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Factors influencing the development and implementation of nurse practitioner candidacy programs: A scoping review

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ABSTRACT

Background: To meet the growing needs of a diverse population, it is critical that healthcare service provision is underpinned by innovative, cost-effective, and sustainable services and solutions. The role of the nurse practitioner creates an opportunity to meet the increasing demands of complex care and enables greater access to high quality care. Understanding how best to support nurse practitioner candidates to develop into the nurse practitioner role will create greater opportunities to transform service delivery and improve healthcare outcomes.

Aim: To identify key factors that support and positively impact the implementation of nurse practitioner candidacy programs and candidate experiences.

Methods: A scoping review of research and grey literature was conducted using Joanna Briggs Institute methodology. For the research literature, eight electronic databases (Embase, Medline, CINAHL, Web of Science, Cochrane Library, Joanna Briggs Institute, PubMed and PsycINFO) were searched followed by a hand search of the reference lists of published systematic reviews and relevant topical papers. A review of national and international grey literature sources was completed.

Findings: Identification of a service gap, developing and promoting a clear role for the nurse practitioner candidate, integration into a multi-disciplinary team with strong mentorship/preceptorship support, continuing professional development, and evaluation of the program were identified as key factors in the research and grey literature.

Conclusion: A well-designed candidacy program can facilitate transition of the candidate into an autonomous, fully independent nurse practitioner. Recommendations to support the implementation of these roles into the clinical setting have been generated.

Tweetable abstract: Key to nurse practitioner candidate programs: Identification of a service gap, clear role, integration, mentorship, training and evaluation

What is already known

- Nurse practitioner roles improve access to health care for marginalised and disadvantaged populations.
- While nurse practitioners are well established in some countries (USA & Canada), there are low numbers of nurse practitioners in countries such as Australia and New Zealand.
- Understanding how to develop and support nurse practitioner candidacy roles is critical to ensuring that nurse practitioner roles are created to meet healthcare needs within services and organisations.

What this paper adds

- Key factors in supporting the development of nurse practitioner roles are identification of a service gap, developing and promoting a clear role for the nurse practitioner candidate, integration into a multi-disciplinary team with strong mentorship/preceptorship support, continuing professional development, and evaluation of the program.

1. Background

The ability of a health care system to meet the evolving and often complex healthcare needs of a population is a critical fea-

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ture. Activities which are innovative, cost-effective, and sustainable must underpin future planning to minimise the economic burden (Sustainable Health Review 2019). Ensuring that the needs of people who are marginalised and/or disadvantaged by geography, culture, or the social determinants of health, the aged, and those with mental health needs and multiple chronic diseases are addressed equitably, is vital (Australian College of Nursing (ACN). 2019). The role of nurse practitioners, a well-established profession in some countries and emerging in others, creates an opportunity to meet increasing demands for, and access to, high quality care. Nurse practitioners provide cost-effective services through disease prevention and mitigation of disease progression, timely management of existing health issues, and provide a continuum of care (KPMG 2018; Rheumatic Heart Disease Australia 2015; Bahouth et al., 2013). Further to the clinical aspects of the role, high level leadership, effective management, critical thinking and decision-making skills, and involvement in research activities should also be developed (Kerr and Macaskill, 2020; Bryant, 2018; Queensland Health 2018; NHS Highland 2017).

Key to developing the role and impact of nurse practitioners is their ongoing training and development. A nurse practitioner candidate is described as a nurse employed in a designated position within the health sector working towards nurse practitioner endorsement. The duration of candidacy is variable and determined at a local level. Understanding how best to develop and support the nurse practitioner role is critical to ensuring that nurse practitioner roles are created to meet healthcare needs within communities and that candidates are supported to become autonomous nurse practitioners, working to the full extent of their scope of practice. Research into the development of nurse practitioner roles and the transition of registered nurses to nurse practitioners is limited. This review considered literature on candidacy models or newly graduated student (novice) programs for health professionals including nurse practitioners, junior medical staff, and podiatrists. These professions were deemed to have comparable programs to the novice nurse practitioner and nurse practitioner candidate roles. The research and grey literature were synthesised to better understand the key factors that support and impact candidacy programs and influence the experiences of candidates.

2. Methods

2.1. Eligibility criteria

2.1.1. Study design

Randomised controlled trials, experimental studies, observational, descriptive designs, qualitative research, and grey literature were considered for inclusion in this review.

2.1.2. Types of studies

Literature examining the elements of student candidacy models or newly graduated student programs for nurse practitioners and those professions deemed to have comparable transitional programs (junior medical staff, and podiatrists) were included. Topics covered within the programs could include, but were not limited to, mentoring, role description and expectations, role transition, candidate identification and attributes, implementation strategies, risks, benefits, and funding models. The models or programs could be based in any health setting, including acute hospitals and outpatient and/or community practice, inclusive of general practice. Studies were excluded if they were not published in English or had a primary focus on care models rather than discussions on overarching programs which included processes and outcomes.

2.2. Search methods for inclusion of studies

2.2.1. Electronic searches

An initial scoping review was performed to identify gaps within the literature. A search of Medline and Google Scholar served to identify additional keywords for the search strategy. Terms related to nurse practitioner, medical or podiatry professions ('nurse practitioner*', 'nurse practitioner', 'JMO', 'junior medical officer*', 'podiatri*'); terms related to candidacy models ('candidac*', 'candidate*', 'advance* practice*', 'framework*', 'model*'); and terms related to the elements within candidacy programmes ('mentor*', 'role*', 'role transition*', 'candidat* identif*', 'attribute*', 'characteris*', 'expectation*', 'implement*', 'strateg*', 'risk*', 'benefit*', 'success*', 'barrier*', 'fund* model*) were used to identify further key terms. We trialled the initial search strategy which included a search using terms related to advanced practice nursing. The first 1000 records returned were reviewed. No papers were found that related to nurse practitioners and were not already included in the search restricted to nurse practitioners." Once all terms were agreed upon by all authors, concepts were combined with Boolean operators 'AND' and 'OR'. (See Supplementary File 1 for the full search strategy).

