due to perceptions it will provide them with a stable, good-paying job following graduation[264]. For international undergraduate nursing students who prioritise job security, the fear of not securing a job immediately following graduation may influence career decision-making. The predominately hospital-based 'transition to professional practice' (TPP) programs in Australia is made even more competitive for international students as

programs prioritise domestic applicants. Further research is needed to explore the factors shaping international undergraduate nursing students' interest and intention to seek employment in PHC settings such as general practice, in consideration of the differences in the demographic differences between domestic and international students, in terms of age and prior nursing qualifications. Universities are well-positioned to ensure these students are well supported and prepared to work in general practice should they pursue this career pathway.

Limitations

This study has some limitations. Some surveys were incomplete and so were not included in the analysis, thus reducing the sample size. While respondents were from five different universities situated in NSW, Australia, nursing students from other locations may possess variable perceptions. As the majority of the respondents resided in urban areas, further research is needed to explore final-year nursing students' confidence, interest and intentions to work in general practice residing in rural and remote regions of Australia. Survey respondents were more likely to have fixed ideas or interest in general practice than non-respondents. In line with the demographics of the broader nursing cohort, most of the respondents identified as female. Additionally, there was a small response from Aboriginal or Torres Strait Islander students. This needs to be considered when interpreting the findings. The quantitative nature of the data collection did not allow responses to be explored. The qualitative component of this study sought to further develop this understanding and is reported elsewhere.

Conclusions and Implications

The findings of this study demonstrate that respondents had generally positive views concerning their confidence, interest, and intention to work in general practice. However, some respondents remained uncertain about this area of work and the usefulness of their undergraduate preparation. This may be attributable to the inconsistent and/or lack of exposure to general practice nursing within different BN programs. This emphasises the need for universities to ensure undergraduate nursing students are being exposed to general practice nursing during their undergraduate education, involving both theoretical content and clinical placement exposure, and can build clinical skills and confidence in this setting throughout their degree. Academics have an important role in expanding undergraduate nursing students' understanding of community-based nurse roles, which in turn can motivate students to pursue careers in diverse clinical settings.

Chapter Summary

This chapter explored survey findings, which focused on respondents' confidence, interest, and intention regarding employment in general practice. Findings revealed that work experience was a significant predictor of perceived confidence in working as a Registered or General Practice Nurse, while clinical placement in general practice and high confidence to work in this setting were significant predictors of students' interest and intention to work in general practice. The next chapter will describe survey respondents' perceptions of the general practice environment, and their priorities for employment.

Chapter 5: Perceptions of the General Practice Environment

Chapter Introduction

This chapter includes Paper 3[121](Appendix I) which explored final-year undergraduate nursing students' perceptions of the general practice environment and the factors they consider most important when choosing an employment setting. Paper 3 is under review by Nursing Open (Impact factor: 1.762, Journal ranking by JCR: 51/181) as:

> Calma, K.R.B., McInnes, S., Halcomb, E., Williams, A., & Batterham, M. (2022). Understanding nursing students' perceptions of the general practice environment and their priorities for employment settings. *Nursing Open, 9*(5)*,* 2325-2334.

Abstract

Aim: To explore final year nursing students' perceptions of the general practice environment and their priorities when choosing a workplace.

Design: Online survey, reported following the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines have guided reporting.

Methods: The Profession Scale from the SCOPE tool was used to identify characteristics within the general practice environment and the importance of these in choosing a workplace. To explore the factor structure exploratory factor analysis was undertaken.

Results: Three hundred and fifty-five responses were received. Factor analysis revealed three factors: Provision of care, Employment conditions, and Nature of work. Respondents exposed to general practice in the BN program or who had a general practice clinical placement had significantly different perceptions across all factors. Although wages, advancement opportunities, work pressures, and the physical nature of work were perceived as important in choosing a workplace they were seen as only moderately present in general practice.

Introduction

Graduates from an accredited BN program are qualified to work as RNs in Australia with no further preceptorship or transition requirements. New graduate nurses have a wide range of career opportunities across diverse clinical settings, from hospitals settings such as emergency, intensive care, medical wards, or operating theatres to community-based, PHC services such as community not-for-profit organisations, public health services, aged care and general practice [16]. Transition-to-Practice Programs are designed to assist

new graduate nurses to "acculturate to their new profession"[16](p. 45). However, most Australian transition-to-practice programs are offered in hospitals, which is where most new graduate nurses seek employment[16,105]. In contrast, few undergraduate nursing students' express interest in pursuing a career in PHC[22,97].

Palese et al.[265] report that work environments that allow skill consolidation, the development of supportive team relationships, and offer a diversity of patients, positively influence students' career choices. Nursing students' experiences during their education, including the program theoretical content, the expertise of educators, and clinical placement experiences, also influence their career interests[69,120,260,266]. Current evidence suggests that nursing students' perceptions of PHC settings are diverse. While some students perceive PHC nurses as having limited clinical skills and making little impact on health outcomes, others view the PHC nurse role as having a unique level of professional autonomy that requires a high level of competence and skill[3,122].

Background

Within the PHC sector, general practices deliver comprehensive, coordinated, and patient-centred care for individuals in the community, across the lifespan[23]. General practices are usually the initial contact people have with the health system[9]. In Australia, around 90% of the population present to general practice each year[9]. General practices are mostly operated and owned by GPs as a small business or as part of a larger network of corporations in Australia, and other countries such as the UK and NZ[35,36,68].

General practices are typically staffed by multidisciplinary health professionals, with GPNs being the largest non-physician workforce[43]. While nurses employed in general practice can be nurse practitioners (Masters prepared) or enrolled nurses (Diploma prepared), most are registered nurses (Baccalaureate prepared or equivalent)[28,44]. The role and responsibilities of GPNs are diverse. GPNs may undertake clinical activities such as health assessments, screening, patient education, acute care, and coordination of chronic conditions[26,34,49]. The current GPN workforce faces increasing demands in continuing to meet the increasingly complex care needs of the community with a workforce that is aging and faced with critical shortages[26,43]. In Australia, some 60% of GPNs are aged 45 years or over[44]. While previous studies have explored workplace factors that influence the transition of acute care nurses to general practice [159], and the impact of job satisfaction and retention of GPNs[60,63], little attention has been given to the perceptions of undergraduate nursing students' about general practice. To address this

gap, a study exploring final-year nursing students' preparedness for and perceptions about employment in general practice was undertaken. Data around students' confidence, interest, and intention to work in general practice has been reported elsewhere[120]. This paper seeks to explore the views of final-year nursing students about the general practice environment to understand the factors that they consider most important when choosing an employment setting.

Methods

Design

Data were collected between March and June 2019 using a cross-sectional, online survey delivered via SurveyMonkey©[220]. The STROBE guidelines guided reporting.

Sample and Setting

All nursing students in their final year of the BN program at five universities in New South Wales, Australia were eligible to participate. As these students were nearest to transitioning into the RN role, it was anticipated that they would have concerns and insight into their career plans[86,208]. Universities were approached to participate if they offered an undergraduate BN program. Institutions were purposively selected to provide a diversity of metropolitan and rural locations. To comply with individual University policies regarding access to students, the survey was either disseminated by a contact person in the School of Nursing via direct email or promoted on the e-learning platform. An information sheet was the opening screen of the survey. This provided details about the study aim, benefits and risks to participation, and confidentiality and use of data.

Data Collection

The survey comprised six sections combining both validated tools, modified for use in general practice, and investigator-developed items. The validated tools were modified by replacing references to the setting in the original tool with references to general practice. Section one and two investigated respondents' experience of PHC and general practice nursing as part of their BN program, and their experiences of general practice nursing. Section three explored respondents' confidence and interest regarding general practice employment using the modified 9-item Confidence and Interest in Critical Care Nursing tool [1]. Using the modified Profession Scale from van Iersel et al.[3] SCOPE tool, Section four explored expectations of the general practice work environment and the factors considered most important when choosing an employment setting. Section five explored

intention to seek general practice employment using the modified Attitudes, Subjective Norms, Perceived Behavioural Control, and Intention to Pursue a Career in Mental Health Nursing scale[2]. The final section collected demographic information about the respondent and their educational characteristics.

This paper presents findings from Section four of the survey, which comprised the modified 17-item Profession Scale for use in general practice, a subscale of the SCOPE tool[227]. The structure and construct validity of the SCOPE and its subscales were previously reported in a community nursing setting[227]. The Profession Scale was modified by adding two additional items, 'Hours of work' and 'Wages', following examination of the literature and expert consultation [267]. These new items and the 16 existing items were rated on a 10-point Likert scale ranging from 1 ('very little') to 10 ('a lot'). The final existing item, 'work environment' was rated on a 10-point scale from 1 ('poor environment') to 10 ('good environment'). Given the difference in rating scales, this item was not included in the factor analysis. Finally, the 19 items from the modified Profession Scale were also used to measure the level of importance of each item when choosing an employment setting. Items were rated on a 5-point Likert scale ranging from 1 ('not important') to 5 ('very important').

Data Analysis

Data were imported from SurveyMonkey[©(220)] into SPSS version 25[221] before being checked and cleaned. The data were then summarised using descriptive statistics. To determine the factor structure, an exploratory factor analysis method was adopted using Principal Components Analysis with Varimax Rotation[223]. To ensure the adequacy of the sample size for factor analysis, the Kaiser-Meyer-Olkin index was used[223]. Bartlett's test of sphericity was used to evaluate the correlation between variables[225]. To gauge the substantive importance of variables to the extracted factors, variables with factor loadings of >0.40 were retained[223]. The mean total score for each factor and the mean score for the overall modified Profession scale were calculated by adding the scores for each item and then dividing these by the number of items in the factor/scale. The association between demographic characteristics and respondents' perceptions of the general practice environment was evaluated using a 2-tailed t-test. 'Age' was dichotomised at the mean (28 years). Statistical significance was demonstrated with a p-value of <0.05.

Ethical Considerations

The conduct of this study was approved by the University of Wollongong Human Research Ethics Committee (HREC 2018/556), and participating universities. Respondents could cease the survey at any time.

Validity and Reliability

To establish face validity, the survey was reviewed by two final-year nursing students and two RNs who recently graduated with a BN and three nurse academics who had expertise in PHC education and research. These reviewers provided feedback which was used to revise the survey language and flow before widespread dissemination.

The complete SCOPE tool has been reported to have a Cronbach's alpha of 0.892[227]. Additionally, the Professions scale has been reported to have a Cronbach's alpha of 0.799[227]. Both demonstrate good internal consistency.

Results

Respondent Demographics

One hundred and thirty-nine responses were excluded due to incomplete data (n=106; 21.5%) or absent demographic data (n=33; 6.7%), leaving 355 responses included in the analysis. The mean age of respondents was 28 years (Range 18-58, SD=8.2) and the majority identified as female (n=329, 92.7%). Nearly a quarter of respondents were enrolled as international students (n=88, 27.8%), and 65.9% reported never having a general practice clinical placement within their BN program (n=234) (Table 5.1).

Factor Structure of the Modified Profession Scale

The Kaiser-Meyer-Olkin index of 0.901, indicates 'marvellous' sampling adequacy[268]. The data were deemed suitable for factor analysis as Bartlett's test of sphericity was 3100.421 (p=0.000)[223].

Factor analysis revealed a three-factor solution, accounting for 57.33% of the total variance. These factors were labelled Factor 1 'Provision of care' (11 items), Factor 2 'Employment conditions' (3 items), and Factor 3 'Nature of work' (4 items) (Table 5.2). The Cronbach's alpha were Factor 1: α=0.896, Factor 2: α=0.768, Factor 3: α=0.662, and Total scale: α=0.906, indicating good internal consistency[226].

Table 5.1 Respondent Characteristics

Characteristic	n	%
Current place of residence		
Urban	247	69.6
Rural	108	30.4
Country where the majority of pre-University was completed		
Australia	232	65.4
Other	123	34.6
Enrolment status		
Domestic	265	74.6
International	88	24.8
Missing	2	0.6
Exposure to general practice nursing within BN		
Yes	218	61.4
No	137	38.6
Work experience in general practice		
No	178	50.1
Yes	177	49.9
Clinical placement in general practice		
No	234	65.9
Yes	121	34.1
Receiving care from a GPN currently or in the past		
Yes	209	58.9
No	146	41.1

Perception of the General Practice Work Environment

The overall mean score for the modified Profession Scale was 7.53. The three factors, 'Provision of care', 'Employment conditions' and 'Nature of work' had a mean score of 8.01 (SD=1.36), 7.02 (SD=1.81), and 6.61 (SD=1.57) respectively (Table 5.2). The highest mean scores for individual items indicated the characteristics that respondents felt would be present 'a lot' in general practice. These items were 'elderly patients' (Mean 8.70 SD 1.60), 'individual responsibility' (Mean 8.39, SD 1.78), 'collaboration with colleagues' (Mean 8.29, SD 1.91), and 'contact with family/carers' (Mean 8.25 SD 1.81) (Table 5.2). Conversely, the lowest mean scores for individual items indicated characteristics that respondents expected to be the least present in general practice. These items were 'opportunities for advancement' (Mean 6.97, SD 2.50), 'wages' (Mean 6.75, SD 2.13), 'physically demanding work' (Mean 6.15, SD 2.33), and 'low status of work' (Mean 5.88, SD 2.15).

Table 5.2 Factor Analysis

	Factor 1	Factor 2	Factor 3	Presence in general practice Mean (SD)
Factor 1: Provision of care (Mean=8.01, SD=1.36, α = 0.896)				
Contact with Family / Carers	0.777	0.026	0.036	8.25 (1.81)
Health improvements for Patients	0.742	0.222	0.16	8.12 (1.75)
Enthusiastic colleagues	0.698	0.433	-0.091	7.43 (2.00)
Variety of caregiving	0.692	0.267	0.197	7.76 (2.20)
Collaboration with colleagues	0.681	0.258	0.109	8.29 (1.91)
Individual responsibility	0.671	0.141	0.217	8.39 (1.78)
Enjoyable relationships with patients	0.66	0.079	0.034	7.97 (1.90)
Collaboration with other disciplines	0.651	0.279	0.136	8.09 (2.04)
Freedom of action (Autonomy)	0.609	0.16	0.056	7.45 (2.07)
Technical nursing skills needed	0.573	0.394	0.355	7.67 (2.16)
Elderly patients	0.482	-0.412	0.434	8.70 (1.60)
Factor 2: Employment conditions (Mean=7.02, SD 1.81, α = 0.768)				
Wages	0.374	0.739	0.039	6.75 (2.13)
Hours of Work	0.156	0.684	0.334	7.35 (1.88)
Opportunities for advancement	0.55	0.618	0.126	6.97 (2.50)
Factor 3: Nature of work (Mean=6.61, SD=1.57, α = 0.662)				
Work pressures	0.251	0.135	0.747	6.98 (2.12)
Physically demanding work	0.152	0.316	0.744	6.15 (2.33)
Complex patient care needs	0.553	0.003	0.598	7.43 (2.30)
Low status work	-0.12	0.002	0.457	5.88 (2.15)

Extraction Method: Principal Component Analysis.

Association between the Modified Profession Scale and Demographics

a) Provision of Care

Items in the 'provision of care' factor related to the types of consumers, variety of work and relationships with colleagues (Table 5.2). Respondents who were exposed to general practice nursing within their BN program (p=0.000) or who had a general practice clinical placement (p=0.001) had significantly different perceptions of the characteristics within the factor 'Provision of care' than those who did not have this experience (Table 5.3).

b) *Employment Conditions*

The 'employment conditions' factor contained items about wages, hours and opportunities. Respondents enrolled on an international visa had significantly different perceptions of characteristics in the 'Employment conditions' factor than domestic students (p=0.018). Similarly, those who had exposure to general practice nursing within the BN program (p=0.030), had general practice work experience (p=0.000) or had a general practice clinical placement (p=0.000) had significantly different perceptions of the 'Employment conditions' factor in general practice than those respondents without this experience.

Table 5.3 Correlations Analyses

	Factor 1: Provision of care		Factor 2: Employment conditions		Factor 3: Nature of work	
	Mean (SD)	p value	Mean (SD)	p value	Mean (SD)	p value
Age						
0-28	8.01 (1.39)	0.977	7.12 (1.80)	0.195	6.57 (1.60)	0.532
≥ 29	8.01 (1.31)		6.87 (1.81)		6.67 (1.51)	
Place of residence						
Urban	7.96 (1.44)	0.251	6.97 (1.87)	0.368	6.59 (1.59)	0.647
Rural	8.13 (1.14)		7.15 (1.65)		6.67 (1.51)	
Enrolment status (Domestic/International)						
Domestic	8.00 (1.31)	0.696	6.89 (1.79)	0.018*	6.61 (1.54)	0.951
International	8.07 (1.46)		7.42 (1.83)		6.62 (1.66)	
Exposure to general practice nursing within BN						
Yes	8.21 (1.19)	0.000*	7.19 (1.75)	0.030*	6.91 (1.47)	0.000*
No	7.68 (1.53)		6.76 (1.88)		6.14 (1.61)	
Work experience in general practice						
Yes	8.14 (1.35)	0.064	7.38 (1.75)	0.000*	6.91 (1.54)	0.000*
No	7.88 (1.36)		6.66 (1.80)		6.32 (1.54)	
Clinical placement in general practice						
Yes	8.33 (1.19)	0.001*	7.60 (1.60)	0.000*	7.24 (1.36)	0.000*
No	7.85 (1.41)		6.73 (1.84)		6.29 (1.57)	
Received Care from a GPN currently or in the past						
Yes	8.10 (1.33)	0.141	6.94 (1.81)	0.295	6.57 (1.57)	0.583
No	7.88 (1.38)		7.14 (1.81)		6.67 (1.57)	

*indicates significance

c) Nature of Work

Items in the 'nature of work' factor related to work pressures, the physical nature of the work, complexity of care needs and perceived status of the work. Respondents had significantly different perceptions of this factor if they were exposed to general practice nursing within the BN program (p=0.000), had work experience in general practice (p=0.000) or had undertaken a general practice clinical placement (p=0.000).

Priorities when Choosing a Place of Employment

Respondents considered all 19 items on the modified Profession Scale important to some degree when deciding where to seek future employment (Table 5.4). Items that were rated as most important when deciding where to seek employment included 'work environment' (Mean 4.68, SD 0.54), 'collaboration with colleagues' (Mean 4.58, SD 0.64), and 'opportunities for advancement' (Mean 4.54, SD 0.69). Items that were deemed of least importance were 'level of work pressures' (Mean 4.06, SD 0.90), 'status of work' (Mean 3.72, SD 1.15), and 'patient age group' (elderly patients) (Mean 3.21, SD 1.42).

Discussion

This paper describes final-year nursing students' views on the general practice work environment and their priorities when choosing an employment setting. Explicating these factors can guide policymakers, managers, and primary care organisations on how general practice can be presented as an attractive career choice. They may also assist in preparing nursing students to consider general practice employment. Analysis of the modified Profession Scale showed good internal consistency suggesting that the tool is reliable for measuring final-year nursing students' views of the general practice environment[269].

The Profession Scale has previously been used to evaluate "perceptions of community nursing as a profession", with particular emphasis on understanding clinical placement experiences and changes over time during nursing education[3,227]. This study has focussed on validating the scale for use specifically in general practice. Previous factor analysis was undertaken with 1062 first-semester Dutch nursing students[227]. This demonstrated a four-factor solution accounting for 50.2% of the total variance. These factors were named 'professional development', 'collaboration', 'freedom of action', and 'complexity and workload'. In this study, items from the first three factors loaded onto the single 'provision of care' factor. This factor refers to the nature of the GPN role, their interaction with others, and their skills. All items in the fourth factor and the item 'low-

Table 5.4 Priorities when Deciding Place of Work

	Not Important		Slightly Important		Moderately Important		Important		Very Important		Mean	SD
	n	%	n	%	n	%	n	%	n	%		
Work environment	0	0	2	0.6	7	2.0	92	25.9	254	71.5	4.68	0.54
Collaboration with colleagues	1	0.3	2	0.6	18	5.1	102	28.7	232	65.4	4.58	0.64
Opportunities for advancement	1	0.3	5	1.4	18	5.1	109	30.7	222	62.5	4.54	0.69
Health improvements for patients	2	0.6	7	2.0	23	6.5	115	32.4	208	58.6	4.46	0.75
Technical nursing skills needed	1	0.3	7	2.0	26	7.3	118	33.2	203	57.2	4.45	0.74
Collaboration with other disciplines	1	0.3	6	1.7	27	7.6	119	33.5	202	56.9	4.45	0.73
Enthusiastic colleagues	1	0.3	6	1.7	33	9.3	114	32.1	201	56.6	4.43	0.75
Hours of Work	0	0	7	2.0	25	7.0	138	38.9	185	52.1	4.41	0.71
Individual responsibility	0	0	6	1.7	36	10.1	125	35.2	188	53.0	4.39	0.74
Wages	2	0.6	6	1.7	32	9.0	142	40.0	173	48.7	4.35	0.76
Relationships with patients	3	0.8	10	2.8	38	10.7	119	33.5	185	52.1	4.33	0.84
Variety of caregiving / role	2	0.6	11	3.1	36	10.1	144	40.6	162	45.6	4.28	0.81
Freedom of action (autonomy)	2	0.6	10	2.8	44	12.4	157	44.2	142	40.0	4.20	0.80
Complexity of patient care needs	7	2.0	13	3.7	63	17.7	128	36.1	144	40.6	4.10	0.95
Physical nature of work	6	1.7	10	2.8	66	18.6	142	40.0	131	36.9	4.08	0.90
Contact with family / carers	5	1.4	18	5.1	61	17.2	133	37.5	138	38.9	4.07	0.94
Level of work pressures	3	0.8	15	4.2	71	20.0	133	37.5	133	37.5	4.06	0.90
Status of work	22	6.2	29	8.2	81	22.8	119	33.5	104	29.3	3.72	1.15
Patient age group	68	19.2	41	11.5	79	22.3	84	23.7	83	23.4	3.21	1.42

status work' from the initial validation all loaded onto the 'nature of work' factor in this study. This factor refers to the complexity of work pressures and status of work. The factor 'employment conditions', referred to remuneration, hours of work, and advancement opportunities. This factor comprised the two items added to the modified scale and the single item 'opportunities for advancement'. While the similarities in factor structure and psychometric properties give confidence in the use of the scale in general practice, further research with larger sample sizes is required.

This study has demonstrated that exposure to general practice in theoretical and clinical experience during the BN changed respondents' perceptions across all factors. This is consistent with literature that reports that once students have experienced nursing in general practice through clinical placement, they better appreciate the scope and complexity of the GPN role[143]. Additionally, new graduate nurses working in general practice have asserted that more exposure to theory or clinical placement would have better prepared them for the role[68]. Both theoretical exposure and clinical placement experiences have been shown to influence students' views and attitudes about particular clinical settings[90,266]. Theoretical content is necessary to develop undergraduate nursing students' understanding of clinical situations through problem-based learning, and 'classroom' discussions provide students with the space to reflect and develop critical thinking skills[270]. Additionally, the quality of students' learning experience on clinical placement can increase students' confidence and familiarise them with roles and diverse settings, which can positively influence their subsequent career intention[143,260]. Both theoretical and clinical practice training is necessary for the preparation of undergraduate nursing students for the RN role, and in developing their professional identity[270].

Our study showed that respondents who were enrolled on an international visa had significantly different perceptions of the characteristics within the factor 'Employment conditions' compared to respondents who were domestic students. International respondents were found to have diverse cultural backgrounds, and are likely to have experienced a range of exposures and understanding of health systems and clinical settings[262]. Therefore, it was likely that their perceptions were impacted by personal experiences of and/or exposure to community-based nursing roles in their home countries. Individuals are influenced by their personal experiences of health care settings through illness, work, or clinical placement exposure; as well as their overarching beliefs within their cultural groups[271]. Future research needs to explore innovative strategies to

integrate an international lens in BN programs, and to explore how students' pre-conceived ideas, understandings, and personal experiences impact their perceptions of clinical settings as employment options.

There was little discrimination in the scoring of the modified Profession Scale in terms of the presence of characteristics in general practice and the importance of these characteristics in choosing a workplace. Therefore, it was difficult to ascertain the relative importance of individual items. Such challenges in rating scales have been previously reported where respondents may respond in perceived consistency with others' opinions or tend to favour the positive end of the scale regardless of the items[272]. In this study, only two items that scored in the top half of the 'importance' items were rated in the lower half of the scale of characteristics expected in general practice. Wages and opportunities for advancement were both seen as important when choosing an employment setting but felt to be limited in their presence in general practice. Opportunities for personal and professional growth and good remuneration are factors that have been identified as impacting the career plans of nursing students[265]. Dissatisfaction with remuneration has been widely reported among nurses working in PHC settings such as general practice[59,60]. Similarly, limitations in advancement opportunities and a lack of a clear career pathway have been reported[63,123,273] . Given the links between career opportunities and sufficient remuneration and job satisfaction, these areas require consideration to promote general practice to new graduate nurses as a viable career opportunity.

Limitations

This study has some limitations. Not all responses were complete and so some surveys were excluded from the analysis. Respondents may have had more positive or negative views about nursing in general practice than those who chose not to participate. Although respondents were from five geographically dispersed universities, nursing students studying at other institutions may have different perceptions based on the diversity in BN programs across Australia and local clinical placement opportunities in general practice. Furthermore, respondents were primarily female, and few were from Aboriginal or Torres Strait Islander descent. Finally, the quantitative method of data collection restricted the scope of responses. Follow-up interviews sought to further explore survey findings[120,121].

Conclusions and Implications

This study revealed that exposure to general practice nursing within theoretical content and clinical placement influences final-year nursing students' views of the general practice environment. Despite the importance of wages and opportunities for career advancement when choosing an employment setting, respondents generally felt that these would be limited in general practice.

Implications of these findings are two-fold. First, to prepare new graduates to work in diverse clinical settings, universities need to ensure nursing students experience settings, such as general practice, within the BN program. Secondly, policymakers and primary care organisations need to be clear about remuneration and career advancement opportunities for nurses in general practice and ensure that these are commensurate with other nursing employment. Re-evaluating nursing students' preparation to work in diverse clinical settings such as general practice, and supporting the current GPN workforce, may improve nursing students' perceptions of general practice work and encourage them to pursue employment in this setting following graduation.

Chapter Summary

This chapter explored characteristics perceived to be present in the general practice setting environment, and the importance students placed on these characteristics in choosing a work setting. Findings revealed that although respondents valued employment conditions such as wages and opportunities for career advancement when choosing a workplace setting, there were low expectations that these would be present in general practice. The next chapter will present qualitative interview data that more deeply explored perceptions of general practice nursing.

Chapter 6: Perceptions of General Practice Nursing

Chapter Introduction

This chapter includes Paper 4[122] (Appendix J), which investigated final-year undergraduate nursing students' perceptions of general practice nursing. This paper presents interview data around participants' perceptions of the GPN role and the factors that have influenced these perceptions. Paper 4[122] was published in the Journal of Clinical Nursing (Impact factor: 3.036, Journal ranking by JCR: 10/181) as:

> Calma, K., Halcomb, E., Williams, A., & McInnes, S. (2021). Final-year nursing students' perceptions of general practice nursing: A qualitative study. *Journal of Clinical Nursing, 30* (7-8), 1144-1153

Permission to include this publication as part of this thesis has been granted by the publisher, Elsevier (Appendix J).

Abstract

Aim: To explore Australian final-year undergraduate nursing students' perceptions of general practice nursing.

Background: The need for general practice nurses has increased due to growing demands for health care in the community. This demand is exacerbated by a shortage in the general practice nursing workforce. Understanding final-year undergraduate nursing students' perceptions of general practice nursing are important as these may influence career choices.

Design: Qualitative descriptive study within a mixed methods study.

Methods: Telephone interviews were conducted with sixteen final-year undergraduate nursing students. Interviews were audio-recorded, transcribed verbatim, and analysed using thematic analysis. Reporting follows the Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist.

Results: Perceptions of general practice nursing varied between participants and related to three main themes; ways of working; a broad role to meet diverse health needs; and relationships with patients. General practice nurses were seen to have stable and collaborative working relationships, with their role ranging from supporting GPs to being autonomous professionals. The nurse's broad role was associated with diverse presentations and was considered interesting and challenging. Participants perceived that general practice nurses had more time to spend with patients, and this helped establish trust, and facilitated patient-centred care.

Conclusion: Participants' perceptions of general practice nursing varied, with some students recognising the diversity of the role and others perceiving it as limited. These views were often impacted by the experiences of other students or family members rather than personal experience. These variations underscore the need for students to receive greater exposure to general practice nursing. A review of undergraduate curricula to increase focus on preparing nursing students to work in general practice may help shape students' interest to seek employment in this setting.

Relevance to clinical practice: Students' perceptions of a clinical setting can influence their career decisions. Understanding these perceptions can highlight areas that may need to be addressed to promote career opportunities.

Introduction

New graduate nurses have diverse career opportunities ranging from acute general settings to specialist units and community-based services[179,274]. Pre-conceived opinions about these areas are often developed during the nurse's undergraduate education[15,86]. Although nursing students tend to hold preconceived career pathways upon commencing their education[85], career interests and choices develop over time as a product of undergraduate nursing students' interaction with their environment[15,87]. Extrinsic factors such as curricula and academic staff expertise[69,90,275], clinical placement experience[143,266], perceived employment conditions[165,265], perceptions around work-life balance and opportunities for career progression[265,276] all influence nursing students' career interests. Undergraduate nursing students tend to have greater certainty about their career intentions in their final years as shaped by their educational programs[86].

Understanding undergraduate nursing students' career choices and the perceptions that influence these are important elements of the recruitment and retention of a nursing workforce. While there has been research examining the perceptions of undergraduate nursing students regarding work in specialist clinical areas such as critical care[1], mental health[84,277], and aged care[90], gaps remain regarding the perceptions of undergraduate nursing students regarding work in PHC settings[151]. Given the importance of attracting new graduate nurses to address workforce shortages in general practice internationally, it is essential to understand final-year undergraduate nursing students' perceptions of the general practice nursing role to understand how these underpin their career choices.

Background

Countries with a strong PHC system have better access to care, lower rates of hospital readmissions, less use of emergency services, and lower rates of ill-health and mortality[30]. Increasingly, the demand for PHC services, such as general practice, has grown in response to an ageing population, and increased burden of chronic disease[27,30].

In the UK, the majority of general practices are privately owned businesses contracted to deliver primary care[35]. In NZ many general practices are private businesses, but are increasingly becoming a part of larger corporations or are owned by trusts in low-socioeconomic areas[36]. In Australia, general practices may be either owned by a GP as a private business or be part of larger corporate chains. Most general practices employ at least one GPN[278]. Similar to the UK and NZ, GPNs in Australia are either baccalaureate-prepared or equivalent RNs or diploma-prepared ENs. The GPN workforce has rapidly expanded over the past 20 years, with RNs the majority of the GPN workforce[28,278].

