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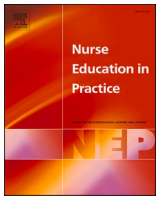

Understanding perceptions, attitudes and experiences of nursing students during clinical placement in primary health care settings – A scoping review

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ABSTRACT

Aims: Critically analyse literature on undergraduate nursing students' perceptions, attitudes and experiences during Primary Health Care (PHC) placements and identify factors influencing their satisfaction. These insights may improve educational outcomes, shape career intentions and address workforce shortages.
Background: Global nursing shortage, driven by increased demands and high attrition, impacts healthcare worldwide. Australia faces projected shortfalls of 79,473 nurses by 2035, significantly in PHC. Attributing factors include remuneration disparities, inadequate training/mentorship and limited career pathways. Strengthening the PHC nursing workforce is crucial, with undergraduate nursing students providing an important workforce pipeline.
Design/Method: Scoping Review protocol was registered using Joanna Briggs Institute's framework for scoping review methodology, Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Review's Checklist and Peer Review of Electronic Search Strategies, were applied. Grey literature was sought. Covidence facilitated article review and extraction, inductive thematic analysis identified key themes.
Results: Four key themes were developed: 1. PHC placements as a learning environment; 2. Skills development and acquisition; 3. Importance of nurse preceptor relationship; and 4. Curriculum structure and preparation.
Conclusions: This review explores nursing students' experiences in PHC placements and factors influencing satisfaction, while highlighting gaps in optimising placements to better prepare students and strengthen the PHC workforce. Further research is needed on satisfaction, variation in experiences across PHC settings, the impact of preceptor relationships and strategies to strengthen them and stronger integration of PHC content in curricula. Addressing these gaps is essential for aligning education with workforce demands and strengthening student career intentions in PHC.

1. Introduction

The World Health Organisation (WHO) estimates the global nursing workforce to be approximately 29 million and predicts a shortage of around 4.5 million by 2030 (World Health Organisation, 2023). The global shortage of nursing professionals is influenced by various factors, such as increased demands on healthcare services and attrition of experienced nurses due to retirement, physical stress, lack of support

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and poor working conditions (Al Zamel et al., 2020; Chamanga et al., 2020; De Vries et al., 2023; Dos Santos, 2020). Following the Covid-19 global pandemic, this shortfall is likely to be higher because of a significant number of nurses leaving the workforce due to burnout (Buchan et al., 2022; Poon et al., 2022). This shortage has significant implications for healthcare delivery, resulting in compromised patient care, increased workload for existing nurses and decreased job satisfaction (Brook et al., 2021; Redfern et al., 2019).

The nursing workforce is the largest health profession in Australia, with 362,855 registered and employed nurses in 2022 and a growth of 36,573 nurses between 2017 and 2022, however, this growth will not meet healthcare needs and the existing nursing workforce, already under pressure, will continue to experience workload challenges (Department of Health. 2024a). Australia has a predicted nursing workforce shortfall of approximately 79,473 by 2035 (Department of Health. 2024a). Concerningly, 21,765 (27.4 %) of this shortage is predicted in the Primary Health Care (PHC) nursing workforce (Department of Health. 2024a), creating challenges in care delivery and patient outcomes in PHC settings. This shortfall creates a significant gap between the demand and supply of nurses in PHC, highlighting the importance of ensuring strategic workforce planning through adequate preparation of nursing graduates.

PHC plays an essential role in improving health outcomes, acting as the first point of contact in the healthcare system and providing accessibility to individuals and communities (Australian Institute of Health and Welfare. 2025). The provision of quality PHC services is crucial for promoting health, illness prevention and management of chronic conditions in communities, reducing demands on tertiary health facilities (Bitton et al., 2017; Haque et al., 2020). With healthcare needs of ageing populations and chronic illnesses escalating alongside de-institutionalisation of mental health services and early discharge from costly tertiary hospitals; cultivating a nursing workforce skilled in health promotion and population health is imperative (Bloomfield et al., 2018; Halcomb et al., 2018; Peters et al., 2015). In addition, strengthening the PHC nursing workforce to meet healthcare demands in communities is vital (Haque et al., 2020; McInnes et al., 2015a).

PHC nursing offers a unique and rewarding career path. It encompasses diverse settings such a general practice, community nursing, school nursing, correctional centres and public health (Australian Primary Health Care Nurses Association. 2025). PHC nurses work closely with individuals and families, providing continuity of person-centred care over time (Ahmed et al., 2022). The PHC nurse's role offers autonomy and opportunities for career progression to Nurse Practitioners, leaders in healthcare delivery and management of complex health needs (Nursing and Midwifery Board of Australia. 2021).

Despite career opportunities and growing recognition of the need to strengthen the PHC workforce, the workforce shortage is significant. Furthermore, in Australia, the PHC nursing workforce is ageing, with nearly 40 % of nurses aged 55 years or older (Hills et al., 2025). PHC nursing shortages have been attributed to disparities that exist between tertiary and PHC employment settings in remuneration, training and mentorship (Dussault et al., 2018; Leonardsen et al., 2019). Additionally, misconceptions of the nurse's role, often due to inadequate preparation in the undergraduate curriculum and insufficient exposure to PHC settings (Calma et al., 2019), could further contribute to the challenges of attracting and retaining nurses in PHC settings.

