

**Approaches used to enhance transition and retention for newly qualified nurses (NQNs): a rapid evidence assessment**

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## **ABSTRACT**

### **Aim**

To undertake a rapid evidence assessment of approaches used to enhance nurse transition and retention for newly qualified nurses and to evaluate the strength of the evidence for specific approaches to nurse transition and retention.

### **Design**

A rapid evidence assessment was undertaken. Electronic databases were searched, and the full texts of relevant papers were retrieved. Studies were appraised using relevant Critical Appraisal Skills Programme and Mixed Methods Assessment Tools and a single descriptor of quality: high; medium; or low was assigned to each output. Given the disparity in methods, the lack of randomized trials, results could not be combined; therefore, a descriptive approach was used to synthesise and present the data.

### **Data Sources**

The search was undertaken using: specific database searching; and secondary searching of relevant websites. Electronic databases (CINAHL complete, Academic search premier, Open Grey, ERIC\* (Education), Web of Science--Social Science Citation Index and PubMed) were searched during February 2018.

## **Results**

Orientation and creating supportive environments were frequently reported as being effective in enhancing transition across a range of studies. A range of methods: quasi-experimental, survey and qualitative were used. Generally, the quality of most studies was poor.

## **Conclusions**

Despite decades of research into the experiences of newly qualified nurses and development of schemes and frameworks to support them during this period, there is little substantive or robust evidence in terms of impact on retention. Further research into the longer-term retention of newly qualified nurses is recommended. Longitudinal studies would be beneficial in assessing the efficacy of approaches to enhancing retention.

## **Keywords**

1. Newly Qualified Nurse
2. Rapid evidence assessment
3. Retention
4. Transition



## **INTRODUCTION**

Concerns regarding nursing workforce shortages and subsequent pressures on service delivery and patient experience are prominent internationally (RCN 2018; The Health Foundation et al 2018; The Health Foundation 2017; Aiken et al 2014). In 2019 the UK Nursing and Midwifery Council (NMC) reported that their register had grown by approximately 8,000 since 2018 (NMC 2019). Simultaneously however, UK National Health Service (NHS) providers reported one of the most concerning issues facing them was 'lack of nurses' (NHS Providers 2019; 24). Furthermore, the number of applicants successfully entering undergraduate nursing courses in 2018 was 4% less than 2016 (NHS Providers 2019:24). For the UK, leaving the European Union and changes to how nursing students in the UK are supported financially (The Complete University Guide 2019) may also have an impact.

The numbers of nurses retiring also has an impact on the workforce shortages and the ageing of the nursing workforce has been well documented over the past two decades (Buchan 1999; Graham and Duffield 2010; Kwok et al 2016; Buchan et al 2015). High staff turnover linked to stress, workload and burnout (Heinen et al 2013; Halter et al 2017) further depletes numbers and this has led to renewed interest in recruitment and retention of the existing nursing workforce. Strategic intervention is considered key to ensuring workforce stability and sustainability and this has led to many policies focusing employers on workforce retention (Health Education England 2015; The Health Foundation 2017; House of Commons Health Committee 2018; NHS Education for Scotland (NES) 2019).

## **BACKGROUND**

Newly qualified nurses (NQNs) are one group considered vulnerable to early exit from the workforce. Reliable measures of this phenomenon internationally are not available as figures relating to this group of nurses tend to be conflated with turnover reports. Furthermore, the issue is clouded by semantics (Drennan and Ross 2019, Buchan et al 2018). For example, the phrase ‘turnover’ is often used interchangeably with ‘attrition’ (Buchan et al 2018); a nurse leaving an organization might not necessarily leave the profession, they may move between jobs within the profession or between organizations. Estimated levels of attrition amongst NQNs vary. Up to 50% of nurses leave their first position within 1-year due to stressors in the work-place (Canada; Winfield et al 2009) and graduate nurse attrition rates of between 30 - 50% are reported in the USA (Phillips et al 2017). Nevertheless, whether through turnover or attrition, when a NQN leaves the workplace where they were initially employed, this commonly has a detrimental effect on that workplace. Therefore, quite apart from the definitions and measurement of turnover and attrition, there is good reason to focus independently on NQNs leaving their first destination employment as a precursor to better understand transition support frameworks as a means to retain them.

The challenge of transition from student to autonomous practitioner has been well documented in the literature and described as ‘reality shock’ (Kramer 1974) and ‘transition shock’ (Duchscher 2009). Healthcare organizations try to mitigate potential loss of NQNs by providing supportive frameworks for the transition period and these include: preceptorship; mentorship; residency and

internships; externships; orientation and transition to practice programmes and clinical ladder or advancement programmes (Brook et al 2019).

In the UK, NMC guidance recommends a formal period of preceptorship lasting: “*about four months but this may vary according to individual need and local circumstances*” (NMC 2006: 2) and this is considered a ‘model of enhancement’ (NMC 2006; DH 2010) central to the continued professional development of the nurse rather than a framework to address educational deficits. The introduction of the UK Preceptorship Framework for Newly Registered Nurses, Midwives and Allied Health Professionals (Department of Health 2010) sought to reinvigorate preceptorship in the NHS and provide a commitment to staff and improved patient care. The DH guidance (2010) said that four months advocated in the NMC Guidance (2006) was insufficient.

Preceptorship may ‘*include classroom teaching and attainment of role-specific competencies, however the most important element is the individualised support provided in practice by the preceptor*’ (CAPITAL Nurse 2017:4). In the UK, whilst the preceptorship model is widely supported, the integrity of this approach is persistently compromised by lack of preceptors (Deasy et al. 2011; Whitehead et al. 2013, Adams and Gillman 2016). Workload pressures and staffing deficits further undermine opportunities for preceptorship support in NHS Settings (Lewis and McGowan 2015) and the existence of preceptorship frameworks is insufficient to ensure that this support is delivered in practice. Whilst preceptorship occurs post registration in the UK, this is provided for final year

student nurses in the US and Canada (Robinson and Griffiths 2009; Currie and Watts 2012; Cubit and Ryan, 2011). Although there is agreement that such approaches have a positive impact on job satisfaction and intention to stay (Rush et al. 2013; Phillips et al. 2013; 2014), there is little evidence of impact on NQN retention figures in the UK, nor on patient outcomes (Robinson and Griffiths 2009).

Research focusing on NQNs and transition has explored a range of organizational and individual factors such as supportive frameworks, professional socialisation, learning development and competency (Adams and Gillman, 2016, Rejon and Watts 2014, Dinmohammadi et al 2013) which feature in previous reviews of transition experiences (Higgins et al. 2010; Rush et al. 2013; Whitehead et al. 2013; Murray-Parahi et al. 2016). The above studies, however, were not solely concerned with loss of NQNs and retention in the workforce. Thus, the research questions guiding this review were:

- What approaches are used to enhance the transition of newly qualified nurses?
- What approaches are used to enhance retention of newly qualified nurses?
- What is the strength of the evidence for specific approaches to nurse transition and retention?