As the number of GPNs has grown, their role has shifted from being a 'handmaiden' to making a significant contribution to the delivery of chronic disease management, acute care, and preventative health services[49]. However, the growing demand for general practice nurses is exacerbated by an ageing GPN workforce and a high frequency of part-time and casual employment[26]. Heywood and Laurence[26] identify that a larger proportion of the Australian GPN workforce, as is the case internationally[43], is predicted to retire in the next 10 years compared to the broader nursing workforce, which places further pressure on general practice to attract a strong nursing workforce.

While many experienced nurses transition into primary care from acute care[159], to sustain the workforce, it is vital that new graduate nurses also see general practice as a viable career option[5]. However, negative perceptions of PHC nursing are influenced by an acute care-focused curriculum[129,151,167], a lack of academic nurses with PHC experience[129,167], beliefs of academic staff around preparing students for an acute care career[129], and limited exposure to PHC through clinical placements[129,167]. To maintain and expand the GPN workforce, it is important to understand nursing students' perceptions of general practice nursing. Understanding these perceptions can inform academics and managers and highlight areas that may need to be addressed to promote career opportunities within the clinical setting[25,279]. Thus, this paper sought to explore final-year undergraduate nursing students' perceptions of general practice nursing.

Method

Design

This paper reports the findings of a qualitative descriptive study within a larger sequential explanatory mixed methods study. Initially, a cross-sectional online survey of final-year undergraduate nursing students was undertaken[120,121]. This paper presents findings from subsequent qualitative interviews. A qualitative descriptive approach was employed as it provides a comprehensive description of participants' experiences, enabling a deeper understanding of the phenomena[280]. This study is reported using the COREQ checklist.

Participant Recruitment

Final year undergraduate nursing students from five universities in NSW, Australia that provide a BN program were included in the study. Given variations in University policies, survey information was disseminated to potential participants either via a direct email from academic staff within their institution or through promotion on the University learning platform. Reminders were provided with posters placed in prominent locations on campus and electronic reminders sent via email and the learning platform.

At the end of the survey, respondents were invited to provide contact details to participate in an interview. Potential interview participants were identified based on responses to the modified 19-item ASPIRE scale that described respondents' intention and attitudes to work in general practice following graduation[2]. Respondents were stratified in terms of low, mid, and high intention to work in general practice. Contact with potential participants from each group occurred via email and phone by the lead author (KC) to provide study information and arrange an interview time. Recruitment continued until data saturation was achieved. Given the time and resource constraints of the Doctoral program it was not possible to recruit or interview additional participants.

Data Collection

A semi-structured interview schedule was developed from a literature review and survey data[69]. The schedule comprised open-ended questions, for example, "Tell me about your understanding of nursing in general practice?", and prompts including "What might have influenced these perceptions?" The geographical spread of participants meant that all interviews were conducted via telephone by the lead author (KC), an RN and Doctoral candidate with experience in qualitative descriptive research. Other team members were

female RNs who are experienced qualitative researchers with a background in primary care research.

Interviews were audio-recorded and transcribed verbatim by a professional transcription company. Field notes were written during and immediately after each interview. Given the lack of personal meaning and timing of data collection at the end of a study year, transcripts were not returned to participants.

Data Analysis

The inductive thematic analysis framework by Braun and Clarke[4] was used to analyse the data. The lead author (KC) familiarised herself with the data through reading and re-reading transcripts while listening to audio recordings. Field notes provided a descriptive account of the researchers' observations and allowed the researcher to reflect on and interpret emerging ideas. Preliminary codes, patterns, and meanings were identified independently and manually coded (Appendix F). Codes were organised into potential themes by collating the coded extracts[4]. To establish congruence throughout the analysis, the team reviewed and cross-checked the developing coding framework against transcripts. Extracts were organised against developing sub-themes. Review of the identified themes established coherence in the patterns forming and assessed whether the themes reflected the meanings evident in the entire dataset[4]. The meaning and name of each theme were discussed until consensus was achieved.

Rigour

To establish rigour the criteria for trustworthiness described by Lincoln and Guba[243] were used. All researchers participated in debriefing, examining each other's perspectives, and clarifying interpretations throughout the analysis process. Checking the accuracy of transcriptions against audio recordings established the congruence and credibility of data. A detailed description of participants and the use of verbatim quotes assured transferability[243]. Dependability was achieved through the description of steps taken from the study commencement, through to the analysis and reporting[243]. This audit trail, together with cross-checking codes for accuracy, further established confirmability[243].

Ethical Considerations

Ethics approval was provided by the Human Research Ethics Committee of the University of Wollongong (Approval No. HREC 2018/556) prior to data collection. The information

sheet and consent form described the research team, study aims, and the benefits and potential risks to participants. Written consent was given before each interview. Pseudonyms are used to protect participants' confidentiality.

Results

Sixteen semi-structured interviews were conducted between October and November 2019. Fifteen participants (93.8%) identified as female. Two participants (12.5%) had experience as an Enrolled Nurse in general practice and two (12.5%) had worked as receptionists. Only one (6.3%) participant reported having had a general practice clinical placement experience. The remaining 11 (68.8%) participants had no clinical exposure to general practice (Table 6.1).

Table 6.1 Participant Demographics

Pseudonym	Age	Gender	Experience in General Practice	ASPIRE Score
Anne	27	F	Nil	Low
Bronte	41	F	Nil	High
Celestine	40	F	Nil	High
Denise	20	F	Nil	Low
Edna	35	F	Student placement	High
Faye	54	F	Nil	High
Grace	31	F	Nil	Low
Hailey	29	F	Nil	High
Ian	23	M	Nil	Low
Jessica	33	F	Receptionist	Mid
Klara	37	F	EN	Low
Lorraine	26	F	Nil	Low
Maggie	21	F	Nil	Mid
Nadine	20	F	Nil	Mid
Olivia	20	F	Receptionist	High
Paula	41	F	EN	High

Findings revealed three themes regarding participants' perceptions of general practice nursing: a) *Ways of working;* b) *A broad role to meet diverse health needs; and* c) *Relationships with patients*

Ways of Working

Diverse perceptions about the GPN role indicated that participants were largely unsure about ways of working in general practice. This may be attributed to "a lack of education surrounding job roles and responsibilities" [Denise] in general practice at University;

> *"... my placement has been – like [for] example, the emergency department, then coronary care or ICU. So, most of my placements is on those levels. So, I really have no idea of what general practice is. But in my mind, is the general practice - is it equal to a ward? So, I really don't know?" [Grace]*

> *"I mean I went online, there was a little chat a couple of - maybe a few months ago now on primary health care for general practicing nursing and that was the only time I heard about a general practice nursing.." [Bronte]*

Some participants relied on the perceptions of others to shape their understanding of the GPN role.

> *"[Some students] said it's a good experience. Some have said there's not as much clinical experience or it's a very slow-moving position." [Denise]*

> *"So when you're talking about general practice nursing, is that just general ward?... From what I hear, it sounds difficult. But I've never really seen a general practice nurse... But my cousin, because she's working in the community ... I've heard some stories from her." [Ian]*

Several participants perceived that GPNs work in isolation from other nurses, but still work as part of the multidisciplinary team. Maggie described "it's a different style of nursing. You more work alone a lot of the time – well at least in rural locations or remote locations…you don't really have that team of nurses [like] if you're on the wards." However, Olivia added that although GPNs may not always be working with other nurses, "really from my experiences working [as a receptionist in general practice], [nurses] do have the support from the doctors. You do have support from everyone else and you're not just expected to be alone there."

Perceptions regarding the GPN's clinical role varied from a fully supportive role to the work of the GP to being professionally autonomous in their practice. Faye described the

GPN's role as being "someone that's supporting the doctor. You work under a doctor very closely. You'd be triaging the patients for the doctor". Similarly, Denise perceived the GPN role as "assisting their doctors and whatnot. Reading results and helping out with the follow up of doctors' reviews". However, Edna, who had experienced a clinical placement in general practice, perceived that GPNs have defined nursing responsibilities:

> *"I can see a lot of people that have the misconception that, oh, they just*
> *do what the doctor tells them to do but that's not true…they've got their*
> *responsibilities as an RN to direct the care." [Edna]*

Olivia, who had experience as a general practice receptionist, summed it up, identifying that "it does vary from practice to practice…I've seen somewhere the nurse will go and get the observations of the patient…and then other tasks would be helping out doctors with procedures such as dressings and minor procedures".

Participants varying perceptions about the GPN's autonomy influenced their perceptions of the role. Some participants perceived that an independent, self-directed role for GPNs would be appealing and provide a level of decisional authority around patient care. Lorraine described how "having the freedom to breathe and not just constantly have people down [their] throat all the time" and "having the freedom to make decisions…within your scope of practice...Would be a positive for me absolutely."

Conversely, an increased level of responsibility could carry an unwanted element of risk that required the nurses to understand any limitations in knowledge or experience that they might not know and be confident in regards to their scope of practice.

> *"You would have to know what you don't know. You'd have to be confident*
> *and - yeah, I guess the autonomy could be a positive and a negative. It's*
> *great in the sense that you can use your experience to help, but you are*
> *[autonomous] and you'd have to be very careful with that as well."*
> *[Celestine]*

In fulfilling an autonomous role, GPNs were perceived to require extensive knowledge and experience:

> *"I can imagine in my head the scope of practice they must have to have…*
> *the knowledge base must have to be so wide for them to be really effective*
> *at their job, because they're basically - outside of being able to prescribe,*

> *they're really doing a doctor's role. They're very autonomous, so I think…*
> *to be good at their job they must be quite experienced." [Celestine]*

On the other hand, some participants felt that the level of professional autonomy provided opportunities for ongoing learning and development as an RN. For example, Ian described that while there are "daunting" aspects to self-directed practice, "you learn a lot more when you have to do things yourself… having to do those tasks and be confident in your own practice, it helps with the experience of being a nurse".

Some participants described their observations of general practice nurses and the working environment. Olivia asserted that general practice seemed to be "a pretty fun environment to be around most of the time" [Olivia]. While Nadine commented, "… From the nurses I can see they always have a smile on their faces… that's what makes it look like they do enjoy what they do in… general practice." [Nadine]

A Broad Role to Meet Diverse Health Needs

There were favourable perceptions around the diversity of general practice nursing, where "you get everyone from tiny babies to the elderly population, so there is a wide range of things going on" [Lorraine]. Alternatively, others viewed this diversity as requiring GPNs to have broad skills and knowledge to work effectively.

> *"I would think that their role would be very varied and pretty wonderful,*
> *but I would think that it would have to have come with quite a wide*
> *knowledge base." [Celestine]*

> *"You need to also know your skills, know your information…you need to*
> *know health issues that are relevant to the population where you work."*
> *[Maggie]*

The disparate presentations were thought by some to potentially make general practice nursing a busy role and stressful job.

> *"I would say it's very busy. You don't know what to expect so it's very ..,*
> *it's busy and sometimes schedule can be off track…. Sometimes it could be*
> *stressful." [Nadine]*

Acute presentations were seen as commonplace, where "you might get somebody with chest pains come in… or you might get somebody that's come in and cut themselves on glass in their garden" [Paula] or someone needing "removal of stitches" [Olivia]. Others

described that "there's a lot of family health, immunisations and baby health checks…" [Jessica], issues related to "sexual health… and [advice] with alcohol intake" [Maggie], and management of "mental health… being the first port of call for that" [Lorraine]. Some participants also described the GPN's role in supporting self-management, with a focus on educating clients, working in the multidisciplinary team, and coordinating care.

> *"Maybe long-term cases, like COPD patients, diabetes clients, people with… ongoing medications… maybe with some partnership with the palliative care team at some point… it would be education and then collaboration and coordination." [Grace]*

> *"You're getting to see people that aren't critically ill but you're able to give them education and assistance on how to deal with whatever they're going through to prevent them from going to hospital." [Paula]*

The important contribution of GPNs in health education was best described by Paula;

> *"Being able to explain the processes of disease in a simplified manner that the patient can understand…The doctors will just say you need a care plan because you've got diabetes… that [it's] really important that you see a podiatrist once every 12 months... But the patients don't understand why. [GPNs] can say it's because the little blood vessels in your toes can sometimes lose feeling because of the glucose supply in your blood…you can get sores. The patients will often say, oh I had no idea because the doctor hasn't been able to explain that to me." [Paula]*

GPN engagement in various clinical procedures that hospital nurses might not participate in was thought to be interesting.

> *"I've recently come into contact with some nurses for some procedures for myself and I have got to see some of the things that they do... It actually made me quite curious because I realised that they were doing some tasks that perhaps a nurse on the ward wouldn't be able to get to do." [Anne]*

> *"I've got friends that are in general practice… some can do a lot more than what other people can do on the wards" [Edna]*

Despite the recognition of the potential within the role, other participants viewed general practice nursing as slower-paced, with limited opportunities for skill development.

"Nurses in GP roles, it's more of a slow pace kind of job. It's not a broad range of experience or sorry, clinical experience….you wouldn't want to do a GP [nursing] role because it's just giving needles and doing check-ups and giving results and doing a minute amount of clinical experience as to what you would get in a hospital setting." [Denise]

" it can be a little bit slow depending on the time of year." [Nadine]

Relationships with Patients

Most participants shared an appreciation for GPNs' perceived ability to spend more time with patients than acute care nurses. Increased time with patients was perceived as an enabler to develop trusting relationships with patients because "you can actually sit down with a patient, inform them what procedure you're going to do. You get to know the patient better" [Nadine]. It was acknowledged, however, that this was dependent on the nurse having well-developed communication skills.

"You always get your client to come back to you…The things that aren't taught in nursing is how to be approachable… you still need that bit of salesmanship as well, you need to really sell yourself to be able to interact with other people well." [Klara]

Participants suggested that the therapeutic relationship developed by GPNs with their patients had positive benefits for both the patient and the nurse. From her experience as a patient, Nadine described how the positive relationship with the GPN optimised her outcome;

"There was this kind nurse that helped me during the procedure. I had to get a wound dressing done and I feel like they build more of an interpersonal relationship with the patients. I experienced good outcome from seeing the nurse…You can kind of see a difference with a nurse with a heavy patient workload…" [Nadine]

Relationships with patients were perceived as equally rewarding for GPNs.

"What I would like mostly about it is the rapport that you would build with your patients in supporting them…. That one on one that you would be able to have with people, the time, building rapport. It'd be quite special and be heart-warming." [Faye]

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"What I like probably most is the contact with the patients... We do have a lot of patient contact." [Paula]

"I like that you get to be a little more one on one in that moment…that you might get to know .. someone, be able to see a progression." [Celestine]

Views around the GPN-patient relationship led to the perception that patients might feel more comfortable discussing health concerns with the GPN than the doctor.

"through the half an hour or so that you get to spend with the parents chatting that you find out whether there are any concerns that they're not going to raise with the doctor. A lot of the time it's because they get to spend time with the nurse and begin to trust the nurse that they mention things, what do you think about this?" [Paula]

"My dad… won't tell the doctors things because then he'll go on more pills or whatever, but if he goes into the nurse's station to go and get a blood pressure check then he discloses a lot more to her than what he does to the doctor." [Edna]

Discussion

This study sought to explore final-year undergraduate nursing students' perceptions of general practice nursing. This is a topic of global relevance given the growing need to develop and sustain the primary care nursing workforce internationally. While this study is one of the first of its kind to investigate final-year undergraduate nursing students' perceptions of general practice and was undertaken in Australia, the findings have synergies with and are relevant internationally.

The findings illustrated that participants had varied views of nursing in this setting in terms of the GPN's ways of working within the team and the diversity of their roles. This variation highlights an intriguing contradiction in the findings. On one hand, some participants perceived GP nursing as being 'less stimulating' than acute nursing roles, which could limit career advancement and negatively impact their interest to work in general practice. Conversely, others expressed views that GP nursing was broad and complex that would demand extensive skill and experience. In contrast, participants largely agreed that the time GPNs spent with patients enabled them to build close relationships that fostered care quality and job satisfaction.

The variation in participants' perceptions likely stem from the perceptions of others and personal experiences. Furthermore, only a few participants had experienced general practice placement or employment where they could be exposed to the GPN role. This is consistent with the international literature describing an overall lack or inconsistent delivery of PHC content[129,151,164,258]. It should be noted, however, that participants with actual experience of the GPN role expressed more positive views of general practice than those who did not have experience in this setting. As students' career decision-making is influenced by positive learning environments[87], providing high-quality theoretical and clinical experiences may enhance students' understanding and interest in general practice nursing[3,86,277,281]. Given that students' career intentions become increasingly clear as they near the end of their degree[86], it is important for universities to evaluate not only the consistency of general practice content but also the timing of content delivery within the curricula. Furthermore, incorporating appropriate clinical placement experiences, and content that is delivered by academics with primary care experience can contribute to the realistic representation of general practice nursing as a career opportunity. While in the UK this role may be undertaken by Lecturer practitioners, such roles are not commonplace in Australian higher education.

A key area of diverse perceptions was around the level of self-direction in general practice nursing, with some assuming that GPNs primarily support GPs while others expected that GPNs were autonomous. Professional autonomy is considered a highly valued nursing attribute that influences job satisfaction[282] and its absence is associated with a greater likelihood of leaving nursing[283]. There is a need to reinforce students' understanding that as health professionals, GPNs are accountable for delivering nursing care. However, comparable to nurses working in other settings, GPNs are still expected to work within their scope of practice in collaboration with other nurses and the multidisciplinary team[49,284]. Furthermore, GPNs' level of self-direction may vary due to other factors, such as level of experience and differences in the practice setting. This highlights the need for new graduates to have a good understanding of professional concepts such as the scope of practice to prepare them for employment in a diverse range of settings. Additionally, poor role clarity around general practice nursing continues to challenge perceptions of the value of the role[160] and perpetuates the perception that acute care experience is necessary[160]. Indeed GPNs themselves often have diverse perceptions around their professional autonomy and identity[40]. Strategies to promote the visibility of GPNs,

develop their professional identity, and advocate for the role could be powerful in promoting this setting as a valuable employment opportunity.

The breadth of general practice nursing was perceived as interesting and challenging by participants. GPNs have been previously described as "specialised generalists"[285](p. 380) given their wide-reaching set of clinical skills and knowledge[24,284]. However, the breadth of the GPN role also raised concerns around the extent of knowledge and clinical skills that a GPN would require to be safe and effective[65]. As such, participants who described the complexity of the role expressed some trepidation as they compared this to acute hospital employment. Enhancing undergraduate nursing students' experience of general practice nursing, through high-quality clinical placement experiences, networking opportunities and continuous learning opportunities may help to allay these concerns by facilitating familiarity with the setting and role.

This perception of complexity, however, was not shared by all participants. Other participants described their perceptions around the 'lightness' of the GPNs workload compared to acute care nursing. For these participants, this had the potential to negatively impact their interest to seek general practice employment. The literature has described PHC as an area where a nurse could lose important skills and reduce the potential for career advancement[3,129]. Indeed, McInnes et al.[143] reported on undergraduate nursing students' limited understanding of general practice nursing, and their beliefs that GPNs perform basic tasks with little autonomy. While the scope and workload of GPNs have evolved, many GPNs remain underutilised[51,63]. Exploring strategies that could support funding and policy changes to maximise the role of the GPN can improve job satisfaction[63], and may influence undergraduate nursing students' perceptions of the role and intent to pursue a career in general practice[143,286].

Limitations

Several limitations need to be considered when evaluating this study. Although participants were recruited from five different universities across metropolitan and rural areas of NSW, Australia, students in other jurisdictions may have different perceptions. Additionally, those who volunteered to participate may be more likely to have stronger feelings about general practice nursing than those who did not engage. Furthermore, all but one participant identified as female, which meant that the views of male nursing students could not be fully explored. Despite attempts to recruit a diversity of participants,

participants were recruited based on their ASPIRE scores and so few participants had personal experience of general practice nursing during their undergraduate program. Further research should seek to explore the perceptions of those who have direct experience of clinical placements in general practice. While this is likely reflective of the current curricula, it does impact the interpretation of the findings. Finally, students were recruited via email or on their University website close to the Christmas break, which made it challenging to ensure that all students had access to this information during the study period.

Conclusion

Understanding final-year undergraduate nursing students' perceptions of general practice nursing are key to addressing the current and future workforce shortages in this setting internationally. The findings of this study reveal that final-year undergraduate nursing students' perceptions of general practice nursing varied. This highlights a need for students to have greater exposure to general practice nursing during their undergraduate education. Increasing focus on preparing nursing students for employment outside acute hospitals can help develop students' competence and confidence to seek employment in diverse clinical settings.

Relevance to Clinical Practice

Nursing students' perceptions of a clinical setting can influence their career decisions. Understanding these perceptions can inform clinicians, managers, and nurse educators and highlight areas that may need to be addressed to promote career opportunities across the health sector beyond acute hospitals. Collaboration between nurse academics, PHC professional organisations and GPNs is key to ensuring realistic appraisal of general practice nursing is shared with students and other nurses.

Chapter Summary

This chapter presented findings from the interviews, focusing on participants' narratives relating to their perceptions of general practice nursing. Findings revealed that there was a diversity in perceptions of general practice nursing among the participants, which were often shaped by the experiences of family members or other students rather than direct exposure to general practice nursing. The next chapter will describe participants' views of general practice nursing as a new graduate career path, and the issues that influence these perceptions.

Chapter 7: Perceptions of General Practice Nursing as a Graduate Career Path

Chapter Introduction

This chapter presents qualitative interview data focusing on participants' perceptions of general practice nursing as a new graduate career path[123]. Paper 5[123] (Appendix K) was published in Nurse Education in Practice (Impact factor: 2.281, JCR Journal ranking: 29/181) as:

> Calma, K., Williams, A., McInnes, S., & Halcomb, E. (2021). New graduate employment in general practice: Perceptions of final-year nursing students. *Nurse Education in Practice, 54* (1), 103115.

Permission to include this publication as part of this thesis has been granted by the publisher, Elsevier (Appendix K).

Abstract

Aim: This paper sought to investigate the perceptions of final-year undergraduate nursing students regarding general practice nursing as a new graduate career path.

Background: General practice nurses have become increasingly important in providing community-based care, in response to the growing burden of chronic conditions and the ageing population. To sustain this workforce, there is a need to optimise strategies to promote a consistent supply of new graduate nurses.

Design: This qualitative descriptive study was undertaken within a sequential explanatory mixed methods study.

Methods: Data were collected through semi-structured telephone interviews with sixteen final-year undergraduate nursing students from five Australian universities. Interviews were analysed using thematic analysis.

Results: Four main themes were identified, namely; a) general practice is not a priority career path, b) opportunities for skills development and consolidation, c) perceptions of employment conditions, and d) transition support is limited.

Conclusion: To meet current workforce needs in areas with increasing demand, nurse educators need to support undergraduate nursing students to explore a wide range of career pathways following graduation. Informed career choices and well-structured educational preparation during undergraduate education may be an effective strategy in building a sustainable future workforce in settings such as general practice.

Introduction

The growing burden of chronic conditions, combined with an ageing population, has driven the focus of health care delivery towards the community[30]. This has increased demand for services such as general practice. As a first-line health care provider, over 90% of Australians access general practice services annually[9]. Similar to the UK and NZ, Australian general practices are often owned by GPs and operated either within a small business structure or as part of a corporate chain[27]. Most general practices, in countries such as Australia, the UK, and NZ, employ at least one nurse[138].

The GPN role has been firmly established in both the UK and NZ, in contrast with Australia where it has developed over the past two decades. Australian GPNs have developed their role in preventive health, chronic disease management, and acute presentations. In Australia, GPNs either hold a baccalaureate degree or equivalent (RN), or a diploma (EN). Nurses most frequently enter general practice employment following work experience in hospital settings, with few new graduate nurses employed in this setting[158]. This is largely attributed to the limited pathways for new graduate nurses in general practice[67,68]. This is particularly concerning given the GPN shortage, ageing GPN workforce, and predominately part-time and casual nursing employment arrangements[26,67]. One workforce development strategy is to ensure a consistent flow of new graduate nurses seeking employment across clinical areas and, in particular, in areas of known or predicted shortages. To sustain and replenish the GPN workforce, it is important to understand the issues that influence undergraduate students' career choices.

Background

Nursing registration entitles graduate nurses to practise in many different settings[16]. As such, graduate nurses are faced with a wide variety of career choices, including hospital settings and community-based PHC services such as general practice[68,274].

There is growing evidence exploring the preferences of final-year undergraduate nursing students regarding employment following graduation[15,287], and the relative attractiveness of different clinical settings[15,274]. Internationally, aged care and mental health are the least preferred career options among undergraduate nursing students[15,96]. In contrast, high-tech areas including emergency departments, intensive care, operating theatres[15], paediatrics, and maternity are often reportedly preferred by students[96]. While there is limited research[69], few undergraduate nursing students report an intention to seek

employment in community-based settings[22,97]. This mirrors the recent State of the World's Nursing Report which highlighted the maldistribution of nurses given preferences to work in hospital settings[17].

Various factors are known to influence nursing students' career choices. Gender, age, and personal qualities may shape career decisions[15,22,266]. Additionally, clinical placement experiences[266], knowledge of the practice area[288], expectations around working conditions[22], curriculum foci, and expertise of academic staff[260] impact decision making. To maintain a sustainable nursing workforce, it is important to understand final-year undergraduate nursing students' perceptions of general practice as a career choice, and the issues that influence these perceptions.

Aim

This paper investigates final-year undergraduate nursing students' perceptions of general practice nursing as a new graduate career path.

Methods

Study Design

A qualitative descriptive study was undertaken in a sequential explanatory mixed methods study following an online survey of final-year undergraduate nursing students. To explore survey findings interviews were undertaken with a sub-group of survey participants. A qualitative descriptive approach provided an extensive yet straightforward description of experiences[280]. Survey data have been reported separately[120]. This paper reports on interview data related to participants' perceptions of general practice nursing as a new graduate career path. Discrete data about perceptions of the GPN role also emerged from the interviews and are reported elsewhere[122]. The COREQ checklist was used to guide reporting.

Participants

Final-year undergraduate nursing students from five universities in NSW, Australia were recruited. Potential participants either received a direct email from their faculty or the survey was promoted on e-learning platforms. Participants provided contact details on survey completion if they were interested in interview participation.

Survey participants who indicated a willingness to be interviewed were stratified into low, mid, and high intention to work in general practice based on the modified 14-item ASPIRE scale[2]. A high score is indicative of a greater intention to work in general

practice. The Doctoral candidate (KC) contacted potential participants from the three career intention groups. Once study information was provided and informed consent was gained, an interview was arranged. Participants were recruited until data saturation was reached. The constraints of a Doctoral program precluded further interviews.

Data Collection

The Doctoral candidate (KC), an RN with qualitative descriptive research experience, conducted all interviews via telephone due to participants' geographical dispersion. The other members of the team were female RNs and academics who have experience in qualitative descriptive research in PHC. Interviews followed a semi-structured interview schedule developed from a literature review[69] and survey findings. The schedule included open-ended items such as, "Tell me, how do you feel about general practice nursing as a career choice for new graduate nurses?", and probing questions such as "what aspects are most/least appealing to you about general practice as a career choice?". Interviews were digitally audio-recorded and field notes were kept. Transcripts were not returned to participants given interviews were conducted at the end of their study year.

Data Analysis

Audio recordings were transcribed verbatim by a professional transcription company. Data were then analysed using thematic analysis[4]. Transcripts were initially read (KC) while listening to the audio to establish accuracy. Field notes and transcripts were read and re-read to establish familiarity. Initial codes, patterns, and meanings were independently identified (KC) and cross-checked (EH, AW, SM). Codes were organised into potential themes by manually collating coded interview extracts. Initial themes were identified and developed into a coding framework by all researchers, and these were cross-checked against the transcripts and discussed. The 'meaning' of each theme was discussed until consensus was reached and final titles determined[4].

Rigour

Trustworthiness was established using the criteria described by Lincoln and Guba[243]. Credibility was established by comparing the audio data and transcripts and peer-debriefing, where the team conferred on raw data, codes, and themes. Providing a detailed description of participants and presenting verbatim quotes demonstrated transferability. A detailed description of study processes established dependability. Finally, providing an audit trail and cross-checking codes established confirmability.

Ethical Considerations

Approval was gained from the University of Wollongong Human Research Ethics Committee (HREC 2018/556). The aim, benefits, and potential risks to participants were included in the information sheet and consent form. Participation was voluntary and, although participants could cease the interview at any time, none chose to do so. Identifying information was removed from transcripts. Pseudonyms are used in reporting.

Results

Of the 16 participants, only one identified as male (6.3%)(Ian). Participants ranged in age from 20-54 years (Mean 31.1 years). Eleven (68.8%) participants reported having no general practice clinical experience. Two participants (12.5%) had worked as a receptionist (Jessica and Olivia), and two (12.5%) had worked as Enrolled Nurses in general practice (Klara and Paula). Only one (6.3%) participant (Edna) had undertaken a general practice clinical placement as part of their undergraduate education.

Four main themes emerged, namely: a) general practice is not a priority career path, b) Opportunities for skills development and consolidation, c) perceptions of employment conditions, and d) transition support is limited.

General Practice is Not a Priority Career Path

When considering career options, several participants reported prioritising hospital settings for initial employment. General practice was frequently viewed through a negative lens, or as a 'back-up option', if hospital employment was not secured.

> *"Most people I think have a pretty negative view of being a nurse in general practice. It seems to be nobody's first choice of job." [Lorraine]*

> *"It's not looked upon… as a priority of a job…I think a lot of people go into nursing thinking that working in a ward is the goal. So working in other areas, whether that be community nursing or GP practices or anything like that, almost feels as though they haven't met that goal." [Denise]*

Most perceptions of general practice as a career path were not informed by direct experiences of participants in the general practice setting. Bronte, for example, described that she has "never been in the general practice on placement" and that she did "not know

much… I really don't know what the range of prospects for nursing is in general practice".

Participants reported that the initial prioritisation of career path was influenced by the extent to which academic staff portrayed a particular clinical setting as important and provided content and promotion of the setting in coursework. An absence of general practice content, and a lack of general practice career advice or promotion in some undergraduate programs, negatively influenced perceptions of general practice as a career option.

> *"It's absolutely not something we're prepared for at Uni I think in any way whatsoever." [Lorraine]*

> *"When it came to applying for new grads and for jobs there was no one that came and talked to us about this." [Anne]*

Limited promotion of general practice nursing as a career path resulted in some participants assuming that work in general practice required specialist qualifications.

> *"I think it's just I assumed that it's a closed-door for me, and you'd have to specialise to be able to have that as an option." [Anne]*

Opportunities for Skills Development and Consolidation

Many participants described seeking initial employment based on perceived opportunities to consolidate fundamental skills and to learn new nursing skills. Views on which clinical setting best-supported skill consolidation and development varied. Some participants, who had been exposed to the general practice setting, articulated that general practice would expose them to diverse skills that may not be available in hospital settings.