Undergraduate nursing students provide an important workforce pipeline for PHC. Therefore, students must experience high-quality PHC education and diverse, positive clinical placements that challenge their preconceived ideas, shape professional identity and drive career aspirations (André et al., 2023; Anyango et al., 2024; Calma et al., 2022a; Lythgoe et al., 2022). However, increasing student numbers have led to a shortage of clinical placements, particularly in PHC, where placement providers often have limited capacity compared with tertiary settings (Al-Ghareeb and Cooper, 2016; Cant and Cooper, 2017; Wojnar and Whelan, 2017). While placements have traditionally occurred in general practice or community settings, underused options such as correctional centres, school clinics and health camps offer valuable learning opportunities (Betony and Yarwood, 2013; Miller-Rosser et al., 2019).

The Australian Nursing and Midwifery Accreditation Council (ANMAC) requires graduates to be prepared for diverse settings but does not specify the requirements of a PHC placement. A clearer national curriculum and framework for PHC education is needed for building a future workforce that is prepared for PHC settings (Department of Health, 2024b). Expanding PHC placement settings is crucial to provide opportunities for diverse experiences and better prepare students for future roles in PHC (McKenna et al., 2014; Sutherland et al., 2021). Furthermore, it is imperative for undergraduate nursing curricula to effectively prepare students for the generalist, autonomous and diverse nature of PHC nursing career opportunities.

Research demonstrates that students' perceptions, attitudes and experiences of PHC clinical placements are critical in shaping career intentions post-graduation (Gill Meeley, 2021; McInnes et al., 2015a). Satisfaction with clinical placements is closely linked to students' perceptions of the environment and attitudes towards the learning and how they were treated; positive perceptions and attitudes enhance satisfaction, while negative experiences contribute to dissatisfaction (Luders et al., 2021). Therefore, in this review, we aimed to understand nursing students' perceptions, attitudes and experiences during PHC placements and identify factors influencing satisfaction and career intentions. Understanding these concepts may guide the development of educational strategies and outcomes to enhance placement experiences, improving recruitment and retention. We aimed to identify knowledge gaps for further research that guides nursing educators to improve curricula for PHC placements and better prepare students for careers in PHC. In addition, our findings may assist PHC stakeholders, employers and clinicians in understanding factors influencing nursing students' satisfaction during placement and improving the quality of student experiences. The findings from our review may also contribute to government and policymaker decisions related to workforce development and PHC workforce shortages.

2. Method

Our scoping review methodology was based on the broad and exploratory nature of the topic, which required a comprehensive mapping of previously unknown concepts and gaps (Arksey and O'Malley, 2005). This approach is particularly useful when reviewing emerging topics such as students' attitudes, perceptions and experiences, as they address research questions that do not involve an intervention (Peters et al., 2020). To ensure quality and reliability of the review, reporting followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) (Tricco et al., 2018). Prior to starting this review, a protocol was written and registered with the Open Science Framework (OSF). We were guided by Joanna Briggs Institute (JBI) Scoping Review (Aromataris et al., 2024; Peters et al., 2020; Pollock et al., 2023) and followed the five steps described in Arksey and O'Malley (2005) scoping review methodology framework: (1) defining the research question, (2) searching relevant publications, (3) study identification, (4) data charting, (5) analysing the results (Arksey and O'Malley, 2005).

Step 1: Defining the research question

The Population (or participants), Concept and Context (PCC) framework (Aromataris et al., 2024) articulated the main concepts of the review questions:

- What are the perceptions, attitudes and experiences of nursing students while on Primary Health Care placements?
- What are the factors that influence nursing students' experiences and satisfaction while attending Primary Health Care Placement?

Pollock (2023) explains that this format allows for greater synthesis

of inclusion and exclusion criteria (Pollock et al., 2023). For this review, Participants were nursing students, Concepts were perceptions, attitudes and experiences and the Context was Primary Health Care placements (Table 1).

Step 2: Searching relevant publications

This review followed the Peer Review of Electronic Search Strategies (PRESS) guideline to produce the search strategy (McGowan et al., 2016): (1) Translation of the research question; (2) Boolean and proximity operator; (3) Subject headings (database-specific); (4) Text word search; (5) Spelling, syntax and line numbers; and (6) Limits and filter.

The first author collaborated with a specialist librarian to develop optimal search terms using Subject Headings and Medical Subject Headings (MeSH). In June 2024, literature searches were conducted on MEDLINE (EBSCOhost), CINAHL with full text (EBSCOhost), Scopus and ProQuest databases. Additionally, reference lists of included articles and Google Scholar were searched for further relevant studies, including PhD dissertations and government reports. These databases and searches were chosen to ensure a broad search of both peer-reviewed and grey literature relevant to the topic. Keywords derived from the preliminary literature were used and combined using Boolean Operators OR/AND/NOT functions to connect terms such as "student placement" OR "clinical placement" (see Supplementary Table 1, Search strategies). The inclusion and exclusion criteria were developed by all four authors, who are nursing academics and included peer-reviewed, English language journal articles, published within the last ten years (Table 2).

For the purpose of this review, PHC placements included community-based healthcare settings that did not involve an overnight stay in an institutional setting, such as Aged or Disability residential care (McCullough et al., 2023). This is because residential care placements focus on skill and knowledge development in assisting with activities of daily living and fundamental care (Fussell et al., 2009) rather than episodic care and health promotion more commonly found in PHC settings. However, we decided to include prison health services because they function as a clinic attending to episodic well-person care rather than assisting with activities of daily living. Therefore, examples of PHC placements included general practice services, school nurse clinics, community and outpatient clinics and home visiting services. Likewise, service-learning placements were included if the study reflected the aims of our review; however, if the research's primary focus was cultural immersion, social determinants of health, or the setting was a very short community taster rather than a clinical placement, they were excluded. Our review specifically investigated Registered Nursing students and future workforce issues, therefore, studies on other health student populations were excluded. Studies on Enroled Nursing students could have been included; however, none were identified.