## **METHODS**

### **Design**



A rapid evidence assessment (REA) is ‘a form of knowledge synthesis in which components of the systematic review process are simplified or omitted to produce information in a timely manner’ (Tricco 2015:2). The need to provide evidence-based recommendations in a timely and resource efficient manner has driven the development and widespread application of REAs (Varker et al 2015, Khangura et al 2012). Whilst systematic reviews are considered the ‘gold standard’ of knowledge synthesis and have become synonymous with ‘Cochrane Reviews’, the method is not without its drawbacks as these can be labour and time intensive and focused on a narrow set of research questions (Khangura et al 2012). REA methodologies comply with the rigour of the systematic review approach but in a shorter time with fewer questions (Thomas et al. 2013, Government Social Research Service (GSR) 2013).

There is diversity within the literature about the length of time a NQN can still be considered a NQN or has achieved ‘competent status’ according to Benner (1984). For this review the term NQN is used throughout and defined as 12 months or less. This is consistent with earlier research exploring the stages of transition (Dearmun 2000, Evans 2001, Duchscher 2008, Andersson and Edberg 2010).

## **Search Methods**

The search was undertaken using: specific database searching; and secondary searching of relevant websites. Electronic databases (CINAHL complete, Academic search premier, Open Grey, ERIC\* (Education), Web of Science--Social Science Citation Index and PubMed) were searched during February 2018. The following search terms were used:

Newly qualified nurse **OR** Newly registered nurse **OR** New nurse **OR** Student Nurse **OR** Nursing Student

**AND**

Transition **OR** Retention **OR** attrition **OR** Turnover **OR** stability

Truncation, for example Nurs\* for nurses, nurse and nursing and Boolean operators was also used to maximise search results. An inclusion and exclusion criteria was applied to focus the search approach and can be seen in Table 1.

Papers were included if participants were NQNs, were primary research studies (defined as ‘*empirically observe a phenomenon at first hand, collecting, analysing or presenting ‘raw’ data*’) or secondary research studies, (defined as studies that: ‘*interrogate primary research studies, summarising and interrogating their data and findings*’) (<https://www.gov.uk/government/collections/rapid-evidence-assessments>; accessed 9 August 2019). Papers were included if published in English and between 2008–2018. The rationale for disregarding papers published before 2008 was that this date marked the publication of Duchscher’s (2008) seminal work on

‘transition shock’. Where papers examined NQN over a longer timeframe, they were only included if data were available to differentiate between those up to 12-month NQN and those beyond 12 months.

### **Search Outcome**

2,647 references were identified across the databases (Table 3). Two further titles were identified via web searches. Full texts were retrieved and classified using the RAE tool and template (<https://www.gov.uk/government/collections/rapid-evidence-assessments>; accessed 9 August 2019). Each member of the team was randomly allocated papers for this preliminary classification. Papers were excluded at this stage if they did not meet the inclusion criteria.

Titles of the 2,649 references were examined for relevance; 106 were excluded as they were not primary or secondary research. A further 2,239 not meeting the inclusion criteria were excluded (Table1). A further 123 papers were removed after examining the abstracts.

Full texts of the remaining 181 papers were examined and classified using the REA tool and template (<https://www.gov.uk/government/collections/rapid-evidence-assessments>). Each member of the team was randomly allocated papers

for this preliminary classification. A further 133 were excluded because they did not meet the inclusion criteria (n=44 were not reporting research, n = 49 were not about NQNs, n = 11 were not related to transition and/or retention (n=11) and n = 10 for 'other' reasons, for example, the authors did not define a NQN). A further 19 papers were excluded because they were considered too low quality leaving 48 papers for data extraction; RCTS (3), Survey / other quantitative methodologies (8), systematic Reviews (8), qualitative studies (27) and mixed methods studies (2). The included papers were from the USA (n=17), the UK (n=11) Australia (n=8), Taiwan (n=3), Canada (n=3), Singapore, Finland, New Zealand, Sweden, Iran and South Africa (all n=1).

### **Quality Appraisal**

Each member of the team undertook quality assessment of the papers using an appropriate appraisal tool. CASP (Critical Appraisal Skills Programme) appraisal tools were used to assess qualitative papers, systematic reviews and RCTs. The MMAT (Mixed Methods Appraisal Tool) was used to assess mixed methods papers, and a customised tool based on Kelley et al. (2003) was used for evaluating surveys. Using a series of questions to prompt the reader to consider if the study was valid, what the results of the study were and if the results were useful these tools ensured a systematic assessment of the trustworthiness, relevance and results of published papers (<https://casp-uk.net/>). To ensure consistency, a subsample of the papers was quality assessed at this stage by another member of the team. Disagreement was resolved via discussion or involvement of a third team member. A single descriptor of quality: high;

medium; or low was assigned to each output based on whether or not the output was low, medium or high in the range of scores afforded by the quality assessment instrument.

### **Data Abstraction**

Key details of the included papers are summarised in Table 2.

### **Synthesis**

The review included studies employing a range of research designs, with different focuses and outcome measures therefore a narrative synthesis of the data was appropriate.

## **RESULTS**

The results will be presented under the first two research questions as follows:

### **What approaches are used to enhance the transition of newly qualified nurses?**

Approaches used to enhance the transition process can be broadly divided into ‘formal’ and ‘informal’ approaches. Formal approaches included preceptorship (Ke et al 2017; Oosterbroek 2017; Ward & McComb 2017; Pasila et al 2017; Edwards 2015; Muir et al 2013;

Marks-Maran 2013); Simulation (Olejniczak et al 2010); Mentorship and Internship (Edwards et al 2015) and Educational preparation for transition (Brandt et al 2017; Chappy et al 2010; Penphrase (2012). Informal approaches tended to focus on ‘support’ and included the importance of positive and supporting experiences/environments (Chandler 2012); acceptance by colleagues/the team and becoming a team member (Anderson and Edberg 2010, Brandt et al 2017, Moore and Cagle 2012); providing NQNs with learning opportunities and constructive feedback (Edwards et al 2015; Gardiner and Sheen 2016; Pasila et al 2017; Oosterbroek 2017).

### **What approaches are used to enhance retention of newly qualified nurses?**

Six studies purported to address retention directly (Lee et al 2009; Yeh et al 2009; McDonald and Ward Smith 2012; Ya Ting et al 2015; Ke 2017; Meyer et al 2017). However, only two studies included and reported measuring retention (Lee et al 2009, Meyer et al 2017) and they did this by measuring turnover in terms of how many NQNs were still in post within the first year following qualification. Seven studies did not address retention directly but explored proxy measures of retention such as Adaptation (Ashton 2015); Organisational commitment (Bratt 2012); Confidence and competence (Deasy 2011); Satisfaction with practice; Empowerment and competence (Kuokannen 2016); Predictors of successful transition (Phillips 2012); Effect of a programme of transition (Steen 2011); and Stressors and intention to quit (Yeh 2009).