> *"I think it's a great learning curve…There's a lot of stuff to be learned that they [new graduates] would not be exposed to on a daily basis on the wards." [Paula]*

> *"General practice nursing would be really beneficial for a new grad nurse… you get a broad range of skills." [Jessica]*

Several participants perceived general practice as a 'steppingstone' for new graduates, rather than a career option. Olivia described several nurses who worked in general

practice "while they're waiting for a new grad and they actually say they learnt a lot and it built their confidence quite a bit more." She expanded on this perception:

> *"I feel like especially it's a way for you to start thinking – especially people who are not too confident in talking to patients it's a starter option…to build up your confidence… it's taking those steps towards being a full-on Registered Nurse at a hospital." [Olivia]*

In contrast, concerns were expressed by participants about losing clinical skills if they were employed in general practice following graduation, particularly concerning how this might impact future employment opportunities. These views, however, were not always founded on personal general practice experience.

> *"The thing that would scare me the most about general practice is losing all of the other skills that you wouldn't be able to practise there such as basic patient daily care, knowing some of your medications since you're not constantly dispensing those medications... if you do decide to move on, you'd have an adjustment period where you're relearning some of these skills." [Olivia]*

> *"I wouldn't say deskill or you won't use what you have studied because for myself now I'm thinking, oh, I want to go to the hospital system first so you basically learn about everything, all the acute symptoms, and all the skills, gather it all before going to GP nursing...if you go straight into GP nursing you might not use or learn all those skills or acquire the skills that you need to go into hospital nursing." [Bronte]*

Denise commented that "there probably is less learning opportunities [in general practice]…as what you would get in a hospital". To these participants, it was important that working in hospital settings always remained a viable career option in the future.

For some, acute care experience was perceived as a "good training ground" [Celestine] for new graduate nurses to consolidate skills before moving into other settings. Many participants perceived that fundamental skills could only be consolidated through hospital experience, with limited recognition that other clinical settings could offer opportunities for skills consolidation. Lorraine perceived that; "It's very much a case of you need to be in a hospital, you need to get your acute care experience, you need to know how to

measure medications, you need to know how to do IV fluid". Faye also shared her perceptions:

> *"[In the ward you learn] time management; critical thinking; when to escalate; knowing how to escalate; who to go to and ensuring the proper processes are done. Everything; everyday basic nursing."*

While some participants verbalised interest in working in general practice in the future, this would only occur after they had gained hospital experience given the greater perceived support provided for new graduate nurses in the hospital setting. Celestine identified that "even if it's only short term, even if it's only six months of a new grad year…where you rotate a couple of times", one could "do six months in a hospital and then go on to your general practice… [but] I just think you see so much [working in the hospital]". She expanded on this saying:

> *"I definitely think being in a hospital where you can just ask a lot of questions is a really good place for a new grad to start. I mean GP practice is a great long-term career choice and maybe that's even something I'll seek out."*

Perceptions of Employment Conditions

Three main issues around employment conditions that emerged from the data influenced participants' perceptions, namely: work-life balance, salary, and workplace pressure, Establishing a work-life balance was important for several participants who perceived general practice employment as a "healthier choice" [Hailey] as it facilitated such balance. Celestine described that "the hours would be much better" in general practice, and Denise identified "it's such a great lifestyle [because] it is a nine to five job". Participants described work-life balance as an important consideration when they experienced concurrent family commitments. Maggie stated that she would consider general practice employment "Definitely in the long term, in the future, definitely a good job, just for the hours too if you've got family, kids". Similarly, Hailey identified that "my family comes first and this area of practice might allow me to make my dreams come true, you know?". Denise agreed to say general practice nursing isn't "something that they were willing to go into straight away – but potentially down the track when they didn't want to be doing shift hours".

Discrepancies between the remuneration for GPNs compared to hospital nurses reduced the attractiveness of general practice employment. Lorraine articulated; "the pay rate in general practice is not as good as a hospital". Paula stated that pay differences influenced decisions regarding general practice employment.

> *"I think that the only downfall of general practice nursing is the fact that they aren't paid nearly as well as what the hospital nurses are. Pay rates are terrible. Hours are great. But, yeah, pay rates are terrible. I think that that's probably one thing that will influence a lot of people as to whether they would stay there or not."*

In contrast, the perceived lower time pressures of general practice were considered by some to make general practice an ideal setting for new graduate employment, particularly if they lacked confidence.

> *"I would say a new graduate nurse into general practice can be beneficial because it's allowing you to… be not so pressured for time."* [Paula]

> *"I personally do want to work in a hospital but for some people they don't like an environment that's too busy as well. So for those people I believe it would be a great option for a new graduate or somebody who's still wanting – who's still a bit too nervous to do everything in a hospital."* [Olivia]

Other participants felt that the perceived 'easier' work of general practice nursing might make employment in this setting more suitable for nurses nearing the end of their career. Lorraine described, "… a lot of the GP practice nurses I have met before have been older people… at the end of their career that are looking to take it a bit easier and not be in a big setting, not be running around as much…". Faye also shared her similar views;

> *"Maybe towards the end of my career. I would probably think [general practice nursing] may be a little bit more easy."*

Transition Support is Limited

While some participants expressed interest in general practice nursing as a career option, the lack of formal transition to practice programs negatively impacted seeking general practice employment immediately post-graduation.

"I think that general practice of nursing would be really beneficial for a new grad nurse. I haven't myself heard of many programs. I know a lot of the hospitals, they do the new grads, but not so much in the general practice." [Jessica]

"I would love to do it; the only thing is availability - yes, you can get a job in general practice but it's not supported like a [hospital] new graduate [program]." [Edna]

Access to professional support such as a manager, supervision, and working within a team were important considerations when choosing a new graduate career path.

"I personally wouldn't want to do it as a new grad nurse. I don't feel I would have enough knowledge. It's such a wide skill set. I wouldn't have enough experience to be that person, that one on one… you're the only nurse.. you don't have anyone to ask on the spot if you needed something." [Maggie]

"It depends on the practice. If you're at a GP that's very supportive and willing to teach then I feel like it would be a good option." [Olivia]

Some participants who lived outside major cities expressed interest in general practice employment. However, there were perceived to be limited local employment opportunities.

"If it was offered in my area it would be – I would like it. Yeah... it would be something that I'd really look into. ... We are quite limited in the [Region] sadly. There are grad years at hospitals, and I think that's it." [Klara]

"A lot of the medical centres I've come across in [Town], in my area, don't support a nurse." [Celestine]

Discussion

Most participants did not consider general practice as a priority career path following graduation. Several participants expressed concerns about seeking general practice employment immediately post-graduation. These concerns were predominately related to limited exposure to and experience of the GPN role, perceptions around skill development and consolidation, lower remuneration, and limited transition support. However, while

others have described PHC as 'not real nursing' and a low-status job[3,170], participants in this study shared much more positive perceptions of general practice nursing overall. Several participants in this study spoke of general practice as a viable option later in their career when they had consolidated skills in a hospital and were more independent in their nursing practice. They also identified that general practice offered opportunities to build skills that are not practised in the hospital.

Despite these positive views, participants were conscious of their knowledge deficit around career pathways around general practice due to limited GPN career promotion at University. The growth of community-based health care requires increased student awareness and preparedness for roles beyond those in hospitals settings[170]. Current BN curricula lack emphasis on such non-traditional nursing roles[16]. Since nurse academics are strong role models to students[177], increasing GPN involvement in academia may assist in demystifying nursing roles and promoting career pathways in the general practice setting[167].

Limited clinical experiences[3], and acute care-focused curricula[69] impact career choices. Indeed, many participants voiced perceptions of limited exposure to the GPN role. International literature concurs that undergraduate programs provide inconsistent and inadequate PHC preparation[129,167,258]. Ensuring that undergraduate programs provide exposure to diverse practice areas would facilitate more informed choices about career options. The impact of such a strategy was supported by McInnes et al.[143] and Lewis et al.[289] who reported that positive clinical placement experiences enhanced perceptions and increased interest in general practice as a career.

Several participants commented on the importance of skills consolidation and development opportunities when choosing employment. Participants shared concerns around the potential of being limited in skill development in general practice, which mirrors perceptions of broader PHC[129]. Beyond misconceptions of the GPN role, this highlights a gap in participants' understanding of the depth and breadth of GPN skills, and the need for nurses to be able to transfer skills across clinical settings. Indeed, nursing students have been reported to be often unsuspecting of the full complexities of the RNs role, and the skills to be learnt and practised[290]. Good quality clinical experience in a diverse range of clinical settings will equip undergraduate nursing students to better

understand the transferability of their skills between settings and the variety of roles that nurses play in the delivery of care.

The lower salary in general practice in comparison to nurses employed in a hospital diminished the appeal of general practice as a career option among participants in this study. Poor salaries have long caused high levels of dissatisfaction among GPNs[60,66]. Investing in strategies to address issues around job satisfaction, particularly in terms of remuneration has significant potential to address these recruitment issues[27,60].

For those who did express an interest in general practice nursing as a new graduate career, a lack of formal transition programs was a major deterrent. Despite some recent new graduate programs in Australia[67,68,160], there remains limited availability of such programs. The small business nature and funding arrangements for Australian general practice present an ongoing challenge in the organisation and delivery of new graduate programs in this setting[68]. In the absence of formal programs, further research needs to investigate how practices can be supported to provide formal transition support.

Study Limitations

Participants were drawn from five institutions across metropolitan and rural areas in a single State, and recruitment was undertaken via email or institutional learning sites. However, more respondents resided in urban areas. Despite a national accreditation system for Australian nursing education, students in other jurisdictions may have differing views. Additionally, the recruitment material may not have been seen by all students during the study period for various reasons. Most participants identified as female and few were from Indigenous backgrounds, so further research is needed to explore the views of male students and those from Aboriginal and Torres Strait Islander backgrounds. As ASPIRE scores were used to recruit participants, only a few participants had direct exposure to general practice nursing. Further research needs to investigate the views of those who have direct experience in general practice. It is also possible that those who responded may have had more polarised views than those who did not.

Conclusion

This study demonstrates that working in a hospital was largely prioritised as an initial career pathway. There were varying views around the opportunities to consolidate and develop new skills, workplace conditions, and availability of transition programs in general practice. There is a need to encourage nursing students to appreciate the breadth

of general practice nursing, and the realities of the complex work GPNs do. Building appreciation of the transferability of clinical skills has the potential to open new graduates to feel more confident in seeking non-traditional employment. Given the increased focus on community-based care, it is important for new graduate nurses to actively seek employment in areas of increasing demand such as general practice.

Nurse educators need to promote curricula that expose nursing students to a range of clinical settings to facilitate informed decisions about career choices. This can be achieved by ensuring that curricula include both realistic theoretical content and high-quality clinical placements in the range of areas in which nurses practice[16]. Accreditation agencies also need to evaluate curricula to ensure that these align with the demands of the health service concerning workforce needs. Strategies to enhance the profile of diverse settings, such as general practice, are important to ensure that these GPNs are valued and that the potential career pathway is highlighted. Perceptions of GPNs regarding their role in the education of undergraduate nursing students need to be explored, and policy makers need to review funding pathways to support GPNs in their expanded roles of student supervision on clinical placement. The facilitation of transition to practice programs in general practice also has the potential to attract more new graduate nurses into this setting.

Chapter Summary

This chapter explored final-year nursing students' views of general practice nursing as a new graduate career path. The hospital setting was largely prioritised as an initial career pathway following graduation, which was influenced by diverse perceptions around the opportunities for skills development and consolidation, workplace conditions, and availability of new graduate transition support in general practice. This is the final chapter to present findings from the study. The next chapter will present the integration of the quantitative and qualitative findings in the context of broader literature, and will present recommendations for practice, policy, education and future research.

Chapter 8: Discussion and Conclusion

"Teaching is only demonstrating that it is possible. Learning is making it possible for yourself."

Paulo Coelho, The Pilgrimage

Chapter Introduction

This chapter presents the integration of new knowledge from the survey and interviews, arising from the exploration of final-year undergraduate nursing students' perceptions of general practice nursing, and their confidence and intention to work in this setting. These findings are then related to the broader literature, contemporary policy, and practice. Initially, the three key findings are integrated across the datasets and the meta-inferences articulated. Then these are critically compared with the existing literature.

The chapter concludes with implications for policy, education, and practice. Recommendations to enhance students' perceptions of general practice nursing as a viable career option and to enhance the attractiveness of the general practice environment for new graduates are offered. Recommendations for future research are provided and the strengths and limitations of the study are discussed. Finally, the chapter conclusion provides an overarching statement relating to opportunities to enhance undergraduate nursing students' knowledge and interest in general practice nursing that may inform future career decision-making.

Aim and Research Questions

This study explored final-year undergraduate nursing students' confidence and intention to work in general practice, and their perceptions of the GPN's role and this setting. These aims have been achieved by answering four research questions:

1. What are final-year undergraduate nursing students' confidence, interest, and intention to work in general practice? (Paper 2)[120]

2. How do final-year undergraduate nursing students' perceive the general practice environment and what are the factors they consider most important when choosing an employment setting? (Paper 3)[121]

3. What are final-year undergraduate nursing students' perceptions of general practice nursing? (Paper 4)[122]

4. How do final-year undergraduate nursing students' perceive general practice nursing as a new graduate career path? (Paper 5)[123]

Integration

The key quantitative and qualitative findings from this study and meta-inferences on the inter-relationships of the findings are presented in Table 8.1[291]. These meta inferences describe interpretations and conclusions based on the data collected[125]. In mixed methods research, inferences involve the connection and incorporation of the quantitative and qualitative findings that effectively address the research questions[125]. Inferences made from sequential explanatory mixed methods study sought to investigate how the qualitative findings help to explain and expand on the quantitative findings[124].

Key Findings

Three key findings emerged from this study, namely:

- participants had moderate interest to work in general practice, identifying a range of barriers that may impact their interest and intention to seek general practice employment in their graduate year;
- the perceived work environment of general practice influences the views of undergraduate nursing students regarding career options; and
- exposure to general practice nursing during undergraduate education impacts undergraduate nursing students' confidence, interest, and intention to work in general practice.

Table 8.1 Key Findings

	INTEREST AND BARRIERS TO WORKING IN GENERAL PRACTICE	
Quantitative Findings	**Qualitative Findings**	**Meta Inferences & Interpretation**
Respondents expressed moderate interest to work in general practice. • 57.7% expressed interest in general practice employment after gaining clinical experience as an RN[120]. • 43.6% reported interest to seek employment in general practice immediately following graduation[120].	Participants identified a range of barriers that may impact their interest and intention to seek general practice employment as a new graduate nurse. • General practice nursing can be a 'steppingstone' but not a long-term career option *"…especially people who are not too confident in talking to patients it's a starter option… to build up your confidence…it's taking those steps towards being a full-on Registered Nurse at a hospital."* [Olivia][123] • Limited opportunities to consolidate fundamental skills and develop new nursing skills may compromise future employment *"…If you go straight into GP nursing you might not use or learn all those skills or acquire the skills that you need to go into hospital nursing."* [Bronte][123] • Lack of programs for new graduates transitioning to practice in general practice *"I would love to do it; the only thing is availability – yes, yes you can get a job in general practice but it's not supported like a [hospital] new graduate [program]."* [Edna][123]	There was interest and intention to work in general practice, either following graduation or at some point in their career. However, the timing as to when employment in this setting would be sought was influenced by various factors.

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CAREER INTENTIONS ARE INFLUENCED BY PERCEPTIONS OF WORK ENVIRONMENT

Quantitative Findings	Qualitative Findings	Meta Inferences & Interpretation
Opportunities for advancement, wages, and physically demanding nature of work were considered priorities for choosing an employment setting. However, these were not considered key features of general practice[(121)].	Participants' perceptions of the general practice work environment were compared against hospital settings, with the latter considered as the benchmark for a nursing work environment. • General practice nursing offers fewer learning opportunities than hospital settings *"There is probably less learning opportunities [in general practice]… as what you would get in a hospital."* [Denise][(123)] • GPNs receive poor remuneration compared with hospital nurses *"I think that the only downfall of general practice nursing is the fact that they aren't paid nearly as well as what the hospital nurses are…Pay rates are terrible…"* [Paula][(123)] • General practice nursing was perceived to be less physically demanding or slower paced compared to hospital nursing *"Nurses in general practice roles, it's more of a slow pace kind of job…"* [Denise][(122)] *"It can be a little bit slow depending on the time of year."* [Nadine][(122)]	Undergraduate nursing students consider opportunities for advancement, learning opportunities, remuneration, and the physical nature of work as priority needs when determining future places of employment. However, these were not identified as key features of the general practice setting. These impacted on perceptions of general practice nursing work, and their intention to seek employment in general practice.

CONFIDENCE, INTEREST, AND INTENTION TO WORK IN GENERAL PRACTICE ARE INFLUENCED BY EXPOSURE TO THE SETTING		
Quantitative Findings	**Qualitative Findings**	**Meta Inferences & Interpretation**
Exposure to general practice nursing influenced respondents' confidence, interest, and intention to work in general practice	Perceptions of general practice nursing were often not based on personal exposure to general practice nursing theory or clinical placement experience within the BN program. Lack of theoretical or clinical exposure at University resulted in different perceptions related to the general practice nurse's ways of working, and general practice as a career option following graduation.	Lack of exposure to general practice nursing within BN programs shapes perceptions of general practice nursing, which in turn influences interest and intention to work as a GPN.
• 61.4% were exposed to general practice nursing theory in the BN program		
• 34.1% had a clinical placement in general practice[(120)]	• Lack of clinical placement experience in general practice clouded perceptions of ways of working in this setting	
• 39.7% were exposed to PHC content in their final year[(120)]	*"...my placement has been – like [for example], the emergency department, then coronary care or ICU. So most of my placements is on those levels. So I really have no idea of what the general practice is. But in my mind, is the general practice – is it equal to a ward? So, I really don't know?"* [Grace][(122)]	
• Clinical placement and confidence to work in general practice were significant predictors of interest and intention to work in this setting[(120)].	• Limited exposure of general practice nursing as a viable new graduate career pathway influenced perceptions of employment options	
• Work experience in general practice was a significant predictor of confidence to work in this setting[(120)].	*"I think I just assumed that it's a close door for me, and you'd have to specialise to be able to have that as an option"* [Anne][(123)]	

Interest and Barriers to Working in General Practice

a) Interest in General Practice Employment

Quantitative findings revealed an overall moderate interest to work in general practice for some but not all respondents[120]. This is in contrast to previous literature that has reported undergraduate nursing students' lack of interest to seek employment in PHC settings[22,97]. Nursing in community settings has previously been perceived as a low-status job among undergraduate nursing students and an 'easier' area of nursing[3,169]. On the other hand, respondents in this study shared more positive views of general practice nursing, particularly those who had previous experience or clinical placement in general practice.

Qualitative findings, however, extended the understanding of survey findings relating to the timing with which those who had expressed interest would seek general practice employment[123]. Interview participants believed that while general practice nursing may be a good career choice for new graduate nurses seeking to build confidence, it was not necessarily an ideal long-term career option. Given perceptions of general practice as offering fewer opportunities for skill consolidation or development than in hospital settings, participants felt that working in general practice could be career-limiting[123].

Of importance, however, is the extent of GPN experience respondents in this study had which informed these perceptions. As reported in previous studies[129,143], most respondents did not have clinical experience in general practice. This suggests that perceptions regarding the GPN role were not informed by direct clinical experience. In the absence of such clinical experience, some participants indicated that their perceptions were founded on information provided by others. At University, undergraduate nursing students' learning experiences are shaped by nurse academics' clinical experience in their area of expertise[292], which can influence the realistic appraisal of content delivery and may drive interest through 'real-life situation' learning[293]. Given nurse academics are key role models to students, undergraduate nursing students should be exposed to academics with a range of clinical backgrounds including PHC[6,177]. Beyond efforts to increase the diversity of clinical expertise within the nursing faculty, strategies need to expand the range and scope of clinical settings portrayed in case studies and simulated learning experiences. Currently, these predominately involve hospital-based scenarios[294-296], however, integrating more general practice-based scenarios may assist in providing undergraduate nursing students with realistic expectations of the GPN role and highlight the transferability of many key clinical skills across clinical settings.

b) *Limited Opportunities to Develop Skills may Compromise Future Employment*

For many, consolidation and development of clinical knowledge and skills were seen as a priority when making career choices immediately following graduation[123]. Some participants shared concerns around limited opportunities to consolidate fundamental skills and develop new nursing skills in general practice, which was perceived to compromise future employment options[123]. Similar perceptions have been reported in the literature relating to undergraduate nursing students' trepidations around losing nursing skills in PHC settings[129,274], including aged care[91,274] and mental health[297,298]. More specifically, undergraduate nursing students have expressed concerns about losing nursing skills learnt and practised in hospital settings, as well as the lack of opportunities to practise nursing knowledge and skills in non-traditional clinical settings[298]. Billett[113] supports this in their explanation that new knowledge may not always be readily transferrable, and further highlights that without 'Situated Learning', the gap between cognitive learning through theory and sociocultural learning through practice can impede knowledge transferability between settings. It is also important, however, to consider student perceptions' of skills transferability and practice readiness in the context of the 'Disparate Realities' and workplace expectations among clinical settings[115].

Despite the recognition of perceptions around limited opportunities to consolidate skills [143,299], undergraduate nursing students have been reported to have their misconceptions dispelled following exposure to the GPN role through clinical placement experience[299]. Following a clinical placement in general practice, student participants in previous studies described the GPN role to be more autonomous, complex, and significant to long-term patient health outcomes than initially expected[143,299-301]. Clinical experience in general practice actually provided students with opportunities to consolidate and develop a broad range of skills that were not commonplace in hospital settings[299,300].

The organisational structure and breadth of services provided in a particular clinical setting may shape the extent to which nurses consolidate and develop skills in general practice. In separate general practice-based transition to practice programs, both Aggar et al.[67] and McInnes et al.[68] reported that new graduate nurses who worked in small general practice teams, or in services that generally catered for patients of low acuity, felt that there were reduced opportunities to develop skills and work autonomously. On the other hand, new graduate nurses were more satisfied in a program when they were part of larger and more supportive teams, were given opportunities to work autonomously,

and were able to practise a range of nursing skills[67,68]. The variability between general practice environments may, therefore, impact the level of opportunity for skill consolidation and knowledge development. This highlights that undergraduate nursing students need to be empowered to understand variances between practices when exploring employment opportunities, such as the accessibility to education and continuing professional development opportunities, organisational structures that can enable transition support, and employment conditions[5].

In all clinical settings, new graduate nurses need to be empowered to seek opportunities to continuously develop clinical nursing knowledge and skills specific to the area of practice. Workplaces have a role in supporting new graduate nurses to actively participate in continuous professional development opportunities to maintain clinical currency and development of new nursing skills[302,303]. The Theoretical Framework of Career Development[110] explains how developing interests in new activities and skills that in turn can shape motivation and performance. Such opportunities need to adopt a flexible blended approach that maximises strengths and enhances clinical reasoning, critical thinking, and reflective practice skills[304].

c) *Support for Transition into General Practice*

While most respondents expressed an interest in pursuing general practice employment at some point in their career, the perceived lack of formal transition to practice programs negatively influenced their intention to do so in their new graduate year[123]. Availability of transition support shapes new graduate nurses' confidence to work autonomously as an RN and can influence both career choice and the decision to stay in a setting[68,104,274]. The theory of Situated Learning underscores the important role experienced nurse preceptors have in the transition experience of new graduate nurses. This highlights the need to support general practices to employ and prepare RNs for the preceptor role. While preceptors are expected to guide and support new graduate nurses' acculturation in the workplace, they also facilitate new graduate skills development while fostering autonomous and innovative thinking[112]. The evolving identity of the new graduate nurse from novice to expert, and their level of active participation influences are influenced by their sense of membership in the community, which shapes their sense of motivation in their work[112]. The theory of Situated Learning therefore may not only shape the transition experience of new graduate nurses, but also the dynamics and quality of the workforce within communities of practice.

Despite emerging general practice-based transition to practice programs in Australia[67,68,305] and the UK[13], formal programs to support new graduate nurses transitioning into general practice employment are limited. Formal transition support programs in Australia and countries such as NZ, the UK, and the USA are most commonly implemented in hospital settings and delivered by state/territory departments of health or as employer-developed and delivered programs[306-309]. As such, most of the literature focuses on hospital-based transition to practice programs, with limited evidence describing programs in general practice settings[105,306,310,311].

Challenges to implementing formal transition support programs in Australian general practice are influenced by several factors, including funding, workforce and the practice environment[68,160]. In contrast, the organisation of general practice-based transition support programs in countries such as the UK and NZ has progressed further. For instance, the National Health Service in the UK provides clear visibility of preceptorship for new graduate nurses in general practice, with supported opportunities to consolidate and develop nursing skills, and pathways to upskill during the transition to practice[312]. In NZ, the national Nurse Entry to Practice Programme governs new graduate programs in both hospital and community-based settings via District Health Boards[313]. In these programs, the District Health Boards contribute to both the new graduate nurse's salary and GPN preceptor training[314]. New graduate nurses in both NZ-based hospital and general practice settings have access to nurse coordinator/educator support, and clinical coach support is provided to nurse preceptors in both settings to support the new graduate nurse throughout the transition period[315].

New graduate career pathways in general practice are not as clear in the Australian context. Two trial general practice-based transition to practice programs in Australia were externally funded by local Primary Health Networks (PHNs) and involved two rotations between general practices within a 12-month period[67,68]. Larger Australian PHC organisations have also implemented transition to practice programs, providing professional nursing support through a combination of clinical and professional preceptorship or small group learning, and access to a minimum of twelve online learning activities as part of this training period[316]. Despite similarities in program objectives, differences between these programs are apparent concerning the structure and extent of preceptorship training and support, funding, and overall program execution. Future research should focus on robust studies that evaluate the effectiveness of strategies to

support new graduate nurse transition into general practice employment. This needs to consider strategies for Schools of Nursing to engage with GPN preceptors to better inform content delivery and required learning outcomes, and enhance facilitation of clinical placement and transition support model design[173]. Such work would inform evidence-based approaches for transition support and preceptorship models for new graduate nurses in this setting[317].

Where formal transition programs cannot be implemented due to organisational limitations, other alternative models of transition support need to be considered. Literature reviews by Masso et al.[105] and Edwards et al.[317] revealed other initiatives targeting new graduate nurses' transition into practice. These initiatives include residency and internship programs (USA, Canada, NZ), formal or flexible preceptorship programs (USA, Australia, UK), and a combination of stand-alone and supportive self-directed simulation-based interventions (USA, UK)[105,273,317]. Beyond specific transition models of choice, investment on supported preceptor training or other models of support and the collaboration between PHC organisations and clinical settings that impact significantly on new graduate nurses' overall competence and satisfaction[317]. Gordon et al.[318] posited similar recommendations to guide transition support in general practice, highlighting the value of a national structured program that would allow flexibility to adapt to organisational and local needs. Strategies to improve transition need to be informed by professional practice standards for GPNs[49], which articulate the full scope of GPN practice to which new graduate nurses can work towards. Schools of Nursing have a role in increasing undergraduate nursing students' understanding of diverse transition support models available in clinical settings to enhance undergraduate nursing students' realistic expectations of transition in different clinical settings. Further research needs to explore innovative alternate models of transition support to enhance the recruitment of new graduate nurses in general practice and ensure that their transition experiences are positive. This can, in turn, facilitate nurse job satisfaction, wellbeing and workforce retention[273].

Career Intentions are Influenced by Perceptions of the Work Environment

Many respondents identified key components of the work environment, which were considered a priority by undergraduate nursing students in reviewing future employment options, as lacking in the general practice setting[121]. Indeed, the Theory of Triadic Reciprocality[110] highlights the importance of an individuals' personal beliefs about

potential outcomes of their choices, whether this be in the physical such as salary, social approval in the workplace or self-satisfaction in the work environment. The 'work environment' in this study was comprised of several variables such as role complexity, physical infrastructure, remuneration, team dynamic and culture, and opportunities for advancement[18]. Specifically, respondents identified that they perceived there would be fewer opportunities for advancement, poor remuneration, and less physically demanding work in general practice compared to hospital settings. These findings were similarly reflected in the interview data[122,123]. Such unfavourable views are similar to those identified by GPNs regarding their work environment. While Halcomb and Bird[60] reported GPNs had moderate job satisfaction around opportunities to develop new skills and grow as a professional, McKenna et al.[64] revealed that GPNs still do not believe these are comparable to advancement opportunities in hospitals. Although GPNs have acknowledged that their role has expanded progressively over the years, clear career advancement pathways remain limited[319]. Furthermore, Halcomb and Ashley[63] found that funding limitations, administrative workload, and lack of discussion about roles and scope of practice within the general practice team hinder the expansion of the GPN role[63]. GPNs in the UK have reported similar challenges relating to lack of role clarity and variations in the support provided to address training needs[65]. With clear links between work role and job satisfaction[283], and preceptor influence on undergraduate nursing students' perceptions, learning experience, and career decision making[270], it is timely to investigate strategies to ensure GPNs are working to their full scope of practice[320]. This step is particularly important for undergraduate nursing students. Lent et al.[110] acknowledges that although "mastery of challenging tasks engenders positive self-evaluation", it is the "anticipation of additional mastery [that] helps sustain task engagement, leading to skill development and growth of interest" in activities or work that may have initially held small intrinsic allure (p. 90). Both PHC and industrial organisations have key roles in designing, disseminating, and implementing strategies to enhance GPNs' confidence and support them in negotiating roles and working conditions[63,320]. Such strategies may assist in building more positive introductions of general practice nursing as a valuable employment opportunity for new graduate nurses.

Perceptions of poor remuneration in general practice were a key finding that emerged from both the survey[120,121] and interview data[123]. Remuneration has been consistently cited as a negative aspect of GPN employment[27,59,60]. While funding reforms, such as

the Practice Nurse Incentive Program and Workforce Incentive Program, have supported the recruitment of GPNs[321,322], poor remuneration causes substantial dissatisfaction[60,66]. GPNs are still primarily funded through the current fee-for-service model[58,323]. Compared to nurses working in hospital settings or larger government organisations, Australian GPNs often have to negotiate employment conditions on an individual level even though they may be covered by a generic award[5,27]. Strategies to align remuneration with the demands of the GPN's role are needed to improve work conditions and potentially encourage new graduate nurses to pursue work in general practice.

The work environment is a key factor not only influencing career decision-making of undergraduate nursing students[18,94] but also on job satisfaction and turnover intention[324,325]. Further research and collaboration are needed between policymakers, such as the Australian Government Department of Health, policy implementers such as local and regional PHNs and professional PHC nursing organisations, and the Australian Nursing and Midwifery Federation. Such collaborations may facilitate policy change concerning definitive funding sources and competitive remuneration that could support GPNs to work to the full extent of their practice scope[63,320,323].

Confidence, Interest, and Intention are Influenced by Exposure

Survey and interview findings both revealed that the extent of clinical exposure to general practice, impacts undergraduate nursing students' confidence, interest, and intentions to work in this setting[120-122]. It is well established that exposure to clinical settings via clinical placement influence students' attitudes, as well as their career motivation and interests[260,266]. This aligns with the theory of Situated Learning and the impact of practical immersion in the practices of the 'community' on students' learning[108]. Furthermore, the theory of Triadic Reciprocality acknowledges that even when individuals anticipate advantageous outcomes from their career choice, they may still not pursue this if they feel doubtful of their capabilities[110]. This supports the importance of students' level of confidence of their capability when making career choices, as evidenced by the positive correlation between confidence and intention to work in general practice in this study.