A three-step search process was implemented. The initial studies were identified through a systematic search of eight electronic databases (Embase, Medline, CINAHL, Web of Science, Cochrane Library, Joanna Briggs Institute (JBI), PubMed and PsycINFO) in October 2020. A hand search was conducted from reference lists of published systematic reviews and relevant topical papers. A grey literature search strategy, was used to complement the research literature, and was framed by four key stages:

- *Stage 1* incorporated consultation with content experts to provide context regarding role implementation and utilisation within local tertiary hospitals and primary healthcare settings. Discussions with key personnel were used to inform and supplement the electronic database search of peer-reviewed, primary research.
- *Stage 2* involved contacting key state/territory allied health and national regulatory bodies to determine equivalent candidacy programs and formalise inclusion. The allied health review included the departments of physiotherapy, occupational therapy, social work, pharmacy, speech therapy, dietetics, and podiatry. Although, many of these professions incorporated variations of advanced practice (for example, physiotherapy and pharmacy), all allied health programs reviewed or discussed, except for podiatry, lacked formal recognition by the Australian Health Practitioner Regulation Authority (AHPRA). Confirmation of a candidacy program for advanced practice in podiatry which included prescribing medications was provided via the Podiatry Board of Australia and AHPRA, therefore, podiatrists were included in the formal database and grey literature search strategy.
- *Stage 3*: International regulatory bodies in countries with reciprocal registration agreements with Australia: New Zealand, Ireland, the United States of America, Canada, and Scotland were contacted; however following communication with these key organisations, it was determined that these regulatory bodies had not developed specific nurse practitioner candidacy frameworks. Variations of novice nurse practitioner and nurse practitioner frameworks were found embedded within specific health services.
- *Stage 4* involved a review of grey literature websites with focus placed on nurse practitioner candidacy and nurse practitioner frameworks; no timeframe parameters were used. OpenGrey, government reports and documents, open access theses, and an advanced google website search was undertaken.

All references were exported into Endnote X9 citation manager where duplicates were removed (Clarivate Analytics 2019). Title screening was performed by two independent reviewers within Endnote X9 (Clarivate Analytics 2019). Abstract screening was then completed independently by two reviewers in the online platform Rayyan (Mourad et al., 2016). Studies were deemed appropriate for a full-text analysis if the a priori eligibility criteria were addressed. Full text screening was undertaken by three independent reviewers.

2.3. Data extraction

Data were extracted from relevant studies utilising an adapted version of the JBI standardised data extraction tool by three independent research members (Joanna Briggs Institute 2017). Data extracted included country, study design, sample size, sample demographics, setting, type of program (specific to profession), data collection methods, and details on the topics covered within programs or models.

2.4. Data synthesis

Data extracted from each study were narratively synthesised by three independent research members. Study characteristics of included literature are displayed in Supplementary File 2.

3. Results

A total of 55,165 references were retrieved. After duplicates were removed, a total of 34,980 references remained for title screening. Of these, 926 titles were accepted by both reviewers and abstracts were assessed, with 249 abstracts meeting the eligibility criteria. A further 190 items were excluded at full text review as not meeting the inclusion criteria. Reasons for exclusion included incorrect cohort ($n = 76$), did not address inclusion criteria relating to candidacy programs ($n = 97$), and lack of access to full text articles ($n = 17$). A total of 22 peer-reviewed articles were included in the database review. Four research papers reported on the experience of being a nurse practitioner (Barton, 2006; Heitz et al., 2004; Padilla and Kreider, 2020; Steiner et al., 2008), twelve papers on the experience of being a novice nurse practitioner (Brown and Olshansky, 1997; Chang et al., 2006; Faraz, 2017; Faraz, 2019; Jackson, 2020; Kelly and Mathews, 2001; Maten-Speksnijder et al., 2015; Owens, 2018; Sargent and Olmedo, 2013; Sullivan-Bentz et al., 2010; Thabault et al., 2015; Burgess et al., 2011), and six from a medical registrar perspective (Caiola and Litaker, 2000; Gordon et al., 2020; Hartzell et al., 2009; McGrath et al., 2017; Mushin et al., 1993; Owen et al., 2011). Thirty-seven pieces of grey literature met eligibility criteria and were included (KPMG 2018; Rheumatic Heart Disease Australia 2015; Bahouth et al., 2013; Kerr and Macaskill, 2020; Bryant, 2018; Queensland Health 2018; NHS Highland 2017; Plath et al., 2019; Adams and Carryer, 2019; Austin Health 2020; Government of South Australia 2010; Capital and Coast District Health Board 2021; Coward, 2013; Southern District Health Board 2021; Rural Northwest Health 2016; Faraz, 2015; Masso and Thompson, 2014; The University of Auckland 2019; Morgan, 2006; Goudreau et al., 2011; Podiatry Board of Australia 2020; Watts et al., 1996; Cusson and Viggiano, 2002; Sloand et al., 1998; Schwartz, 2019; Contandriopoulos et al., 2015; Wing, 1998; National Council for the Professional Development of Nursing and Midwifery 2007; Bury, 2016; Watson, 2008; De Geest et al., 2008; Delaney et al., 2019; Hayes, 1998; Alencar et al., 2018; Camal Sanchez, 2018; Martsolf and Sochalski, 2019; Painter et al., 2019). See Fig. 1.

The findings and recommendations from the research and grey literature were complementary. The results are presented in three sections: factors which facilitate role development and transition, barriers to role development and transition, and evaluating the role. Results for nurse practitioner candidates, novice nurse practitioners, medical registrars and podiatrists are synthesised within these sections.

3.1. Factors which facilitate role development and transition

There were several factors identified in the review that contribute to role development and transition for both nurse practitioner candidates and nurse practitioner candidates. These include identity development, mentorship, support from colleagues, and opportunities for growth and development.

3.1.1. Identity development

amongst novice nurse practitioner, facilitators in the process of transitioning into the nurse practitioner role related to the key stages of role acquisition, role recognition, role inclusion, role contribution and role alliance. Novice nurse practitioners described the importance of clarifying the position requirement, understanding what was required of them in the role, what areas they needed to upskill in, and establishing a support system (Chang et al., 2006). Novice nurse practitioners described the development of new types of relationships and models of working with colleagues as supporting their transition and identity development. They developed a clear picture of themselves as nurse practitioners, underpinned by a dynamic interrelationship between growth in competence gained through increase in knowledge and opportunities for repeated experiences, and a growth in confidence (Brown and Olshansky, 1997). Growth in confidence was related to positive feedback from physicians (Maten-Speksnijder et al., 2015) and patients (Brown and Olshansky, 1997; Maten-Speksnijder et al., 2015) and engagement with patients and communities as key partners (Burgess et al., 2011).