## **DISCUSSION**

### **What approaches are used to enhance the transition of newly qualified nurses?**

Approaches used to enhance the transition of newly qualified nurses were divided into formal and informal approaches. Formal approaches included preceptorship, mentorship and internship, simulation and educational preparation. Preceptorship was discussed in seven papers (Ward & McComb 2017; Ke et al 2017; Oosterbroek 2017; Pasila et al 2017; Edwards 2015; Marks-Maran 2013 and Muir 2013). However, only one paper (Ke et al 2017) evaluated specific approaches to preceptorship. The authors concluded that a fixed preceptor/preceptee model with regular one-to-one working was the most prevalent approach and this model of preceptorship significantly increased NQNs competence. The papers by both Marks-Maran (2013) and Muir et al (2013) presented data from the same study which was an evaluation of a preceptorship programme for NQNs in one NHS Trust. Marks-Maran et al (2013) found that preceptorship was highly valued by most preceptees (85%) with engagement in the programme perceived as having a positive impact on stress levels, role and developing professional skills. Muir et al (2013) found the preceptorship programme was viewed positively by preceptors and impacted positively on development of preceptees and development of preceptors themselves. The preceptorship programme was also viewed as of long-term benefit to the organisation.

Edwards et al (2015) explored the impact of a broader range of interventions including preceptorship, mentorship and internship. Broadly, these all included the support offered by an experienced member of staff, and the provision of teaching and feedback.

Though firm conclusions on the impact of these interventions were hindered by methodological weaknesses of the primary research, it seemed that most interventions resulted in some level of benefit related to competence, confidence and job satisfaction. However, this seemed less dependent on the type of intervention and was more broadly related to organisations demonstrating their commitment to supporting newly qualified nurses. Simply, the fact that something was being done was more important than the specific nature of the intervention.

A systematic review by Olejniczak et al (2010) provided an overview of the evidence base linked to simulation as an orientation strategy for newly qualified nurses. Their findings indicated that simulation could play an important role in orientating new nurses and allow for learning in a safe environment.

Broadly, 'educational preparation' as a means to enhance transition was explored in three studies, all of which employed qualitative methods and were undertaken in the US where preceptorship is provided for final year student nurses (Brandt et al 2017; Chappy et al 2010; Penprase 2012). Within the study by Penprase (2012) preceptorship was cited as key to preparing for transition. Chappy et al (2010) described the changes that one college of nursing had made to their curriculum as a result of feedback from previous students and Brandt et al (2017) explored the transition experiences of graduates of an accelerated second baccalaureate degree nursing program (ASBSN). Their findings highlight how the process of transitioning to practice began before graduation thus leading the



authors to recommend that post orientation plans within the workplace take into consideration previous education, work experience, and potential for organizational leadership.

A recurrent theme within the papers, which were classed as ‘less formal’ or ‘informal’ approaches to supporting transition, was the existence of a supportive organisational culture. Features of a supportive organizational culture may include being accepted by the team and, or peers, effective communication within and across an organisation and access to and availability of informal support (peers, friends, the wider MDT) (Anderson and Edberg 2010, Brandt et al 2017, Moore and Cagle 2012; Chandler 2012). The provision of learning opportunities and constructive feedback for NQNs were also identified as features of a supportive organizational culture (Edwards et al 2015; Gardiner and Sheen 2016; Pasila et al 2017; Oosterbroek 2017).

### **What approaches are used to enhance retention of newly qualified nurses?**

Of the 48 papers included in the review only five studies directly addressed retention (Lee et al 2009; Yeh et al 2009; McDonald and Ward Smith 2012; Ya Ting et al 2015; Ke 2017). Instead studies tended to explore proxy measures of retention such as Adaptation (Ashton 2015); Organisational commitment (Bratt 2012); Confidence and competence (Deasy 2011); Satisfaction with practice; Empowerment and competence (Kuokannen 2016); Predictors of successful transition (Phillips 2012); Effect of a programme of transition (Steen 2011); and Stressors and intention to quit (Yeh 2009).

It appears that effective strategies with a positive influence on proxy measures of successful NQN employment include: having a formal orientation period (Ashton 2015); the initial placement (Bratt 2012; Hussien 2016); satisfaction with the unit and clinical supervision (Hussein 2016); empowerment (Kuokannen 2016); pre-registration employment (Phillips 2012); and higher stress and not having had previous experience in the unit (Yeh 2009).

### **What is the strength of the evidence for specific approaches to nurse transition and retention?**

The quality of the three experimental studies (Lee et al 2009; Meyer et al 2017; Tseng et al 2013) retrieved was low or moderate according to the CASP criteria with particular weaknesses being a lack of blinding of participants, no indication of a power analysis and no randomisation. Using the customised tool for rating the quality of the eight quantitative survey studies included in the review, this varied from low (Deasy et al 2011) though medium (Bratt & Feltzer 2012) to high (Ashton 2015). The study by Ashton met all the quality criteria but the studies by Deasy et al (2011) and Bratt and Feltzer (2012) had deficiencies in reporting their methods and this was most commonly around the description of the research and included not describing the design in precise detail and also how participants were recruited. The remaining five studies using survey methods (Kuokannen 2016; Steen 2011; Yeh 2009; Phillips 2012; Hussien 2016) were of good quality, being deficient only on not stating any recommendations from the studies.

The standard of systematic reviews could have been higher. Only three of nine studies provided the necessary level of insight into search methodologies, critical appraisal and analysis of evidence. Though all systematic reviews used established databases as part of their literature search, the detail provided of methods, inclusion criteria and search terms varied substantially. Papers such as Edwards et al (2015), Ke et al (2017) and Pasila et al (2017) – which were judged to be the highest quality – provided a flowchart summary of the literature selection process in line with PRISMA (or similar) guidelines. In other papers, the account of the literature search was lacking in detail, thereby reducing confidence in whether all relevant evidence was identified. Edwards et al (2015), Ke et al (2017) and Pasila et al (2017) provided insight into the critical appraisal of selected papers, such as the use of Joanna Briggs Institute checklists. The lowest quality papers – Oosterbroek (2017); Ward & McComb (2017); Olejniczak (2010) – offered no discussion of how literature was appraised, analysed or quality assured. Some of the reviews included quantitative research, but none of them performed meta-analysis of data. All eight reviews offered a narrative of papers, with some identifying core themes and/or articulating the commonalities and areas of disagreement within the selected papers.

Similarly, there was considerable variation in the qualitative studies regarding reporting styles with quality ranging from very poor (met few of the CASP criteria) to moderate to high (met at least half or most of the CASP criteria). No studies met all the CASP criteria. The higher-quality papers were Ebrahimi (2016), Chappy et al (2010) Gerrish (2000), Hollywood (2011), Ya-Ting Ke and Min-Tao Hsu (2015), Ebrahimi et al (2016) and Linder (2009) and the lower quality studies were by Penprase (2012), Bridges et al (2013), Allen et al (2018) and Harrison-White (2013). The relationship between the researcher and participant and impact of potential

bias and influence – key to qualitative methodologies was the most under-reported item across all the studies, followed by rationale for study design.