Given BN programs have been identified as being largely acute-care focussed[16,129,167,168], Schwartz[16] reported the need to increase exposure of undergraduate nursing students to PHC settings. However, despite consensus among stakeholders regarding the need for

BN programs to respond to regional, national, and global health priorities[6,16], there remain competing content priorities within the curricula[16].

The majority of respondents in this study were exposed to PHC content in the first or second year of their BN program[120]. While clinical placements across all three years of the program impact nursing students' interests in, and attitudes towards clinical areas, placements in the third year have the most impact on students' career choices[81,260]. However, the small size of general practices, in comparison to hospital settings, means that they often can only have limited groups of undergraduate nursing students at a given time. This presents challenges in large nursing cohorts which are often present in Australian universities[180,182]. Priorities in curricula, structural differences between settings and financial constraints to support students all influence industry and University expectations of student preparedness to practice following graduation[109]. To address issues with the availability of clinical placements in general practice, while still providing undergraduate nursing students clinical 'experience' to build confidence and interest to work in this setting, Schools of Nursing need to consider innovative strategies for clinical exposure to general practice[260,326].

Schwartz[16] highlighted the need to investigate how simulation and clinical placement could be better integrated to achieve both efficient and effective clinical learning outcomes among undergraduate nursing students. Simulated learning experiences in undergraduate nursing education refer to a continuum involving a range of supported educational activities, from virtual environments and patient simulators to the involvement of trained, real-life patients through role-playing[327]. The delivery of simulated learning experiences has evolved in the past decade and the effectiveness of this teaching and learning strategy has been well documented[328-330]. To date, the majority of simulated learning experiences focus on patient scenarios in hospital settings[294-296] and there has been little exploration around simulation-based teaching in the PHC context[331]. However, positive learning outcomes from general practice-based simulated learning experiences have been reported in the literature for other health care students[332-334]. With consideration of clinical placement shortages and challenges with the capacity to accommodate large numbers of nursing students in general practice settings, simulated learning experience may be an effective strategy to familiarise undergraduate nursing students with general practice[328]. Further research is needed to develop strategies to integrate realistic and industry-informed general practice-based simulated learning

experiences that support or respond to the shortage of clinical placement in such settings. Clearly defined learning objectives aligned with curricula and involving high-fidelity simulated scenarios are key quality features of a simulated learning experience[330,335]. Integrating general practice-based simulated learning experience may provide undergraduate nursing students realistic yet practical "real clinical experience"[335] of the GPN role. In addition, simulated learning experience may improve self-confidence, clinical decision making, and knowledge translation into practice [71] and may assist in stimulating interest to pursue a career in this setting.

Although regulated by an accreditation body, there are variations in the implementation of nursing curricula between universities, both in Australia and internationally[75-77]. Australian BN programs generally cover a diverse range of subject content, designed to meet accreditation requirements and NMBA practice standards[6] to prepare undergraduate nursing students for work across diverse clinical settings[16]. However, Schwartz[16] highlighted that changes in the health care landscape, higher education, and population demographics have impacted nursing education, which has put an emphasis to better prepare new graduate nurses to meet contemporary health care needs while anticipating emerging models of care and future health care demands[16,336]. As such, Schools of Nursing need to expose students to contemporary models of health care delivery and prepare them to work in non-traditional employment settings, such as general practice.

Recommendations

Recommendations for Education and Clinical Practice

- Given the importance of both theoretical exposure and clinical placement experience on career choices, there is a need to ensure that BN programs integrate sufficient clinical experiences beyond hospital settings. The study findings suggest that ongoing discussions around the ensuring greater integration of general practice nursing content in contemporary BN programs is important.

- In curriculum development processes, Schools of Nursing need to engage with GPNs or academics with GPN expertise, to ensure that curricula and course content are based on contemporary practice and workforce and population health needs[292,337].

- There is a need for nurse academics to consciously provide examples of the applicability and transferability of clinical skills and nursing knowledge developed in

the BN across clinical settings to improve new graduates' perceptions of their preparation for employment in settings outside hospitals.

- Innovative strategies to provide students with exposure to general practice nursing[260,326] through simulation[16,328,329] and other means should be a focal point of future curriculum design and implementation. These strategies need to consider diversity in general practice structures in accommodating traditional clinical placement models. Support for these alternate models is required from accreditation bodies.

- Evidence-based, innovative models to support the transition of new graduate nurses into general practice employment need to be developed to enhance recruitment.

Recommendations for Policy

- Pre-registration nursing education needs to facilitate preparation of nurses for 'non-traditional' settings to enhance student learning of diverse nursing roles and increase their interest to pursue a career in settings beyond hospitals. There is a need for NMBA practice standards for RNs to include a focus on the importance of balanced clinical placement hours across settings within the BN program.

- Exposure of undergraduate nursing students to general practice nursing, both in theory and practice, need to highlight that general practice nursing offers pathways for advanced clinical practice roles, such as nurse-led clinics and nurse practitioner roles[338].

- Key stakeholders, including industrial PHC organisations need to develop and implement strategies to enhance support provided to GPNs around negotiating working conditions and opportunities for role advancement[63,320] to both advanced practice and nurse practitioner roles.

- PHC and industrial organisations, have a key role in collaborating with government policymakers to urgently progress policy changes to provide an agreed supervision framework that could support GPNs to improve job satisfaction and workforce retention[60,320,323].

- A career framework, developed in conjunction with the National Practice Standards for Nurses in General Practice, is required to provide clarity and structure around career progression of GPNs for both GPNs and GPs[339].

Recommendations for Future Research

- Further research is needed to develop and evaluate models of clinical exposure in general practice settings to ascertain their effectiveness on undergraduate nursing students' preparedness, interest and intention to work in general practice.

- Given the variability of general practice organisational structures, further research is needed to develop and test models of transition support tailored specifically to this setting[317].

- Considering the challenges around clinical placement availability in general practice settings, further research is needed to gather evidence of best practice around clinical placement models to optimise students' exposure to diverse clinical settings[182].

- Future research is needed to explore and test the efficacy of simulated learning experiences on undergraduate nursing students' perceived confidence to work in general practice settings, and their intention to work in this setting[16,328].

Strengths and Limitations

Recruiting undergraduate nursing students in their final year meant that they were nearest to becoming qualified RNs, and therefore had a deeper insight into their experiences, confidence, and intention to work in different clinical settings[86]. The collection of both quantitative and qualitative data allowed for detailed exploration of the complex research problem, drawing on the strengths and negating limitations of both approaches[124]. Structure, coherence of the content, and ease of comprehension of the survey questions were established with a two-stage review of the survey tool. Standardising instructions for data collection, analysis of quantitative data using methods such as regression analyses and correlations between items[221] strengthened the overall rigour of the quantitative phase.

A robust semi-structured interview schedule, which was informed by the integrative literature review[69], analysis of survey data[120], and review by experts contributed to the strength of the qualitative phase of the study. Analysis of the interview data between the Doctoral candidate (KC) and supervisory team using an established approach[4] further strengthened this phase of the study.

Given the timeline of a PhD, this study involved five universities in a single state (NSW, Australia). However, the sample size was considered an adequate representative subset of final-year undergraduate nursing students given the substantial amount of data yielded

from the online survey, and saturation of data for the interviews. Although the content and delivery of BN programs varied between Australian universities[6,16] these are all subject to evaluation by a national accreditation system. Drawing perspectives from respondents enrolled in rural and urban universities may have assisted to offset this limitation. Most of the students who participated in the interviews identified as female and there were few participants who identified as having an Aboriginal or Torres Strait Islander background. Therefore, further research is needed to investigate the perceptions of male undergraduate nurses and those from First Nations backgrounds. Finally, only a few participants had clinical experience in general practice nursing upon which to base their perceptions. There is a need for further research that explores the perceptions of undergraduate nursing students who have had direct clinical exposure to general practice nursing.

Conclusion

This Doctoral study has provided new knowledge exploring final-year undergraduate nursing students' perceptions of general practice nursing. Contrary to existing evidence, respondents in this study had moderate interest and intention to work in general practice. However, undergraduate nursing students remain apprehensive to pursue a general practice career following graduation. They perceived there would be potential loss of nursing skills, limited transition support, and less favourable employment conditions than hospital settings. Findings from this study demonstrated inconsistencies in some respondents' overall lack of familiarity with the general practice clinical setting and the GPN role, which influenced their perceptions of general practice nursing. Schools of Nursing need to create authentic learning experiences that show the depth and breadth of the GPN's role within BN curricula. Fulfilling the recommendations provided in this thesis will assist in achieving these goals.

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Appendices

Appendix A. Paper 1 and Permission

Appendix B. Recruitment Information

Appendix C. Survey Tool

Appendix D. Permission to Use Tools

Appendix E. Interview Information and Consent Form

Appendix F. Thematic   rid Extract

Appendix   . Human Research Ethics Committee

Appendix H. Paper 2 and Permission

Appendix I. Paper 3

Appendix J. Paper 4 and Permission

Appendix K. Paper 5 and Permission

Appendix A: Paper 1 and Publisher Permission

Calma, K.R.B., Halcomb, E., J., & Stephens, M. (2019). The impact of curriculum on nursing students' attitudes, perceptions, and preparedness to work in primary health care: An integrative review. *Nurse Education in Practice, 39,* 1-10.
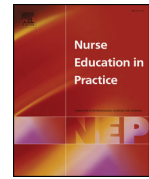
Review

The impact of curriculum on nursing students' attitudes, perceptions and preparedness to work in primary health care: An integrative review

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ABSTRACT

Background: The ageing population and growing burden of chronic disease has increased demands for primary health care services, necessitating growth of this nursing workforce. Studies have explored strategies in retaining nurses, employment conditions in primary health care, and transitioning of acute care nurses to primary health care employment. Few studies have explored how undergraduate nursing students perceive and are prepared to work in this sector.

Aim: This review synthesises evidence on the impact of undergraduate curriculum on nursing students' attitudes, perceptions and preparedness to work in primary health care.

Design: An integrative literature review guided the synthesis of evidence.

Data sources: Scopus, ScienceDirect, CINAHL and MEDLINE were searched for relevant studies published between 2008 and 2018.

Review methods: 491 studies were identified from the database searches. Following the removal of duplicates, review of abstracts and keywords against the inclusion and exclusion criteria, 39 papers were subjected to full-text review. Twelve papers, including one thesis, met the inclusion criteria. Using an appraisal system, no paper was excluded based on methodological quality.

Results: Three themes were identified, namely: impact of curricula; knowledge and attitudes to primary health care; and students' intention to work in primary health care. The preparation of undergraduate nursing students to work in this area is inconsistent as curricula remain acute-care focussed. Negative perceptions about the primary health care nursing role impact intentions of nursing students to work in primary health care.

Conclusion: This review highlights a need to implement strategies to improve the understanding of undergraduate nurses around the primary health care nursing role. In particular, providing students with skills, knowledge and an understanding of working in this area through curriculum content and structure may provide undergraduates with the desire and confidence to seek employment in primary health care following graduation.

1. Introduction

The demand for primary health care (PHC) has increased internationally over recent years due to an ageing population and growing burden of chronic conditions (Halcomb et al., 2018; Peters et al., 2015; Wojnar and Whelan, 2017). The PHC sector is a broad umbrella "whole-of-society approach" to managing health and wellbeing in the community (Dussault et al., 2018, p. 3). Health systems with strong PHC are more efficient, have fewer health inequalities, lower rates of hospitalisations, better health outcomes and lower mortality (Australian Government Department of Health, 2013).

This shift in health care delivery has a significant impact on the health workforce required to meet these changing needs. There is

strong evidence that multidisciplinary models of care, where various health professionals can provide care within their scope of practice, are optimal in terms of balancing health care needs and resource consumption (Drinka and Clark, 2016; Ehikpehae and Kiernan, 2018; Gougeon et al., 2017; Leach et al., 2017). Nurses play an important role in PHC, irrespective of country or setting, internationally (Carryer et al., 2015) given their person-centred approach and role across health promotion, disease prevention and chronic disease management.

The nursing role in PHC has developed at differing rates across the globe. Whilst nurses in the US, UK and New Zealand are well established within PHC (Freund et al., 2015; MacLean et al., 2014; Prior et al., 2010), nurses in Australia have only moved into primary care roles in substantial numbers over the last two decades (Halcomb et al.,

2014; Joyce and Piterman, 2011). Whilst there are challenges in reporting data around the number of nurses working in PHC both locally and on a global scale (Dussault et al., 2018; Halcomb et al., 2014; MacLean et al., 2014), it is generally agreed that the PHC nursing workforce continues to experience pressure worldwide (Freund et al., 2015; Halcomb et al., 2014; Kendall-Raynor, 2015). This is due to both an ageing nursing workforce and a shortage in nurse numbers (Halcomb et al., 2014; Harris et al., 2011; Kendall-Raynor, 2015). In addition, fee-for-service schemes for physicians may hinder the role expansion of non-physician health professionals in PHC settings (Freund et al., 2015). MacLean et al. (2014) identifies that issues such as poor remuneration, long hours, high workloads, lack of workforce planning and policy/political instability are key issues impacting on the ability to sustain the PHC nursing workforce.

Within the literature there has been significant attention given to the exploration of PHC nursing roles and the barriers and facilitators of nursing in PHC, particularly from an Australian context (Halcomb et al., 2008, 2014). However, there has been limited focus on the recruitment and retention of nurses and their preparedness to work in this area (Ashley et al., 2016; McInnes et al., 2015a). Many nurses find themselves inadequately prepared to deliver PHC since nursing education programmes worldwide have inconsistent records of success when it comes to integrating PHC knowledge and skills into their curricula (MacLean et al., 2014). Therefore, an exploration of how student nurses are prepared to work in PHC is important if the PHC workforce is to meet the growing demand for its services.

2. Background

Almost thirty years after moving out of the hospital-based training model, nursing education has been firmly established in the tertiary sector internationally (Halcomb and Newton, 2017). Graduates' career choices and their confidence and preparedness to work in a particular setting are impacted upon by a number of factors, including curricula (McCann et al., 2010), school and workplace cultures, perspectives projected by lecturers and clinical instructors (McCann et al., 2010), personal and placement experiences (Che et al., 2018; Salamonson et al., 2018; Wareing et al., 2018) and preconceived ideas of settings (Ong et al., 2017; Thongpriwan et al., 2015). While there has been research undertaken examining the preparedness of undergraduate nursing students in some specific clinical areas, such as aged care (Algoso, 2015), critical care (Halcomb et al., 2012) and mental health (Ramluggun, Anjoyeb, & D'Cruz, 2017; Thongpriwan et al., 2015), PHC has received far less attention (Keleher et al., 2010). Given the growing need to recruit graduate nurses into PHC either directly following graduation or in the future (Ashley et al., 2016; McInnes et al., 2015a), it is important to understand the factors that impact on their career choices, confidence and preparedness to work in PHC settings.

Current literature has largely focussed on the employment conditions of PHC nurses (Halcomb et al., 2018; Hood and Allen, 2017; Royer, 2011) and their job satisfaction (Almalki et al., 2012; Curtis and Glacken, 2014; Delobelle et al., 2011; O'Donnell et al., 2010), as well as

the experiences of nurses transitioning from acute care to PHC employment (Ashley et al., 2017, 2018a, 2018b). Some studies of PHC graduate nurse programs have begun to emerge (Aggar et al., 2017, 2018; Thomas et al., 2018), but these report early experiences of such programs. There remains limited exploration of undergraduate preparation of nursing students to work in PHC.

3. Aim

This paper aims to review available literature that reports on how current undergraduate coursework shapes nursing students' perceptions of and preparedness to work in PHC. More specifically, this review aimed to critically synthesise the published literature on the impact of undergraduate nursing coursework on students' attitudes, perceptions and preparedness to work in PHC settings.

4. Method

4.1. Research design

This review was informed by the five-step methodological framework described by Whittemore and Knafl (2005). This framework provides for; a clear identification of the problem; a rigorous and auditable search strategy; a comprehensive evaluation; interpretation and critical analysis of the primary data collected; and the synthesis and appropriate presentation of the findings (Whittemore and Knafl, 2005). This approach permits the simultaneous review of both empirical and theoretical research, and allows for a rich understanding of the topic of interest.

4.2. Search strategy

The electronic databases, Scopus, ScienceDirect, CINAHL and MEDLINE, were searched using various keyword combinations, including: "nursing student", "undergraduate nurs*", "undergraduate nursing student", "undergraduate student nurs*", "career intention", "readiness", "preparedness", "primary care", "primary health care", "family practice" and "community". Reference lists of identified studies were also reviewed, while relevant journals and theses repositories were hand searched.

4.3. Search criteria

Papers or theses that reported primary data about undergraduate nursing students' knowledge, attitudes and career intention to work in PHC, as well as studies that reported primary data on the PHC content in the current nursing curricula were included (Table 1). Studies which focussed solely on PHC clinical placement experience were excluded as this represents an issue parallel to the review aim. Given the changing trends around nursing workforce and the undergraduate nursing curricula, results were limited to studies published between 2008 and 2018. Only papers or theses published in the English language were

Table 1
Inclusion and exclusion criteria.

| Inclusion criteria	Exclusion criteria
Published between 2008 and 2018	Literature reviews, editorials, discussion papers
Peer-reviewed papers or theses	Reported data on nursing students' clinical placement experience in PHC
Published in the English language	Described experiences of new graduate nurses transitioning from acute-care to PHC
Reported primary data about PHC content in nursing curricula, undergraduate nursing students' knowledge, attitudes and career intention to work in PHC, or preceptors views about preparedness of students to work in PHC.	
Primary research	
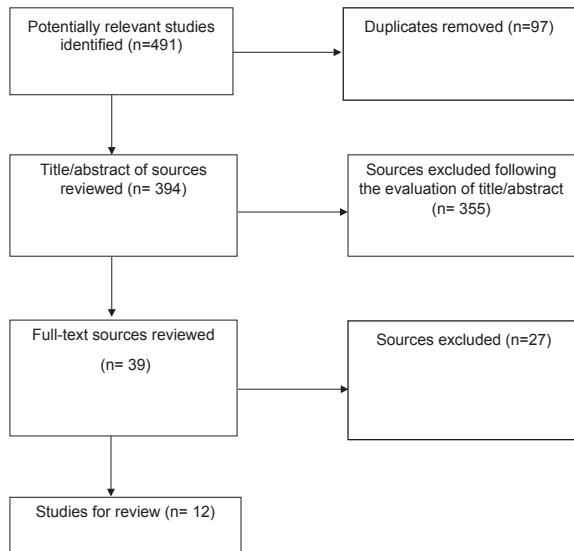
Fig. 1. Prisma flow diagram of study selection.

included due to resource restrictions that precluded translation.

4.4. Search outcomes

The 491 results from the database searches were exported into Endnote© Version X8 (Clarivate Analytics, 2017) (Fig. 1). Following the removal of duplicates (n = 97), analysis of the titles and abstracts by one reviewer (KC), 355 sources were assessed to not meet the inclusion criteria, and so these were excluded. Papers were excluded if they did not report research, were published in a predatory journal, focussed on clinical placement experiences only or described experiences of new graduate nurses transitioning from acute care to PHC. The remaining 39 sources were then reviewed in full text by three researchers (KC, EH, MS) against the inclusion criteria to achieve consensus. This process excluded a further 27 sources as they did not address the review aims. Twelve sources, including 11 published papers and 1 thesis, met the inclusion criteria. As the thesis did not have any publications in the peer-reviewed literature reporting results it was decided to include this source in the review.

4.5. Quality appraisal

The scoring system developed by Pluye et al. (2009) was used to appraise the included studies. The initial stage of appraisal assessed the presence of a clear aim and a comprehensive description of the data collection methods. Qualitative studies that clearly described the participants and context, and acknowledged the minimisation of researcher bias were considered to be of high methodological quality. Quantitative studies had to have high response rates and appropriate sampling methods, and should include descriptions of validity measures. The combination of quantitative and qualitative methods of analysis, and integration of data were appraised in mixed methods studies (Pluye et al., 2009).

Using this appraisal system, it was unanimous among all three reviewers that all included studies had a similar level of high methodological quality. Therefore, no paper was excluded based on its methodological quality.

4.6. Data abstraction and synthesis

All relevant data from the included studies were extracted into a summary table (Table 2). Due to the heterogeneity of the studies, a constant comparison approach was used to synthesise results (Whittemore and Knafl, 2005). In doing so, the included studies were compared and contrasted to detect patterns, variations, themes and relationships (Whittemore and Knafl, 2005). Findings from all included studies were read and coded, line by line. Data were carefully reviewed and categorised using an inductive approach, until no new concepts were discovered. The display of data in a summary table allowed for more manageable identification and comparison of themes; and eventually, the synthesis of the patterns identified (Whittemore and Knafl, 2005). The tabulation of both quantitative and qualitative results in a single matrix allowed for integration of statistical and narrative data, which subsequently facilitated identification of patterns across sources (Whittemore and Knafl, 2005).

5. Results

Of the 12 included studies, 58.3% (n = 7) adopted quantitative methodologies (Betony and Yarwood, 2013; Bloomfield et al., 2015, 2018; Larsen et al., 2012; Mackey et al., 2018; van Iersel et al., 2018a; Wojnar and Whelan, 2017), 33.3% (n = 4) used qualitative approaches (Albutt et al., 2013; Ali et al., 2011; Duah, 2015; Keleher et al., 2010) and 8.3% (n = 1) used a mixed methods approach (Cooper et al., 2014) (Table 2). Studies were conducted in Australia (41.7%, n = 5), United Kingdom (UK) (25%, n = 3), United States (US) (16.7%, n = 2), New Zealand (NZ) (8.3%, n = 1), and Canada (8.3%, n = 1). Three key themes were identified from the included studies, namely: 1) impact of curricula; 2) knowledge and attitudes to PHC; and 3) students' intention to work in PHC.

5.1. Impact of curricula

Six studies explored how the pre-registration curricula prepared nursing students for PHC practice. Of these, four studies investigated the PHC content of curricula (Betony and Yarwood, 2013; Cooper et al., 2014; Keleher et al., 2010; Wojnar and Whelan, 2017). Two studies explored nurse educators' perceptions of PHC content in an undergraduate program (Albutt et al., 2013), and nurses' perceptions of graduates' preparedness for PHC employment (Ali et al., 2011). One study which focussed on PHC career intentions, also reported data on the exposure of undergraduate nurses to PHC (Bloomfield et al., 2015).

5.1.1. Course is acute care focussed

Most included studies raised concerns about the nature of curricula being too acute care focussed. Ali, Watson, and Albutt (2011) reported mixed feelings amongst UK nurses around graduate nurses' preparedness for PHC employment. Both UK papers described current undergraduate nursing courses as being too acute care focussed (Albutt et al., 2013; Ali et al., 2011). Similarly, Keleher et al. (2010) described how preparation for PHC was patchy across courses in Australia. Interestingly, in the US, Wojnar and Whelan (2017) found that some schools avoid delivering PHC content with a belief that undergraduate programs prepare students for an acute care career. Only in NZ, did Betony and Yarwood (2013) reported that over three quarters of academic participants felt that their programs adequately prepared students for PHC employment.

5.1.2. PHC content within curricula

The nature of PHC content within curricula was variable. Bloomfield et al. (2015) reported that 92.8% of their final-year nursing student participants had some educational exposure to PHC during their degree, and 87.1% completed a PHC clinical placement. Keleher, Parker, and Francis (2010) identified various ways in which PHC was covered, including being embedded in health units covering broader topics; as a standalone unit; delivered within Indigenous health subjects; or as a unit focussed on public or population health. Most of the

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Table 2
Summary table.

Reference/Country	Focus	Sample	Methods	Significant findings
Albutt et al. (2013) UK	Nurse educators' perceptions of education in preparing nurses for PHC practice	4 university educators & 4 nurse educators from 2 primary care trusts	Interviews	• Key barriers to student learning and preparedness for PHC employment were shortage of clinical placements and lack of mentors for students. • Pre-registration education was perceived inadequate due to limited clinical experience. • The current nursing curriculum was seen as acute-care focussed. • Recommendations made to increase PHC placements duration, involve PHC nurses in pre-registration programmes to increase curriculum relevance to PHC, and provide a more structured preceptorship programme to improve transition into PHC employment.
Ali et al. (2011) UK	Nurses' perceptions about the PHC role and their preparedness for PHC work	14 primary care trust nurses	Interviews	• There was a mixed response around preparedness - some nurses felt that the curriculum adequately prepares nurses for PHC work; others felt it did not prepare them at all. • Pre-registration curriculum viewed to be acute-care focussed lacking practical aspects. • Novice nurses lack understanding of PHC structures and roles, communication skills and confidence to practice independently. • Recommendations included: - Better preceptorship/mentorship programmes - Focus on preparing students for the changing health care system - More PHC placements to enhance understanding of PHC structure and processes - A focus on PHC content delivery in the beginning progressing to acute care
Betony and Yarwood (2013) New Zealand	Exposure of undergraduate nursing students to PHC nursing	14 institutions who provide a BN programme	Survey	• Greater involvement of PHC nurses in the undergraduate curriculum • 11 institutions embedded PHC throughout the BN programme. • 86% taught PHC specific skills including health promotion, community/family assessment. • There was a variable understanding of PHC across institutions • In 9 institutions all academics had PHC experience, many clinicians delivered PHC content. • 79% 'agreed'/'strongly agreed' that the program prepares students for PHC employment. • Issues raised included: Lack of PHC placement availability, Placements in health centres seen to have greater preference for medical students, Reluctance of staff to supervise a student; impact on workload, Nursing students did not see the relevance of PHC placement, Students were acute-care focussed • Innovations in place: A revised curriculum embedding PHC concepts throughout the programme and Increased PHC placements capacity
Bloomfield et al. (2015) Australia	Intentions of final year nursing students to enter PHC after registration	456 final year nursing students from 14 universities	Survey	• 90.6% were enrolled in a BN program; 9.4% in BN accelerated, combined degree/MN • 91.9% expected to undertake a new graduate transition program • 73.2% expected to work full-time in their first year • 22.8% ranked PHC setting as their first priority work setting following registration • 96.6% considered learning about the PHC nursing role during their undergraduate degree as "moderately important" or "extremely important" • 92.8% had educational exposure to PHC • 87.1% completed a PHC clinical placement during their course • 76.85% reported being "moderately" or "extremely familiar" with the PHC nurse role • Preferred workplace was not associated with undergraduate learning about PHC (p = 0.49). • Placements in PHC did not influence choice of PHC work after registration (p = 0.53)
Bloomfield et al. (2018) Australia	Factors associated with final year nursing students' intention to work in PHC	530 final year nursing students from 14 universities	Survey	• 16% intended to work in PHC • Gender was not a significant predictor (p = 0.073), although more females wanted PHC work. • Older participants had significantly stronger intention to work in PHC (p < 0.001) • Students at a university offering a PHC placement were more likely to want to work in PHC (p = 0.078) • Participants who thought it was important to learn about the PHC RN role at university were more likely to desire to work in PHC (p = 0.068) • Those who considered employment conditions to be of greater importance were significantly more likely to desire to work in PHC (p = 0.026) • Participants who considered workplace support to be of greater importance were significantly less likely to express intent to work in PHC (p = 0.012)

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Table 2 (*continued*)

Reference/Country	Focus	Sample	Methods	Significant findings
Cooper et al. (2014) Australia	Evaluation of a Bachelor of Nursing (Community Health) degree	Enrolment data: 90 nursing students Focus groups: 38 nursing students	Focus groups Enrolment data	• 23 were in first year and 15 were in second year of their degree • Few students wanted to work in PHC despite being enrolled in a PHC focussed program • Community and PHC units were seen as the least relevant to future nursing practice. • Clinical laboratories were valued as these linked theory to practice • Students preferred nurse academics to those from other professions • Many students wanted more support to adjust to university learning • The course had an 11% attrition rate.
Duah (2015) Canada	Nursing students' perspectives of a community health nursing career	11 1st and 4th year nursing students from 1 university	Interviews Focus groups	• 1st year students had less insight due to limited exposure • Students believed community nurses looked at the big picture; teaching patients, promoting health and linking resources within the community as a whole • A perception that community nurses can dress nicely and do not get involved in difficult and dirty procedures • Students believed community nursing is a lesser form of nursing and an easy way out • Stereotypes caused some to feel reluctant to work in the community - people try to change their minds if they talk about PHC employment • A belief that community health is for older nurses approaching retirement – since skill foundation are cultivated in hospitals

Keleher et al. (2010) Australia	The extent of professional socialisation and educational preparation of nurses for PHC	38 pre-registration nursing courses	Audit	• Preparation for PHC was patchy across courses
				• Four types of curriculum content were identified in which PHC is covered:
				  - Embedded health units covering broad topics such as sociology, psychology, health care systems, professionalisation or age-related content
				  - Indigenous health units
				  - Stand-alone units in community health/PHC/social determinants/social model
				  - Units with content on public/population health, prevention, health behaviour and health promotion
				• There was not always a clear distinction between units of PHC and health promotion
				• Some courses reflected a philosophy of PHC within the curriculum, but most covered PHC and health promotion as a topic within the curriculum

Larsen et al. (2012) US	Public health career intentions among undergraduate nursing students	165 junior and 189 senior nursing students from 2 institutions	Survey	• 90.4% of participants were female • 246 (69.5%) reported having completed public health course work • 95 (26.8%) completed clinical placement in traditional public health agencies and 142 (40.1%) undertook their placements in non-traditional sites (school, prison, campus health, women's shelter, outpatient treatment facility, or international experience) • 21.1% indicated they would be likely or very likely to consider a job in public health after graduation; 26.4% 1 year after graduation; 35% > 1 year after graduation • Most important recruitment strategies as rated by students: Comparable wages to a hospital (96%); flexibility in scheduling (94.6%); tuition reimbursement (95.2%) • Enrolling institution (p = 0.008) and placement in non-traditional setting were factors likely to contribute to public health employment immediately following graduation • Those completing a public health theory class were less likely to seek public health employment

Table 2 (*continued*)

Reference/Country	Focus	Sample	Methods	Significant findings
Mackey et al. (2018) Australia	Knowledge and attitudes of nursing students embedded in PHC focussed courses	286 nursing students from 2 universities	Survey	• 18 to > 50 years of age; 90.5% were female; 51% were born overseas • 95.8% were in their first year • Knowledge scores ranged from 19.68 to 95.78 (mean 69.19) • Attitude scores ranged from 33.12 to 93.88 (mean 70.45) • 94.4% knew that "accessibility to health care is a basic concept of PHC" • < 6% knew that "PHC focusses on setting targets and plans of action to meet national health goals" • Attitude items with the highest mean scores: "access to good health care is a fundamental right of all people" (3.73) and "helping people learn to stay well is an important role for nurses" (3.67) • Mean knowledge (p = 0.01) and attitude scores (p = 0.001) of Australian-born students were significantly higher than overseas-born students • Mean knowledge scores of metropolitan university students were significantly higher than those enrolled in the rural university (p = 0.002) • Older students' mean attitude scores were significantly higher than younger students' (p ≤ 0.005)
van Iersel et al. (2018a) UK	Perceptions of 1st year nursing students of community care	1058 1st year nursing students from 6 universities	Survey	• There was an overall knowledge deficit relating to the application of PHC concepts. • 71.2% would choose to go to a hospital for a clinical placement; 5.4% indicated they would go to a community centre. Elderly care was the least preferred area (4.1%) • Most participants considered community care to be important (mean = 8.39), meaningful (mean = 8.43), and good (mean = 8.32) • Items 'attractive' (mean = 5.36), 'comfortable' (mean = 5.85) and 'interesting' (mean = 5.88) scored relatively low • Enjoyable relations with patients and family, variety in caregiving and opportunities for advancement most vital in choosing a placement • Community care perceived to be looking after mostly older patients (mean = 8.72) with limited variety and advancement opportunities • Perceptions of community care sector were incongruent to what students considered important • Community nursing was perceived as a low-status job • Students had a limited idea of what community nursing entails
Wojnar and Whelan (2017) US	Barriers, enablers and current state of PHC content delivery in nursing programmes	529 institutions delivering pre-licensure and RN-to-BSN online education	Survey	• 76.8% in the BSN and Master's entry to practice program indicated some PHC content in the curriculum • 6.6% indicated that they have implemented or are in the process of implementing PHC content in both theory and clinical practice • Enablers of PHC content delivery included: Senior leadership and progressive thinking of the faculty (42.3%), Collaborating with clinical partners (19.2%), Current trends in health care (10.9%), Insufficient number of acute inpatient care sites (9.2%), Combination of some of these forces (47.6%) • The biggest barriers to PHC content included: Lack of faculty interest (29.1%), More students than PHC placements (24.5%), Lack of RN preceptors in PHC (23.8%), Student expectations to receive clinical education solely in acute care (23.1%), Student perception of losing skills in PHC (22.1%) • Undergraduate education prepares students to work in acute care, whilst postgraduate MN students are prepared to work in PHC.

audited courses covered PHC as a topic within the curriculum (Betony and Yarwood, 2013; Keleher et al., 2010).