Novice nurse practitioners felt closely connected to physicians who were often described as key personnel they interacted with about their new role (Owens, 2018). Being recognised as providing healthcare that differed to the care provided by an registered nurse by patients, nursing staff and other providers reinforced their perceptions of themselves operating as independent nurse practitioners (Owens, 2018). The development of mutual trust with medical staff was described as vital in helping the novice nurse practitioner transition to an autonomous nurse practitioner role (Chang et al., 2006). Novice nurse practitioners described their interactions with nurses as “improved” when the nurse practitioner model of practice was better understood (Chang et al., 2006). The utilisation of the nurse practitioner role by other professions underpinned a sense of role inclusion (Burgess et al., 2011). Promotion and marketing were suggested to ensure that clarity of role and a heightened sense of awareness of nurse practitioner candidate positions were achieved (Plath et al., 2019). This is reported to lessen role ambiguity while also providing a clear vision and an understanding by all team members (KPMG 2018).

The stages of role contribution and alliance developed over time, and as nurse practitioners became more confident in their capacity and role within the team. Nurse practitioners increasingly partnered with researchers and evaluators to develop systems to track client care, assess outcomes and value add (Burgess et al., 2011). Nurse practitioners developed and affirmed their capabilities within the larger system through an understanding of where their practice fitted within the system (Brown and Olshansky, 1997). As nurse practitioners transitioned in their role they became involved in the politics of employment, some engaging in local and state nurse practitioner activities (Brown and Olshansky, 1997). Nurse practitioners engaged with policy leads and external lead-

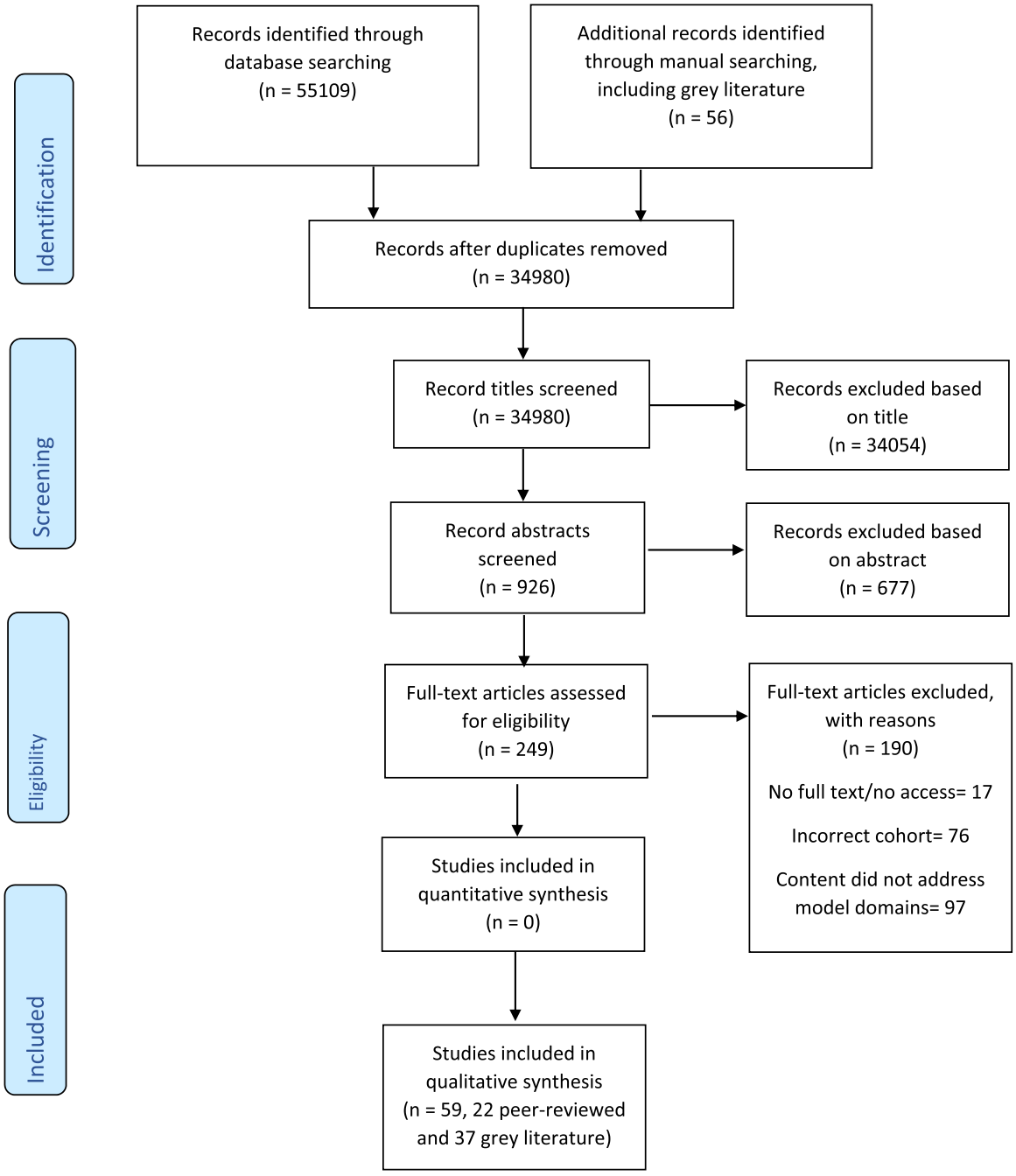

Fig. 1. Prisma flow diagram.

ers to contribute to local practice innovations through representation in health programs and strategic planning (Burgess et al., 2011). amongst nurse practitioner candidates, maintaining a positive attitude was important to facilitate role identity and confidence (Heitz et al., 2004). Nurse practitioner candidates described the value of internal reinforcement through optimistic self-talk, for example reminding themselves that feeling challenged is part of the growth process (Heitz et al., 2004). Nurse practitioner candidates also described the importance of recognising that they were transitioning from a registered nurse to an nurse practitioner role and that they needed to "let go" of their registered nurse role (Heitz et al., 2004).

3.1.2. Mentorship

The development and implementation of mentoring and preceptorship within programs involving nurse practitioner candidates and novice nurse practitioner, medical and podiatry health professionals were considered to be critical to success (Kerr and Macaskill, 2020; Bryant, 2018; Adams and Carryer, 2019; Wing, 1998; Alencar et al., 2018). Support received by mentors was associated with enhanced job satisfaction and retention (Faraz, 2015), provided emotional and social support to build confidence and assisted with overall acceptance of the nurse practitioner candidate or novice nurse practitioner role within a service (Kerr and Macaskill, 2020; Faraz, 2015). Mentorship amongst nurse practitioner candidates was described as important in role devel-

opment (Barton, 2006; Steiner et al., 2008), in building skills and confidence through setting daily goals (Padilla and Kreider, 2020), and through guidance and role modelling (Heitz et al., 2004). Key to the relationships with mentors/preceptors was regular contact. Mentors provided support during role transition (Owens, 2018), significant moral and spiritual support, and the opportunity for consultation and guidance on clinical problems and were highly valued (Chang et al., 2006; Thabault et al., 2015). The availability of a mentor was also identified as important or very important by the majority ($n = 93$, 85%) of general medical interns when choosing a fellowship program (Caiola and Litaker, 2000).