Both mixed methods studies were evaluated as being of good quality, scoring 75% (three out of four stars) using the MMAT.

However, both papers failed to report on how the findings relate to the researchers' influence and on the limitations of integrating qualitative and quantitative data both of which are methodological quality criteria within the MMAT.

In terms of the hierarchy of evidence (Murad et al 2016), with systematic reviews the top and followed by randomised controlled trials, the overall assessment of the strength of evidence in this review is low. Systematic reviews were of poor quality, and experimental studies were all quasi-experiments. With no studies being large scale or long term, there is a definite need for longer term assessment of the impact of interventions. Surveys studies were, generally, of the highest quality, but they tended to use proxy measures of retention and in such correlative designs the relationship between cause and effect is weak.

The quality of papers included in our review was variable. Although some were 'low quality' they provided useful insights into the experiences of NQNs during transition. Importantly and irrespective of study quality a consistent message emerged - the importance of providing a supportive framework. This review adds to a growing body of evidence that indicates that despite decades of research

investigating ‘transition shock’ – and considerable investment in approaches to ameliorate it - it is still an issue that have not been successfully resolved. Nor despite investment are we clear that this makes much difference to retention of this group of nurses.

To resolve these issues and fill an obvious gap in the literature relate to the transition and retention of NQNs a major requirement is the design and funding of larger, inter-institutional and possibly international rigorous studies into this important period in any nurse’s career. Specifically, more prospective comparative studies are required. Admittedly, randomised controlled trials may be hard to implement but alternative designs such as pragmatic trials (Ford & Norrie, 2016) and acknowledging that interventions to improve retention are complex (MRC, 2019) could be implemented. Moreover, while the need persists to study what makes NQNs leave and what is effective at retaining them, research questions could be broadened to include the reasons why most NQNs actually stay and, for those who may have considered leaving, what made them change their mind.

### **LIMITATIONS OF THE REVIEW**

Limitations to our review should be noted. This was a rapid evidence assessment therefore some compromises were made (Thomas et al. 2013). In the types of studies retrieved, we only considered articles published in the past 10 years. Whilst we included studies from any country, the range of countries from which the studies in this review are included limits the ability to draw any conclusions that

may be applied internationally as differences between the healthcare systems of different countries and the cultural and educational systems, mediates the experiences of NQNs.

Our definition of NQNs may have limited the articles retrieved and the timespan of 12-months after qualification may also have limited our search. There is a distinct lack of standardisation in relation to the definition of NQN in the literature which warrants further investigation. Further research into the longer-term retention of NQNs is recommended. Longitudinal studies would be beneficial in assessing the efficacy of approaches to enhancing retention and as such our findings relate to short-term retention (that is, in line with our definition of NQNs as being within the first 12 months of practice). Notwithstanding these limitations, this review has addressed a key gap in the available evidence relating to the density and quality of evidence on nurse transition and retention from student to registered nurse.

## **CONCLUSION**

A range of methods, varying in quality, has been applied in the past decade to the study of the transition and retention of NQNs and those methods have been applied to a wide range of initiatives and programmes designed to increase such retention. However, the lack of a standard definition of 'retention' should be borne in mind when interpreting our findings. Therefore, it is hard to draw firm conclusions about the best ways to achieve retention. Nevertheless, orientation, and creating supportive environments were frequently

reported as being effective across a range of studies. In terms of the hierarchy of evidence (Murad et al 2016), with systematic reviews the top and followed by randomised controlled trials, the overall assessment of the strength of evidence in this review is low. Systematic reviews were of poor quality, and experimental studies were all quasi-experiments. With no studies being large scale or long term, there is a definite need for longer term assessment of the impact of interventions. Surveys studies were, generally, of the highest quality, but they tended to use proxy measures of retention and in such correlative designs the relationship between cause and effect is weak.

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<b>Study</b> Name (date)	<b>Aim and/or research questions</b>	<b>Design</b> Experimental/survey Qualitative/review	<b>Methods</b> Interviews/observations Questionnaires (maybe leave blank for reviews)	<b>Participants</b> Description and N	<b>Analysis</b> Details	<b>Results</b> Main findings	<b>Study quality &amp; Comments</b>
Allan et al (2018)	Study had two aims;  1) To understand how NQNs reconceptualise knowledge learnt in university to enable them to delegate to, and supervise, healthcare assistants (HCAs).  2) To develop, pilot and evaluate a preceptorship tool.	Qualitative	Participant observation and semi-structured interviews	N = 33 NQNs N = 10 HCAs N =12 ward managers	Thematic analysis	Findings suggest that the implementation of preceptorship can be highly variable. Inadequate formal preceptorship can be compensated for by informal on-ward support. Where there is neither sufficient formal preceptorship nor a lack of compensatory informal support, NQNs can struggle in putting their knowledge to work effectively and reworking it to meet the changing demands of ward-based practice	CASP: Qualitative LOW
Andersson and Edberg 2010	To describe the experiences of newly qualified Swedish nurses (year 1 professional practice)	Qualitative	Interviews conducted 1 year after graduation	N=8	Qualitative latent and manifest content analyses - (inductive approach using open coding and meaning units related to	2 key themes (1) up to 6 months - being a rookie (striving for acceptance, respect from colleagues), (2) from 6-12 months feeling like a registered nurse, (shoulder responsibility, prioritize tasks, and convey confidence to patients).	CASP: Qualitative LOW

					study aim).	Being accepted and respected as a colleague was more important than being accepted and respected by patients for NQNs in first few months.	
Ashton 2015	To explore adaptation in new registered nurses using the Roy adaptation model as the guiding conceptual framework	Correlational study was implemented using a cross-sectional design	Self-report VAS and questionnaires	NQNs (N=88); 37% response rate	Descriptive statistics and multiple regression	Being in a formal orientation period significantly supported the new nurses' overall adaptation.	Survey Assessment Tool: HIGH
Brandt et al 2017	To examine ASBSN graduates' experience of transition to practice during their first 12 months after graduation.	Qualitative	Semi-structured telephone interviews conducted using topic guide - 5 open-ended questions about the transition to professional practice that corresponded to the five activities of the Getting Started stage identified by Calhoun (2010)) plus 6th item asked about the effect of ASBSN education on the transition, and a final item invited additional comments.	N=7	Transcribed data imported into NVivo 10® Thematic analysis and reflectivity and documentation of analytic decision notes used	Themes Pre-transition (1) A Combination of How the ASBSN Program Prepared Me and How I Prepared Myself. Orientation (3) - Intense Situations Evoked Strong Emotions; The Pace of Progression Fit My Needs. How I Spent My Time Was an Important Factor in Orientation Post-orientation (3) Building My Own Support Network, Keeping the Patient Safe as I Built Confidence, Being on my Own Was	CASP: Qualitative LOW