Step 3: Study identification

Relevant studies were imported into EndNote [Clarivate, Philadelphia] for reference management and Covidence systematic review software [Veritas Health Innovation, Melbourne] was used to manage the review process. Study selection records from all databases and searches were combined (n = 3006) and duplicates removed (n = 965). To ensure consistency in the screening process, two reviewers independently reviewed all titles and abstracts (n = 2041) and excluded studies that did not meet the inclusion criteria (n = 1871). Then two reviewers independently reviewed all full-text studies (n = 170), with conflicts resolved by a third author. Consequently, 34 articles were included in the final data extraction and inclusion in this review.

Results were documented in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) flow diagram (Tricco et al., 2018). Full details of the screening process are presented in Fig. 1. During screening, weekly team meetings were conducted to improve understanding of the project's objectives as well as consistency in applying the eligibility criteria.

Table 1
The population, concept, and context (PCC).

P (Population)	C (Concept)	C (Context)
Nursing students	Perceptions, Attitudes, Experiences	Primary Health Care placement

Table 2
Literature review eligibility criteria.

Inclusion	Exclusion
• Nursing students who have completed a PHC placement • Articles on the students' attitudes, perceptions, and experiences • Empirical studies / Primary studies • Grey literature • Full text available • Written in English language • Published between January 2014 to June 2024	• Students other than nursing • Perspectives other than the nursing students • Placements other than PHC • Placements that were a 'taster' rather than approved Work Integrated Learning. • Placements where the focus was on non PHC tasks eg ADLs in an aged care facility

Step 4: Data charting

Data extraction was completed using an extraction tool purposefully developed by the four authors, to include key findings relevant to the review objectives (see Supplementary Table 2). Any inconsistencies arising between the authors were resolved through discussion in weekly meetings.

The methodological quality of the empirical studies identified in the searches was evaluated by the Mixed Methods Appraisal Tool (MMAT) (Supplementary Table 2, column 8) (Hong et al., 2018). To ensure the highest level of quality and consistency in research, two authors applied the MMAT tool and cross-examined results. Although quality appraisal tools are not considered essential in scoping reviews, we decided it was important to inform the understanding of the quality of studies to strengthen the overall quality and credibility, but we did not exclude any studies based on quality assessment. This is consistent with Grant and Booth (2009); Hughes et al. (2023) and Pollock et al. (2021), who indicate that quality appraisal strengthens scoping review findings.

Step 5: Analysing the results

Results were summarised in the data extraction tool by the first author and then all four authors reviewed the summary until consensus was achieved. In circumstances where primary and grey literature was analysed, JBI Scoping Review guidance recommends using a descriptive approach of open coding to analyse qualitative data (Pollock et al., 2023). Coding was conducted manually with Microsoft Excel used to organise and manage the raw data throughout the analysis. After data extraction, an inductive approach of thematic analysis (Braun and Clarke, 2006) was undertaken to discover key themes in the articles and compare the findings between studies. Initially, an independent analysis was conducted by the first author which involved systematically reading the data, assigning labels to important narratives (such as 'students feeling uncomfortable') and then grouping similar labels or recurring concepts into broader categories (such as 'preparedness'). These formulated the foundations of themes which were then reviewed, refined and validated by all four authors, to ensure accuracy. Additionally, themes were cross-referenced with research questions to ensure alignment and relevance. This inductive approach strengthened consistency of the findings, with all authors ultimately agreeing on four key themes.

3. Results

3.1. Characteristics of studies

There was diversity in geographic origin with studies completed in Australia (n = 10) (Bloomfield et al., 2015; Byfield et al., 2020; Calma et al., 2022a; Calma et al., 2022b; McInnes et al., 2015a, 2015b; McKenna et al., 2014; Merritt and Boogaerts, 2014; Miller-Rosser et al.,