During the early stages of nurse practitioner candidacy, or employment post-graduation, the student or novice nurse practitioner was described as transitioning from a more theory-based role. Previous learnings were well established and behaviours familiar. During the transition period an acute paradigm shift often occurred; the application of critical thinking and active participation in direct patient care was now an expectation (Wing, 1998). During the initial stages, nurse practitioners described experiencing frustration, isolation, insecurity, and a lack of confidence in their decision-making abilities (Cusson and Viggiano, 2002). Having a pre-determined mechanism of support in place was described as an important factor (Kerr and Macaskill, 2020).

Novice nurse practitioners called for more structured support and for nurse practitioner qualified mentors/preceptors to support clinic sessions (Sargent and Olmedo, 2013). Mentors and preceptors who had received additional training and support reported valuing the content and tools provided to them to support novice nurse practitioners. Learning the phases and functions of mentorship was reported to increase their perceived readiness to mentor novice nurse practitioners (Jackson, 2020). Sullivan-Bentz et al. (2010) noted that employers described as “experienced” in the support of novice nurse practitioners were more likely to arrange mentoring support for novice nurse practitioners. Of interest, Faraz (2017) highlighted the importance of achieving a balance between support from mentor/preceptors and nurse practitioners being given autonomy to develop and extend their scope of practice of nurse practitioners who were given autonomy expressed satisfaction but also acknowledged the need for additional support with more complex patients (Faraz, 2019).

The selection of an appropriate mentor to support novice nurse practitioners was highlighted as an integral feature of program success (Rheumatic Heart Disease Australia 2015; Government of South Australia 2010). This was influenced by several factors; sufficient time to provide mentorship; the degree of expertise they possess within a clinical area, and the level of coaching skills required as the nurse practitioner develops (Alencar et al., 2018). In one podiatry program, a formal mentoring arrangement was entered into via a signed agreement between the podiatrist and the authorised mentor (Podiatry Board of Australia 2020). Consideration was given to whether the mentor met the professional credentialing required to achieve approval from a regulatory body (AHPRA) (Podiatry Board of Australia 2020). An effective mentor/preceptor is described as having a clear understanding of the nurse practitioner candidate or novice nurse practitioner role, awareness of the candidate’s course outline, the strengths and weaknesses within the setting which could impact progress, and an awareness of what skills could be achieved during placement (Bahouth et al., 2013; Sloand et al., 1998).

Mentoring has been described as a long-term relationship (Cusson and Viggiano, 2002; Hayes, 1998), however, in contrast, Camal Sanchez (2018) described the preceptor role as being limited to placement location and therefore somewhat short-term. Having insufficient time to formalise a relationship impacted the socialisation of the nurse practitioner candidate and whilst no definitive time frames were provided in the literature, adequate time to build a relationship was an important factor (Hayes, 1998).

Physicians play a critical part in mentoring, frequently functioning as the primary mentor for novice nurse practitioners. (Barton, 2006; Steiner et al., 2008; Rural Northwest Health 2016; Faraz, 2015; Masso and Thompson, 2014; Cusson and Viggiano, 2002) Working with physicians was seen to facilitate a greater acceptance of the nurse practitioner role and enhance the overall contribution and impact achieved during a placement (Masso and Thompson, 2014). Recommendations regarding mentor selection, however, were not limited to physicians and in some circumstances, more than one mentor may be required (Government of South Australia 2010). For novice nurse practitioners, a combination of physicians and nurse practitioners often held the role of mentor/preceptor; a mix of professions to support the transition phase was valued (Chang et al., 2006; Faraz, 2017; Faraz, 2019; Jackson, 2020; Kelly and Mathews, 2001; Owens, 2018; Sargent and Olmedo, 2013; Sullivan-Bentz et al., 2010; Thabault et al., 2015). Alternative options for mentor selection were suggested such as an academic nurse practitioner (Capital and Coast District Health Board 2021; The University of Auckland 2019), social workers, pharmacists, the chaplain (Camal Sanchez, 2018), clinical multidisciplinary team members (Rheumatic Heart Disease Australia 2015), the unit nurse manager (Coward, 2013; Wing, 1998), project support officers (Coward, 2013) and community-based cultural mentors in rural and remote settings (Morgan, 2006). Two documents described the use of external mentoring companies to provide additional support in settings where a lack of suitable personnel were available (Capital and Coast District Health Board 2021; Delaney et al., 2019). The mentorship provided by the Director of Nursing within a setting or site was highlighted in relation to role and position support, leadership, and assistance with the preparation of documents required for nurse practitioner endorsement (For example, the nurse practitioner candidate portfolio and panel review preparation) (Adams and Carryer, 2019; Capital and Coast District Health Board 2021; Coward, 2013; Southern District Health Board 2021). One study reported that contact with a Director of Nursing should occur every three months (Capital and Coast District Health Board 2021), while another advocated once every six months throughout a program and also two months prior to program completion (Coward, 2013).

The mentor/preceptor role was associated with a broad range of roles as the nurse practitioner candidate developed into an advanced and autonomous practitioner (Austin Health 2020). These included providing best-practice education, bolstering management skills, providing advocacy, and promoting clinical leadership (Austin Health 2020) while facilitating the completion of the nurse practitioner portfolio, required for endorsement at program completion (Adams and Carryer, 2019; Southern District Health Board 2021; The University of Auckland 2019 Assistance with this portfolio of evidence via the mentor was also described in the Australian podiatry program which provided podiatrists with prescribing authority when endorsement was achieved (Podiatry Board of Australia 2020). Sloand et al. (1998) recommended that the preceptor orientates the novice nurse practitioner to the key staff operating within a setting or location including discussing the specific roles that each staff member performs to minimise ambiguity and role overlap. In one New Zealand report, mentors served to assist the nurse practitioner candidate with mock panel assessments and the registration processes required by the Nursing Council (The University of Auckland 2019). On a professional level, mentors provided personal and emotional support, and routinely offered career guidance (Queensland. Department of Health, 2018) (Queensland Health 2018). Contandriopoulos et al. (2015) emphasised the importance of didactic learning strategies and advised that regular discussions on patient case studies, scenario building and clinical

and organisational issues that were being experienced by the nurse practitioner candidate (or in preparation for) should be included during mentor contact.