						Frightening Being a NQN (2) I Had Supportive Colleagues and Plentiful Help and Experience Cultivated Confidence and I Grew Into a Contributing Team Member.	
Bratt & Feltzer 2012	To determine predictors of organizational commitment during a 12-month new graduate nurse residency program	Longitudinal correlational design with data collected from 16 different cohorts of nurse residents over a three-year period from 2005-2008	A range of questionnaires: demographic; work experience; job competence; nursing performance; organizational commitment	NQNs; (N=468), no response rate information	Descriptive statistics and multiple regression	Initial job placement in the new graduate's desired position was found to be a significant predictor of organizational commitment; otherwise the results are very hard to ascertain	Survey Assessment Tool: MODERATE
Bridges et al 2013	Gain perceptions of transition (post qualification) for students who were supported by clinical coaches on accelerated second-degree baccalaureate (ASDB) program.	Qualitative	Semi-structured interviews	N=4	Transcripts analyzed based on van Manen's (1990) hermeneutic phenomenological method.	3 themes 1 - becoming independent 2 - knowing the culture, 3 - relationship with the coach.	CASP: Qualitative LOW
Chandler 2012	To investigate experience of first-year nurses in making the transition from	Qualitative	Appreciative Inquiry framework using semi-structured interviews	N=36	Inductive content analysis (Hsieh & Shannon, 2005): 8 steps	3 themes 1 - They were there for me 2 - There are no stupid questions 3 - Nurturing the seeds	CASP: Qualitative LOW



	school to practice.						
Chappy et al 2010	Purpose of the study was to explore how well the University college of nursing prepared graduates for practice.	Qualitative	Text based comments as part of a larger study using a survey of alumni 1 year after graduation (1 open ended question "How could the BSN curriculum be changed to have better prepared you for practice as a registered nurse")	N= 460 (880 total popn)	Thematic analysis of text based responses to survey question	1 major category (clinical instruction) 4 subthemes - more clinical time, more technical skills, broader range of real life experiences and communication with physicians.	CASP: Qualitative MODERATE
Deasy et al 2011	To explore transition from student to Registered Nurse in a cohort who had a substantial rostered internship in the final year of their programme	Not stated – but used survey method	Questionnaire developed by the authors: explored demographics, role preparation, role competence, support, the organisation, emotional issues and role expectations.	Final year students followed through to post-registration; (N=98); no response rate	Mann-Whitney U test	Respondents had high levels of confidence in clinical abilities both at pre-registration and post-registration. They also perceived themselves to be competent across a range of other domains	Survey Assessment Tool: LOW
Doody et al 2011	Not stated: This study presents the findings of phase one of a two-part study exploring final-year student nurses' (n=116) perceptions and	Not stated – survey methods	Self-administered anonymous questionnaire was distributed to the students at the beginning of a scheduled lecture midway during their final year	Final-year student nurses' (N=116); 84% response rate	Not stated but purely descriptive	Respondents generally perceived themselves to be competent across a range of domains but many expected the transition to be problematic; not about newly qualified nurses	Survey Assessment Tool: LOW; Exclude

	expectations of role transition						
Ebrahimi 2016	To identify the barriers against providing support to new graduated nurses in clinical settings (Iran)	Qualitative	Semi-structured interviews	N= 18 licensed nurses	Thematic using MAXQDA software.	5 themes 1 - Lack of Support-Seeking Behaviors 2 - Management Weaknesses 3 - Ineffective Communication 4 - Personal Characteristics of Nursing Personnel 5 - Cultural Barriers	CASP: Qualitative HIGH
Ebrahimi et al (2016)	To understand the experiences of experienced nurses about the means of providing emotional support to newly graduated nurses.	Qualitative	Unstructured in-depth interviews plus field notes and observations	N = 18	Conventional content analysis	Emotional support emerged in four categories: 1)Assurance, 2)creating a sense of relaxation and security, 3) lifting spirits, 4)emotional belonging and involvement	CASP: Qualitative HIGH
Edwards D et al (2015)	More of a broad aim than a specific question: the review aimed to determine the effectiveness of strategies used to support newly qualified	Narrative review	Literature review	30 studies were included	Narrative review. No meta-analysis of data was possible as there were no comparable RCTs	Findings suggest that transitional support arrangements such as internships, mentorship and preceptorship can have beneficial impact on competence, confidence, anxiety and job satisfaction amongst NQNs. There was some suggest that retention rates could be improved,	CASP: Systematic Review MODERATE

	nurses during the transition into the clinical workplace and, where identified, evaluate the impact of these on individual and organisational level outcomes.					though it was very difficult to link cause and effect. Interesting point made that doing something seems to be important, rather than worrying too much about what you do.	
Fater et al 2014	To examine the effectiveness of instruction and skill development on the transition to practice of newly licensed nurses and their preceptors	One group pretest-posttest pilot study	Nurse Competency Assessment Tool MCQ	Newly qualified nurses (N=38) and preceptors (N=33); 20 newly qualified nurses and 27 preceptors completed	t-test	No significant differences between groups but otherwise very hard to discern what happened	CASP RCT: LOW; Exclude
Gardiner and Sheen (2016)	What is currently known about the experiences of graduate nurses?  What does the literature indicate regarding	Narrative review	Literature review	36 papers included	Very limited discussion of how papers were analysed and how themes were identified.	Three themes:  Transition is a stressful experience; the need for a supportive environment; importance constructive feedback during the transition to practice.	CASP: Systematic Review MODERATE

	<p>support provided to nurses undertaking graduate programs?</p> <p>What factors have been shown to assist graduate nurses in their transition to practice?</p> <p>What methods have been used to study graduate nurses' experiences?</p>						
Gerrish 2000	To examine NQNs transition from student to qualified nurse	Qualitative – two cohort comparison (pre (1998) and post (1985) project 2000)	Interviews	N=35  N= 10 1985 cohort and N = 25 1998 cohort	Little detail regarding analysis – constant comparative analysis	<p>Three categories: 1 – “fumbling along” 2 – “taking charge of the ward” 3 – “metamorphosis</p> <p>Need for a bridging period over the latter part of the programme and first 6 months post – qualification to gradually acclimatize to accountable practitioner</p>	CASP: Qualitative MODERATE