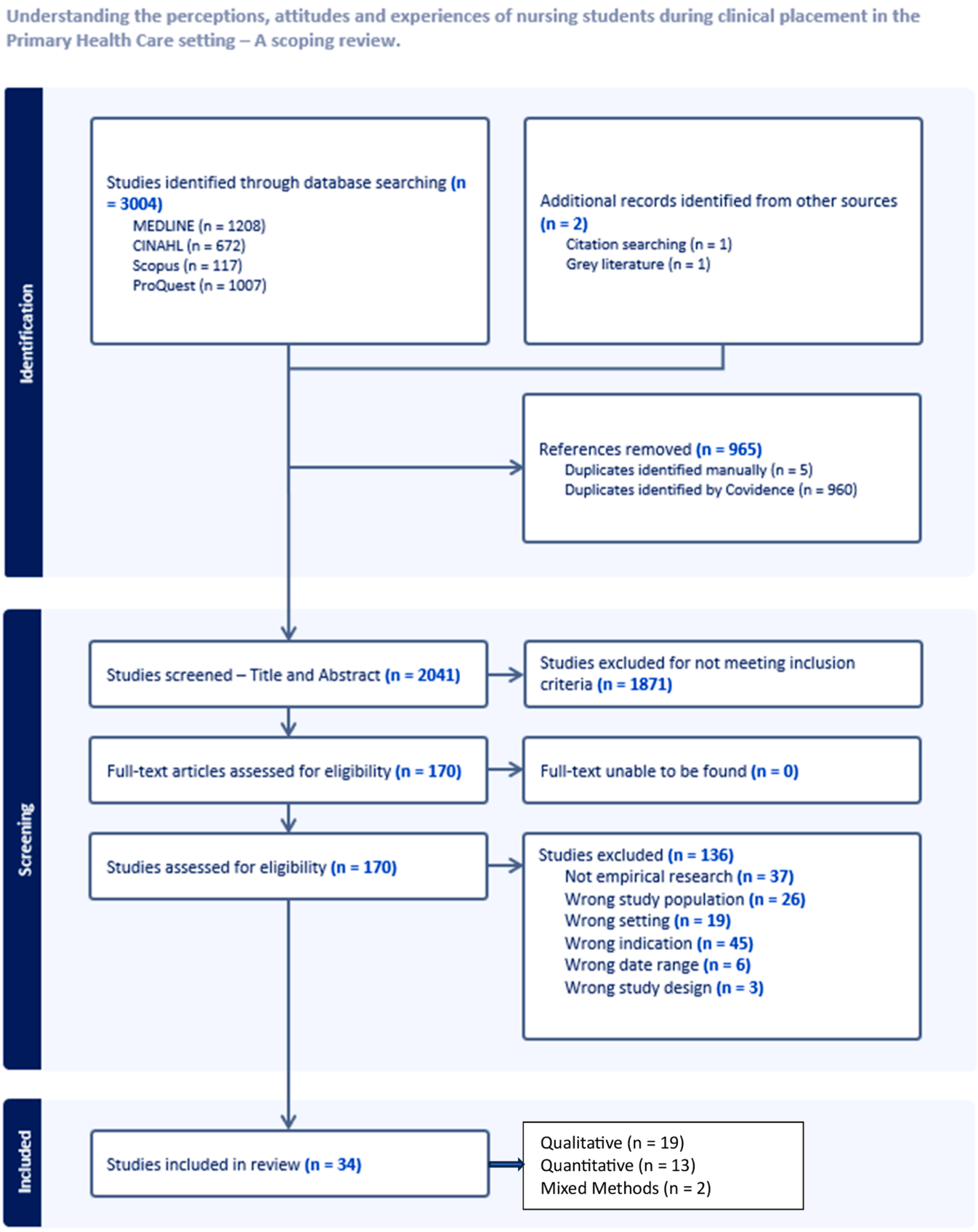

Fig. 1. PRISMA date flow chart.

2019; Peters et al., 2015), United States of America (n = 6) (Bouchaud et al., 2018; Clark, 2022; Hawkins et al., 2023; Lawlor et al., 2023; Snyder et al., 2022; Sutherland et al., 2021), United Kingdom (n = 6) (Donley and Norman, 2018; Gale et al., 2016; Lavery and Morrell-Scot, 2024; Lewis et al., 2019; Walsh and Mason, 2018; Williamson et al., 2020), Canada (n = 2) (Babenko-Mould et al., 2016; Valaitis et al., 2020), Spain (n = 2) (Cervera-Gasch et al., 2022; Serrano-Gallardo et al., 2016), South Africa (n = 2) (Phafoli et al., 2018; Zulu et al., 2021), Turkey (n = 1) (Gokce and Betul, 2021), Sweden (n = 1) (Bos et al., 2015a), Singapore (n = 1) (Chee et al., 2024), Peru (n = 1) (Santos Falcón et al., 2019), Korea (n = 1) (Choi and Um, 2022) and Egypt (n = 1) (Moselhy, 2021).

Of the 34 studies, approximately 56 % (n = 19) were qualitative (Babenko-Mould et al., 2016; Byfield et al., 2020; Choi and Um, 2022; Clark, 2022; Donley and Norman, 2018; Gokce and Betul, 2021; Hawkins et al., 2023; Lavery and Morrell-Scot, 2024; McInnes et al., 2015a; McKenna et al., 2014; Merritt and Boogaerts, 2014; Miller-Rosser et al., 2019; Peters et al., 2015; Phafoli et al., 2018; Santos Falcón et al., 2019; Snyder et al., 2022; Valaitis et al., 2020; Walsh and Mason, 2018; Zulu et al., 2021), 38 % (n = 13) were quantitative design (Bloomfield et al., 2015; Bos et al., 2015a; Calma et al., 2022a, 2022b; Cervera-Gasch et al., 2022; Chee et al., 2024; Gale et al., 2016; Lawlor et al., 2023; Lewis et al., 2019; McInnes et al., 2015b; Moselhy, 2021; Serrano-Gallardo et al., 2016; Sutherland et al., 2021) and 6 % (n = 2) were mixed methods design (Bouchaud et al., 2018; Williamson et al., 2020).

