UNIVERSITY OF
GLOUCESTERSHIRE

This is a peer-reviewed, post-print (final draft post-refereeing) version of the following published document, © The Intensive Care Society 2020 Accepted for publication in the Journal of the Intensive Care Society may be used for non-commercial and no derivatives use only. and is licensed under All Rights Reserved license:

Elias, Charlotte ORCID logoORCID: https://orcid.org/0000-0003-3364-0496 and Day, Tina (2020) Experiences of Newly Qualified Nurses in Critical Care: A qualitative systematic review. Journal of the Intensive Care Society, 21 (4). pp. 334-343. doi:10.1177/1751143720926794

Accepted for publication in the Journal of the Intensive Care Society may be used for non-commercial and no derivatives use only.

Official URL: http://doi.org/10.1177/1751143720926794
DOI: http://dx.doi.org/10.1177/1751143720926794
EPrint URI: https://eprints.glos.ac.uk/id/eprint/8422

Disclaimer

The University of Gloucestershire has obtained warranties from all depositors as to their title in the material deposited and as to their right to deposit such material.

The University of Gloucestershire makes no representation or warranties of commercial utility, title, or fitness for a particular purpose or any other warranty, express or implied in respect of any material deposited.

The University of Gloucestershire makes no representation that the use of the materials will not infringe any patent, copyright, trademark or other property or proprietary rights.

The University of Gloucestershire accepts no liability for any infringement of intellectual property rights in any material deposited but will remove such material from public view pending investigation in the event of an allegation of any such infringement.

PLEASE SCROLL DOWN FOR TEXT.

Experiences of Newly Qualified Nurses in Critical Care: A qualitative systematic review

Charlotte E Elias and Tina Day

Abstract
Recent nursing shortages have been particularly felt in specialist areas, like Critical Care, which require higher staffing quotas; leading to increased recruitment of Newly Qualified Nurses in an area once reserved for the more experienced. This qualitative systematic review aimed to explore the experiences of Newly Qualified Nurses working in Critical Care, as their first job post-registration. A systematic search was undertaken between December 2017 and May 2018, yielding eight studies for inclusion in this review. Eligibility criteria included a qualitative design; Newly Qualified Nurses with less than two years post-registration experience, working in adult Intensive Care Units. Data were extracted and synthesised using the Thematic Synthesis approach. Five main themes emerged from the data: Intensive Care Unit Readiness; An Emotional Spectrum; Developing Relationships; The Journey to Self-Satisfaction and Intensive Care Unit Commitment. Conclusions are that an undergraduate placement in Critical Care should be facilitated where possible, consistent mentorship enhances Newly Qualified Nurse satisfaction, peer support is an important coping mechanism and opportunities for socialisation should be facilitated.

Keywords
Critical Care, Intensive Care Unit, Newly Qualified Nurses, Experiences

Introduction

This review examines the experiences of Newly Qualified Nurses (NQNs) working in Critical Care, an environment traditionally reserved for experienced nurses, due to the complexity of patients and specialist skills required.[1] Recent decline in the nursing workforce has been acutely felt in specialist areas, including Critical Care, with higher staffing requirements.[2] This has led to increased recruitment of NQNs in Critical Care, a phenomenon still relatively unexplored.[1,3]

Evidence on the experiences of NQNs transitioning from student to registered nurse in the ward setting is widely available. O'Shea and Kelly's[4] study describes NQNs experiencing significant stress, some describing physiological disturbances, including insomnia and weight loss. Rudman and Gustavsson[5] found that 50% of NQNs had experienced burnout, a psychological syndrome of exhaustion and disillusionment, due to job-related stress.[6] Kramer's[7] 1974 seminal work recognised that stress may be particularly prominent amongst NQNs due to 'Reality Shock', where the realities of working as a qualified nurse are vastly different to expectations developed during nursing education. Confirmed by Higgins et al.'s[8] review exploring the experiences of NQNs in the UK, which found that NQNs undergo a period of role change, made particularly stressful as they encounter uncontrollable and overwhelming events; far removed from the idealised care taught in training.