Guay et al (2016)	The study's research question was "What are NGRNs' perceptions of the transition process during the 12 months after the NGG orientation program?"	Qualitative	Semi-structured interviews	N = 10	Data were analysed as data collection proceeded, using the constant comparative method	In the early part of the transition, NGRNs experienced Surviving Without a Safety Net, which involved Experiencing Fear, Figuring It Out, and Learning on the Job. In the later part of transition, the NGRNs experienced Turning of the Tables, which involved Being Trusted, Gaining Confidence, and Feeling Comfortable in their professional role.	CASP: Qualitative MODERATE
Harrison-White (2013)	To investigate the experience and value of a local preceptorship programme from the perspective of newly registered children's nurses and their preceptors	Qualitative	Questionnaire and focus groups	N=6	Thematic analysis.	Five themes emerged from the preceptees 1) Traumatic transition from student to staff nurse. 2) Added pressure of being a newly qualified children's nurse 3) Need for proper accessibility and support from preceptors. 4) Need for a programme that is clinically focused. 5) View that preceptees should receive informal support outside of the formal guidelines of preceptorship. Five themes emerged from the Preceptors; 1) A requirement for formal establishment and structure of the preceptorship	CASP: Qualitative LOW

						programme. 2) A goal of enabling preceptees to feel confident and comfortable in their new role and environment. 3) The importance of timely preceptorship at the beginning of the newly qualified nurses' career journeys. 4) The importance of meaningful feedback. 5) Specific study on the programme should be ward-based, supported and relevant.	
Hollywood 2011	To explore the transitions of newly qualified RCNs from postgraduate student nurse to staff nurse	Qualitative	Semi-structured interviews	N=6	Data analysis was based on the work of Colaizzi (1978) 7 step approach to identify and interpret emerging themes.	Five primary themes (Paper only presents 2) (1) Support network (subtheme finding your own way, mentorship / preceptorship and previous experience) and (2) reality shock (subtheme professional accountability)	CASP: Qualitative MODERATE
Hussein et al 2016	To examine the influence of new graduate nurses' (NGNs) personal and situational factors on their satisfaction with the practice	Cross-sectional survey	In addition to sociodemographic and situational data, two validated, standardised instruments were administered: the Manchester Clinical Supervision Scale (MCSS-26) and the Practice Environment Scale Australia (PES-AUS)	Newly qualified nurses (N=109); no response rate	Psychometric testing of the instruments; linear multiple regression analysis (stepwise entry) to explain the variance in participants' levels of	Three independent and significant predictors of NGNs' satisfaction were: (1) unit satisfaction; (2) satisfaction with the clinical supervision; and (3) assigned unit	Survey Assessment Tool: HIGH

	environment				satisfaction as assessed by the PES-AUS scores.		
Johnstone et al (2008)	<p>Study had three aims.</p> <p>1) To explore and describe the nature and implication of “support” being provided and/or not being provided to neophyte graduate nurses during their first year of practice</p> <p>2) To explore and describe the development of a supportive environment that encourages and facilitates a safe environment and safe practice among neophyte graduate</p>	Qualitative	Questionnaires, interviews and focus groups	<p>N =63 questionnaires</p> <p>N = 35 focus group and individual interviews</p>	Content and thematic analysis.	<p>Three main findings: 1) support is critical to the process of graduate nurse transition, and that integration into “the system” is best provided during the first 4 weeks of a graduate nurse transition program and thereafter at the beginning of each ward rotation;2) “informal teachers” and the graduate nurses themselves are often the best sources of support; 3) the most potent barriers to support being provided are the untoward attitudes of staff toward new graduates.</p>	CASP: Qualitative MODERATE

	nurses  3) To explore and describe the safe transition of the graduate nurse from novice to advanced beginner-level practitioner.						
Ke et al (2017)	To determine the effects of nursing preceptorship on the competence, professional socialization, job satisfaction and retention of new nurses.	Systematic review	Literature review	Six articles selected	Papers were synthesised and critically appraised, though meta-analysis could not be completed.	Paper demonstrated that new nurses' overall competence increased significantly due to preceptorship.  The most adopted preceptorship approach was a fixed preceptor/preceptee model and one-on-one for 1–3-month duration.	CASP: Systematic Review HIGH
Kuokanne et al 2016	To determine how newly qualified nurses assess their empowerment and to clarify professional competence compared to other work-related factors	A descriptive, cross-sectional and correlational design	Empowerment was measured using the 19-item Qualities of an Empowered Nurse scale and the Nurse Competence Scale measured nurses' self-assessed generic competence. In addition to demographic data, the background data included intent to change/leave job	Newly qualified nurses (N=318); no response date	Spearman's correlation coefficient as well as the One-Way and Multivariate Analysis of Variance	Association between nurse empowerment and professional competence job satisfaction, and intent to change job, and other variables	Survey Assessment Tool: HIGH
Labrague	To appraise	Integrative review	Literature review	21 studies	Narrative	Newly qualified nurses	CASP:



and McEnroe-Petitte (2017)	and synthesize available evidence on new nurses' stress experiences.			included	approach utilised. No real discussion of why statistical pooling was not used for quantitative data	perceived low to moderate levels of stress, mainly as a result of heavy workloads and lack of professional nursing competence.	Systematic Review MODERATE
Lee et al 2009	To design a preceptorship programme and to evaluate its effects on turnover rate, turnover cost, quality of care and professional development	Quasi-experiment	Intervention: preceptorship programme; outcomes: turnover rate, turnover costs, medication errors, falls and adverse events compared with pre-intervention	Newly qualified nurses (N=34) and preceptors (N=24) to rate satisfaction with programme	t-test	Turnover 46.5% less than the previous year; cost saved US\$186,102; medication errors, falls and adverse effects all decreased	CASP RCT: LOW
Lee et al (2013)	Study aims to explore the nature of the transition reported by new nurses in Taiwan.	Qualitative	Focus groups	N=16	Data were analysed according to Sloan's (2002) three moments	Transition process of new nurses becoming experienced members of the clinical nursing team was revealed as a journey of 'struggling to be an insider'. This phenomenon was characterised by four themes 1) 'being new as being weak', 2) 'masking myself', 3) 'internalising the unreasonable' and 4) 'transforming myself to get a position'.	CASP: Qualitative MODERATE
LeeAnna Spiva et al	Aim to explore the	Qualitative	Descriptive study using semi-structured	N= 21 NLRNs	Constant comparison	Four major themes or patterns (10 sub	CASP: Qualitative

2013	orientation experiences of NQNs		interviews and grounded theory methodology.		method to analyse transcripts.	themes) 1 - Preceptor variability 2 - Professional growth and confidence changed with time 3 - A sense of being nurtured 4 - Enhancements needed to improve orientation experience	LOW
Lewis and McGowan (2015)	Study aimed to gain insight into what it was like for newly qualified nurses who had finished preceptorship.	Qualitative	Semi-structured interviews	N=8	Data was analysed using Newell and Burnard's (2011) Pragmatic Approach to Qualitative Data Analysis	Two main categories emerged from the data. 1) Support Requirements which was further broken down into two themes: time and build confidence  2) Expectations of Preceptorship which was further broken down into two themes; understanding the process and understanding the preceptor's role.	CASP: Qualitative MODERATE
Linder (2009)	The purpose of this study was to investigate the lived experiences of newly graduated paediatric oncology nurses during their first year of hire utilizing a	Qualitative	Semi-structured interviews	N=6	Analysis of these themes (van Manen, 2002) was used to identify the nurses' identified meanings from the interviews. The identified meanings and themes were analyzed to	Eleven themes in the categories of professional role development, a unique practice, and personal reflection were identified.	CASP: Qualitative MODERATE

	phenomenological approach.				provide an overall description of the nurses' experiences from their perspectives (Boyd, 2001).		
McDonald & Ward-Smith (2012)	To review the state of the science regarding graduate nurse retention research and the evidence-based strategies shown to enhance retention	Narrative review	Literature review	Six articles selected	No insight into how papers were analysed or appraised	Papers suggested that the key elements of any orientation program are as follows: (a) evaluation of baseline knowledge, (b) inclusion of higher level skill practice, (c) support from an experienced individual (expert) in the unit where the new nurse will be working, (d) provision of opportunities to clarify existing knowledge and expand knowledge, and (e) evaluation of individual program outcomes.	CASP: Systematic Review LOW
Martin and Wilson (2011)	The purpose of the study was to examine the lived experience of newly licensed RNs in their first year of practice in a hospital setting.	Qualitative	Semi-structured Interviews	N=7	Colaizzi's (1978) seven-step process for data analysis in phenomenological inquiry	Two themes that are congruent with the literary and theoretical context within which the study is situated 1) Adapting to the Culture of Nursing 2) Development of My Professional Responsibilities	CASP: Qualitative MODERATE