Placement setting varied with 26 % (n = 9) attending Community Health placements (Babenko-Mould et al., 2016; Chee et al., 2024; Clark, 2022; Gokce and Betul, 2021; Lavery and Morrell-Scot, 2024; Merritt and Boogaerts, 2014; Santos Falcón et al., 2019; Snyder et al., 2022; Williamson et al., 2020), 24 % (n = 8) General Practice (Calma et al., 2022a, 2022b; Donley and Norman, 2018; Gale et al., 2016; Lewis et al., 2019; McInnes et al., 2015a; McKenna et al., 2014; Walsh and Mason, 2018) and 6 % (n = 2) Correctional Centres (Bouchaud et al., 2018; Sutherland et al., 2021). 44 % (n = 15) attending Primary Health Care (mix) placements which included unspecific PHC placements and studies included a range of different PHC placements in the same study such as Kidney camps Community Health centres, Child and Family Health centres, Public Health centres, Aboriginal Health centres, School Nursing, Ambulatory Care, Refugee Health centres, Family Planning centres, Street Outreach and Youth-friendly services (Bloomfield et al., 2015; Bos et al., 2015a; Byfield et al., 2020; Cervera-Gasch et al., 2022; Choi and Um, 2022; Hawkins et al., 2023; Lawlor et al., 2023; McInnes et al., 2015b; Miller-Rosser et al., 2019; Moselhy, 2021; Peters et al., 2015; Phafoli et al., 2018; Serrano-Gallardo et al., 2016; Valaitis et al., 2020; Zulu et al., 2021) (Fig. 2).

Most studies (n = 19) did not identify duration of placement. Other placements ranged from one week or less, up to less than six weeks (Fig. 3). The sample size across the 34 studies was approximately 3005, with each individual study participant sample size varying from three (Walsh and Mason, 2018) to 501 participants (Chee et al., 2024).

Theoretical frameworks underpinning the studies were inadequately described, with only five out of thirty-four studies discussing this topic. Byfield et al. (2020) used the Preconceptions and Learning Framework, to inform their findings. Snyder et al. (2022) described the Minnesota Wheel Model and the Social-Ecological Model, focusing on how students independently apply previously acquired knowledge, skills and abilities during street outreach. Donley and Norman (2018) employed a phenomenological philosophical framework, whereas Clark (2022) applied Grounded Theory for data collection and analysis. Gale et al. (2016) adopted Marks-Maren's evaluation research framework, which aligned with the educational action research design of their study.

Using thematic analysis (Braun and Clarke, 2013), we developed four key themes: 1. PHC placements as a learning environment; 2. Skills development and acquisition; 3. Importance of nurse preceptor relationships; and 4. Curriculum structure and preparation.

3.1.1. *PHC placements as a learning environment*

While on PHC placements, students reported feeling motivated (Bos et al., 2015a), highly satisfied, positive and enjoyed their clinical PHC experience (Cervera-Gasch et al., 2022; Lewis et al., 2019; McInnes et al., 2015a, 2015b; Moselhy, 2021; Peters et al., 2015; Phafoli et al., 2018; Santos Falcón et al., 2019; Serrano-Gallardo et al., 2016; Snyder et al., 2022; Valaitis et al., 2020; Williamson et al., 2020). They described the PHC learning environment as high-quality (Donley and Norman, 2018) and an important part of their development as a nurse (Gale et al., 2016).

Some students voiced the placement as a transformative experience leading to significant personal and professional growth, with comments in Miller-Rosser et al. (2019) such as *"Pushed me emotionally, physically and mentally, it just puts everything into perspective* (Pg. 4, participant 74)" and *"On this placement I got a global picture of health* (Pg. 4, participant 43)" and *"I learnt about myself, I could not do that in a hospital* (Pg. 4, participant 61)".

The placements broadened undergraduate nursing students' perspectives, challenging initial perceptions of PHC nursing (McKenna et al., 2014). Prior to attending PHC placements, students reported concerns about working and learning in non-tertiary settings (Bouchaud et al., 2018). However, these feelings were reduced once they were integrated and immersed into the PHC team (Hawkins et al., 2023; McInnes et al., 2015a; McKenna et al., 2014). Concerns were further reduced, and rapport was gained, as students realised patients were receptive to receiving care in their homes and welcomed nurses' visits

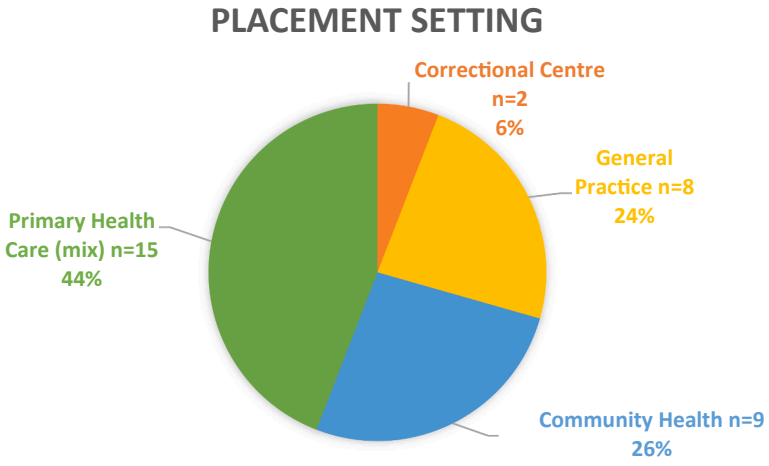

Fig. 2. Placement Setting.