Two studies described the implementation of PHC within pre-registration curricula. The NZ study revealed that over three quarters of surveyed institutions embedded PHC concepts throughout the programme (Betony and Yarwood, 2013); while US universities implemented student community-based projects or online PHC programmes (Wojnar and Whelan, 2017). It was clear from both studies that some tertiary institutions are experiencing a curricular shift. This indicates some progress in terms of increasing PHC content delivery, however, there is insufficient evidence that this shift is sufficient to address the gaps identified in this review.

In contrast, Cooper et al. (2014) described their experience in offering a dedicated community health Bachelor of Nursing (BN) programme. Despite the potential allure of this program, many students reportedly did not see the importance of PHC content to their practice and few were inclined to want to work in PHC following graduation. This raises significant questions about the effectiveness of this strategy for enhancing PHC within undergraduate nursing programs.

5.1.3. Barriers and enablers to PHC content

A number of barriers were identified in delivering PHC content within undergraduate nursing curricula. Limitations around clinical placement availability impacted skills consolidation and socialisation into PHC settings (Albutt et al., 2013; Betony and Yarwood, 2013; Wojnar and Whelan, 2017). Other barriers were related to lack of academic staff with PHC expertise (Albutt et al., 2013; Wojnar and Whelan, 2017), variable understandings of PHC, tension between embedding concepts and discrete units of study (Keleher et al., 2010; Wojnar and Whelan, 2017), and student expectations (Betony and Yarwood, 2013; Cooper et al., 2014; Wojnar and Whelan, 2017).

A need to engage PHC nurses in curriculum development, and a more structured preceptorship programme was identified (Albutt et al., 2013; Ali et al., 2011). Senior leadership, faculty interest, collaboration with clinical partners and insufficient acute inpatient facilities were enablers to PHC content delivery (Wojnar and Whelan, 2017). Some enabling innovations have already been attempted, such as increased PHC placements (Betony and Yarwood, 2013). But while students in a BN programme with a community health focus commented that clinical laboratories linked theory to practice, the programme was not successful in recruiting the graduates to PHC (Cooper et al., 2014).

5.2. Knowledge and attitudes to PHC

Three studies reported data specifically around undergraduate nursing students' knowledge and attitudes toward PHC (Duah, 2015; Mackey et al., 2018; van Iersel et al., 2018a), whilst three other studies reported knowledge and attitudes as part of a broader study (Bloomfield et al., 2015; Cooper et al., 2014; Wojnar and Whelan, 2017).

5.2.1. Knowledge about PHC nursing

In the only study to measure knowledge of PHC amongst nursing students, Mackey et al. (2018) reported students had an overall understanding that PHC is an important aspect of people's healthcare. Knowledge scores were shown to be higher in Australian-born students and those enrolled in a metropolitan university (Mackey et al., 2018). Participating nursing students appreciated the societal importance of PHC (Mackey et al., 2018; van Iersel et al., 2018a), and correctly associated community nursing with health promotion, education and low patient acuity (Duah, 2015). However, others have reported that nursing students underestimate PHC nursing and consider this to be the least relevant in their degree (Betony and Yarwood, 2013; Cooper et al., 2014; van Iersel et al., 2018a; Wojnar and Whelan, 2017). Some studies reported that PHC content should be delivered either as an elective (Cooper et al., 2014) or as postgraduate content (Wojnar and Whelan, 2017).

Bloomfield et al. (2015) reported that over three quarters of their student participants were familiar with the PHC nurses' role. However, van Iersel et al. (2018a) described that participants had limited understanding of the PHC nursing role. van Iersel et al. (2018a) also reported that student participants believed community nurses are mostly involved in caring for the elderly. This gap was reflected in an Australian study where less than 6% knew that PHC focusses on target setting and action plans to meet national health goals (Mackey et al., 2018). These misconceptions reportedly led to ambivalence in subsequent career choices (Duah, 2015).

5.2.2. Attitudes to PHC nursing

There was variation in student attitudes to PHC, as well as a disconnect between students' appreciation of PHC in society, and their attitude towards it in a more personal way (van Iersel et al., 2018a). Some studies described an overall positive attitude towards PHC among students (Mackey et al., 2018), such as students who valued learning about the PHC nursing role (Bloomfield et al., 2015). In contrast, others reported that students viewed PHC nursing as not 'real nursing' (Cooper et al., 2014; Duah, 2015; van Iersel et al., 2018a).

Potentially arising from these stereotypes are perceptions that a PHC career is an easy way out (Duah, 2015) and a low-status job (van Iersel et al., 2018a). Two studies described perceptions that working in PHC can limit opportunities for skill practice and diminish potential for career advancements (van Iersel et al., 2018a; Wojnar and Whelan, 2017). A belief that PHC is for older more experienced nurses whom otherwise have accumulated sufficient acute care nursing skills was also reported (Bloomfield et al., 2015; Duah, 2015). Participants also described PHC nurses as those who can look pretty and do not engage in complicated 'dirty' clinical procedures (Duah, 2015). Interestingly, Mackey et al. (2018) reported that attitude scores of older students were significantly higher than younger students.

5.3. Students' intention to work in PHC

Three studies specifically explored undergraduate nursing students' intention to work in PHC (Bloomfield et al., 2015, 2018; Larsen et al., 2012). There is some evidence that attitudes to PHC nursing can impact career intention, with participants who valued learning about the PHC nurses role more inclined to seek PHC employment (Bloomfield et al., 2018).

5.3.1. Age as a predictor for PHC career intention

Both Bloomfield et al. (2018) and Bloomfield et al. (2015) reported that less than a quarter of participants intended to work in PHC in the near future. Bloomfield et al. (2018) reported that age was a significant predictor for career intention, with older students more inclined to want to work in PHC. Additionally, Larsen et al. (2012) identified that participants did not see themselves working in public health until they were further along in their career.

5.3.2. Curriculum exposure/clinical placements

There is variable evidence of the impact of PHC clinical placements and curriculum exposure on nursing students' intent to work in PHC. Bloomfield et al. (2015) reported that PHC placements did not influence career intention. However, Bloomfield et al. (2018) reported that placements were a predictive factor and that students who had a PHC placement during their undergraduate education were more likely to intend to work in PHC upon graduation.

Larsen et al. (2012) identified that placement location impacted students' career intention. Furthermore, nursing students' limited exposure to nursing courses in their first-year may limit insight into community nursing roles, which can further lead to misconceptions about this area of nursing (van Iersel et al., 2018a). Enrolling institution was also a significant variable to career intention (Larsen et al., 2012),

which may indicate that other factors about the program and its delivery may be important influences.

5.3.3. Employment conditions

Perceived employment conditions contributed to student nurses' intention to work in PHC (Bloomfield et al., 2018; Larsen et al., 2012). Participants who considered employment conditions to be important were more likely to express a desire to work in PHC (Bloomfield et al., 2018). Indeed, Larsen et al. (2012) identified comparable wages, schedule flexibility and tuition reimbursement as the top three recruitment strategies. However, Bloomfield et al. (2018) identified that students who valued workplace support, including preceptor support, were less likely to intend to work in PHC.

6. Discussion

This integrative review has provided an insight into the impact of undergraduate nursing curricula on students' understanding and perceptions of, as well as their preparedness to work in PHC settings. It has drawn together international literature and synthesised findings to highlight gaps in knowledge for future research. The findings highlight the acute care focus of current undergraduate nursing curricula, and gaps exist in undergraduate nursing students' knowledge about PHC despite the shift of the workforce. These may be important factors contributing to the low career intention in PHC among graduate nurses internationally. Given the need to continue to grow and sustain the PHC nursing workforce, the review highlights the need for urgent attention towards the preparation of new graduate nurses for PHC employment.

The finding that undergraduate nursing curricula remain acute-care focussed supports previous evidence that contemporary nursing education falls short in responding to the shifting focus of health care delivery from hospital to community (Albutt et al., 2013; Ali et al., 2011; Peters et al., 2013). As health systems shift to have stronger PHC services, we need to build and maintain a strong PHC nursing workforce to meet community demands. It is vital to engage accreditation agencies in driving undergraduate nursing curricula to meet current and emerging clinical trends. Accreditation bodies should monitor collaboration between nursing schools and PHC organisations to ensure that students are influenced by clinically relevant role models who can provide an accurate representation of contemporary PHC and integrate PHC theory and clinical practice (van Iersel et al., 2018b). Additionally, accreditation bodies should ensure that entry-to-practice competencies are applicable to pre-registration nurses across practice settings to assist in theoretical knowledge translation (Schofield et al., 2018). The fact that the focus of curricula has not yet shifted to include PHC highlights the need for accreditation bodies and curriculum developers to be more agile in responding to trends in health service delivery. There is a real need to ensure that curricula keep pace with evolving trends to future proof the nursing profession (Ralph et al., 2014).

A lack of academics experienced in PHC was identified as one of the biggest barriers in preparing students for a career in PHC (Albutt et al., 2013; Ali et al., 2011; Wojnar and Whelan, 2017). The PHC nursing role has developed significantly in recent years and, as such, is not necessarily well understood by the broader nursing profession (Halcomb et al., 2017), including nurse academics. This is an important consideration as nurse academics are strong role models for their students (Gibbs and Kulig, 2017). The gap highlights the need to ensure that nurses with PHC expertise are engaged to develop and deliver PHC content. Strategic appointments of nurses with PHC expertise to Schools of Nursing is an important step in both building the career pathway and capacity within curricula. However, much like in clinical nursing, there are workforce shortages of academic staff. Clearly strategies implemented to recruit academics need to consider not only cultural and ethnic diversity (Bittner and Bechtel, 2017), but also diversity of clinical expertise to ensure that nursing students are exposed to a range of influences during their education.

The final key finding was around the negative perceptions of the PHC nurse role (Duah, 2015; van Iersel et al., 2018a). Nursing students have previously been shown to have a limited understanding of PHC nursing and the complexities of the role (McInnes et al., 2015b; van Iersel et al., 2016). These beliefs also resonate with previous work on clinical placements which revealed that student nurses believe hospital experience is required before working in general practice (McInnes et al., 2015a), as well as in studies on transition and career expectations following registration (Aggar et al., 2017; Thomas et al., 2018).

Interestingly, McInnes et al. (2015a) found that these negative perceptions were significantly shifted once students had the opportunity to experience high quality PHC clinical placements. Clinical experience is an important tool in shaping students' attitudes to their learning, professional role development and clinical skills (Henderson et al., 2012), and it is the combination of theoretical and clinical experience that can influence career intentions (McCann et al., 2010). Exposing nursing students to high quality PHC clinical experiences can aid preparation and stimulate interest in PHC (Peters et al., 2015). Universities must strengthen clinical placement programs across PHC settings and continue to promote PHC as a feasible career option (Peters et al., 2015). Ensuring that all undergraduate students undertake a quality, well supported clinical placement in PHC is one strategy for promoting career opportunities in this setting. However, the small business structure of general practices and relatively small nursing numbers seen in many PHC settings adds complexity to providing such clinical placements, particularly in programs with large student cohorts (Peters et al., 2013).

To ensure that clinical placements promote PHC as a feasible career option, it is important that the nurses within these settings have a positive perception of their role and project positive perspectives about a career in PHC. There is some evidence that currently PHC nurses lack a sense of identity, are challenged by articulating their role and its value, and project variable support for graduate nurses seeking to enter PHC (Halcomb et al., 2012; Thomas et al., 2018). Strategies to build the identity of PHC nursing and increase its visibility within the nursing profession have the potential to not only improve the confidence and contribution of current PHC nurses, but can also help to build student exposure through increased awareness of the issues and more positive introductions to the setting.

While various strategies have been trialled at a local level in different locations with variable success, this review highlights that there is still more to be done to address the key issues. Gaining the support of policymakers, professional organisations and accreditation bodies is vital to achieve real change in pre-registration nurse preparation. Such support requires robust evidence from the perspectives of education providers, PHC workplaces and nursing students/graduates to guide strategic planning. Perhaps one of the challenges is that much of the evidence comes from studies that broadly examine PHC and all its relatively disparate clinical settings, which may have different and unique issues (Mackey et al., 2018; Schofield et al., 2011). Further research should concentrate on students' preparedness to work in key PHC settings where large numbers of nurses work, such as general practice, community health or rural and remote health services.

6.1. Limitations

This integrative review has several limitations. Despite systematic searching, only 12 studies from 5 countries were identified. Geographically, studies reviewed were mostly published in developed countries. Consequently, the structure of PHC sector and how PHC content is delivered within the BN curricula in other parts of the world were not represented. The included studies explored PHC in the context of community or public health, or as a whole sector, but specific clinical areas, such as general practice, which make up a large section of the PHC sector were not explored separately.

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7. Conclusion

The acute-care focussed nature and inconsistencies in PHC content delivery in undergraduate nursing curricula may contribute to low numbers of students intending to work in PHC following graduation. Collaboration between accreditation bodies, universities and experienced PHC nurses, is crucial in the development of a more inclusive curriculum. Future strategies should focus on challenging perceptions of PHC and the PHC nurse role to improve the allure of this important area of practice. In particular, equipping students with required skills and knowledge, as well as an understanding of working in this area through curriculum content and structure may provide undergraduates with the desire and confidence to seek employment in PHC following graduation. Given the importance of a strong PHC nursing workforce to meet the demands of chronic and complex disease, the review highlights the need for urgent attention towards the preparation of nursing graduates for PHC employment.

Author contributions

Conception and design of the study, or acquisition of data, or analysis and interpretation of data; KC, EH, MS, Drafting the article or revising it critically for important intellectual content; KC, EH, MS, Final approval of the version to be submitted; KC, EH, MS.

Conflicts of Interest Statement

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Appendix B: Recruitment Information

ARE YOU A FINAL-YEAR NURSING STUDENT?

ARE YOU INTERESTED IN WINNING A $100 VOUCHER?

We need **YOUR HELP** to understand how nursing students are prepared to work in primary healthcare. We need to hear from you regardless of whether primary healthcare interests you.

It only takes a few minutes to complete the online survey at
https://www.surveymonkey.com/r/WorkinGPX

Information will be used to develop future undergraduate nursing curricula.

All participants will go into a draw to win a

$100 Coles Myer Voucher.

Contacts: Kaara Calma krbc929@uowmail.edu.au / Prof Liz Halcomb ehalcomb@uow.edu.au

This study has been approved by the University of Wollongong Human Research Ethics Committee (Approval No. 2018/556).

Dear Student,

The future of the nursing workforce is in your hands!

We want you to tell us what you think in an **online survey** to explore final-year undergraduate nursing students' views about primary health care. The survey will help us understand how you as a final-year nursing student have been prepared to work in this area after you graduate. This survey should take you no more than 10-15 minutes to complete. **One lucky participant from each participating university will win a $100 Coles Myer voucher.**

Please proceed by clicking on the survey link: https://www.surveymonkey.com/r/WorkinGPxX

If you have any further questions, please feel free to contact Miss Kaara Ray B. Calma via email krbc929@uowmail.edu.au or Professor Liz Halcomb via email ehalcomb@uow.edu.au or phone 4221 3784.

We are grateful in anticipation of your support.

Kind Regards,

Kaara Ray B. Calma (PhD Candidate)   Professor Liz Halcomb

krbc929@uowmail.edu.au   ehalcomb@uow.edu.au

Appendix C: Survey Tool

Information Sheet

PURPOSE OF THE RESEARCH
We invite you to participate in a study being conducted by the University of Wollongong (UOW) to explore final-year undergraduate nursing students' preparedness to work in general practice, and to understand the factors that impact on their preparedness to work in this area. These data will provide important insights into the nature of preparation final-year undergraduate nursing students receive in terms of employment in general practice following graduation.

INVESTIGATORS
Miss Kaara Ray B. Calma (PhD Candidate), University of Wollongong, 02 4221 3784, krbc929@uowmail.edu.au

Professor Liz Halcomb, University of Wollongong, 02 4221 3784, ehalcomb@uow.edu.au

Dr. Moira Stephens, University of Wollongong, 02 4221 5350, moiras@uow.edu.au

Dr. Anna Williams, The University of Notre Dame, 02 8204 4167, anna.williams@nd.edu.au

WHAT WE WOULD LIKE YOU TO DO
If you choose to participate, we would ask you to complete this online survey. This survey should take no more than 10-15 minutes. There will be a combination of tick box questions and free-text short answer questions. <u>One lucky participant from each participating university will win a $100 Coles Myer voucher.</u>

At the end of the survey, you will be able to provide your contact details should you wish to be added to the draw for the gift voucher. You will also be given the opportunity to indicate your interest to be contacted about follow up interviews. These contact data will be separated and not stored with your survey response.

POSSIBLE RISKS, INCONVENIENCES AND DISCOMFORTS
Aside from the time it will take for you to complete the survey, there are no risks anticipated with your participation in this survey. As all surveys are anonymous, once you have submitted the survey online it will not be possible to withdraw the data. All data will be stored electronically for a period of 5 years following the publication of results before being permanently destroyed as per the Australian Code for the Responsible Conduct of Research 2007.

CONFIDENTIALITY & USE OF DATA
Findings from this study will be published within a doctoral thesis, and are likely to be published in peer-reviewed nursing journals. However, confidentiality is assured, and no individual participant will be identified in any part of the research. Participating universities will not be informed about who has

participated in this study, or any of the individual responses made, to maintain student confidentiality. Decisions to participate in the study will not influence nor impair any existing or future relationships between the participant and the researchers, their universities (University of Wollongong/University of Technology Sydney/Charles Sturt University/Western Sydney University/University of New England) or any other stakeholders involved in the research.

FUNDING AND BENEFITS OF THE RESEARCH
This study is being funded by the Australian Government Research Training Program scholarship. The research will provide a basis for the review of current Bachelor of Nursing programmes to assess the adequacy of nursing students' preparation to work in general practice.

ETHICS REVIEW AND COMPLAINTS
This study has been reviewed by the Human Research Ethics Committee of the University of Wollongong (Approval No. HREC 2018/556) and approved by all participating Universities. If you have any concerns or complaints regarding the way this research has been conducted you can contact the UOW Ethics Officer on (02) 4221 3386 or email rso-ethics@uow.edu.au.

STUDY ENQUIRIES
If you have any questions about this study please contact Miss Kaara Ray B. Calma via email krbc929@uowmail.edu.au or Profess

* 1. Have you read and understood the information described in the participant information sheet?

  ☐ Yes, I have read the participant information sheet and agree to participate in this research.

  ☐ No, I do not wish to participate in this survey.

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Experience in General Practice

The following questions are related to your experience of working in, or being connected to someone who has experience of general practice.

* 2. Are you currently or have you ever worked as an:

○ Enrolled Nurse   ○ Wardsperson

○ Assistant in Nursing   ○ Administration assistant / Receptionist

○ Aboriginal Health Worker   ○ I have never worked in health

○ Pathology / Blood collector

○ Other (please specify)

[   ]

* 3. Are you currently or have you ever worked in **general practice** as an:

○ Enrolled Nurse

○ Assistant in Nursing

○ Aboriginal Health Worker

○ Pathology / Blood collector

○ Receptionist (Front Desk)

○ Student Nurse

○ I have never worked in general practice

○ Other (please specify)

[   ]

4. Do you have a family member or close friend working in general practice?

○ Yes, I know someone working in Reception

○ Yes, I know someone working as a Nurse

○ Yes, I know someone working as a Doctor

○ No. I do not know anyone working in general practice

5. In the last 12 months, how often have you attended your general practice?

Never	Rarely	Occasionally	Frequently	Very Frequently
○	○	○	○	○

6. Have you received care from a general practice nurse in the past, or are receiving it now?

○ Yes

○ No

○ Unsure

Primary health care nursing in the Bachelor of Nursing curriculum

The following questions are related to your experience of learning about primary health care nursing during your Bachelor of Nursing course.

* 7. Have you been exposed to **primary health care nursing** during your Bachelor of Nursing course?

○ Yes - in theory only

○ Yes - theory and placements

○ Unsure

○ No

* 8. How has **primary health care nursing** been covered in your Bachelor of Nursing program?

○ Dedicated subject / unit(s)

○ Integrated through course

○ Not really covered in course

○ Other (please specify)

[   ]

* 9. I have learnt about **primary health care nursing** in my: (tick all that apply)

☐ First year

☐ Second year

☐ Third year

☐ Primary health care nursing was NOT a part of our curriculum

* 10. Have you undertaken a clinical placement in a **primary health care (PHC)** setting? **PHC settings** may include community health sector and social service, general practice, residential aged care, custodial/detention settings, boarding houses and outreach to homeless people, schools, occupational health and safety workplaces.

○ Yes

○ No

If yes, please specify which setting you had a primary health care placement in:

[   ]

General practice nursing in the Bachelor of Nursing curriculum

The following questions are related to your experience of learning about general practice nursing during your Bachelor of Nursing course.

* 11. Have you been exposed to **general practice nursing** during your Bachelor of Nursing?

  ○ Yes - in theory only

  ○ Yes - theory and placements

  ○ Unsure

  ○ No

* 12. Have you had clinical placement in **general practice** during your Bachelor of Nursing?

  ○ Yes

  ○ No

  ○ If yes, please specify the number of days you spent on clinical placement in general practice:

* 13. Please indicate your level of agreement with the following statements

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I feel that I will have sufficient knowledge when I graduate to perform as a competent beginning Registered Nurse	○	○	○	○	○
I feel that I will have sufficient clinical skills when I graduate to perform as a competent beginning RN.	○	○	○	○	○
I feel my undergraduate nursing studies have prepared me to enter general practice	○	○	○	○	○
I do not believe new graduate nurses should be employed in general practice	○	○	○	○	○
Primary health care subject / unit gave me sufficient **clinical skills** to work in general practice	○	○	○	○	○
Primary health care subject / unit gave me sufficient **knowledge** to work in general practice	○	○	○	○	○
Primary health care subject / unit **increased my confidence** to work in general practice	○	○	○	○	○
Primary health care subject / unit **increased my interest** in general practice	○	○	○	○	○
I am interested in seeking employment in general practice after graduation	○	○	○	○	○
I am interested in seeking employment in general practice after I have had some clinical experience as an RN.	○	○	○	○	○

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Perceptions of General Practice

The following questions are related to your perceptions of what it would be like working in general practice.

* 14. When working as a general practice nurse how much do you expect the following would be present?

	Very little 1	2	3	4	5	6	7	8	9	A lot 10
Enjoyable relationships with patients	○	○	○	○	○	○	○	○	○	○
Physically demanding work	○	○	○	○	○	○	○	○	○	○
Collaboration with colleagues	○	○	○	○	○	○	○	○	○	○
Collaboration with other disciplines	○	○	○	○	○	○	○	○	○	○
Technical nursing skills needed	○	○	○	○	○	○	○	○	○	○
Freedom of action (Autonomy)	○	○	○	○	○	○	○	○	○	○
Variety of caregiving	○	○	○	○	○	○	○	○	○	○
Work pressures	○	○	○	○	○	○	○	○	○	○
Complex patient care needs	○	○	○	○	○	○	○	○	○	○
Elderly patients	○	○	○	○	○	○	○	○	○	○
Low status work	○	○	○	○	○	○	○	○	○	○
Health improvements for Patients	○	○	○	○	○	○	○	○	○	○
Enthusiastic colleagues	○	○	○	○	○	○	○	○	○	○
Contact with Family / Carers	○	○	○	○	○	○	○	○	○	○
Opportunities for advancement	○	○	○	○	○	○	○	○	○	○
Individual responsibility	○	○	○	○	○	○	○	○	○	○
Wages	○	○	○	○	○	○	○	○	○	○
Hours of Work	○	○	○	○	○	○	○	○	○	○

* 15. When working as a general practice nurse I expect there to be;

A poor work environment 1	2	3	4	5	6	7	8	9	A good work environment 10	I don't know
○	○	○	○	○	○	○	○	○	○	○

* 16. Working in general practice would better suit my personal health needs.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
○	○	○	○	○

Career Intention

The following questions are related to your intention to work in general practice after graduation.

* 17. Please indicate your level of agreement with the following statements

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I intend to work as a general practice nurse when I graduate	○	○	○	○	○	○	○
I regard general practice nursing as a highly desirable career option	○	○	○	○	○	○	○
People who are important to me would like me to pursue a career in general practice nursing	○	○	○	○	○	○	○
If I wanted to, I could get a job in general practice nursing when I graduate	○	○	○	○	○	○	○
General practice nursing would not be an enjoyable area of nursing for me	○	○	○	○	○	○	○
People who are close to me would prefer me to choose an area of nursing other than general practice when I graduate	○	○	○	○	○	○	○
I am confident that, if I wanted to, I could work as a general practice nurse when I graduate	○	○	○	○	○	○	○
I have no intention of pursuing a career in general practice nursing	○	○	○	○	○	○	○
If I was to choose general practice nursing as a career, people whose opinions I care about would be disappointed with me	○	○	○	○	○	○	○
Even if I wanted to, I would find it difficult to pursue a career in general practice nursing	○	○	○	○	○	○	○
The role of the general practice nurse appeals to me	○	○	○	○	○	○	○
My family and friends would be very supportive of me choosing a career in general practice nursing	○	○	○	○	○	○	○
Whether or not I choose a career in general practice nursing when I graduate is up to me	○	○	○	○	○	○	○
It is unlikely that I will seek employment as a general practice nurse when I graduate	○	○	○	○	○	○	○
Working as a general practice nurse would be a very positive experience	○	○	○	○	○	○	○
People whose opinions I value would approve of my pursuing general practice nursing as a career	○	○	○	○	○	○	○

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
People I care about would encourage me to pursue a career in general practice nursing	○	○	○	○	○	○	○
I am planning to become a general practice nurse when I graduate	○	○	○	○	○	○	○
If I decide to pursue a career in general practice nursing I should have no difficulty in getting a job in general practice when I graduate	○	○	○	○	○	○	○

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Employment

The following questions seek to explore the working arrangements you prefer after graduation.

* 18. When I graduate, I intend to work

- ◯ Full-time
- ◯ Part-time
- ◯ Casual
- ◯ Not work in nursing

* 19. How important are the following aspects in deciding where you would like to work?

	Not Important	Slightly Important	Moderately Important	Important	Very Important
Relationships with patients	○	○	○	○	○
Physical nature of work	○	○	○	○	○
Collaboration with colleagues	○	○	○	○	○
Collaboration with other disciplines	○	○	○	○	○
Technical nursing skills needed	○	○	○	○	○
Freedom of action (Autonomy)	○	○	○	○	○
Variety of caregiving / role	○	○	○	○	○
Level of work pressures	○	○	○	○	○
Complexity of patient care needs	○	○	○	○	○
Patient age group	○	○	○	○	○
Status of work	○	○	○	○	○
Health improvements for Patients	○	○	○	○	○
Enthusiastic colleagues	○	○	○	○	○
Contact with Family / Carers	○	○	○	○	○
Opportunities for advancement	○	○	○	○	○
Work environment	○	○	○	○	○
Individual responsibility	○	○	○	○	○
Wages	○	○	○	○	○
Hours of work	○	○	○	○	○

Comments:

Participant Demographics

The following are questions seek to understand who has responded to the survey.

* 20. How old are you today (in whole years)?

[   ]

* 21. Do you identify as

○ Male ○ Female ○ Non-binary

22. In which country did you complete the majority of your schooling?

○ Australia

○ Other (please specify)

[   ]

23. Do you identify as Aboriginal or of Torres Strait Islander origin?

○ No ○ Yes Aboriginal ○ Yes Torres Strait Islander

24. Are you currently enrolled on an international visa?

○ Yes ○ No

25. Please indicate how you would classify your current place of residence:

○ Capital city

○ Metropolitan centre

○ Rural area

○ Remote area

26. Was nursing your first choice when you entered University?

○ No ○ Yes

27. What is your average grade in your Bachelor of Nursing?

○ Fail

○ Pass

○ Credit

○ Distinction

○ High Distinction

○ Unsure

Participant Contact Details (Optional)

Please provide your contact details if you wish to be added to the draw for a $100 gift voucher. Please check the box below if you consent to be contacted about follow up interviews. This will not impact on your inclusion in the Prize Draw.

These contact data will be separated and not stored with your survey responses.

* 28. Do you consent to be contacted about follow up interviews?

☐ Yes

☐ No

29. Contact Details

Name	
Email Address	
Phone Number	

Appendix D: Permission to use Tools

RE: Request for a copy of survey in van Iersel et al 2018

Iersel, Margriet van <   >

Mon 16/07/2018 19:07

To: Kaara Calma <krbc929@uowmail.edu.au>;

Cc: vos@amc.uva.nl <   L   L   >; Paul Kirschne.   nl>; Scholte Op Reimer, Wilma
nl>; Latour, Corine <   >;

📎 1 attachments (114 KB)

SCOPE.pdf;

Dear Mrs. Calma, Kaara,

Thank you for your interest in our survey (see attachment). You can also find our article about the development and validation of the instrument SCOPE behind this link:

https://doi.org/10.1016/j.nepr.2018.05.002

In case of any questions, please feel free to contact me again. It would be nice if you can share the results of your research with me.