O'Shea and Kelly[4] also reveal that NQNs perceive a clinical skills deficit upon qualification. Although adequately prepared for routine skills, such as dressings or suture removal, they lacked specialist skills, such as passing a nasogastric tube or suctioning. Patterson et al.'s[9] study based in the Emergency Department (ED) reflects these challenges, observing that the breadth of skills required for working in specialist areas and the rapid pace can be overwhelming for NQNs. Although set outside Critical Care, these studies allude to the challenges that NQNs face in a specialist area.

Farnell and Dawson[10] explored the perceptions of experienced registered nurses, transitioning from the ward into Critical Care. Participants identified comparisons between transitioning from student to registered nurse; they were surprised by the knowledge required to look after the critically ill, often feeling overwhelmed. King and Macleod Clark[11] explored the development of intuition skills in Critical Care, featuring nurses with varied experience. Those least experienced exhibited greater anxiety, lacking both confidence and critical thinking skills. These studies of experienced nurses cast doubt upon the suitability of this environment for NQNs. Parker et al.[12] describe the first 12–24 months post qualification as the most vulnerable time for NQNs, during which they decide whether to commit to the profession. Hence the case for increasing understanding about the NQNs experiences in Critical Care, in order to provide optimal support, ultimately to maintain patient safety, but also to reduce attrition.

Terminology surrounding Critical Care remains unstandardized; therefore, throughout this review, the terms 'Critical Care' and 'Intensive Care' are used interchangeably to describe areas solely dedicated to providing closer observation or support for single or multiple failing organ systems.[13] It does not cover other specialities such as ED or Theatres, which may also intermittently provide organ support.

Methods

Aims and objectives

This review aims to explore the experiences of NQNs beginning their career in Critical Care, with the following objectives:

- Identify the experiences of NQNs working in Critical Care, as their first job post-registration.
- Discuss the unique challenges faced by NQNs working in Critical Care.
- Make recommendations to enhance support for NQNs beginning their career in Critical Care.

These informed the final review question 'What are the experiences of Newly Qualified Nurses beginning their career in Critical Care?' This was broken down into facets using the population, exposure, outcome framework, later underpinning the search strategy.[14]

Protocol and design

A review protocol was developed including elements of the Joanna Briggs Institute (JBI) Reviewer's Manual,[14] arguably the most established for synthesising qualitative data; alongside principles from The Cochrane Collaboration Handbook[15] and supplementary guidance from The Cochrane Qualitative and Implementation Methods Group.[16] The protocol was not externally registered. Ethical approval was not required for this review, as it had been sought by the primary researcher in all original studies.

Eligibility criteria

Eligibility criteria (Table 1) included qualitative studies of any design. Quantitative studies were excluded, as their ability to address experience is limited. Mixed method papers were accepted, provided the qualitative aspect adequately addressed human experience, with only the qualitative element included in the data synthesis. The population was restricted to NQNs within two years of registration to ensure that their perceptions were current.[17] Studies were set solely within adult intensive care units (ICUs), including specialist units. Paediatric and neonatal settings were excluded, as a scoping search indicated an existing review in these areas.

Search strategy

A three-stage method of systematic searching was used, across primary databases, grey literature and additional sources, following an initial scoping search to identify any existing review in the subject area (Table 2).[18]

The initial search was undertaken between December 2017 and March 2018. The searches were saved and run again on each database immediately prior to data extraction in May 2018 to identify the emergence of new papers. An example search using MEDLINE can be viewed in Supplementary material online.

Critical appraisal

Critical appraisal of included studies was carried out using the 'Consolidated Criteria for Reporting Qualitative Research (COREQ) Checklist'[19] and 'The JBI Critical Appraisal Checklist for Qualitative Research'.[20] An example of quality assessment using the JBI Checklist is shown in Table 3.