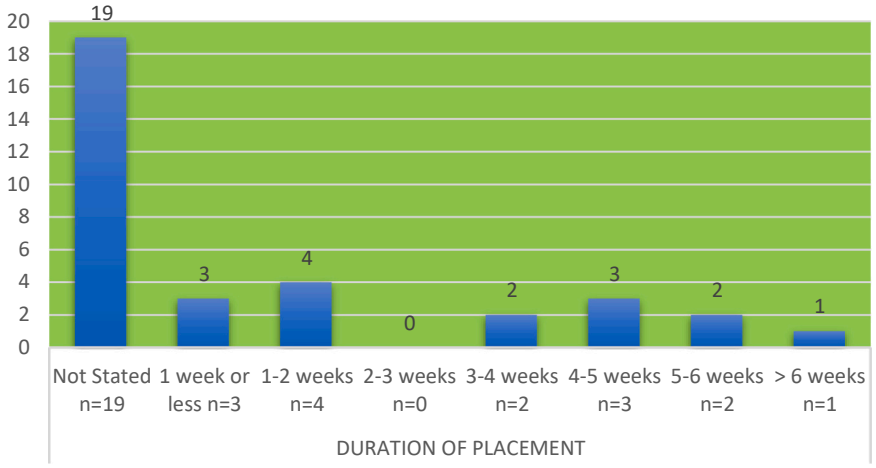

Fig. 3. Duration of Placement.

(Gokce and Betul, 2021; Peters et al., 2015).

Despite perceived benefits, many students expressed little interest in pursuing PHC nursing as a career (Bloomfield et al., 2015; Lewis et al., 2019; Sutherland et al., 2021). Contributing factors included being underprepared for diverse PHC placements (Sutherland et al., 2021) and an unfounded belief that newly qualified nurses should start their careers in tertiary facilities (Bloomfield et al., 2015). Furthermore, students identified at times feeling challenged by the lack of community resources, clarity of the student role and technology issues, which led to confusion and frustration (Valaitis et al., 2020). Students also discussed issues with inconsistent preceptor support (Zulu et al., 2021) and feeling important learning opportunities were lost because of the need to wait for preceptors to complete relevant paperwork (Williamson et al., 2020). Additionally, McInnes et al. (2015b) noted opportunities to practice clinical skills were at times limited, particularly if students did not feel integrated into the PHC team.

3.1.2. *Skills development and acquisition*

Students acquired an array of skills while on PHC placements, including technical and non-technical skills. Technical skills most commonly reported in the studies were wound care, medication administration, infection control procedures, taking vital observations and giving immunisations (Bloomfield et al., 2015; Miller-Rosser et al., 2019; Walsh and Mason, 2018). Several studies identified that many non-technical skills were uniquely cultivated in the PHC setting, offering opportunities that may be less accessible in the tertiary setting (Babenko-Mould et al., 2016; Bouchaud et al., 2018; Choi and Um, 2022; Hawkins et al., 2023; Lewis et al., 2019; McKenna et al., 2014; Miller-Rosser et al., 2019). These non-technical skills included effective communication, relationship-building with patients and interdisciplinary teams, self-reflection, awareness of personal biases, empathy, patient advocacy, decision-making, leadership and ability to work autonomously (Babenko-Mould et al., 2016; Bouchaud et al., 2018; Clark, 2022; Miller-Rosser et al., 2019; Phafoli et al., 2018; Snyder et al., 2022; Walsh and Mason, 2018). Critical thinking was also improved, as evidenced by refined analytical decision-making and increased autonomy, which were perceived as crucial to student learning (Donley and Norman, 2018).

In addition to the acquisition of technical and non-technical skills, students discovered the importance of patient education (Clark, 2022; Snyder et al., 2022; Walsh and Mason, 2018), chronic disease management and participating in health promotion and preventative illness activities (Lewis et al., 2019; Santos Falcón et al., 2019; Walsh and Mason, 2018), with many students taking on roles as educators and counsellors (Gale et al., 2016; Gokce and Betul, 2021; Lewis et al., 2019; Santos Falcón et al., 2019). While undertaking these dynamic roles during PHC placements, students recognised differing power dynamics between the nurse and patient relationship in the community setting, compared with the tertiary setting. They needed to develop creative approaches to collaborate with patients in decision-making processes that promoted patient empowerment (Merritt and Boogaerts, 2014). These skills are vital in building trust with patients and delivering a higher standard of person-centred care. Students also gained greater knowledge of patient care and deeper insight into the healthcare system (Bouchaud et al., 2018; Byfield et al., 2020).

3.1.3. *Nurse preceptor relationship*

For the purpose of this review, nurse preceptors are defined as registered nurses employed in PHC clinical settings who support nursing students by mentoring, teaching, assessing and offering feedback during placements (Trede et al., 2016). These nurses are typically clinicians who undertake patient care responsibilities, integrating supervision and education of students into their existing workloads (Bos et al., 2015b; Yonge, 2009).

Students consistently indicated that a strong preceptor relationship was critical for support during PHC placements (Babenko-Mould et al., 2016; Lewis et al., 2019; McInnes et al., 2015a; Santos Falcón et al., 2019). Preceptors were seen as role models with a positive preceptor-student relationship highly valued (Bos et al., 2015a; Cervera-Gasch et al., 2022). Lewis et al. (2019) reported 77 % of students rated their ability to develop a relationship with their nurse preceptor as a positive attribute of PHC placements. Positive preceptor-student relationships increased student motivation and learning, leading to greater student satisfaction (Gale et al., 2016; Lewis et al., 2019; McInnes et al., 2015a; Santos Falcón et al., 2019). Key enablers of effective PHC placement experiences included preceptor enthusiasm and supportive learning environments (McInnes et al., 2015b). Students particularly appreciated preceptors who showed genuine interest in their learning by providing assistance with skills competencies, knowledge development and gave effective constructive feedback (Peters et al., 2015; Serrano-Gallardo et al., 2016; Walsh and Mason, 2018).