Although the original model for mentoring and preceptorship was reliant on in-kind support (Delaney et al., 2019), alternative options were also identified. These included financial compensation in exchange for mentorship (Sloand et al., 1998; Delaney et al., 2019). One example described funding sourced from the student nurse practitioners faculty or institution and distributed to the mentor/preceptor to secure their services (approximately $2000 USD) (Delaney et al., 2019). However, in articles where additional monetary payments were described, there was potential for conflict to arise as a result of variation in compensation from those who do not receive payment (Delaney et al., 2019). Furthermore, if payments are made to secure the mentoring/precepting services, there is risk that students may request specific persons and/or working schedules; individual contracts for payments may also need to be drawn up (Delaney et al., 2019). Alternative arrangements for non-monetary payment included income tax credits, employment of the nurse practitioner candidate in the practicum location following placement completion, educational credits, letters of recognition, access to additional setting facilities (such as the library services and associated resourcing), and access to site conferences (Sloand et al., 1998).

3.1.3. Support from colleagues

In addition to mentorship/preceptorship, general support from colleagues and others is integral to the success of the nurse practitioner role. New nurse practitioners described the importance of support from colleagues, especially the medical director, collaborating physicians and fellow nurse practitioners (Faraz, 2019). Nurse practitioners also described developing their own networks of support with other nurse practitioners and meeting on a semi-structured or informal basis to provide each other with educational support and offer professional sharing (Kelly and Mathews, 2001).

Burgess et al. (2011) reported that novice nurse practitioners felt able to work to their full scope of practice when they were able to partner with managers and leaders. When novice nurse practitioners felt supported to work to their full scope of practice they felt autonomous, respected, trusted and valued (Owens, 2018) and a sense of autonomy was linked to a lower intention to leave (Faraz, 2017). For interns, the value of a culture of support within the workplace that facilitated being able to ask colleagues for help was linked to psychological safety in the workplace (Gordon et al., 2020). Amongst nurse practitioner candidates, support and guidance from academic staff, in addition to the support of co-workers and family were described as important (Heitz et al., 2004).

The transition of the nurse practitioner candidate or novice nurse practitioner can be enhanced by several key health professionals. The site nurse manager and the physician were seen as critical to successful transitioning (Watts et al., 1996; Wing, 1998). Where nurse managers were involved in nurse practitioner meetings or site communications, the nurse practitioner role and associated scope of practice were better understood by multidisciplinary team members (Contandriopoulos et al., 2015), nurse managers were critical in creating a supportive environment for nurse practitioner to practice in (Masso and Thompson, 2014), and in assisting with the transition of the student nurse practitioner from theory-based to advanced clinical practice (Wing, 1998). Watts et al. (1996) described the nurse manager as being instrumental in the embedment of the nurse practitioner into a setting as they were able to act as change agents (Contandriopoulos et al., 2015). Plath et al. (2019) advised that the nurse manager provided support to the nurse practitioners by participating in stakeholders' committees or in working parties which served to promote the nurse practitioner role across the site.

The identification of a nurse practitioner leader was highlighted as being important in supporting role implementation and nurse practitioner candidate progression and development (Bahouth et al., 2013; Capital and Coast District Health Board 2021). Championing of the nurse practitioner role and ensuring that a full expansion of skill set was recognised was identified as being pivotal in avoiding underutilisation (Adams and Carryer, 2019). Adams and Carryer (2019) described the nurse practitioner leader as playing a critical role in supporting the transition pathway from registered nurse to nurse practitioner, securing educational pathways via non-clinical contact (to enhance management and leadership skills and participate in research activities), and acquiring funding for ongoing positions. The nurse practitioner leader also served to ensure that a broad scope of practice was maintained whilst acting as a conduit to enhance inter-professional collaborations amongst staff within a setting (Adams and Carryer, 2019). Moreover, they championed the nurse practitioner role, enhanced nurse practitioner socialisation and the subsequent acceptance of the new staff member during placement (Bahouth et al., 2013; Adams and Carryer, 2019; Capital and Coast District Health Board 2021).

Acceptance of the nurse practitioner role by site administrators and executives was identified as being a critical feature of nurse practitioner role implementation (Bahouth et al., 2013). To assist with this process, the nurse practitioner leader can facilitate enhanced rapport between executive personnel and nurse practitioner candidates, and create heightened understanding of the nurse practitioner role and promote acceptability (Bahouth et al., 2013). The nurse practitioner leader was also identified as being able to simplify recruitment processes, increase awareness of the nurse practitioner contributions within an area, identify suitable potential mentors (Government of South Australia 2010) and facilitate credentialing of the nurse practitioner candidate (Bahouth et al., 2013).

Socialising of the nurse practitioner candidate or novice nurse practitioner was reported as facilitating an acceptance amongst the clinical team. Kerr and Macaskill (2020) described this as a form of networking to positively influence communications whilst also enhancing collegial support. Socialisation of the nurse practitioner candidate may be undertaken by the mentor, the nurse practitioner leader, the preceptor, the physician, the medical champion (of nurse practitioners), or the steering committee who work to progress the nurse practitioner role within a setting (Kerr and Macaskill, 2020; Goudreau et al., 2011; Sloand et al., 1998; Wing, 1998; Hayes, 1998; Alencar et al., 2018; Camal Sanchez, 2018).

To enhance acceptance, the identification of a health service need was described as a significant feature in the successful introduction and integration of nurse practitioner services in Canada (Masso and Thompson, 2014). This finding was also supported in a United Kingdom nurse practitioner candidate framework (National Council for the Professional Development of Nursing and Midwifery 2007) and a paper (Bahouth et al., 2013) that recommended the use of strengths, weaknesses, opportunities and threats analysis to structure the approach. Acceptance of the nurse practitioner role by medical staff were described as critical to effective transitioning of the nurse practitioner candidate/novice nurse practitioner (Masso and Thompson, 2014). This was typically supported by physicians when a gap in service had been identified and accepted by the medical staff (Plath et al., 2019).

Faraz (2015) described the perceived competency of the nurse practitioner candidate/novice nurse practitioner and nurse practitioner by the collaborating physician, as heavily impacting nurse practitioner role transition, in terms of acceptance. To bolster the medical and nurse practitioner relationship, a number of activities were identified; these were designed to increase communications and included weekly journal club meetings with medical staff,

participation in grand rounds and formal presentations, regular patient case review, and attendance at morbidity or mortality meetings (Camal Sanchez, 2018).