Meyer et al 2017	To investigate the effect of a curriculum revision on the transition-to-practice experiences of traditional baccalaureate nursing graduates	Two group comparative design over time	Self-designed demographic and educational satisfaction instrument and the Casey-Fink Graduate Nurse Experience Questionnaire	N=53 (44% response rate); intervention group (N=36); control group (N=29)	Chi-Square test; t-tests	12% of control group and 6% of intervention changed jobs within 12 months; intervention group more likely to recommend nursing as a career at 3 months	CASP RCT: MODERATE
Meyer & Shatto 2018	The effect of resilience on newly qualified nurses' transition to practice	Quantitative descriptive pilot study with repeated measures design.	Educational Professional/Satisfaction Scale (EPSS); The Casey-Fink Graduate Nurse Experience Survey; the 25 item Resilience Scale	Newly qualified nurses (N=17); 8 completed all time waves	Descriptive statistics, correlation and regression	Pilot study	Survey Assessment Tool: HIGH; Exclude
Mooney (2007)	Aim is to report on the insights of newly qualified Irish nurses into their preparation for registration as general nurses and to develop insights into the post registration experience.	Qualitative	Semi –structured interviews	N=12	At the end of each interview, the Gibbs reflective cycle, cited by Johns (2000), was used to reflect on the interviews and the emerging analyses.	Two categories, emerged 1) Learning the Ropes 2) The Metamorphosis	CASP: Qualitative MODERATE

Moore and Cagle 2012	Two aims (1) explore the phenomenon of being a new nurse in a 12–18 month internship program (2) identify ways that CPs provide a framework during the internship experience.	Qualitative - interpretive study (Heideggerian phenomenology)	Semi-structured interviews 'open conversations'	N=7	Synthesis of a 'converging' conversation using hermeneutical circle of interpretation	3 key themes 1 - feeling the fit 2 - mentoring to push and pull growth 3 - proving competency: losing the apron strings.	CASP: Qualitative LOW
Muir et al (2013)	Aim of the study was to examine the experiences of preceptors who were involved in the preceptorship component of the Band 5 development programme within one acute Trust in London.	Mixed methods	Questionnaires and interviews	40 questionnaires, 9 interviews	Quantitative analysis was undertaken using SPSS, and included descriptive statistics, t-test and for reliability of the impact scales, Cronbach's alpha coefficient was calculated. Thematic analysis of the responses to open-ended questions, as well as transcriptions of interviews with preceptors	Seven themes emerged. These were preceptors' perceptions of: the personal development of preceptees; the role development of preceptees; the communication skills development of preceptees; the clinical development of preceptees; the development of professional relationships by preceptees; value of the preceptorship programme to the organisation and value of being a preceptor in terms of their own professional development.	MMAT: 75% (3 Stars)

					was undertaken using the Framework Method.		
Olejniczak EA <i>et al</i> (2010)	To provide a summary of current evidence related to the use of simulation in Graduate Nurse orientation.	Integrative review	Literature review	Three articles selected	Guided by an established framework but very little detail on how papers were analysed	Three themes were identified: socialization to the professional role, competence and confidence in self-performance, and learning in a safe and supportive environment	CASP: Systematic Review LOW
Oosterbroek (?date – certainly post 2015)	To determine the state of knowledge regarding rural nursing preceptorship.	Integrative review	Literature review	19 articles were included in the analysis	Scant detail in relation to the process of thematic analysis. No discussion of how quantitative data were analysed.	Four main themes emerged:  The nature of the rural experience, the importance of interprofessional collaboration, issues related to recruitment and retention of nurses to rural communities, and factors associated with student performance evaluation and feedback	CASP: Systematic Review LOW
O'Shea and Kelly (2007)	The aim of the study was to explore newly qualified staff nurses' experiences of being on clinical	Qualitative	In-depth interviews	N=10	Content analysis	Two themes emerged from the data; 1) The experience of being qualified: highs and lows  2) Stressful aspects of the staff nurse role.	CASP: Qualitative MEDIUM

	placement in the Republic of Ireland (ROI) and the meanings that this experience held for them.						
Pasila <i>et al</i> (2017)	<p>To describe the newly graduated nurses' experiences of the orientation in nursing.</p> <p>The research question was: What kind of orientation experiences do newly graduated nurses have in nursing?</p>	Integrative review	Literature review	13 papers selected	<p>Makes links to validated and established approaches to systematic review, including those from PRISMA, CRD and Joanna Briggs.</p> <p>Inductive content analysis used to identify themes</p>	<p>Newly graduated nurses' had four categories of orientation experience:</p> <p>Experiences related to orientation arrangements;</p> <p>Experiences related to the preceptor;</p> <p>Experiencing role transition during the orientation;</p> <p>Suggestions for changes based on orientation experiences.</p> <p>It was found that the orientation and the preceptor have a great impact on how newly graduated nurses experience the start of their career.</p>	CASP: Systematic Review MODERATE
Penphase 2012	Perceptions of educational preparation and	Qualitative	Survey with open ended (text based) questions	29 included responses from the survey	Searched for patterns and themes	2 key areas 1 - aspects of the students' educational experience that	CASP: Qualitative LOW

	understanding job satisfaction.					prepared them for the professional nursing role 2 - perceptions and factors contributing to the participants' satisfaction with their current nursing	
Phillips et al 2017	Explored how satisfaction levels with transition may improve during first year as a newly qualified nurse, using a continuous quality assurance feedback loop	Mixed-methods study; compared two health services	Multiple types of data collected – not succinctly explained	Around 20 respondents and while response rates are given it is very hard to interpret	Descriptive statistics; t-tests; general linear models	Very hard to make sense of the what the results mean	Survey Assessment Tool: LOW; Exclude
Phillips et al 2012	To identify predictors of successful transition from undergraduate student to newly qualified nurses and to identify effect of any pre-registration paid employment	A descriptive questionnaire survey	Survey tool developed for the study	Newly qualified nurses (N=392); response rate 7%	t-tests; one-way ANOVA; Chi-squared tests; forward stepwise multiple linear regression	Transition scores were significantly higher for undergraduates who were employed; institutional work factors appeared to be stronger predictors of successful transition than pre-registration employment factors. Assistance in dealing with complex patients, orientation to a new environment, and respect from colleagues were the best predictors for successful transition	Survey Assessment Tool: HIGH
Pittman et al 2013	Examine the current	Survey	National survey of nurse leaders	Nurse leaders	Descriptive statistics	2% of surveyed home health and hospice	Survey Assessment