While many students reported excellent relationships with their preceptors, some faced challenges due to inconsistent or insufficient preceptor support (Williamson et al., 2020; Zulu et al., 2021). At times, students felt preceptors' involvement on PHC placements did not match with the level of guidance and feedback in the tertiary settings due to less structure and interdisciplinary team dynamics, which often left students feeling overlooked and under-supported. (Byfield et al., 2020). Cervera-Gasch et al. (2022) also report that students noticed when preceptors were unhappy in their roles and burnout, potentially negatively impacting their placement experience.

3.1.4. Curriculum structure and preparation

Students highlighted the need for more detailed preparation and clarity about the nurses' and nursing students' role in PHC settings before embarking on these placements, as they are different to tertiary hospital placements (Babenko-Mould et al., 2016; Byfield et al., 2020; Calma et al., 2022a; McInnes et al., 2015a). Researchers identified a bias in curriculum towards the acute environment and tertiary care pathways, rather than PHC (Byfield et al., 2020; Lavery and Morrell-Scot, 2024). Students also acknowledged disparity between theoretical learning and practical field experience (Gokce and Betul, 2021; Lavery and Morrell-Scot, 2024). For example, students voiced concerns about violating patient privacy and encountering unwelcoming families, which stemmed from a lack of knowledge about what to expect on PHC placements (Gokce and Betul, 2021; Snyder et al., 2022).

Many students reported feeling unprepared for post-graduation nursing in PHC settings, particularly due to the demands of working autonomously, making independent decisions and a lack of time on PHC placements, which led to a lack of confidence (Lavery and Morrell-Scot, 2024; McInnes et al., 2015a). To address these issues, students expressed the need for more structured and comprehensive information to better prepare them for their placements (Williamson et al., 2020) as well as increased theoretical exposure and PHC placement time (Calma et al., 2022a, 2022b). Increased academic and pre-placement preparation was also recommended, such as role-playing, simulation, orientation to the placement setting and PHC skills training, especially for innovative PHC placements like street outreach (Snyder et al., 2022).

4. Discussion

Our aim in undertaking this scoping review was to critically analyse literature on undergraduate nursing students' perceptions, attitudes and experiences during PHC placements and identify factors influencing their satisfaction. The review identified gaps that will guide further research aimed at improving educational outcomes, shaping career intentions and addressing workforce shortages in PHC.

We identified that PHC placements are positively perceived; students appreciated the opportunity to apply theoretical knowledge to practice and develop clinical skills and knowledge. This aligns with attitudes toward placements in acute care settings, where clinical skills experiences are valued (Luders et al., 2021). However, inconsistencies in satisfaction levels among students regarding all clinical placements have been highlighted, with Cooper et al. (2020) noting a range of positive, ambivalent and negative experiences. These variations underscore the need for further research to more deeply understand the factors influencing nursing students' satisfaction during clinical placements. Notably, our findings revealed a lack of large-scale national data on nursing students' satisfaction levels specific to PHC placements, which prevents comparisons with placements across other healthcare sectors. This data is important for workforce planning, as understanding student satisfaction may inform strategies to attract and prepare future nurses for the PHC sector. Furthermore, limited evidence exists on how satisfaction varies across different PHC settings, such as General Practice and Community Health, suggesting a need for targeted research to identify areas for improvement and inform strategies to enhance students' satisfaction and engagement.

This review highlighted that PHC placements facilitate development of technical and non-technical skills among nursing students (Byfield et al., 2020). Notably, PHC experiences were more likely than tertiary placements to cultivate essential non-technical skills such as effective communication, relationship building, interprofessional collaboration, cultural sensitivity and holistic care (Miller-Rosser et al., 2019; Phafoli et al., 2018), reinforcing students' ability to work autonomously and make informed decisions (Phafoli et al., 2018). A possible explanation for this is the diverse and person-centred nature of PHC, which necessitates critical thinking and leadership skills (Michielsen et al., 2023). Although we previously identified that students felt unprepared for autonomous practice post-graduation, we argue that this finding may reflect short placement duration, limited support and curriculum insufficiencies, rather than the capacity of PHC settings to develop these skills. These findings have significant implications for nursing education, as non-technical skills are strongly linked to improving patient safety, sometimes surpassing the impact of technical competencies (Hargett et al., 2017). For example, Uramatsu et al. (2017) reported that 46.6 % of fatal medical accidents were attributed to deficiencies in non-technical skills, indicating that improving and addressing these skills can effectively enhance patient safety. Overall, this highlights the crucial role of PHC placements in shaping well-rounded, person-centred, safe and competent nursing graduates. However, the extent to which technical and non-technical skills prepare students for PHC placements, and which skills should be developed prior to PHC placements, warrants further investigation.