3.1.4. Opportunities for professional growth and development

Opportunities for professional growth and development were important to newly graduated nurse practitioners. They enjoyed opportunities to learn within environments that supported collegiality and where asking questions and teaching others was promoted (Faraz, 2019). Novice nurse practitioners expressed a need to learn new skills, increase their knowledge and expand roles that they saw as critical in successfully transitioning their professional identity into the role of nurse practitioner (Owens, 2018). Ongoing learning was described as vital to providing safe patient care (Owens, 2018). Activities that supported effective communication, understanding organisational strategies, and an enhanced understanding of the organisation as a system, enabled nurse practitioners to determine how to implement change more effectively (Thabault et al., 2015). Novice nurse practitioners also valued discussion forums to talk about complex cases and to support ethical decision-making (Sargent and Olmedo, 2013). For nurse practitioner candidates inclusion in academic activities, case studies and laboratories were seen as important to support transition (Heitz et al., 2004).

Opportunities for professional growth and development were also valued by medical interns. In selecting a fellowship program, interns rated protected time for research or teaching as important or very important (81%), as well as support more generally for research activities (79%) (Gordon et al., 2020). Opportunities for growth through attending consultant meetings and being included in emails were described as supporting the participants to engage in the workplace context (Gordon et al., 2020). Where educational opportunities were not readily available, trainees described creating their own by seeking opportunities such as attending meetings (Gordon et al., 2020). Hartzell et al. (2009) employed an adult learning theory approach with residents to identify their learning goals and support needs. Residents developed a journal club and were encouraged to identify topics; faculty members and sub-speciality staff were invited to attend sessions as needed (Hartzell et al., 2009). The outcomes included residents' appreciation for how senior staff approach and use literature and the opportunity for residents to meet a broad range of staff; while the attendance of general internal medicine fellows ensured that an expert was available to teach critical appraisal skills and biostatistics (Hartzell et al., 2009).

A comprehensive orientation program at the start of the residency program was described as important for new resident doctors (McGrath et al., 2017), The orientation program included getting to know each other, familiarising interns with hospital and department policies, becoming acquainted with additional staff working within the department, administrative tasks and chores, promotion of a positive working environment, team building, teaching new skills and new knowledge (McGrath et al., 2017). Residents described the importance of having time for an orientation curriculum for bonding and socialisation (McGrath et al., 2017). They valued dedicated time to be introduced to their care delivery system and expectations of the program (McGrath et al., 2017).

A resident assistance program that included time management, interactions with nurses, discussion of ethical issues, issues surrounding the difficult patient, the difficult family, management of medical mistakes and interaction with senior staff was reported as supporting residents to successfully anticipate difficult situations they may encounter and provided them with insight and effective strategies to deal with certain situations (Mushin et al., 1993).

3.2. Barriers to role development and transition

Several barriers to role development and transition were also identified in the literature. These included role ambiguity and professional identity, lack of support, and workload expectations. Transitioning of the nurse practitioner candidate or novice nurse practitioner to an autonomous role was frequently described as challenging (Morgan, 2006; Goudreau et al., 2011; Contandriopoulos et al., 2015; Martsolf and Sochalski, 2019). Kerr and Macaskill (2020) described this period as being non-linear and non-directional. One article discussed Hamric and Taylor's role development model (Cusson and Viggiano, 2002) which was described via four key stages: Orientation to the environment; frustration where the student nurse practitioner considered returning to their previous role; transitioning where the novice nurse practitioner starts to become familiar with activities of the new role, changes their perspectives and develops the practice and skills required for successful transitioning; and finally, proficiency where full skill set has been achieved.

3.2.1. Role ambiguity and professional identity

Barton (2006) identified the issue of role ambiguity amongst nurse practitioner candidates, which was related to the underdevelopment of the career framework for nurse practitioners. Those nurse practitioners who were 'first in role' described entering an organisation as "difficult" because no prior framework existed (Faraz, 2019), the parameters of the nurse practitioner role was obscure (Kelly and Mathews, 2001), with no clear job description (Maten-Speksnijder et al., 2015; Sullivan-Bentz et al., 2010), and nurse practitioner protocols had not been developed (Kelly and Mathews, 2001; Maten-Speksnijder et al., 2015). Some nurse practitioners described searching for practice protocols from other hospitals and developing nurse practitioner protocols while already working in the role (Maten-Speksnijder et al., 2015). Employers often did not understand the nurse practitioner scope of practice (Faraz, 2019; Sullivan-Bentz et al., 2010) and there was a lack of onboarding coupled with inadequate orientation (Faraz, 2019). Resourcing the infrastructure needs of the role was also apparent where funding had been made available to hire nurse practitioners but infrastructure to support them had not been put in place and formal evaluation processes had not been developed (Sullivan-Bentz et al., 2010). Some novice nurse practitioners described a lack of recognition of their role from nursing, medical and administration staff (Chang et al., 2006; Kelly and Mathews, 2001), including colleagues who thought that nurse practitioners were exceeding their authority by taking on physicians' duties (Chang et al., 2006). Nurse practitioners attributed this to staff who were unfamiliar with the nurse practitioner role (Chang et al., 2006).

The issue of role ambiguity was not limited to the organisation. Novice nurse practitioners described needing to determine what their role and scope of practice as independent nurse practitioner was. Nurse practitioner described lacking a clear understanding of their scope and associated responsibilities and often found it difficult to articulate their own job description to others (Chang et al., 2006). Nurse practitioner also found it hard to define the "nursing" part of their role (Maten-Speksnijder et al., 2015) and at times experienced a loss of identity because they were neither a physician or a nurse and therefore needed to establish their own identity and role as a nurse practitioner (Kelly and Mathews, 2001). They described a constant struggle to hold on to "who they were" and "what they did" (Kelly and Mathews, 2001). One nurse practitioner described "I feel like I'm faking it" and struggled with the dissonance between external expectations where they functioned as a competent nurse practitioner, and their internal sense of feeling like an imposter and pretending to be a nurse practitioner in their new role (Brown and Olshansky, 1997). The need to

earn the respect of nurses was described in one study (Kelly and Mathews, 2001). Nurse practitioner candidates who had worked as RNs for "many years" also described problems "switching hats" and separating the RN role from the nurse practitioner role (Heitz et al., 2004).

Establishing a role as a nurse practitioner that was seen to be different to the role of a physician was described as challenging (Kelly and Mathews, 2001). Requests to take over junior doctor's duties by the service or organisation, led to many nurse practitioners feeling that they were pushed into a doctor substitution model, with one nurse practitioner stating "we take over a lot of doctor's tasks, such as contacts with GPs, writing letters etc." (Maten-Speksnijder et al., 2015 p547). Nurse practitioners described wanting to have responsibilities that extended across the whole continuum of care (Maten-Speksnijder et al., 2015). They felt that their time was spent dealing with episodic illness rather than health maintenance where nurse practitioners felt their strengths lay (Kelly and Mathews, 2001).