Good luck and kind regards,

Margriet van Iersel

Margriet van Iersel MSc Education
Lecturer/ PhD Student in project 'Educating on Complex Care'

Hogeschool van Amsterdam/ University of Applied Sciences
Faculteit Gezondheid - verpleegkunde/ Health Faculty - nursing
Tafelbergweg 51 / 1105 BD Amsterdam, The Netherlands
M 06 21157910
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De Amsterdam School of Health Professions is een samenwerkingsverband van HvA Gezondheid, de UvA en het AMC. Door de intensieve samenwerking bundelen deze instellingen hun kennis op het vlak van paramedisch en verpleegkundig onderwijs, onderzoek en zorg.

Van: Kaara Calma [krbc929@uowmail.edu.au]
Verzonden: zondag 15 juli 2018 03:04
Aan: Iersel, Margriet van; Latour, Corine;   ;   Scholte Op Reimer, Wilma
Onderwerp: Request for a copy of survey in van Iersel et al 2018

Dear Margriet van iersel, Corine Latour, Rien de Vos, Paul Kirschner and Wilma J.M. Scholte op Reimer,

Good day. My name is Kaara Ray B. Calma and I am a PhD candidate in the School of Nursing at University of Wollongong, New South Wales, Australia. I am writing to ask if I could please have a full copy of the survey that you used in this paper:

---

van Iersel, M., Latour, C. H. M., de Vos, R., Kirschner, P. A., & Scholte op Reimer, W. J. M. (2018a) Perceptions of community care and placement preferences in first-year nursing students: A multicentre, cross-sectional study. Nurse Education Today, 60, 92-97.

We would greatly appreciate it if you could please provide us a copy of this survey to assist us in the further exploration of nursing students' perceptions of PHC.

Thank you so much and I look forward to hearing from you soon. Should you have any further questions, please do not hesitate to contact me via email.

Kind Regards,

Kaara Ray B. Calma RN, BN (Hons)
PhD Candidate
School of Nursing I Faculty of Science, Medicine & Health
University of Wollonoonn
Alternate email.
Twitter: @KaaraCalma

Calma, KRB, Halcomb, E & Stephens, M 2018
An exploration of the experiences of Australian Grey Nomads travelling with chronic conditions
Australian Journal of Primary Health, vol. 24, no. 2, pp. 183-188
http://www.publish.csiro.au/PY/PY17043

RE: Request for permission to use 19-item ASPIRE scale - Kaara Calma, PhD candidate at University of Wollongong

Mark Wilbourn <M.Wilbourn@westernsydney.edu.au>

Mon 05/11/2018 11:58

To:Kaara Calma <krbc929@uowmail.edu.au>;

Cc:Liz Halcomb <ehalcomb@uow.edu.au>; Moira Stephens <moiras@uow.edu.au>;

Dear Kaara,

I'm happy for you to use the ASPIRE tool in your study. I hope it goes well.

Kind regards,
Mark

Mark Wilbourn
Adjunct Fellow
School of Nursing and Midwifery
Western Sydney University
0466 829 091
M.Wilbourn@westernsydney.edu.au

RE: Request for permission to use 19-item ASPIRE scale - Kaara Calma, PhD candidate at University of Wollongong

Mark Wilbourn <M.Wilbourn@westernsydney.edu.au>

Mon 05/11/2018 11:58

To:Kaara Calma <krbc929@uowmail.edu.au>;

Cc:Liz Halcomb <ehalcomb@uow.edu.au>; Moira Stephens <moiras@uow.edu.au>;

Dear Kaara,

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M.Wilbourn@westernsydney.edu.au

Appendix E: Interview Information Sheet and Consent Form

Participant Information Sheet - Interviews

An exploration of final-year undergraduate nursing students' preparedness to work in general practice

PURPOSE OF THE RESEARCH

We invite you to participate in a study being conducted by the University of Wollongong (UOW) to explore final-year undergraduate nursing students' preparedness to work in general practice, and to understand the factors that impact on their preparedness to work in this area. These data will provide important insights into the nature of preparation final-year undergraduate nursing students receive in terms of employment in general practice following graduation.

INVESTIGATORS

Miss Kaara Ray B. Calma (PhD Candidate), University of Wollongong, 02 4221 3784, krbc929@uowmail.edu.au

Professor Liz Halcomb, University of Wollongong, 02 4221 3784, ehalcomb@uow.edu.au

Dr. Moira Stephens, University of Wollongong, 02 4221 5350, moiras@uow.edu.au

Dr. Anna Williams, The University of Notre Dame, 02 8204 4167, anna.williams@nd.edu.au

Dr. Susan McInnes, The University of Wollongong, 02 4221 4289, smcinnes@uow.edu.au

WHAT WE WOULD LIKE YOU TO DO

If you choose to participate, we would ask you to participate in an interview either face-to-face, via telephone or video conference. The date, time and venue will be mutually agreed. This interview will involve responding to a series of questions around your preparedness for practice and career intentions. The discussion may ask you to reflect on your experiences when learning about general practice within the Bachelor of Nursing programme. The interview might last up to 60 minutes. All discussion will be audio-recorded and transcribed verbatim, then de-identified for analysis and reporting.

POSSIBLE RISKS, INCONVENIENCES AND DISCOMFORTS

Aside from the time it will take for you to complete the interview, there are no risks anticipated with your participation in this survey. The interview will be scheduled at a time convenient to the participant and the interviewer. It is not anticipated that this interview will cause any discomfort or risk to the participant. However, should you become distressed we will provide support and refer you to local support services to assist you. Available counselling services at University of Wollongong campuses are listed below:

Wollongong	Wollongong Campus Counselling Services (Bld 11, Lv 2)	(02) 4221 3445
Batemans Bay	Contact Campus Manager, Jaimey Facchin, for an appointment	(02) 4472 2125
Bega	Melanie Sheehan Contact Campus Manager, Sam Avitaia, to make an appointment.	(02) 6494 7035
Shoalhaven	Gabrielle Booty. Contact the front desk at the Ray Cleary building to make an appointment	(02) 4448 0888
Southern Sydney & South Western Sydney	Nadezhda Kurukulasuriya	(02) 87636012

Students can also contact the UOW Afterhours Crisis Support Line for support between 4.30pm and 9am Monday to Friday, all weekend and on public holidays. 1300 036 149

CONFIDENTIALITY & USE OF DATA

Findings from this study will be published within a doctoral thesis, and are likely to be published in peer-reviewed nursing journals. However, confidentiality is assured and no individual participant will be identified in any part of the research. Participating universities will not be informed about who has participated in this study, and any of the responses made, to maintain student confidentiality. Decisions to participate in the study will not influence nor impair any existing or future relationships between the participant and the researchers, their university (UOW) or any other stakeholders / institutions involved in the research.

Individual participants will be de-identified from any reports, publications or presentations stemming from the study. You may choose to withdraw your consent to participate at any time.

All audio data and transcripts will be stored electronically for a period of 5 years following the publication of results before being permanently destroyed as per the Australian Code for the Responsible Conduct of Research 2007.

FUNDING AND BENEFITS OF THE RESEARCH

This study is being funded by the Australian Government Research Training Program scholarship. The research will provide a basis for the review of current Bachelor of Nursing programmes to assess the adequacy of nursing students' preparation to work in general practice.

ETHICS REVIEW AND COMPLAINTS

This study has been reviewed by the Human Research Ethics Committee of the University of Wollongong (Approval No. HREC 2018/556). If you have any concerns or complaints regarding the way this research has been conducted you can contact the UOW Ethics Officer on (02) 4221 3386 or email rso-ethics@uow.edu.au.

STUDY ENQUIRIES

If you have any questions about this study please contact Miss Kaara Ray B. Calma via email krbc929@uowmail.edu.au or Professor Liz Halcomb via email ehalcomb@uow.edu.au or phone 4221 3784.

Thank you for your interest in this study.

Participant Consent Form - Interviews

An exploration of final-year undergraduate nursing students' preparedness to work in general practice

INVESTIGATORS: Miss Kaara Ray B. Calma (PhD Candidate), Professor Liz Halcomb, Dr. Moira Stephens, Dr Anna Williams, Dr. Susan McInnes

I acknowledge that:

- I have been given information about the project **'An exploration of final-year undergraduate nursing students' preparedness to work in general practice'** and been provided the opportunity to discuss and ask questions about the research project with the research team. The procedures required for the project and the time involved have been explained to me, and any questions I have about the project have been answered to my satisfaction.

- I understand that participation will involve taking part in a face-to-face, telephone or video conference interview. I understand and consent to the audio taping of my interview for data analysis purposes and that audio transcripts will be stored for a period of 5 years following the publication of results before being permanently destroyed as per the Australian Code for the Responsible Conduct of Research 2007.

- I understand that my involvement is confidential, with my information only accessible to the research investigators directly involved in the project. Information gained during the study will be published with no information about me, and in no way will be used that reveals my identity.

- I have been informed of the burdens associated with this research, which includes an interview that may last up to 60 minutes.

- I understand that my participation in this research is voluntary, and that I can withdraw from the study at any time, without affecting my relationship with the researcher/s or the University of Wollongong, University of Technology Sydney, Charles Sturt University, Western Sydney University, or University of New England.

- If I have any enquiries about the research project, I have been informed that I can contact Miss Kaara Ray B. Calma (krbc929@uowmail.edu.au) or Professor Liz Halcomb (ehalcomb@uow.edu.au / 4221 3784). If I have any concerns or complaints regarding the way the research is or has been conducted, I have been advised to contact the Ethics Officer, Human Research Ethics Committee, Office of Research, University of Wollongong on (02) 4221 3386 or email rso-ethics@uow.edu.au.

By signing below, I am indicating my consent to (please tick):

              Participate in an interview

              Audio-recording of the interview

I understand that the data collected from my participation will be used for the purposes of exploring the preparedness of final-year undergraduate nursing students to work in general practice and will be reported in a de-identified form in various reports, presentations and publications, and I consent for it to be used in that manner.

Signed: _____

Name: _____   Date:__/_____/_____

Return Address: Miss Kaara Ray B. Calma, Building 41 - School of Nursing,
                        University of Wollongong,
                        Northfields Ave Wollongong NSW 2522

HREC Approval No. 2018/556

Appendix F: Thematic Grid Extracts

Participant quote	Code	Sub-theme	Theme
"I know that they have a lot of appointments with patients who come in. Whether that's injections or they need to help out with a wound or a surgical review with a doctor that might involve some sort of minor procedures. So doing minor procedures by themselves as well. Assisting their doctors and what not. Reading results and helping out with the follow up of doctors' reviews." *- Denise*	Minor procedures	Assisting doctors	Ways of working
"I would think that you could have a lot of ownership within that practice if it was a smaller scale practice. You could have a lot of ownership over the direction that the practice takes and you'd be really collaborative with doctors." *- Celestine*	Collaborative environment	Autonomy	
"you get to learn new things pretty much every day. I had never done this before, but a hormone injection, a testosterone injection for a patient, which I had never done before" *- Klara*	Learn new skills everyday	Broad skills	A broad role to meet diverse health needs
"I would think that their role would be very varied and pretty wonderful, but I would think that it would have to have come with quite a wide knowledge base." *- Celestine*	Broad scope	Wide knowledge base	
"I think that whole building a rapport, getting to know people, seeing them come back, seeing them progress, helping them out through different stages and different thing would be really appealing to me. I think that would be a really lovely thing to be able to do." *- Lorraine*	Time to get to know patient	Rapport with patient	Relationships with patients
"Definitely long term, in the future, definitely a good job, just for the hours too if you've got family, kids." *- Maggie*	Convenient hours	Work-life balance	Employment conditions
"I think that the only downfall of general practice nursing is the fact that they aren't paid nearly as well as what the hospital nurses are. Pay rates are terrible. Hours are great. But, yeah, pay rates are terrible. *- Paula*	Flexible hours but pay is poor	Salary	
"…a lot of the GP nurses I have met before have been older people… at the end of their career that are looking to take it a bit easier and not be in a big setting, not be running around as much…" *- Lorraine*	Easier work	Workplace pressure	

Appendix G: HREC Approval

Liz Halcomb

From:	irma-support@uow.edu.au
Sent:	Wednesday, 5 December 2018 3:52 PM
To:	Liz Halcomb
Cc:	krbc929@uowmail.edu.au; Moira Stephens; Liz Halcomb; RSO Ethics
Subject:	HREC Approval of Application 2018/556

Dear Professor Halcomb,

I am pleased to advise that the application detailed below has been **approved.**

Ethics Number:	2018/556
Approval Date:	04/12/2018
Expiry Date:	03/12/2019
Project Title:	An exploration of final-year undergraduate nursing students' preparedness to work in general practice
Researchers:	Calma Kaara Ray; Stephens Moira; Halcomb Liz; Williams Anna
Documents Approved:	• Initial HREC Application V1 22112018
	• HREC Response V1 28112018
	• Interview Information Sheet V2 28112018
	• UOW Information Sheet V2 28112018
	• UTS Information Sheet V2 28112018
	• CSU Information Sheet V2 28112018
	• WSU Information Sheet V2 28112018
	• UNE Information Sheet V2 28112018
	• Interview Consent Form V2 28112018
	• Survey Tool V2 28112018
	• Advertisement V1 22112018
	• Budget V1 22112018

Sites:

Site	Principal Investigator for Site
University of Wollongong (UOW)	Prof Elizabeth Halcomb / Miss Kaara Ray B. Calma
University of Technology Sydney (UTS)	Prof Elizabeth Halcomb / Miss Kaara Ray B. Calma
Charles Sturt University (CSU)	Prof Elizabeth Halcomb / Miss Kaara Ray B. Calma
Western Sydney University (WSU)	Prof Elizabeth Halcomb / Miss Kaara Ray B. Calma
University of New England (UNE)	Prof Elizabeth Halcomb / Miss Kaara Ray B. Calma

The HREC has reviewed the research proposal for compliance with the *National Statement on Ethical Conduct in Human Research* and approval of this project is conditional upon your continuing compliance with this document. Compliance is monitored through progress reports; the HREC may also undertake physical monitoring of research.

Approval is granted for a twelve month period; extension of this approval will be considered on receipt of a progress report **prior to the expiry date**. Extension of approval requires:

- The submission of an annual progress report and a final report on completion of your project.
- Approval by the HREC of any proposed changes to the protocol or investigators.
- Immediate report of serious or unexpected adverse effects on participants.
- Immediate report of unforeseen events that might affect the continued acceptability of the project.

If you have any queries regarding the HREC review process or your ongoing approval please contact the Ethics Unit on 4221 3386 or email rso-ethics@uow.edu.au.

Yours sincerely,

Susan Thomas

Dr Susan Thomas,
Chair, UOW & ISLHD Health and Medical Human Research Ethics Committee

The University of Wollongong and Illawarra and Shoalhaven Local Health District Health and Medical HREC is constituted and functions in accordance with the NHMRC National Statement on Ethical Conduct in Human Research. The processes used by this HREC to review multi-centre research proposals have been certified by the National Health and Medical Research Council.

Appendix H: Paper 2 and Publisher Permission

Calma, K.R.B., McInnes, S., Halcomb, E., Williams, A., & Batterham, M. (2021). Confidence, interest and intentions of final-year nursing students regarding employment in general practice. *Collegian, 29 (2)*, 220-227.

Confidence, interest and intentions of final-year nursing students regarding employment in general practice

Kaara Ray B. Calma [a,*], Susan McInnes [a], Elizabeth Halcomb [a], Anna Williams [b], Marijka Batterham [c]

[a] School of Nursing, University of Wollongong, Northfields Ave Wollongong, New South Wales 2522, Australia
[b] Health Sciences and Physiotherapy, Nursing & Midwifery and Health Sciences, The University of Notre Dame Australia, Sydney Campus, Sydney New South Wales 2000, Australia
[c] National Institute for Applied Statistics Research Australia, School of Mathematics and Applied Statistics, University of Wollongong, Northfields Ave Wollongong New South Wales 2522, Australia

ARTICLE INFO

ABSTRACT

Background: Rising health care burden has increased demand for general practice nurses. Exploring final-year nursing students' perceived levels of confidence, interest and intention to work in this area can inform preparation and recruitment of new graduates into this workforce.

Aim: To explore final-year nursing students' confidence, interest and intention to work in general practice.

Methods: Final-year nursing students from five universities situated in New South Wales, Australia were surveyed between March and June 2019. The survey comprised investigator-developed questions and validated tools adapted for use in general practice.

Findings: Of the 355 included responses, 34.1% respondents had a clinical placement in general practice. Work experience was a significant predictor of confidence in working as a Registered or General Practice Nurse. Being enrolled as an international student, general practice placement experience and high confidence to work in general practice were significant predictors of interest and intention to work in this setting. Analysis showed a strong positive relationship between interest and intention to work in general practice, and a small but positive relationship between confidence and intention to work in general practice.

Discussion: Despite generally positive views around their confidence, interest and intention to work in general practice, some respondents indicated uncertainties around these, and the usefulness of their undergraduate preparation towards PHC employment. This may be attributable to the inconsistent exposure to general practice nursing within Australian undergraduate nursing programs.

Conclusion: Increasing students' theoretical and clinical exposure to general practice enhances confidence and interest to pursue a career in this setting.

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* Corresponding author at: Northfields Ave, Wollongong, New South Wales 2522, Australia, Tel.:+61 2 4221 3784.
  E-mail address: krbc929@uowmail.edu.au (K.R.B. Calma).

Summary of relevance

Problem

Despite increased demand for general practice nurses due to rising health care burdens, there has been little focus given to final-year nursing students' perceived preparedness and intention to work in this setting.

What is already known

Exposure to PHC nursing during undergraduate education can influence career intentions. To date, Bachelor of Nursing curricula remain acute-care centric.

What this paper adds

Universities need to engage with PHC experienced academics with the theoretical and clinical preparation of students to work in general practice as this may enhance students' confidence and interest to pursue a career in this setting.

1. Introduction

Internationally, there has been an increased focus on the provision of health care in the community to meet the health needs of an ageing population and growing chronic disease burden (Halcomb et al., 2017). As the world's population dramatically increases in size, many people will experience at least one chronic condition (James et al., 2019). Community-based, primary health care (PHC) services are essential in the early identification and ongoing management of chronic conditions (World Health Organization, 2018). These health services include a range of specialist and generalist services, such as women's health clinics, refugee health services and school-based clinics. General practice, also known as family practice or primary care, is a subset of PHC. It is the frontline health service for the diagnosis and management of chronic conditions, as well as for other health needs such as acute injury and illness, infectious disease and preventive health care such as health assessments and vaccinations (Royal Australian College of General Practitioners, 2020).

In Australia, general practitioners predominately own and operate general practices, either as an independent business or within a larger group of corporations (McInnes et al., 2019). General practices are the first point of contact the community has with the health care system and almost 90% of the Australian adult population access general practice services annually (Royal Australian College of General Practitioners, 2020). Nurses comprise the majority of the non-physician workforce in general practice (James et al., 2019). The role of the general practice nurse (GPN) has evolved over the past two decades, moving from a "doctor's assistant" towards a broader scope of practice including preventive health, health assessment, coordination of care and management of both acute and chronic conditions (Halcomb et al., 2017).

The GPN workforce faces challenges with recruitment and retention, attributable to limited career pathways, and an ageing workforce (Halcomb & Ashley, 2017). Indeed in a recent Australian survey of PHC nurses, 48.6% were aged 50 years or over (Halcomb et al., 2020). Currently, nurses primarily enter general practice employment after gaining some nursing experience in a hospital setting (Ashley et al., 2018), with few nurses seeking employment in this area immediately post-graduation (McInnes et al., 2019). To meet the contemporary health demands of the community, there is a need to expand a skilled nursing workforce in general practice. Recruiting new graduate registered nurses (or 'new graduate nurses') into general practice employment is one strategy to build the GPN workforce.

2. Background

There is limited literature which reports undergraduate nursing students' interest in employment in PHC settings, including general practice (Bloomfield et al., 2018; Bloomfield et al., 2015; Calma et al., 2019). The literature indicates that most undergraduate nursing students prefer to work in hospitals following graduation and that PHC settings are not a priority career path immediately following graduation for many graduates (Bloomfield et al., 2015; Matarese et al., 2019). Commonly, undergraduate nursing students express a preference to work in high technology areas such as intensive care and emergency departments (Matarese et al., 2019), maternity and paediatrics (Shen & Xiao, 2012). Nursing students' beliefs around the need to consolidate professional skills in hospitals may be an important contributor to student preferences (Calma et al., 2021; Matarese et al., 2019).

Exposure to PHC nursing during undergraduate education can influence career intentions. Nursing students who value learning about PHC nursing roles within their undergraduate education, tend to be more inclined to seek work in PHC settings (Bloomfield et al., 2018). However, pervasive negative attitudes exist towards working in PHC (van Iersel et al., 2018a), which may be influencing the numbers of nursing students who intend to seek PHC employment. Some studies have reported that students' perceive PHC as being limited in supporting career development and clinical skill consolidation which are considered important by new graduate nurses (van Iersel et al., 2018a). Furthermore, some undergraduate nursing students perceive PHC as a less exciting career option than high technology areas (van Iersel et al., 2018a), and more appropriate for experienced or older nurses who are nearing retirement (Bloomfield et al., 2015).

Commonly, undergraduate nursing curricula remain predominately acute care focussed (Albutt, Ali & Watson, 2013). PHC content within BN programs tends to differ significantly between universities (Calma et al., 2019; Murray-Parahi et al., 2020). This is particularly concerning given that curriculum focus, insufficient knowledge of the practice area and clinical placement experience are all factors reported to influence nursing students' career choices (Calma et al., 2019; van Iersel et al., 2018a).

Much of the research around career intentions, however, has focused on the broader PHC sector, or community health. To date, there has been little attention given to nursing students' perceptions about confidence, interest and career intentions to work in general practice. Given the growing demands faced by general practice today, it is timely to explore the factors that may be influencing undergraduate nursing students' perceptions of, and intentions to work in general practice. Understanding such factors have the potential to optimise the preparation and recruitment of new graduate nurses in this setting, and thus support the maintenance of a critical workforce.

3. The study

3.1. Aim

This study aimed to explore final-year nursing students' confidence, interest and intention to work in general practice.

3.2. Study design

A cross-sectional, descriptive online survey was conducted between March and June 2019.

3.3. Respondents and recruitment

Nursing students were invited to participate if they were enrolled in the final year of a Bachelor of Nursing (BN) Program in one of five participating universities in New South Wales, Australia. The participating institutions were selected based on having a Nursing School that delivered a Bachelor of Nursing program, being in geographical proximity to the research team, providing a spread of metropolitan, regional and rural areas and willingness of the Nursing School to participate in the research. A contact person from each university was engaged to distribute study information and the link to the online survey (SurveyMonkey) to potential respondents. Invitations to participate were distributed either via a direct email, or promotional material on the targeted School of Nursing e-learning platform. The contact person was prompted to send out three reminders throughout the data collection period. A survey poster was also provided with the second and third reminder to increase response rates.

3.3.1. Data collection

A survey was purposefully designed for the study using both investigator developed questions and existing validated tools to meet the aims of the study. The survey had six sections. The first two sections explored respondents' personal experiences of general practice and exposure to PHC and general practice within the BN program. The third section explored preparedness to work in general practice, using the 9-item Confidence and Interest in Critical Care Nursing (CICCN-9) tool (Halcomb et al., 2012) modified for use in general practice. The CICCN tool comprises two sub-scales; namely, confidence about working as a Registered / General Practice Nurse (6 items), and interest in seeking employment as a General Practice Nurse (3 items). Each item was rated on a 5-point Likert scale from 'strongly disagree' to 'strongly agree'.

Section 4 comprised the modified 18-item 'Profession Scale' from the Scale on COmmunity Care PErceptions (SCOPE) tool (van Iersel et al., 2018a) The Profession Scale was used to explore respondents' perceptions of how much of the items provided would be present in the general practice work environment. Items were scored on a 10-point Likert scale, from 1 being 'very little' to 10 being 'a lot'. Respondents were then asked to rate the level of importance of aspects of general practice in their career decisions on a 5-point Likert scale ('not important' to 'very important').

The fifth section included the 14-item Attitudes, Subjective Norms, Perceived Behavioural Control, and Intention to Pursue a Career in Mental Health Nursing (ASPIRE) modified to measure intention to pursue a career in general practice (Wilbourn et al., 2018). Each item was rated on a 7-point Likert scale from 'strongly disagree' to 'strongly agree'. The highest possible score is 98, with a higher ASPIRE score indicating greater intention to work in general practice.

Demographic data, including age, gender, country where majority of pre-University education was completed, Indigenous origin, enrolment status (international or domestic), current place of residence, nursing as a first choice at university, and average grade within the BN program were collected in the final section of the survey.

This paper reports on the confidence, interest and intentions of the respondents to work in general practice resulting from responses to the ASPIRE and CICCN tools. Perceptions of the work environment of general practice measured by the SCOPE tool addresses a distinct research question, and therefore is reported elsewhere.

3.4. Ethical considerations

The conduct of this study was approved by the Human Research Ethics Committee of the University of Wollongong (HREC 2018/556) and reciprocal approval was received from participating universities. Survey data were aggregated for reporting and any identifying material was removed before analysis.

3.5. Data analysis

Data were imported from SurveyMonkey (San Mateo, CA.) into SPSS version 25.0 (IBM analytics) for analysis. Data were cleaned and checked for accuracy of importing. Descriptive statistics were used to summarise the data and inferential statistics were used to explore the differences between groups (Field, 2018). A multiple regression analysis was undertaken to determine which variables predicted the outcomes from the sub-scales of the CICCN, and ASPIRE scores (Table 3), which indicated confidence, interest and intention to work in general practice respectively. Predictor variables were dichotomised for the regression analysis. These variables were age (Mean=28.35), place of residence (Urban/Rural), enrolment status (International/Domestic), exposure to general practice nursing within BN (Yes/No), work experience in general practice (Yes/No), clinical placement in general practice (Yes/No), and received care from a GPN currently or in the past (Yes/No). Pearson's correlation coefficient was used to measure the strength of relationships between confidence, interest and intention scores. A p-value of <0.05 was considered statistically significant.

3.6. Validity and reliability

High internal consistency was reported for both modified tools with Cronbach's alpha (α=0.900 for the ASPIRE, α=0.84 for the total CICCN, α=0.86 for the 'Confidence' subscale, and α=0.78 for the 'Interest in seeking employment' subscale (Halcomb et al., 2012; Wilbourn et al., 2018). This reflects good internal consistency for both tools.

Face validity of the survey was established through a review of the survey tool. The survey was reviewed by three nurse academics with experience in PHC research and teaching, and four nurses who had recently graduated from a BN Program. Feedback from both groups were used to revise the survey wording for ease of comprehension and flow prior to final dissemination.

4. Results

4.1. Respondent characteristics

While 494 responses were received, 106 (21.5%) respondents completed less than 50% of the survey and 33 (6.7%) respondents provided no demographic information. Following removal of these data, a total of 355 responses (71.9%) were included in the analysis. As the response denominator was not known, it was not possible to calculate a response rate.

Most respondents identified as female (n=329, 92.7%), with a mean age of 28 years (Range 18-58 years) (Table 1). Many respondents reported living in an urban area (n=247, 69.6%,). Two-thirds (n=232, 65.4%) of respondents completed most of their pre-University education in Australia and nearly three quarters were enrolled as a domestic student (n=265; 74.6%).

4.2. University exposure to primary health care and general practice

Most respondents reported being exposed to PHC content in the first (n=251, 70.7%) and second-year (n=187, 52.7%), with only

Table 1

Demographic characteristics.

Characteristic	n	%
Age Range 18-58; Mean 28.35; SD 8.2		
≤ 20 years	45	*12.7*
21-30	200	*56.3*
31-40 years	74	*20.8*
41-50 years	30	*8.5*
51-60 years	6	*1.7*
Gender		
Female	329	92.7
Male	26	7.3
Aboriginal or Torres Strait Islander origin		
No	348	98.0
Yes – Aboriginal or Torres Strait Islander	7	2.0
Current place of residence		
Metropolitan centre	247	69.6
Rural area	94	26.5
Remote area	14	3.9
Country where majority of pre-university was completed		
Australia	232	65.4
Nepal	43	12.1
India	22	6.2
China	14	3.9
Other	44	12.4
Enrolment status		
Domestic	265	74.6
International	88	24.8
Missing	2	0.6
Employment in health		
Assistant in Nursing/Support Worker/Carer	211	59.4
Never worked in health	72	20.3
Enrolled Nurse	42	11.8
Administration assistant / Receptionist	9	2.5
Wardsperson	2	0.6
Other health related roles	19	5.4
Work experience in general practice		
Previous GP Work	177	49.9
No Previous GP Work	178	50.1
Nursing first choice at university		
Yes	285	80.3
No	70	19.7

39.7% (n=141) of respondents exposed to PHC content in their final year of undergraduate study. Just under half of the respondents (n=177, 49.9%) reported having a clinical placement in PHC sometime during their degree.

Nearly two thirds of respondents (n=218, n=61.4%) were exposed to content specifically related to general practice nursing during their undergraduate study. However, only 34.1% (n=121) described completing a clinical placement in general practice during their course. Despite this, 62.8% of the respondents (n=223) agreed or strongly agreed that new graduate nurses should be employed in general practice.

4.3. Personal exposure to general practice

Almost half of the respondents (n=162, 45.6%) described having a family member or close friend working as a GPN, and 10.1% (n=36) had a family member or close friend working as a GP. Some 58.9% of the respondents (n=209) recounted having received care from a GPN. Only 4.5% (n=16) of the respondents stated that they had not attended a general practice in the last 12 months.

4.4. Confidence and interest to work in general practice

Confidence and interest to work in general practice were measured using the modified CICCN tool (Halcomb et al., 2012). Means for both subscales reflect a generally positive effect. The subsections below report on the two subscales separately, and explore predictive characteristics.

4.4.1. Confidence to work in general practice

Many respondents agreed or strongly agreed that they would have sufficient knowledge (n=243, 68.5%) and clinical skills (n=234, 65.9%) to be a competent beginning nurse in general practice (Table 2). Some 54.4% (n=193) of respondents agreed or strongly agreed that their undergraduate studies prepared them to work in general practice. Less than half of the respondents reported that the PHC subject / unit in their BN program increased their knowledge (n=159, 44.8%) and clinical skills (n=146, 41.1%) related to general practice nursing. Similarly, 47% (n=167) of respondents agreed or strongly agreed that the PHC content within their BN program increased their confidence to work in general practice nursing.

Respondents who had work experience in general practice (Mean = 21.76, Unstandardised β = 1.291, p = 0.019) were more confident about working as a Registered / General Practice Nurse than those who did not (Table 3). Other demographic factors including age, place of residence, enrolment status, exposure to general practice nursing within the BN degree, clinical placement in general practice, and care received from a GPN were not significant predictors of confidence to work in general practice.