	residency landscape for home health and hospice nurses			(N=2513)		settings offer residencies, while almost 49% of hospitals and 11% of nurse-led primary care clinics provide them; not relevant but possibly use in background	Tool: LOW; Exclude
Plaff et al 2014	To explore new graduate nurse confidence in interprofessional collaboration	Explanatory sequential mixed methods design	Survey measured perceived confidence in interprofessional collaboration; interviews	Newly qualified nurses (N=514); response rate 43% prior to removal of further questionnaires	Descriptive statistics, correlations; Mann-Whitney U test; qualitative analysis	Several factors have a positive relationship with new graduate nurse confidence in interprofessional collaboration; but not about retention	Survey Assessment Tool: HIGH; Exclude
Roziars and Ramugondo (2014)	This study explored the lived experience of role transition of newly qualified nurses undertaking compulsory community service in health service facilities in the Western Cape.	Qualitative	Semi-structured interviews	N=8	Hycner's simplified explication process congruent with the philosophical underpinnings of descriptive phenomenology, was used for data analysis	Three general themes emerged 1) a sense of achievement; 2) uncertainty and fear in anticipation of reality 3) reality shock	CASP: Qualitative MODERATE
Steen et al 2011	To investigate the effect of a student nurse intern programme	Not stated – but survey design	A questionnaire not described at all	Newly qualified nurses (N=50); 80% return rate	Purely descriptive	The programme eased transition	Survey Assessment Tool: Low

	on newly qualified nurse						
Tseng et al 2013	Pretest-posttest quasi experiment	Intervention: collaborative partnerships between schools and hospitals; jointly designed courses (school & hospital); additional practicum. Control group: practicum at end of courses and preceptorship only	Control group N=18; intervention group N=24	t-test; MANCOVA	Multiple outcomes including the fact that nurses in the intervention group were more likely to be in their first hospital after 1 year	Related to retention	CASP RCT: MODERATE
Walker et al (2013)	The research aimed to explore the workplace factors that affect GNs' during their first year of clinical practice, in a regional context in Victoria, Australia, from the perspective of both GNs and NUMs	Qualitative	Focus groups and individual interviews used in pilot phase, qualitative survey used in actual project	N = 94	Directed content analysis.	GNs and NUMs differed with respect to perceptions of unprofessional workplace behaviour and coping with death and dying. The findings suggest that NUMs and GNs do not always have a shared understanding of the stressors that GNs face in the first year of clinical practice	CASP: Qualitative MODERATE
Walton et al (2018)	The study aimed to identify the challenges and learning experiences revealed in	Qualitative	Reflective essays	N=27	Inductive thematic analysis	Five key themes were identified. The students' reflections noted individual attributes - personal and professional strengths and weaknesses;	CASP: Qualitative MODERATE

	reflective assignments written by new graduate nurses undertaking a postgraduate course as part of their transition to registered nurse practice.					professional behaviour - actions such as engaging help and support, advocating for patients' needs and safety and putting their own feelings aside; situational challenges such as communication difficulties, both systemic and interpersonal, and the pressure of competing demands. Students also identified rewards - results they experienced such as achieving the nursing outcomes they desired, and commented on reflection as a useful tool.	
Ward & McComb (2017)	To examine studies that evaluate preceptorships embedded within an orientation or education program.	Narrative review	Literature review	19 studies were included	No insight provided into method of data analysis or quality appraisal.	Findings were from both the preceptor and preceptee perspective.  Themes related to preceptor perspective were satisfaction and confidence, support, role preparation, and workload issues.  Preceptee perceptions were categorised under satisfaction and confidence, support, and preceptor effectiveness.	CASP: Systematic Review LOW
Washington 2012	Not specified	Participation in a residency	Newly qualified nurses (N=34)	t-test	Reduction in performance	Not focused directly on retention	CASP RCT: LOW; Exclude

		programme; outcome = Clinical Experience Assessment Form 'as a measure of anxiety'			anxiety from beginning of the nurse residency program to its end		
Watt and Pascoe (2013)	The study explored the impact of a university- based clinical school of nursing experience on graduate nurses' perceptions of their preparedness for practice.	Qualitative	Semi-structured interviews	N=10	The data analysis was undertaken in three phases. 1) Analysis in action 2) Interviews were transcribed verbatim - linkages and themes identified 3) use of NVivo to identify themes and sub-themes within the data	Three major themes emerged;  1) Being situated in a clinical school within the hospital 2) The university away from the university 3) Engagement with practice	CASP: Qualitative LOW
Woods et al 2015	To explore the perceptions of third-year nursing students enrolled in their final semester with regard to preparedness for practice	Quantitative survey approach	The Casey-Fink Readiness for Practice Survey	Final year students; (N=113); 48% return	Factor analysis of the tool; ANOVA;	Students reported that simulation experiences were helpful; higher levels of confidence in younger nursing students; not newly qualified nurses	Survey Assessment Tool: HIGH; Exclude
Ya-Ting Ke and	To explore differences in	Qualitative	Interviews	N=20	A categorical- content	3 major themes: 1 - the stages of a	CASP: Qualitative

Min-Tao Hsu 2015	the nature of preceptorship and functions between Eastern and Western cultures.				approach proposed by Lieblich et al. (1998) used	preceptorship 2 - the differences of preceptorship 3 - quasi-family functions.	MODERATE
Yeh & Yu 2009	To identify job stress and intention to quit in newly qualified nurses during the first three months of work	A cross-sectional research design	Job stress and intention to quit questionnaires	Newly qualified nurses (N=146); response rate 76%	Logistic regression	Intention-to-quit group had significantly higher job; not having practiced in the working hospital was associated with the intention to quit	Survey Assessment Tool: HIGH

Identification

Records identified through  
database searching  
(n = 4,269)

Additional records identified  
through other sources  
(n = 2)

Records after duplicates removed  
(n = 2,649)

Screening

Records screened  
(n = 2,649)

Records excluded  
(n = 2,345)

ABSTRACTS assessed for  
eligibility  
(n = 304)

ABSTRACTS excluded  
(n = 123) Did not meet inclusion

Eligibility

FULL TEXTS assessed for  
eligibility  
(n = 181)

FULL TEXTS excluded  
(n = 114) Did not meet inclusion  
criteria

Included

Systematic  
Reviews

Randomised  
Controlled Trials

Quantitative  
n= 8

Qualitative  
n= 27

Mixed Methods  
n= 2