Only one study identified transition barriers in the medical literature which was in relation to professional identity and participation in peer review amongst interns (Owen et al., 2011). In this study, a small number of interns (8 of 60) completed the entire mandated program, and no interns completed the voluntary program (Owen et al., 2011). The authors hypothesised that while hospital internship is a critical time in the development of professional identity amongst doctors, resistance to peer review amongst novice doctors likely reflects a complex tension between developing group professional identity in which 'team culture' was important and the managerial drive for personal reflection and accountability which could appear to be counterintuitive to collegiality (Owen et al., 2011). The authors recommend that if peer review is introduced into an internship program that it should be situated as key to clinical development and modelled as a professional behaviour by higher status colleagues (Owen et al., 2011).

3.2.2. Lack of support

Lack of support for nurse practitioners was a major issue and the most cited barrier in one study. (Faraz, 2019) Lack of support often led to feelings of isolation (Faraz, 2019) and for some, to high levels of anxiety. (Sargent and Olmedo, 2013) Negativity towards the role of the nurse practitioner candidate was also evident. (Barton, 2006; Heitz et al., 2004; Steiner et al., 2008) A lack of recognition by nursing, medical and administrative staff was described as impacting the development of the role (Barton, 2006) while others identified a negative reception by physicians and lack of acceptance by RNs (Steiner et al., 2008) and "staff resistance". (Heitz et al., 2004) Perceptions of negativity at the clinical site were also attributed to preceptor teaching style; these were considered to be "not helpful" and a "lack of mentorship". (Heitz et al., 2004) Nurse practitioner candidates in one study described feeling "fear and insecurity" and reported feelings of being "overwhelmed", "inadequate", "vulnerable" and "isolated". (Heitz et al., 2004)

Organising a support system for themselves where this was not in place was highlighted. (Sullivan-Bentz et al., 2010) nurse practitioners described needing to learn "many things" on their own and they recommended employers set up workshops or in-service sessions designed to meet the needs of the new nurse practitioner. (Chang et al., 2006) This finding was echoed by Sullivan Bentz et al. (Sullivan-Bentz et al., 2010) where nurse practitioners described having to identify their own needs and objectives, plan their own orientation programs and continuing education, and "fight" for time and reimbursement of costs. Education needed to be timely and shorter, with more intensive programs seen as better able to meet practice and learning needs rather than education spread out over a one-year program. (Thabault et al., 2015)

3.2.3. Workload expectations

Expectations in relation to workload impacted on nurse practitioners' perceived ability to deliver care. Nurse practitioners described having to see too many patients in too short a time frame with some organisations stressing it being "a numbers game" (Faraz, 2019). Nurse practitioners described finding it difficult to hold onto the ideals of holistic care and health promotion while responding to physician's expectations, including the feeling that nurse practitioners spent too long with patients (Kelly and Mathews, 2001). Nurse practitioners new to the role were slower than experienced counterparts and this contributed to a pervasive anxiety about performance and ability (Brown and Olshansky, 1997).

3.3. Evaluating the role

Literature describing progress and final evaluations were reported in seventeen documents. Masso and Thompson (2014) described evaluation as consisting of three main components: the structure of a setting which may include the patient, the nurse practitioner/nurse practitioner candidate, and the variables which may derive from the organisation; the processes which may consist of questions based on the nurse practitioner/ nurse practitioner candidate role, and the outcomes. Alencar et al. (2018) emphasised the importance of an evaluation tool developed prior to program commencement. The intention was to facilitate discussions amongst the mentee/preceptee and mentor/preceptor at program outset so that expectations during placement were well understood. Feedback provided by the mentees were analysed yearly and resulted in amendments to, and standardisation of, the existing program for quality improvement purposes (Alencar et al., 2018). Bryant (2018) reported that although consistent communication and verbal feedback must be an ongoing feature throughout a program, evaluation formalises student performance and benchmarks progress. It also enables the identification of issues or concerns to occur in a timely manner (Bryant, 2018). One article recommended that strategies which serve to address conflict should be determined prior to program placement (Government of South Australia 2010). Goudreau et al. (2011) described an evaluation which was competency-based, rather than anecdotal and was framed using core competencies established via a peak nursing registration body that aligned with endorsement requirements.

There was variation found in the literature as to the frequency of completing an evaluation of the nurse practitioner candidate/novice nurse practitioner progress. Several articles advised that evaluations should be conducted after six months in a setting (Capital and Coast District Health Board 2021; Rural Northwest Health 2016), while others suggested twelve months (Rural Northwest Health 2016), or at placement completion (Bryant, 2018; Camal Sanchez, 2018).

4. Discussion

The evidence relating to the impact of introducing nurse practitioners into healthcare services and organisations on health outcomes is mounting and supports the call for global healthcare reform (Bahouth et al., 2013; Bryant, 2018; Masso and Thompson, 2014). This extensive review suggests that support for nurse practitioner candidates and novice nurse practitioners transitioning into the nurse practitioner role is fragmented. A program of support needs to be multifaceted, well planned and resourced (Kerr and Macaskill, 2020). To assist with the transition of the registered nurse to nurse practitioner, it is vital that a structured and well-defined role and position are created prior to the introduction of an nurse practitioner candidate into a service or organisation, that a supportive working environment is created, suitable mentors/preceptors are selected, and that the nurse practitioner candi-

date program is regularly evaluated to ensure that ongoing development of the role, stability of the position, and funding is secured.

An increase in accountability, responsibility and autonomy in decision-making aligns with higher-level expert practice. Nurses in advanced practice roles need to be supported to achieve professional efficacy through autonomy and accountability (Elliott et al., 2014; Higgins et al., 2014; Hutchinson et al., 2014). Key to autonomy and accountability is the ability of the practitioner to develop these competencies. Organizational readiness (Manley et al., 2011) underpins the development of effective workplace cultures and the promotion of practice development (Hardy et al., 2013). The ethos of the organisation and management, role development and transition make up the complex organizational context where nurse practitioner candidates and novice nurse practitioners' practise. Organisations influence individual's position within their wider communities of practice (ten Hoeve et al., 2014). Nurse practitioner candidates and novice nurse practitioners described adverse experiences when organisational readiness was low and there was a lack of understanding of the nurse practitioner candidate and nurse practitioner role and these resulted in practice-based tensions.