4.5. Interest in working in general practice

One hundred and fifty-five respondents (43.6%) reported interest in seeking employment in general practice immediately following graduation. Some 57.7% (n=205) agreed or strongly agreed that they were interested to work in general practice after gaining clinical experience (Table 2). Less than half (n=162, 45.6%) of the respondents reported that their undergraduate program increased their interest in general practice nursing.

Students who had experienced a clinical placement in general practice during their BN program (Mean=11.12, Unstandardised β=0.710, p=0.028) and those enrolled as an international student (Mean=11.17, Unstandardised β=0.855, p=0.006) were significantly more likely to be interested in working in general practice following graduation. Students who also had a higher confidence score (Unstandardised β=0.310, p=0.000) had a statistically significant higher mean interest score for working in general practice following graduation. Age, place of residence, exposure to general practice nursing within the BN program, work experience in general practice and care received from a GPN were not significant predictors of interest to work in general practice.

4.6. Intention to work in general practice

The mean total ASPIRE score, which indicated respondents' intention to work in general practice, was 64.79 (SD=13.80, Range: 19-98). The responses to the ASPIRE tool are summarised in a supplementary table (Supplementary Table S1).

Significant predictors of intent to work in general practice were university enrolment on an international visa (Mean=70.33, Unstandardised β=6.190, p=0.000), clinical placement experience in general practice during the BN program (Mean=69.10, Unstandardised β=4.173, p=0.013), and confidence to work in general practice (Unstandardised β=1.153, p=0.000). Age, place of residence, exposure to general practice nursing within the BN program, work experience in general practice and care received from a GPN were not significant predictors of intention to work in general practice.

4.7. Relationship between confidence, interest and intention to work in general practice

Using Pearson's correlation coefficient there was a strong positive relationship between interest and intention to work in gen-

Table 2
Confidence and interest to work in general practice.

	SD/D[a] n	%	Neutral n	%	A/SA[a] n	%	Mean (SD)
Component 1: Confidence about working as a Registered or General Practice Nurse							
I feel that I will have sufficient knowledge when I graduate to perform as a competent beginning Registered Nurse	25	7.0	87	24.5	243	68.5	3.79(0.92)
I feel that I will have sufficient clinical skills when I graduate to perform as a competent beginning RN	34	9.6	87	24.5	234	65.9	3.69(0.97)
I feel my undergraduate nursing studies have prepared me to enter general practice	55	15.5	107	30.1	193	54.4	3.48(1.01)
PHC subject / unit increased my confidence to work in general practice	64	18	124	34.9	167	47.0	3.35(0.99)
PHC subject / unit gave me sufficient knowledge to work in general practice	58	16.4	138	38.9	159	44.8	3.34(0.94)
PHC subject / unit gave me sufficient clinical skills to work in general practice	76	21.4	133	37.5	146	41.1	3.22(1.00)
Component 2: Interest in seeking employment as a General Practice Nurse							
I am interested in seeking employment in general practice after I have had some clinical experience as an RN	52	14.6	98	27.6	205	57.7	3.59(1.09)
PHC subject / unit increased my interest in general practice	65	18.3	128	36.1	162	45.6	3.36(1.02)
I am interested in seeking employment in general practice after graduation	83	23.3	117	33	155	43.6	3.30(1.13)

[a] SD= Strongly Disagree, D=Disagree, A=Agree, SA=Strongly Agree

Table 3
Characteristics and experience as predictors of confidence, interest and intention to work in general practice.

Variable	Confidence to work in GP Unstandardized β (95% CI)	t	p	Interest to work in GP Unstandardized β (95% CI)	t	p	Intention to work in GP Unstandardized β (95% CI)	t	p
Age	0.292(-0.71-1.30)	0.571	0.568	0.177(-0.33-0.69)	0.684	0.494	-1.145(-3.79-1.50)	-0.852	0.395
Place of residence	-0.660(-1.72-0.40)	-1.221	0.223	-0.022(-0.56-0.52)	-0.082	0.935	-1.405(-4.21-1.40)	-0.986	0.325
Enrolment status (International / Domestic)	0.164(-1.04-1.36)	0.268	0.789	0.855(0.25-1.46)	2.768	0.006[a]	6.190(3.03-9.35)	3.856	0.000[a]
Exposure to general practice nursing within BN	0.722(-0.44-1.88)	1.223	0.222	0.047(-0.54-0.64)	0.157	0.875	1.145(-1.92-4.21)	0.735	0.463
Work experience in general practice	1.291(0.21-2.37)	2.353	0.019[a]	0.024(-0.53-0.58)	0.087	0.930	0.088(-2.77-2.95)	0.060	0.952
Clinical placement in general practice	0.705(-0.55-1.96)	1.108	0.268	0.710(0.08-1.35)	2.203	0.028[a]	4.173(0.88-7.47)	2.490	0.013[a]
Received care from a GPN currently or in the past	-0.046(-1.06-0.96)	-0.089	0.929	-0.136(-0.65-0.38)	-0.522	0.602	2.189(-0.47-4.85)	1.620	0.106
Confidence to work in general practice	-	-	-	0.310(0.26-0.36)	11.381	0.000[a]	1.153(0.88-1.43)	8.143	0.000[a]

[a] indicates significance

eral practice (r=0.722, p<0.01). Analysis also showed a positive relationship between confidence and intention to work in general practice, with small effect (r=0.428, p<0.01).

5. Discussion

This study used a quantitative approach to explore the confidence, interest and intention of final-year nursing students regarding employment in general practice. As such, it fills a gap in the literature regarding understanding the factors that encourage or discourage nursing students to seek employment in general practice following graduation. Gaining a better understanding of the factors that influence nursing students' confidence and perceptions of working in general practice can help inform universities and academics in the preparation of nursing students to work in such areas following graduation.

Findings indicate that respondents had generally positive views around their confidence and interest to work in general practice. Such favourable views are in contrast with previous literature reporting nursing students' understanding and competence around PHC nurse roles. In their study, McInnes et al. (2015a) reported that the nursing students they interviewed did not understand the role or feel confident about general practice nursing, particularly before commencing their clinical placements in this setting. Previous literature have also evidenced nursing students' negative perceptions of PHC (Cooper et al., 2014; van Iersel et al., 2018a), and their lack of interest to work in this setting (Bloomfield et al., 2018; Bloomfield et al., 2015). The more positive findings seen in this study highlights a shift among nursing students towards seeing general practice nursing as a potential employment opportunity. Given confidence to work in general practice influence intention to work in this setting, future research need to explore strategies to improve nursing students' confidence and preparedness for general practice employment.

Despite predominately positive responses around confidence and interest to work in general practice, a considerable number of respondents indicated uncertainty around perceived confidence, knowledge and clinical skills to work as a GPN. The variations in perceived preparedness, as well as interest to work in general practice is likely influenced by personal exposure to this setting (McInnes et al., 2015a), or the opinion of others (van Iersel et al., 2018b). Uncertainties were also apparent when respondents were asked whether PHC subjects/units increased their overall preparedness and interest to work in general practice. This may be indicative of inconsistent and sometimes inadequate delivery of PHC content within BN programs (Calma et al., 2019; Murray-Parahi et al., 2020). As such, undergraduate nursing students frequently consider PHC content as the least relevant component of the BN program (Cooper et al., 2014). Gaps in undergraduate nursing students' knowledge, and inconsistencies in PHC content within an acute care focussed curricula contribute to nursing students' low intention to seek PHC employment. Universities have a significant role in ensuring undergraduate nursing students are supported to make informed career choices. One way for universities to achieve this role is to provide theoretical and clinical placement opportunities that reflect the realities of nursing roles in PHC, such as in general practice nursing (van Iersel et al., 2018a), delivered by experienced nurse academics.

Only a third of respondents reported experiencing a clinical placement in general practice during their BN program. Contemporary literature reports that most undergraduate nursing students spend the majority of their clinical placements in hospital settings (Bjørk et al., 2014). In this study, clinical placement experience within the BN program was a significant predictor to respondents' interest to work in general practice. Indeed, clinical placement experiences enable students' socialisation to the setting and

the role, which can ultimately shape career interest (Hunt et al., 2020). However, there has been a shortage of clinical placements in community settings such as general practice. The small size of general practices means that they often can only accommodate limited numbers of nursing students at any one time which is problematic in the large nursing cohorts seen in Australian universities (Halcomb, Peters & McInnes, 2012; McInnes et al., 2015b). Future research needs to explore models of clinical placement and associated funding to enhance placement opportunities in this setting.

Despite increasing interest, our study found that clinical placement experience during the BN program was not a significant predictor of student confidence to work in general practice. This finding conflicts with literature reporting that levels of self-confidence and competence in a particular setting increase following clinical placement experience (McInnes et al., 2015a). It is important to note that most of the respondents in this study were exposed to PHC content in the first year of their degree, with fewer students exposed to PHC in the latter part of their BN program. The timing of students' theoretical and clinical exposure to PHC may be a factor influencing their confidence to work in this setting, as they potentially perceive that the GPN's role was beyond their scope of practice early in their degree.

Clinical placements in the final year have the most significant impact on nursing students' career choices immediately following graduation (Wareing et al., 2017). This is attributable to the fact that undergraduate nursing students' scope of practice is generally at its most advanced in their final year, and students are able to exercise a wider range of skills that may reflect the nurse's role better. GPNs practice with a unique level of self-direction within the multidisciplinary team, such as when managing and co-ordinating care for people living with multiple chronic conditions (Halcomb et al., 2017), providing disease-specific health education and engaging in the complex process of eliciting behaviour change in patients (James et al., 2019). Given the diverse scope of the GPN role, it is worthwhile noting the importance of timing as a factor that may be influencing students' experiences of their clinical placement, and hence its influence on their perceived confidence to work as new graduate nurses. Given universities have an important role in building health workforce in areas of shortage, further research is needed in considering strategic timing of clinical placements to ensure graduate nurses are prepared for diverse clinical settings. Careful consideration is needed in terms of clinical placement timing since clinical placement choices are often based on experiences in the earlier parts of the BN program. Increasing exposure to general practice later in the program may allow students to better consolidate skills and practice with greater autonomy, thereby gaining a more a realistic 'work' experience of the GPN role and hence building confidence to work in this setting following graduation.

The third main finding revealed that international nursing students were significantly more likely to be interested in seeking employment in general practice following graduation than domestic students. Given international participants in this study have come from different countries, the diversity in their own country's health systems may have influenced their understanding of, and the value placed on PHC. Additionally, many international nursing students face challenges transitioning into clinical roles due to poor communication skills, limited English language proficiency, and lack of self-confidence (John McKitterick et al., 2021b). Some international nursing students also report experiencing isolation and discrimination from their peers (John McKitterick et al., 2021a) and nurses on clinical placement (Robinson, 2018), which may make them feel less inclined to seek work in the 'larger' teams often found in hospital settings. Job security is also a priority for many

nursing students regardless of cultural orientation (McInnes et al., 2015a). However, many international nursing students pursue a nursing degree due to perceptions it will provide them with a stable, good-paying job following graduation (Vardaman & Mastel-Smith, 2016). For international nursing students who prioritise job security, the fear of not securing a job immediately following graduation may influence career decision making. The predominately hospital-based 'transition to professional practice' (TPP) programs in Australia, are made even more competitive for international students as programs prioritise domestic applicants. Further research is needed to explore the factors shaping international nursing students' interest and intention to seek employment in PHC settings such as general practice. Universities are well positioned to ensure these students are well supported and prepared to work in general practice should they pursue this career pathway.

5.1. Limitations

This study has some limitations. While respondents were from five different universities situated in New South Wales, Australia, nursing students from other locations may possess variable perceptions. Survey respondents were more likely to have clear perceptions of general practice than non-respondents. Additionally, the quantitative nature of the data collection did not allow responses to be explored. The qualitative component of this study sought to further develop this understanding.

6. Conclusions and implications

Findings demonstrate that respondents had generally positive views around their confidence, interest and intention to work in general practice. However, some students remained uncertain around this area of work and the usefulness of their undergraduate preparation. This may be attributable to the inconsistent and/or lack of exposure to general practice nursing within the BN program. This emphasises the need for universities to ensure undergraduate nursing students are being exposed to general practice nursing during their undergraduate education, involving both theoretical content and clinical placement exposure, and are able to build clinical skills and confidence in this setting throughout the course of their degree. Academics have an important role in expanding students' understandings of community-based nurse roles, which in turn can motivate students to pursue careers in diverse clinical settings.

Criteria	Author Initials
Made substantial contributions to conception and design, acquisition of data, and analysis and interpretation of data	KC, SM, EH, AW, MB
Involved in drafting the manuscript or revising it critically for important intellectual content	KC, SM, EH, AW, MB
Given final approval of the version to be published. Each author has participated sufficiently in the work to take public responsibility for appropriate portions of the content	KC, SM, EH, AW, MB
Agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.	KC, SM, EH, AW, MB

Authorship contribution statement

Authors KC, EH, and AW were involved in the development of the survey questionnaire. All authors (KC, SM, EH, AW MB) contributed to the following:

- Made substantial contributions to conception and design, acquisition of data, and analysis and interpretation of data.
- Involved in drafting the manuscript or revising it critically for important intellectual content.
- Given final approval of the version to be published. Each author has participated sufficiently in the work to take public responsibility for appropriate portions of the content.
- Agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Ethical statement

As stated in the manuscript, the conduct of this study was approved by the Human Research Ethics Committee of the University of Wollongong (HREC 2018/556) and reciprocal approval was received from participating universities (blinded in manuscript for review). Survey data were aggregated for reporting and any identifying material was removed before analysis.

Conflict of interest

The author(s) of this paper, 'Confidence, interest and intentions final-year nursing students regarding employment in general practice', have declared no conflicts of interest.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.colegn.2021.08.005.

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Calma, K. R. B., Halcomb, E., Fernandez, R., Williams, A., & McInnes, S. (2022). Understanding nursing students' perceptions of the general practice environment and their priorities for employment settings. *Nursing Open,* 9(5), 2325-2334.

RESEARCH ARTICLE

Understanding nursing students' perceptions of the general practice environment and their priorities for employment settings

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Abstract

Aim: To explore final year nursing students' perceptions of the general practice environment and their priorities when choosing a workplace.

Design: Online survey, reported following the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines.

Methods: The validated Profession Scale from the Scale on Community Care Perceptions (SCOPE) tool was used to identify characteristics within the general practice environment and the importance of these in choosing a workplace. To explore the factor structure, exploratory factor analysis was undertaken which was used to revise the survey language and flow before widespread dissemination.

Results: Three hundred and fifty-five responses were received. Factor analysis revealed three factors: Provision of care, Employment conditions and Nature of work. Respondents exposed to general practice in the Bachelor of Nursing program or who had a general practice clinical placement had significantly different perceptions across all factors. Although wages, advancement opportunities, work pressures and the physical nature of work were perceived as important in choosing a workplace, they were seen as only moderately present in general practice.

KEYWORDS
attitudes, employment setting, genera practice, nursing education, perceptions, primary care, undergraduate nursing student, work environment, workforce development

1 | INTRODUCTION

Nursing students who graduate from an accredited Bachelor of Nursing (BN) program are qualified to work as Registered Nurses (RNs). New graduate nurses have a wide range of career opportunities across diverse clinical settings, from hospitals settings, such as emergency, intensive care, medical wards or operating theatres to community-based, primary healthcare (PHC) services, such as community not-for-profit organizations, public health services, aged care and general practice (Schwartz, 2019). Transition to Practice Programs are designed to assist new graduate nurses to "acculturate to their new profession" (Schwartz, 2019, p. 45). However, most Australian Transition to Practice Programs are offered in hospitals, which is where most new graduate nurses seek employment (Masso

et al., 2019; Schwartz, 2019). In contrast, few undergraduate nursing students express interest in pursuing a career in PHC (Bloomfield et al., 2018; Bloomfield et al., 2015).

Palese et al. (2016) report that work environments that allow skill consolidation, the development of supportive team relationships, and offer a diversity of patients, positively influence students' career choices. Nursing students' experiences during their education, including the program theoretical content, the expertise of educators and clinical placement experiences also influence their career interests (Calma et al., 2019; Calma et al., 2022; Chai et al., 2019; Hunt et al., 2020). Current evidence suggests that nursing students' perceptions of PHC settings are diverse. While some students perceive PHC nurses as having limited clinical skills and making little impact on health outcomes, others view the role of PHC nurse as having a unique level of professional autonomy that requires a high level of competence and skill (Calma et al., 2021a; van Iersel et al., 2018b).

2 | BACKGROUND

Within the PHC sector, general practices deliver comprehensive, coordinated and patient-centred care for individuals in the community, across the lifespan (Royal Australian College of General Practitioners, 2018). General practices are usually the initial contact people have with the health system (Royal Australian College of General Practitioners, 2020). In Australia, around 90% of the population present to general practice each year (Royal Australian College of General Practitioners, 2020). General practices are mostly operated and owned by General Practitioners as a small business or as part of a larger network of corporations in Australia and other countries, such as the United Kingdom (UK) and New Zealand (NZ) (Cowling et al., 2017; Goodyear-Smith & Kassai, 2015; McInnes et al., 2019).

General practices are typically staffed by multidisciplinary health professionals, with General Practice Nurses (GPNs) being the largest non-physician workforce (Innes, 2019). While nurses employed in general practice can be nurse practitioners (Masters prepared) or enrolled nurses (Diploma prepared), most are registered nurses (Baccalaureate prepared or equivalent) (Australian Primary Health Care Nurses Association, 2019; Halcomb et al., 2020). The role and responsibilities of GPNs are diverse. GPNs may undertake clinical activities, such as health assessments, screening, patient education, acute care and coordination of chronic conditions (Halcomb et al., 2017; Heywood & Laurence, 2018; Matthys et al., 2019). The current GPN workforce faces increasing demands in continuing to meet the increasingly complex care needs of the community with a workforce that is aging and faced with critical shortages (Heywood & Laurence, 2018; Innes, 2019). In Australia, some 60% of GPNs are aged 45 years or over (Halcomb et al., 2020). While previous studies have explored workplace factors that influence the transition of acute care nurses to general

practice (Ashley et al., 2017), and the impact of job satisfaction and retention of GPNs (Halcomb & Ashley, 2019; Halcomb & Bird, 2020), little attention has been given to the perceptions of undergraduate nursing students about general practice. To address this gap, a study exploring the final-year nursing students' preparedness for and perceptions about employment in general practice was undertaken. Data on students' confidence, interest and intention to work in general practice have been reported elsewhere (Calma et al., 2022). This paper seeks to explore the views of final-year nursing students about the general practice environment and understand the factors that they consider most important when choosing an employment setting.

3 | METHODS

3.1 | Design

Data were collected between March and June 2019 using a cross-sectional online survey using SurveyMonkey© (2018). The STROBE guidelines were used as reporting guidelines (Appendix S1).

3.2 | Sample and setting

All nursing students in their final year of the BN program at five universities in New South Wales, Australia were eligible to participate. As these students were nearest to transitioning into the RN role, it was anticipated that they would have concerns and insight into their career plans (McCann et al., 2010; Newton & McKenna, 2007). Universities were approached to participate if they offered an undergraduate BN program. Institutions were purposively selected to give a diversity of metropolitan and rural locations. To comply with individual University policies about access to students, the survey was either disseminated by a contact person in the School of Nursing via direct email or promoted on the e-learning platform. An information sheet was the opening screen of the survey. This provided details about the study aim, benefits and risks to participation and confidentiality and use of data.

3.3 | Data collection

The survey comprised six sections combining both validated tools, modified for use in general practice, and investigator-developed items. The validated tools were modified by replacing references to the setting in the original tool with references to general practice.

Section one and two investigated respondents' experience of PHC and general practice nursing as part of their BN program, and their experiences of general practice nursing. Section three explored respondents' confidence and interest about general practice employment using the modified 9-item Confidence

and Interest in Critical Care Nursing tool (Halcomb et al., 2012). Using the modified Profession Scale from (van Iersel et al., 2018b) SCOPE tool, Section four explored the expectations of the general practice work environment and the factors considered most important when choosing an employment setting. Section five explored the intention to seek general practice employment using the modified Attitudes, Subjective Norms, Perceived Behavioural Control and Intention to Pursue a Career in Mental Health Nursing scale (Wilbourn et al., 2018). The final section collected demographic information about the respondent and their educational characteristics.

This paper presents findings from Section four of the survey, which comprised the modified 17-item Profession Scale for use in general practice, a subscale of the Scale on Community Care Perceptions (SCOPE) (van Iersel et al., 2018a). The structure and construct validity of the SCOPE and its subscales were previously reported in a community nursing setting (van Iersel et al., 2018a). The Profession Scale was modified by revising the wording to reflect a focus on general practice and adding two additional items, "Hours of work" and "Wages," following examination of the literature and expert consultation (Halcomb & Ashley, 2017). These new items and the 16 existing items were rated on a 10-point Likert scale ranging from 1 ("very little")–10 ("a lot"). The final existing item, "work environment" was rated on a 10-point scale from 1 ("poor environment")–10 ("good environment"). Given the difference in rating scales, this item was not included in the factor analysis. Finally, the 19 items from the modified Profession Scale were also used to measure the level of importance of each item when choosing an employment setting. Items were rated on a 5-point Likert scale ranging from 1 ("not important")–5 ("very important").

3.4 | Data analysis

Data were imported from SurveyMonkey© (2018) into SPSS version 25 (IBM Analytics, 2018) before being checked and cleaned. The data were then summarized using descriptive statistics. To determine the factor structure, an exploratory factor analysis method was adopted using Principal Components Analysis with Varimax Rotation (Field, 2018). To ensure the adequacy of the sample size for factor analysis, the Kaiser-Meyer-Olkin index was used (Field, 2018). Bartlett's test of sphericity was used to evaluate the correlation between variables (IBM Corporation, 2016). To gauge the substantive importance of variables to the extracted factors, variables with factor loadings of >0.40 were retained (Field, 2018). The mean total score for each factor and the mean score for the overall modified Profession Scale were calculated by adding the scores for each item and then dividing these by the number of items in the factor/scale. The association between demographic characteristics and respondents' perceptions of the general practice environment was evaluated using a 2-tailed t test. "Age" was dichotomized at the mean (28 years). Statistical significance was demonstrated with a p-value of < .05.

TABLE 1 Respondent characteristics

Characteristic	n	%
Current place of residence		
Urban	247	69.6
Rural	108	30.4
Country where majority of pre-university was completed		
Australia	232	65.4
Other	123	34.6
Enrolment status		
Domestic	265	74.6
International	88	24.8
Missing	2	0.6
Exposure to general practice nursing within BN		
Yes	218	61.4
No	137	38.6
Work experience in general practice		
No	178	50.1
Yes	177	49.9
Clinical placement in general practice		
No	234	65.9
Yes	121	34.1
Receiving care from a GPN currently or in the past		
Yes	209	58.9
No	146	41.1

3.5 | Validity and reliability

To establish face validity, the survey was reviewed by two final-year nursing students and two RNs who recently graduated with a BN and three nurse academics who had expertise in PHC education and research. These reviewers provided feedback which was used to revise the survey language and flow before widespread dissemination.

The complete SCOPE tool has been reported to have a Cronbach's alpha of 0.892 (van Iersel et al., 2018a). Additionally, the Professions Scale has been reported to have a Cronbach's alpha of 0.799 (van Iersel et al., 2018a). Both demonstrate good internal consistency.

4 | RESULTS

4.1 | Respondent demographics

One hundred and thirty-nine responses were excluded due to incomplete data (n = 106; 21.5%) or absent demographic data (n = 33; 6.7%), leaving 355 responses included in the analysis. The mean age of respondents was 28 years (Range 18–58, SD = 8.2) and the majority were identified as female (n = 329, 92.7%). Nearly, a quarter of respondents were enrolled as international students (n = 88, 27.8%),

and 65.9% reported never having a general practice clinical placement within their BN program (*n* = 234) (Table 1).

4.2 | Factor structure of the modified profession scale

The Kaiser-Meyer-Olkin index of 0.901, indicates "marvellous" sampling adequacy (Hutcheson & Sofroniou, 1999). The data were deemed suitable for factor analysis as Bartlett's test of sphericity was 3,100.421 (*p* = .000) (Field, 2018).

Factor analysis revealed a three-factor solution, accounting for 57.33% of the total variance. These factors were labelled Factor 1 "Provision of care" (11 items), Factor 2 "Employment conditions" (three items) and Factor 3 "Nature of work" (four items) (Table 2). The

Cronbach's alpha scores were Factor 1: α = .896, Factor 2: α = .768, Factor 3: α = .662 and Total scale: α = .906, indicating good internal consistency (Ursachi, Horodnic, & Zait, 2015).

4.3 | Perception of the general practice work environment

The overall mean score for the modified Profession Scale was 7.53. The three factors, "Provision of care", "Employment conditions" and "Nature of work" had a mean score of 8.01 (*SD* = 1.36), 7.02 (*SD* = 1.81) and 6.61 (*SD* = 1.57), respectively (Table 2). The highest mean scores for individual items indicated the characteristics that respondents felt would be present "a lot" in general practice. These items were "elderly patients" (Mean 8.70 *SD* 1.60), "individual

TABLE 2 Factor analysis

	Factor 1	Factor 2	Factor 3	Communalities	Presence in general practice Mean (*SD*)
Factor 1: Provision of care (Mean = 8.01, *SD* = 1.36, α = 0.896)					
Contact with Family/Carers	0.777	0.026	0.036	0.606	8.25 (1.81)
Health improvements for patients	0.742	0.222	0.16	0.625	8.12 (1.75)
Enthusiastic colleagues	0.698	0.433	−0.091	0.683	7.43 (2.00)
Variety of caregiving	0.692	0.267	0.197	0.588	7.76 (2.20)
Collaboration with colleagues	0.681	0.258	0.109	0.542	8.29 (1.91)
Individual responsibility	0.671	0.141	0.217	0.517	8.39 (1.78)
Enjoyable relationships with patients	0.66	0.079	0.034	0.443	7.97 (1.90)
Collaboration with other disciplines	0.651	0.279	0.136	0.520	8.09 (2.04)
Freedom of action (Autonomy)	0.609	0.16	0.056	0.400	7.45 (2.07)
Technical nursing skills needed	0.573	0.394	0.355	0.610	7.67 (2.16)
Elderly patients	0.482	−0.412	0.434	0.591	8.70 (1.60)
Factor 2: Employment conditions (Mean = 7.02, *SD* 1.81, α = 0.768)					
Wages	0.374	0.739	0.039	0.688	6.75 (2.13)
Hours of work	0.156	0.684	0.334	0.603	7.35 (1.88)
Opportunities for advancement	0.55	0.618	0.126	0.700	6.97 (2.50)
Factor 3: Nature of work (Mean = 6.61, *SD* = 1.57, α = 0.662)					
Work pressures	0.251	0.135	0.747	0.640	6.98 (2.12)
Physically demanding work	0.152	0.316	0.744	0.676	6.15 (2.33)
Complex patient care needs	0.553	0.003	0.598	0.664	7.43 (2.30)
Low-status work	−0.12	0.002	0.457	0.223	5.88 (2.15)

Note: Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. ^ Rotation converged in 6 iterations.

The different colours delineate distinguish the variables between the three different factors.

responsibility" (Mean 8.39, *SD* 1.78), "collaboration with colleagues" (Mean 8.29, *SD* 1.91) and "contact with family/carers" (Mean 8.25 *SD* 1.81) (Table 2). Conversely, the lowest mean scores for individual items indicated characteristics that respondents expected to be the least present in general practice. These items were "opportunities for advancement" (Mean 6.97, *SD* 2.50), "wages" (Mean 6.75, *SD* 2.13), "physically demanding work" (Mean 6.15, *SD* 2.33) and "low status of work" (Mean 5.88, *SD* 2.15).

4.4 | Association between the modified profession scale and demographics

4.4.1 | Provision of care

Items in the "provision of care" factor related to the types of consumers, variety of work and relationships with colleagues (Table 2). Respondents who were exposed to general practice nursing within their BN program ($p = .000$) or who had a general practice clinical placement ($p = .001$) had significantly different perceptions of the characteristics within the factor "Provision of care" than those who did not have this experience (Table 3).

4.4.2 | Employment conditions

The "employment conditions" factor contained items about wages, hours and opportunities. Respondents enrolled on an international visa had significantly different perceptions of characteristics in the "Employment conditions" factor than domestic students ($p = .018$). Similarly, those who had exposure to general practice nursing within the BN program ($p = .030$) had general practice work experience ($p = .000$) or had a general practice clinical placement ($p = .000$) and had significantly different perceptions of the "Employment conditions" factor in general practice than those respondents without this experience.

4.4.3 | Nature of work

Items in the "nature of work" factor were related to work pressures, the physical nature of the work, complexity of care needs and perceived status of the work. Respondents had significantly different perceptions of this factor if they were exposed to general practice nursing within the BN program ($p = .000$), had work experience in general practice ($p = .000$) or had undertaken a general practice clinical placement ($p = .000$).

TABLE 3 Correlations analyses

	Factor 1: Provision of care		Factor 2: Employment conditions		Factor 3: Nature of work	
	Mean (*SD*)	*p*-Value	Mean (*SD*)	*p*-Value	Mean (*SD*)	*p*-Value
Age						
0–28	8.01 (1.39)	.977	7.12 (1.80)	.195	6.57 (1.60)	.532
≥29	8.01 (1.31)		6.87 (1.81)		6.67 (1.51)	
Place of residence						
Urban	7.96 (1.44)	.251	6.97 (1.87)	.368	6.59 (1.59)	.647
Rural	8.13 (1.14)		7.15 (1.65)		6.67 (1.51)	
Enrolment status (Domestic/International)						
Domestic	8.00 (1.31)	.696	6.89 (1.79)	.018[*]	6.61 (1.54)	.951
International	8.07 (1.46)		7.42 (1.83)		6.62 (1.66)	
Exposure to general practice nursing within BN						
Yes	8.21 (1.19)	.000[*]	7.19 (1.75)	.030[*]	6.91 (1.47)	.000[*]
No	7.68 (1.53)		6.76 (1.88)		6.14 (1.61)	
Work experience in general practice						
Yes	8.14 (1.35)	.064	7.38 (1.75)	.000[*]	6.91 (1.54)	.000[*]
No	7.88 (1.36)		6.66 (1.80)		6.32 (1.54)	
Clinical placement in general practice						
Yes	8.33 (1.19)	.001[*]	7.60 (1.60)	.000[*]	7.24 (1.36)	.000[*]
No	7.85 (1.41)		6.73 (1.84)		6.29 (1.57)	
Received Care from a GPN currently or in the past						
Yes	8.10 (1.33)	.141	6.94 (1.81)	.295	6.57 (1.57)	.583
No	7.88 (1.38)		7.14 (1.81)		6.67 (1.57)	

[*]Indicates significance.