The significant role of nurse preceptors in shaping students' clinical experiences by providing guidance, structure and cultivating a supportive learning environment was an important finding in our review (Lewis et al., 2019; McInnes et al., 2015a). These qualities were essential for skill development, integration into the interdisciplinary team and building students' confidence. This is especially important in PHC where nurses often work independently, make autonomous decisions and collaborate with other health professionals to provide comprehensive patient care (Cassiani et al., 2018). Baglin and Rugg (2010) argue close preceptor relationships maximise educational opportunities and Baldwin et al. (2014) highlighted nurse preceptors are critical in enhancing students' motivation and self-confidence. However, our review also identified instances of inconsistent support from preceptors (Williamson et al., 2020; Zulu et al., 2021), leaving students feeling overlooked, uninspired and disconnected from the team (Byfield et al., 2020). Such experiences adversely influence students' perceptions of PHC as a viable career pathway (André et al., 2023; Gill Meeley, 2021). These inconsistencies may stem from high workloads and limited preceptor training in student support (Pérez-Francisco et al., 2020). Students may also enter PHC placements with preconceived expectations, shaped by their experiences in the tertiary sector, where clinical educators are typically dedicated solely to supporting students. In contrast, PHC preceptors often manage a full clinical workload in conjunction with student supervision, teaching and support (Bos et al., 2015b). This structural workload difference may lead to a mismatch between students' expectations and the realities of preceptorship in PHC, contributing to perceptions of inadequate support. The inconsistent relationships and dynamics between nursing students and preceptors, on PHC clinical placements, calls for further research into strategies to optimise these relationships and promote positive learning environments, ultimately strengthening placement experiences and the future PHC nursing workforce.

Our analysis identified limited exposure to PHC during undergraduate nursing education and insufficient preparation through academic curricula leaves students entering placements without a clear understanding of the PHC sector or the roles and scope of nurses and student nurses in this field. These findings align with Gill Meeley (2021) and Kako et al. (2024), who also reported inadequate understanding and preparation for PHC placements among students. This lack of preparation leads to feelings of confusion and frustration, potentially resulting in disengagement during placements. Conversely, when students feel well-prepared for PHC placements, they are more likely to have positive experiences, gain confidence in their abilities and potentially be more inclined to pursue careers in the PHC sector (Bloomfield et al., 2018; Calma et al., 2019, 2021; Lewis et al., 2019; McKenna et al., 2014). These findings suggest that more effective integration of PHC-specific content and pedagogical approaches in nursing education could enhance student preparedness for clinical placements. A comprehensive exploration of both preceptor and student perceptions of the PHC curriculum could inform practical recommendations for improving undergraduate education and aligning it more closely with placement

expectations, ultimately enriching the learning experience and encouraging stronger career intentions in the PHC sector.

The need to increase the PHC nursing workforce is crucial for ensuring its sustainability to meet growing healthcare demands. Undertaking this scoping review offers valuable insights into undergraduate nursing students' perceptions, attitudes and experiences during PHC placements. Our findings identify several factors influencing satisfaction, including quality of supervision, development of non-technical skills and adequacy of curricular preparation. Despite the potential of positive PHC placements, knowledge gaps remain. Future research should focus on generating consistent, high-quality data on student satisfaction, examining variations in experiences across PHC settings, exploring the impact of preceptor relationships and strategies to strengthen them and enhancing the integration of PHC content in nursing curricula. Addressing these gaps is essential for aligning PHC education with workforce demands, enhancing student satisfaction and encouraging future career intentions in PHC.

5. Limitations

We used systematic processes of searching, extracting and analysing data to ensure a comprehensive and methodical approach. We restricted our search to studies published in English, which may have introduced selection bias by excluding relevant studies in other languages. This may limit the generalisability of findings due to relevant perspectives or data from other contexts being excluded. Similarly, terminology for PHC placements is vast and varies between countries. To minimise the risk of missing relevant studies, the search strategies incorporated a broad range of spelling and alternative terms, however some may have been inadvertently omitted.

Additionally, the review included four key databases, which were chosen for their comprehensive coverage of nursing and health research, including primary health care, public health and community healthcare. Grey literature was also included to capture additional perspectives and further reduce bias.

6. Recommendations for future research

Gaps in knowledge and understanding of the students' experiences remain, which highlights the need for additional research. Studies should include large-scale research on satisfaction with PHC placements compared with other clinical settings, variations across different PHC placement types, how the academic curriculum prepares students for PHC placements and ways to enhance preceptor-student relationships. Addressing these gaps through further research is essential to improve student experiences, align education with workforce needs and strengthen the future PHC nursing workforce.

7. Conclusion

This scoping review highlights important findings regarding nursing students' perceptions, attitudes and experiences during PHC placements, revealing both positive outcomes and critical areas for improvement. Students viewed PHC placements as beneficial for developing unique skills and knowledge distinct from tertiary settings. However, key factors influencing their experiences and satisfaction include quality of nurse preceptor relationships, integration of specific PHC content in curricula and adequate preparation for placements. These findings can inform education providers and workforce planners by highlighting areas where targeted strategies are needed to improve placement and education quality, better preparing students for PHC careers.

Ethical approval

Ethical approval was not required for this review as the data were extracted from published articles and no individual information was identified or included.

CRediT authorship contribution statement

Debbie Massey: Writing – review & editing, Visualization, Validation, Supervision, Methodology, Formal analysis, Data curation, Conceptualization. **Karen Strickland:** Writing – review & editing, Visualization, Validation, Supervision, Project administration, Methodology, Formal analysis, Data curation, Conceptualization. **Debbie Procter:** Writing – review & editing, Writing – original draft, Visualization, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Kylie McCullough:** Writing – review & editing, Validation, Supervision, Methodology, Formal analysis, Data curation.

Declaration of Competing Interest

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Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.nepr.2025.104434.

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