Changes in organizational infrastructure and professional boundaries are needed to support reconstruction at an organisational level. Bourdieu's (1990) approach provides a useful lense through which to analyse power in development and social change processes. Bourdieu describes power as culturally and symbolically created and describes power as constantly re-legitimised through an interplay of agency and structure. Bourdieu refers to this process as 'habitus', socialised norms or tendencies that guide behaviour and thinking. Habitus is 'the way society becomes deposited in persons in the form of lasting dispositions, or trained capacities and structured propensities to think, feel and act in determinant ways, which then guide them' (Wacquant, 2005). In order to understand why barriers may exist and how these can be reconstructed, understanding how and where power relations exist, which may have been rendered invisible by habitus and misrecognition can inform the integration and growth of nurse practitioner candidates.

Identifying the 'sources of power' and revealing 'the reasons that explain social asymmetries and hierarchies' can become 'a powerful tool to enhance social emancipation' (Navarro, 2006). This speaks strongly to the need for an organisation and practice area to fully understand why a nurse practitioner candidate is needed, the area of need they will address and how they can be supported to meet the goals of the candidacy. The importance of awareness of the role, it's scope and how it fits into the existing structure was highlighted in the review as was the need to start this work before the nurse practitioner candidate took up their role. Bourdieu argues that meanings develop over time in relation to the contexts where agents operate and for agents to make sense of themselves and develop an identity that they regard as socially legitimate. The emerging role of nurse practitioners across healthcare contexts is a clear example of the negotiation required to reconstruct established frameworks of practice.

Managing change is integral to leadership (Skelton-Green et al., 2007). To become a change agent in nursing, a nurse must be able to deal with resistance through conflict resolution (Brown and Draye, 2003). Nurse practitioner candidates, as their roles evolve, are often at the forefront of nursing, defining how advanced roles in nursing practice can be enacted. Buonocore (2004) suggests that to be a change agent is leadership in action. Change in practice and policy involves a number of people over a period of time and often includes managing resistance (Sherrod et al., 2020). Support from key stakeholders, especially management and mentors/preceptors were identified as vital in the review and critical to job satisfaction and tenure (Government of South Australia 2010; Sloand et al., 1998; Wing, 1998; Painter et al., 2019). Specifically, support from a mentor or preceptor was one of the most critical factors identified. Mentorship through preceptors has been identified as a mechanism to increase self-efficacy including nurses working at the advanced practice level (Hayes, 2001). A study in Australia, evaluated the impact of a formal mentoring programme with eighteen nurse practitioner candidates with seventeen senior nurses in a mentoring programme that incorporated coaching and action learning over an 18-month period (Leggat et al., 2015). The formal, structured mentoring programme enhanced clinical leadership skills in preparation for formal endorsement as a nurse practitioner. The study did involve training for the mentors as well as mentees and the study reported that mentors described opportunities for self-reflection.

The importance of matching mentors and mentees was considered in the study by Leggat et al. (2015) with matching on reported learning styles driving the pairing process. The importance of choosing the 'right' mentors or preceptors in nursing is well supported and effective preceptors are described as demonstrating strong interpersonal skills such as communication conflict management and collaboration to facilitate knowledge of organisational standards, social introduction to the unit and health system culture (Sherrod et al., 2020). Investment in preceptor development is important; the unprepared preceptor will lack confidence in their role (Staykova et al., 2013) and preceptors report receiving little to no dedicated time for training or perceptor supervision (Kalischuk et al., 2013). The allocation of resources to support training and implementation of the preceptor role is important to recognise and award preceptor performance as well as attract qualified nurse preceptors (Sanford and Tipton, 2016). It is important that perceptors have experience in the areas needed by the preceptee, the unprepared preceptor is not confident in the role this lack of confidence could result in a poor transition of the preceptor to staff member possibly increasing staff turnover. The impact of a four hour perceptor class on perceptor behaviour (Sanford and Tipton, 2016) reported that the training was associated with the majority of participants achieving at least one goal in relation to improving their mentorship but they identified lack of opportunity to precept over the time period as a barrier. Participants indicated that improved listening skills and team building supported their improvement as a preceptor.

The mentorship role is clearly a complex area and more rigorous research is required to understand the mentoring process and how it is associated with positive objective and subjective organisational outcomes, however common in the literature is the need to focus on learning and development as integral to successful mentoring experiences and outcomes.

Preceptors have reported lacking the skills required to support mentees (Sanford and Tipton, 2016) including nurse practitioner candidates (Leggat and Balding, 2013). The selection of appropriate mentors to support nurse practitioner candidates was identified as vital in the current review (Alencar et al., 2018). The evidence directly related to mentorship of nurse practitioner candidates and novice nurse practitioners can be described as emerging.

One study (Leggat and Balding, 2013) reported that simulation can improve self-efficacy in communication skills and preparing nurse practitioner preceptors as mentors to support novice nurse practitioners' transition. The training involved four, two-hour simulation sessions that focussed on three areas of preceptor communication with novice nurse practitioners, defensiveness, disrespect and incivility. The fifteen participants reported high levels of comfort in relation to handling difficult communication situations with novice NPs in the areas of low performance, lack of professionalism, and lack of teamwork, pre training and reported as areas that preceptors encounter when orienting novice NPs. Improvements post simulation were noted in handling difficult communications

involving defensiveness, incivility, and disrespect (Leggat and Balding, 2013). The identification, training and support of mentors to provide vital support to nurse practitioner candidates requires further research to better understand how resources can be best utilised and outcomes achieved.

The limitations of the review are the inclusion of English only material and the decision not to undertake quality appraisal of the papers included in this review. Limited evidence specifically relating to nurse practitioner candidates existed and the findings from studies and papers relating to newly qualified nurse practitioners and practitioners outside of nursing were drawn upon and the findings extrapolated to nurse practitioner candidates.

5. Conclusion

A well-designed candidacy program can facilitate the transition of the nurse practitioner candidate into the novice nurse practitioner role and then onto an independent and confident nurse practitioner. Novice nurse practitioners are routinely expected to assume independent practice alongside other members of the interdisciplinary team, yet current training models do not support this expectation. Support is required by the employing organisation to sustain transition into practice and ultimately, nurse practitioners working to the full extent of their professional scope of practice to maximise the associated benefits of position placement. When individuals are supported to gain the knowledge and skills related to the roles and responsibilities of the nurse practitioner role, they experience successful role transition to their new professional identity. Role transition and change in professional identity amongst nurse practitioners begin when they enrol in a nurse practitioner training program and transition continues post registration as a nurse practitioner. Newly graduated nurse practitioners reported feeling prepared to provide foundational advanced patient care but needed to learn the procedural skills and therapeutic knowledge associated with the clinical speciality area of practise. The review has identified the facilitators and barriers for nurse practitioner candidates and novice nurse practitioner role development and transition that can be used to help organisations improve the experiences and outcomes of nurse practitioner candidates and nurse practitioners.

Declaration of Competing Interest

None.

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Supplementary materials

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