4.5 | Priorities when choosing a place of employment

Respondents considered all 19 items on the modified Profession Scale important to some degree when deciding where to seek future employment (Table 4). Items that were rated as most important when deciding where to seek employment included "work environment" (Mean 4.68, *SD* 0.54), "collaboration with colleagues" (Mean 4.58, *SD* 0.64) and "opportunities for advancement" (Mean 4.54, *SD* 0.69). Items that were deemed to be of least importance were "level of work pressures" (Mean 4.06, *SD* 0.90), "status of work" (Mean 3.72, *SD* 1.15) and "patient age group" (elderly patients)(Mean 3.21, *SD* 1.42).

5 | DISCUSSION

This paper describes the final-year nursing students' views on the general practice work environment and their priorities when choosing an employment setting. Explicating these factors can guide policymakers, managers and primary care organizations on how general practice can be presented as an attractive career choice. They may also assist in preparing nursing students to consider general practice employment. Analysis of the modified Profession Scale showed good internal consistency suggesting that the tool is reliable for measuring final year nursing students' views of the general practice environment (Pallant, 2001).

The Profession Scale has previously been used to evaluate "perceptions of community nursing as a profession," with particular emphasis on understanding clinical placement experiences and changes over time during nursing education ((van Iersel et al., 2018a, b). This study has focussed on validating the scale for use specifically in general practice. Previous factor analysis was undertaken with 1,062 first-semester Dutch nursing students (van Iersel et al., 2018a). This demonstrated a four-factor solution accounting for 50.2% of the total variance. These factors were named "professional development," "collaboration," "freedom of action," and "complexity and workload." In this study, items from the first three factors were loaded onto the single "provision of care" factor. This factor refers to the nature of the GPNs role, their interaction with others and their skills. All items in the fourth factor and the item "low-status work" from the initial validation were all loaded onto the "nature of work" factor in this study. This factor refers to the complexity of work pressures and the status of work. The factor "employment conditions," referred to remuneration, hours of work and advancement opportunities. This factor comprised the two items added to the modified scale and the single item "opportunities for advancement." While the similarities in factor structure and psychometric properties give confidence in the use of the scale in general practice, further research with larger sample sizes is required.

This study has demonstrated that exposure to general practice in theoretical and clinical experience during the BN changed respondents' perceptions across all factors. This is consistent with literature that reports that once students have experienced nursing in general practice through clinical placement, they better appreciate the scope and complexity of the GPN role (McInnes et al., 2015). Additionally, new graduate nurses working in general practice have asserted that more exposure to theory or clinical placement would have better prepared them for the role (McInnes et al., 2019). Both theoretical exposure and clinical placement experiences have been shown to influence students' views and attitudes about particular clinical settings (Chai et al., 2019; Koehler et al., 2016). Theoretical content is necessary to develop undergraduate nursing students' understanding of clinical situations through problem-based learning, and "classroom" discussions give students with the space to reflect and develop critical thinking skills (Arreciado Marañón & Isla Pera, 2015). Additionally, the quality of students' learning experience on clinical placement can increase students' confidence and familiarize them with roles and diverse settings, which can positively influence their subsequent career intention (Hunt et al., 2020; McInnes et al., 2015). Both theoretical and clinical practice training is necessary for the preparation of undergraduate nursing students for the RN role, and in developing their professional identity (Arreciado Marañón & Isla Pera, 2015).

Our study showed that respondents who were enrolled on an international visa had significantly different perceptions of the characteristics within the factor "Employment conditions" compared with respondents who were domestic students. International respondents were found to have diverse cultural backgrounds, and are likely to have experienced a range of exposures and understanding of health systems and clinical settings (John McKitterick et al., 2021). Therefore, it was likely that their perceptions were impacted by personal experiences of and/or exposure to community-based nursing roles in their home countries. Individuals are influenced by their personal experiences of healthcare settings through illness, work or clinical placement exposure, and their overarching beliefs within their cultural groups (Hickey et al., 2012). Future research needs to explore innovative strategies to integrate an international lens in BN programs, and to explore how students' pre-conceived ideas, understandings and personal experiences impact their perceptions of clinical settings as employment options.

There was little discrimination in the scoring of the modified Profession Scale in terms of the presence of characteristics in general practice and the importance of these characteristics in choosing a workplace. Therefore, it was difficult to ascertain the relative importance of individual items. Such challenges in rating scales have been previously reported where respondents may respond in perceived consistency with others' opinions or tend to favour the positive end of the scale regardless of the items (Kreitchmann et al., 2019). In this study, only two items that scored in the top half of the "importance" items were rated in the lower half of the scale of characteristics expected in general practice. Wages and opportunities for advancement were both seen as important when choosing an employment setting but felt to be limited in their presence in general practice. Opportunities for personal and professional growth and good remuneration are factors that have been identified as impacting the career plans of nursing students (Palese et al., 2016).

TABLE 4 Priorities when deciding place of work

	Not important		Slightly important		Moderately important		Important		Very important		Mean	SD
	n	%	n	%	n	%	n	%	n	%		
Work environment	0	0	2	0.6	7	2.0	92	25.9	254	71.5	4.68	0.54
Collaboration with colleagues	1	0.3	2	0.6	18	5.1	102	28.7	232	65.4	4.58	0.64
Opportunities for advancement	1	0.3	5	1.4	18	5.1	109	30.7	222	62.5	4.54	0.69
Health improvements for patients	2	0.6	7	2.0	23	6.5	115	32.4	208	58.6	4.46	0.75
Technical nursing skills needed	1	0.3	7	2.0	26	7.3	118	33.2	203	57.2	4.45	0.74
Collaboration with other disciplines	1	0.3	6	1.7	27	7.6	119	33.5	202	56.9	4.45	0.73
Enthusiastic colleagues	1	0.3	6	1.7	33	9.3	114	32.1	201	56.6	4.43	0.75
Hours of Work	0	0	7	2.0	25	7.0	138	38.9	185	52.1	4.41	0.71
Individual responsibility	0	0	6	1.7	36	10.1	125	35.2	188	53.0	4.39	0.74
Wages	2	0.6	6	1.7	32	9.0	142	40.0	173	48.7	4.35	0.76
Relationships with patients	3	0.8	10	2.8	38	10.7	119	33.5	185	52.1	4.33	0.84
Variety of caregiving/role	2	0.6	11	3.1	36	10.1	144	40.6	162	45.6	4.28	0.81
Freedom of action (autonomy)	2	0.6	10	2.8	44	12.4	157	44.2	142	40.0	4.20	0.80
Complexity of patient care needs	7	2.0	13	3.7	63	17.7	128	36.1	144	40.6	4.10	0.95
Physical nature of work	6	1.7	10	2.8	66	18.6	142	40.0	131	36.9	4.08	0.90
Contact with family/carers	5	1.4	18	5.1	61	17.2	133	37.5	138	38.9	4.07	0.94
Level of work pressures	3	0.8	15	4.2	71	20.0	133	37.5	133	37.5	4.06	0.90
Status of work	22	6.2	29	8.2	81	22.8	119	33.5	104	29.3	3.72	1.15
Patient age group	68	19.2	41	11.5	79	22.3	84	23.7	83	23.4	3.21	1.42

Dissatisfaction with remuneration has been widely reported among nurses working in PHC settings such as general practice (Halcomb & Ashley, 2017; Halcomb & Bird, 2020). Similarly, limitations in advancement opportunities and a lack of a clear career pathway have been reported (Calma et al., 2021b; Halcomb & Ashley, 2019). Brook et al., (2019) check this section as reference out of place. Given the links between career opportunities and sufficient remuneration and job satisfaction, these areas require consideration to promote general practice to new graduate nurses as a viable career opportunity.

5.1 | Limitations

This study has some limitations. Respondents may have had more positive or negative views about nursing in general practice than those who chose not to participate. Although respondents were from five geographically dispersed universities, nursing students studying at other institutions may have different perceptions based on the diversity in BN programs across Australia and local clinical placement opportunities in general practice. Finally, the quantitative method of data collection restricted the scope of responses. Follow-up interviews sought to further explore survey findings (Calma et al., 2021a; Calma et al., 2021b).

6 | CONCLUSIONS AND IMPLICATIONS

This study revealed that exposure to general practice nursing within theoretical content and clinical placement influences final year nursing students' views of the general practice environment. Despite the importance of wages and opportunities for advancement when choosing an employment setting, respondents generally felt that these would be limited in general practice.

Implications of these findings are two-fold. First, to prepare new graduates to work in diverse clinical settings, universities need to ensure nursing students experience settings, such as general practice, within the BN program. Secondly, policymakers and primary care organizations need to be clear about remuneration and opportunities for nurses in general practice and ensure that these are commensurate with other nursing employment. Re-evaluating nursing students' preparation to work in diverse clinical settings such as general practice, and supporting the current GPN workforce, may improve nursing students' perceptions of general practice work and encourage them to pursue employment in this setting following graduation.

CONFLICT OF INTEREST
No conflict of interest has been declared by the author (s).

DATA AVAILABILITY STATEMENT
The data that support the findings of this study are available from the corresponding author upon reasonable request.

ETHICAL APPROVAL
The conduct of this study was approved by the University of Wollongong Human Research Ethics Committee (HREC 2018/556) and participating universities. Respondents could cease the survey at any time.

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SUPPORTING INFORMATION

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Appendix J: Paper 4 and Publisher Permission

Calma, K.R.B., Halcomb, E., Williams, A., & McInnes, S. (2021). Final-year undergraduate nursing students' perceptions of general practice nursing: A qualitative study. *Journal of Clinical Nursing, 30*(7-8), 1144-1153.

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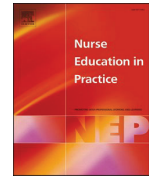
New graduate employment in general practice: Perceptions of final-year nursing students

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ABSTRACT

Aim/objective: This paper sought to investigate the perceptions of final-year nursing students regarding general practice nursing as a new graduate career path.
Background: General practice nurses have become increasingly important in providing community-based care, in response to the growing burden of chronic conditions and the ageing population. To sustain this workforce, there is a need to optimise strategies to promote a consistent supply of new graduate nurses.
Design: This qualitative descriptive study was undertaken within a sequential explanatory mixed methods project.
Methods: Data were collected through semi-structured telephone interviews with sixteen final-year nursing students from five Australian universities. Interviews were analysed using thematic analysis.
Results: Four main themes were identified, namely; a) general practice is not a priority career path, b) opportunities for skills development and consolidation, c) perceptions of employment conditions, and d) transition support is limited.
Conclusion: To meet current workforce needs in areas with increasing demand, nurse educators need to support undergraduate nursing students to explore a wide range of career pathways following graduation. Informed career choices and well-structured educational preparation during undergraduate education may be an effective strategy in building a sustainable future workforce in settings such as general practice.

1. Introduction

The growing burden of chronic conditions, combined with an ageing population, has driven the focus of healthcare delivery towards the community (World Health Organization, 2018). This has increased demand for services such as general practice. As a first-line healthcare provider, over 88% of Australians access general practice services annually (Royal Australian College of General Practitioners, 2018). Similar to the United Kingdom (UK) and New Zealand (NZ), Australian general practices are often owned by general practitioners (GPs) and operated either within a small business structure or as part of a corporate chain (Halcomb et al., 2018). Most general practices, in countries such

as Australia, UK, and NZ, employ at least one nurse (Freund et al., 2015).

The general practice nurse (GPN) role has been firmly established in both the UK and NZ, in contrast with Australia where it has developed over the past two decades. Australian GPNs have developed their role in preventive health, chronic disease management, and acute presentations. In Australia, GPNs either hold a baccalaureate degree or equivalent (Registered Nurse RN), or a diploma (Enrolled Nurse EN). Nurses most frequently enter general practice employment following work experience in hospital settings, with few new graduate nurses employed in this setting (Ashley et al., 2018). This is largely attributed to the limited pathways for new graduate nurses in general practice (Aggar et al., 2017; McInnes et al., 2019a). This is particularly concerning given the GPN shortage, ageing GPN workforce, and predominately part-time and casual nursing employment arrangements (Aggar et al., 2017; Heywood and Laurence, 2018). One workforce development strategy is to ensure a consistent flow of new graduate nurses seeking employment across clinical areas and, in particular, in areas of known or predicted shortages. To sustain and replenish the GPN workforce, it is important to understand the issues that influence undergraduate students' career choices.

2. Background

Nursing registration entitles graduate nurses to practise in many different settings (Schwartz, 2019). As such, graduate nurses are faced with a wide variety of career choices, including hospital settings and community-based primary health care services such as general practice (McInnes et al., 2019b; Wilkinson et al., 2016).

There is growing evidence exploring the preferences of final-year nursing students regarding employment following graduation (Matarese et al., 2019; Shoqirat and Abu-Qamar, 2015), and the relative attractiveness of different clinical settings (Matarese et al., 2019; Wilkinson et al., 2016). Internationally, aged care and mental health are the least preferred career options among undergraduate nurses (Matarese et al., 2019; Shen and Xiao, 2012). In contrast, high tech areas including emergency departments, intensive care, operating theatres (Matarese et al., 2019), paediatrics and maternity are often reportedly preferred by students (Shen and Xiao, 2012). While there is limited research (Calma et al., 2019), few undergraduate nurses report an intention to seek employment in community-based settings (Bloomfield et al., 2018; Bloomfield et al., 2015). This mirrors the recent State of the World's Nursing Report which highlighted the maldistribution of nurses given preferences to work in hospital settings (World Health Organization, 2020).

Various factors are known to influence nursing students' career choices. Gender, age and personal qualities may shape career decisions (Bloomfield et al., 2018; Chai et al., 2019; Matarese et al., 2019). Additionally, clinical placement experiences (Chai et al., 2019), knowledge of the practice area (de Guzman et al., 2013), expectations around working conditions (Bloomfield et al., 2018), curriculum foci and expertise of academic staff (Hunt et al., 2020) impact on decision making. To maintain a sustainable nursing workforce, it is important to understand final-year nursing students' perceptions of general practice as a career choice, and the issues that influence these perceptions.

3. Aim

This paper investigates final-year nursing students' perceptions of general practice nursing as a new graduate career path.

4. Methods

4.1. Study design

A qualitative descriptive study was undertaken in a sequential explanatory mixed methods project following an online survey of final-year nursing students (Authors Own). To explore survey findings interviews were undertaken with a sub-group of survey participants. A qualitative descriptive approach provided an extensive yet straightforward description of experiences (Sandelowski, 2010). Survey data have been reported separately (Authors own). This paper reports on interview data related to participants perceptions of general practice nursing as a new graduate career path. Discrete data about perceptions of the GPN role also emerged from the interviews and are reported elsewhere (Calma et al., 2021).

The Consolidated Criteria for Reporting Qualitative Research (COREQ) was used in this study.

4.2. Participants

Final-year Bachelor of Nursing (BN) students from five universities in New South Wales, Australia were recruited. Potential participants either received a direct email from their faculty or the survey was promoted on learning platforms. Participants provided contact details on survey completion if they were interested in interview participation.

Survey participants who indicated a willingness to be interviewed were stratified into low, mid and high intention to work in general practice based on the modified 14-item Attitudes, Subjective Norms, Perceived Behavioural Control, and Intention to Pursue a Career in Mental Health Nursing (ASPIRE) scale (Wilbourn et al., 2018). A high score is indicative of a greater intention to work in general practice. The doctoral candidate (KC) contacted potential participants from the three career intention groups. Once study information was provided and informed consent was gained, an appointment for the interview was arranged. Participants were recruited until no new information was revealed and data saturation was reached.

4.3. Data collection

The doctoral candidate (KC), a registered nurse with qualitative descriptive research experience, conducted all interviews via telephone due to participants' geographical dispersion. The other members of the team were female registered nurses and academics who have experience in qualitative descriptive research in primary health care. Interviews followed a semi-structured interview schedule developed from a literature review (Calma et al., 2019) and survey findings. The schedule included open-ended items, "Tell me, how do you feel about general practice nursing as a career choice for new graduate nurses?", and probing questions such as "what aspects are most/least appealing to you about general practice as a career choice?". Interviews were digitally audio-recorded and field notes were kept. Transcripts were not returned to participants given interviews were conducted at the end of their study year.

4.4. Data analysis

Audio recordings were transcribed verbatim by a professional transcription company. Data were then analysed using thematic analysis (Braun and Clarke, 2006). Transcripts were initially read (KC) whilst listening to the audio recordings to establish accuracy. Field notes and transcripts were then read and re-read to establish familiarity. Initial codes, patterns and meanings were independently identified (KC) and cross-checked (EH, AW, SM). Codes were organised into potential themes by manually collating coded interview extracts. Initial themes were identified and developed into a coding framework by all researchers, and these were cross-checked against the transcripts and discussed until congruence was reached. The 'meaning' of each theme was discussed until consensus was reached and final titles determined (Braun and Clarke, 2006).

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4.5. Rigour

Trustworthiness was established using the criteria described by Lincoln and Guba (1985). Credibility was established by comparing the audio data and transcripts and using peer-debriefing, where the team conferred on raw data, codes and themes. Providing a detailed description of participants and presenting verbatim quotes demonstrated transferability. A detailed description of study processes established dependability. Finally, providing an audit trail and cross-checking codes established confirmability.

4.6. Ethical considerations

Approval was gained from the University of Wollongong Human Research Ethics Committee (HREC 2018/556). The research aim, benefits and potential risks to participants were included in the information sheet and consent form. Participation was voluntary and, although participants could cease the interview at any time, none chose to do so. Identifying information was removed from transcripts. Pseudonyms are used in reporting.

5. Findings

Of the 16 participants, only one identified as male (6.3%). Participants ranged in age from 20 to 54 years (Mean 31.1 years). Eleven (68.8%) participants reported having no general practice clinical experience. Two participants (12.5%) had worked as a receptionist, and two (12.5%) had worked as Enrolled Nurses in general practice. Only one (6.3%) participant had undertaken a general practice clinical placement as part of their undergraduate education.

Four main themes emerged, namely: a) general practice is not a priority career path, b) Opportunities for skills development and consolidation, c) perceptions of employment conditions, and d) transition support is limited.

5.1. General practice is not a priority career path

When considering career options, several participants reported prioritising hospital settings for initial employment. General practice was frequently viewed through a negative lens, or as a 'back-up option', if hospital employment was not secured.

> "Most people I think have a pretty negative view of being a nurse in general practice. It seems to be nobody's first choice of job." [Lorraine]

> "It's not looked upon… as a priority of a job…I think a lot of people go into nursing thinking that working in a ward is the goal. So working in other areas, whether that be community nursing or GP practices or anything like that, almost feels as though they haven't met that goal." [Denise]

Most perceptions of general practice as a career path were not informed by direct experiences in the setting. Bronte, for example, described that she has *"never been in the general practice on placement"* and that she did *"not know much… I really don't know what the range of prospects for nursing is in general practice"*.

Participants reported that the initial prioritisation of career path was influenced by the extent to which academic staff portrayed a particular clinical setting as important, and provided content and promotion of the setting in coursework. An absence of general practice content, and a lack of general practice career advice or promotion in some undergraduate programs, negatively influenced perceptions of general practice as a career option.

> "It's absolutely not something we're prepared for at Uni I think in any way whatsoever." [Lorraine]

> "When it came to applying for new grads and for jobs there was no one that came and talked to us about this." [Anne]

Limited promotion of general practice as a career path resulted in some participants assuming that work in general practice required specialist qualifications.

> "I think it's just I assumed that it's a closed-door for me, and you'd have to specialise to be able to have that as an option." [Anne]

5.2. Opportunities for skills development and consolidation

Many participants described seeking initial employment based on perceived opportunities to consolidate fundamental skills and to learn new nursing skills. Views on which clinical setting best supported skill consolidation and development varied. Some participants articulated that general practice would expose them to diverse skills that may not be available in hospital settings.

> "I think it's a great learning curve…There's a lot of stuff to be learned that they [new graduates] would not be exposed to on a daily basis on the wards." [Paula].

> "General practice nursing would be really beneficial for a new grad nurse… you get a broad range of skills." [Jessica].

Several participants perceived general practice as a 'stepping stone' for new graduates, rather than a career option. Olivia described several nurses who worked in general practice *"while they're waiting for a new grad and.they actually say they learnt a lot and it built their confidence quite a bit more."* She expanded on this perception:

> "I feel like especially it's a way for you to start thinking – especially people who are not too confident in talking to patients it's a starter option…to build up your confidence… it's taking those steps towards being a full on registered nurse at a hospital." [Olivia]

In contrast, other participants expressed concerns about losing clinical skills if they were employed in general practice following graduation, particularly concerning how this might impact on future employment opportunities. These views, however, were not always founded on personal general practice experience.

> "The thing that would scare me the most about general practice is losing all of the other skills that you wouldn't be able to practise there such as basic patient daily care, knowing some of your medications since you're not constantly dispensing those medications. if you do decide to move on, you'd have an adjustment period where you're relearning some of these skills." [Olivia]

> "I wouldn't say deskill or you won't use what you have studied because for myself now I'm thinking, oh, I want to go to the hospital system first so you basically learn about everything, all the acute symptoms and all the skills, gather it all before going to GP nursing.if you go straight into GP nursing you might not use or learn all those skills or acquire the skills that you need to go into hospital nursing." [Bronte]

Denise commented that *"there probably is less learning opportunities [in general practice]…as what you would get in a hospital"*. To these participants, it was important that working in hospital settings always remained a viable career option in the future.

For some, acute care experience was perceived as a *"good training ground"* [Celestine] for new graduate nurses to consolidate skills before moving into other settings. Many participants perceived that fundamental skills could only be consolidated through hospital experience, with limited recognition that other clinical settings could offer opportunities for skills consolidation. Lorraine perceived that; *"It's very much a case of you need to be in a hospital, you need to get your acute care experience, you need to know how to measure medications, you need to know how*

to do IV fluid". Faye also shared her perceptions;.

> *"[In the ward you learn] time management; critical thinking; when to escalate; knowing how to escalate; who to go to and ensuring the proper processes are done. Everything; everyday basic nursing."*

While some participants verbalised interest in working in general practice in the future, this would only occur after they had gained hospital experience. Celestine identified that *"even if it's only short term, even if it's only six months of a new grad year…where you rotate a couple of times"*, one could *"do six months in a hospital and then go on to your general practice… [but] I just think you see so much [working in the hospital]"*. She expanded on this saying:

> *"I definitely think being in a hospital where you can just ask a lot of questions is a really good place for a new grad to start. I mean GP practice is a great long term career choice and maybe that's even something I'll seek out."*

5.3. Perceptions of employment conditions

Three main issues around employment conditions influenced participants' perceptions, namely: work-life balance, salary, and workplace pressure. Establishing a work-life balance was important for several participants who perceived general practice employment as a *"healthier choice"* [Hailey] as it facilitated such balance. Celestine described that *"the hours would be much better"* in general practice, and Denise identified *"it's such a great lifestyle [because] it is a nine to five job"*. Participants described work-life balance as an important consideration when they experienced concurrent family commitments. Maggie stated that she would consider general practice employment *"Definitely in the long term, in the future, definitely a good job, just for the hours too if you've got family, kids"*. Similarly, Hailey identified that *"my family comes first and this area of practice might allow me to make my dreams come true, you know?"*. Denise agreed saying general practice nursing isn't *"something that they were willing to go into straight away – but potentially down the track when they didn't want to be doing shift hours."*

Discrepancies between the remuneration for GPNs compared to hospital nurses reduced the attractiveness of general practice employment. Lorraine articulated; *"the pay rate in general practice is not as good as a hospital"*. Paula stated that pay differences influenced decisions regarding general practice employment.

> *"I think that the only downfall of general practice nursing is the fact that they aren't paid nearly as well as what the hospital nurses are. Pay rates are terrible. Hours are great. But, yeah, pay rates are terrible. I think that that's probably one thing that will influence a lot of people as to whether they would stay there or not."*

In contrast, the perceived lower time pressures of general practice were considered by some to make general practice an ideal setting for new graduate employment, particularly if they lacked confidence.

> *"I would say a new graduate nurse into general practice can be beneficial because it's allowing you to… be not so pressured for time." [Paula]*

> *"I personally do want to work in a hospital but for some people they don't like. an environment that's too busy as well. So for those people I believe it would be a great option for a new graduate or somebody who's still wanting – who's still a bit too nervous to do everything in a hospital." [Olivia]*

Other participants felt that the perceived 'easier' work of general practice nursing might make employment in this setting more suitable for nurses nearing the end of their career. Lorraine described, *"… a lot of the GP practice nurses I have met before have been older people… at the end of their career that are looking to take it a bit easier and not be in a big setting, not be running around as much…"*. Faye also shared her similar views;.

> *"Maybe towards the end of my career. I would probably think [general practice nursing] may be a little bit more easy."*

5.4. Transition support is limited

While some participants expressed interest in general practice nursing as a career option, the lack of formal transition to practice programs negatively impacted seeking general practice employment immediately post-graduation.

> *"I think that general practice of nursing would be really beneficial for a new grad nurse. I haven't myself heard of many programs. I know a lot of the hospitals, they do the new grads, but not so much in the general practice." [Jessica]*

> *"I would love to do it; the only thing is availability - yes, you can get a job in general practice but it's not supported like a [hospital] new graduate [program]." [Edna]*

Access to professional support such as a manager, supervision and working within a team were important considerations when choosing a new graduate career path.

> *"I personally wouldn't want to do it as a new grad nurse. I don't feel I would have enough knowledge. It's such a wide skill set. I wouldn't have enough experience to be that person, that one on one… you're the only nurse. you don't have anyone to ask on the spot if you needed something." [Maggie]*

> *"It depends on the practice. If you're at a GP that's very supportive and willing to teach then I feel like it would be a good option." [Olivia]*

Some participants who lived outside major cities expressed interest in general practice employment. However, there were perceived to be limited local employment opportunities.

> *"If it was offered in my area it would be – I would like it. Yeah. it would be something that I'd really look into. We are quite limited in the [Region] sadly. There are grad years at hospitals, and I think that's it." [Klara]*

> *"A lot of the medical centres I've come across in [Town], in my area, don't support a nurse." [Celestine]*

6. Discussion

Most participants did not consider general practice as a priority career path following graduation. Several participants expressed concerns about seeking general practice employment immediately post-graduation. These concerns were predominately related to limited exposure to and experience of the GPN role, perceptions around skill development and consolidation, lower remuneration and limited transition support. However, while others have described primary health care (PHC) as 'not real nursing' and a low-status job (Cooper et al., 2014; van Iersel et al., 2018), participants in this study shared much more positive perceptions of general practice nursing overall. Some participants in this study spoke of general practice as a viable option later in their career when they had consolidated skills in a hospital and were more independent in their nursing practice. They also identified that general practice offered opportunities to build skills that are not practised in the hospital.

Despite these positive views, participants were conscious about their knowledge deficit around career pathways around general practice due to limited GPN career promotion at university. The growth of community-based healthcare requires increased student awareness and preparedness for roles beyond those in hospitals settings (Cooper et al., 2014). Current BN curricula lack emphasis on such non-traditional nursing roles (Schwartz, 2019). Since nurse academics are strong role

models to students (Gibbs and Kulig, 2017), increasing GPN involvement in academia may assist in demystifying nursing roles and promoting career pathways in the general practice setting (Albuttet al., 2013).

Limited clinical experiences (van Iersel et al., 2018), and acute-care focussed curricula (Calma et al., 2019) impact career choices. Indeed, many participants voiced perceptions with limited exposure to the GPN role. International literature concurs that undergraduate programs provide inconsistent and inadequate PHC preparation (Albutt et al., 2013; Murray-Parahi et al., 2020; Wojnar and Whelan, 2017). Ensuring that undergraduate programs provide exposure to diverse practice areas would facilitate more informed choices about career options. The impact of such a strategy was supported by McInnes et al. (2015) who reported that positive clinical placement experiences enhanced perceptions and increased interest in general practice as a career.

Several participants commented on the importance of skills consolidation and development opportunities when choosing employment. Participants shared concerns around the potential of being limited in skill development in general practice, which mirrors perceptions of broader PHC (Wojnar and Whelan, 2017). Beyond misconceptions of the GPN role, this highlights a gap in participants' understanding of the depth and breadth of GPN skills, and the need for nurses to be able to transfer skills across clinical settings. Indeed, nursing students have been reported to be often unsuspecting of the full complexities of the RNs role, and the skills to be learnt and practised (Hawkins et al., 2019). Good quality clinical experience in a diverse range of clinical settings will equip undergraduate nurses to better understand the transferability of their skills between settings and the variety of roles that nurses play in the delivery of care.

The lower salary in general practice in comparison to nurses employed in a hospital diminished the appeal of general practice as a career option among participants in this study. Poor salaries have long caused high levels of dissatisfaction among GPNs (Curtis and Glacken, 2014; Halcomb and Bird, 2020). Investing in strategies to address issues around job satisfaction, particularly in terms of remuneration has significant potential to address these recruitment issues (Halcomb et al., 2018; Halcomb and Bird, 2020).

For those who did express an interest in general practice nursing as a new graduate career, a lack of formal transition programs was a major deterrent. Although there have been some recent new graduate programs in Australia (Aggar et al., 2017; McInnes et al., 2019b; Thomas et al., 2018), there remains limited availability of such programs. The small business nature and funding arrangements for Australian general practice present an ongoing challenge in the organisation and delivery of new graduate programs in this setting (McInnes et al., 2019b). In the absence of formal programs, further research needs to investigate how practices can be supported to provide formal transition support.

7. Study limitations

Participants were drawn from five institutions across metropolitan and rural areas in a single State, and recruitment was undertaken via email or institutional learning sites. Despite a national accreditation system for Australian nursing education, students in other jurisdictions may have differing views. Additionally, the promotional recruitment material may not have been seen by all students during the study period for various reasons. It is also possible that those who responded may have had more polarised views than those who did not.

8. Conclusion

This study demonstrates that working in a hospital was largely prioritised as an initial career pathway. There were varying views around the opportunities to consolidate and develop new skills, workplace conditions, and availability of transition programs in general practice. There is a need to encourage nursing students to appreciate the breadth

of general practice nursing, and the realities of the complex work GPNs do. Building appreciation of the transferability of clinical skills has the potential to open new graduates to feel more confident in seeking non-traditional employment. Given the increased focus on community-based care, it is important for new graduate nurses to actively seek employment in areas of increasing demand such as general practice.

Nurse educators need to promote curricula which expose nursing students to a range of clinical settings to facilitate informed decisions about career choice. This can be achieved by ensuring that curricula include both realistic theoretical content and high-quality clinical placements in the range of areas in which nurses practice (Schwartz, 2019). Accreditation agencies also need to evaluate curricula to ensure that these align with the demands of the health service in relation to workforce needs. Strategies to enhance the profile of diverse settings, such as general practice, are important to ensure that these GPNs are valued and that the potential career pathway is highlighted. The facilitation of transition to practice programs in general practice also have the potential to attract more new graduate nurses into this setting.

CRediT authorship contribution statement

KC, AW, SM, EH: Made substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data. KC, AW, SM, EH: Involved in drafting the manuscript or revising it critically for important intellectual content. KC, AW, SM, EH: Given final approval of the version to be published. Each author has participated sufficiently in the work to take public responsibility for appropriate portions of the content. KC, AW, SM, EH: Agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Declaration of Competing Interest

The author(s) have declared no conflict of interest.

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