Table 1. Eligibility criteria.

	Inclusion	Exclusion
Study type	Qualitative studies Mixed-method studies Empirical research	Quantitative studies Editorials Descriptive papers Opinion piece
Data collection	Interviews Focus groups Open-question surveys	Quantitative data collection methods
Healthcare setting	All secondary care settings (district hospitals or large tertiary referral centres) Public or private healthcare	Primary care
Clinical setting	All ICUs – including specialist ICU's (e.g. medical, surgical, cardiac, neurological, burns) High dependency units	Other high care areas e.g. ED, Theatres and step-down bays on acute wards
Patient demographic	Adult	Paediatric or neonatal
Population	Newly Qualified Nurses in their first job post-registration <2 years post-registration experience	Nurses that have had experience working in another clinical area post registration Nurses with >2 years post-registration experience (even if commenced working in ICU as an NQN) Student nurses
Language	English	Non-English language papers
Date	All	None

ED: emergency department; ICU: intensive care unit; NQN: Newly Qualified Nurse.

Table 2. Search strategy.

Level	Resource
Scoping search	Cochrane Library Campbell Collaboration Joanna Briggs Institute
Database search	MEDLINE Embase CINAHL BNI PsychINFO ERIC
Grey literature	Google Scholar Open Grey HMIC EThOS SCOPUS Web of Science
Additional sources	Reference lists of chosen articles Reference lists of relevant studies Contacting experts

Table 3. JBI critical appraisal checklist for qualitative research.[20]

Name of study	Davenport[21]	Ratta[22]	Hussein et al.[23]	Lewis-Pierre[24]	O'Kane[3]	Saghafi et al.[25]	Salkaya[26]	Wiles[27]
Criteria								
Is there congruity between the stated philosophical perspective and the research methodology?	Y	Y	U	Y	U	Y	Y	Y
Is there congruity between the research methodology and the research question or objectives?	Y	Y	Y	Y	Y	Y	Y	Y
Is there congruity between the research methodology and the methods used to collect the data?	Y	Y	Y	Y	Y	Y	Y	Y
Is there congruity between the research methodology and the representation and analysis of data?	Y	Y	Y	Y	Y	Y	Y	Y
Is there congruity between the research methodology and the interpretation of results?	Y	Y	Y	Y	Y	Y	Y	Y
Is there a statement locating the researcher culturally or theoretically?	Y	Y	N	Y	Y	Y	Y	Y
Is the influence of the researcher on the research and vice-versa addressed?	Y	Y	N	Y	Y	Y	Y	Y
Are the participants and their voices adequately represented?	Y	Y	Y	Y	Y	Y	Y	Y
Is the research ethical according to current cri teria or for recent studies, and is there evidence of ethical approval by an appropriate body?	Y	Y	Y	Y	Y	Y	Y	Y
Do the conclusions drawn in the research report flow from the analysis or interpretation of the data?	Y	Y	Y	Y	Y	Y	Y	Y
Overall appraisal	I	I	I	I	I	I	I	I

I: include; E: exclude; Y: Yes; N: No; NA: not applicable; S: seek further information, U: unclear.

Data extraction and synthesis

Data were synthesised using the three-stage 'Thematic Synthesis'[28] method chosen for its interpretative approach, well-suited to exploring the lived experience.[29] In stage 1, the original studies were imported into NVivo 11 Pro[30] and coded line by line. All text labelled 'findings' or 'results' was considered, but only direct participant quotes were coded to avoid including the primary reviewer's interpretations and potential researcher bias. In stage 2, codes were organised into related subject areas and assigned a

descriptive theme. Stage 3 involved grouping the descriptive themes into analytical themes based upon similarities and allocating a more abstract concept heading.

Results

Search yield

The search identified 909 studies following removal of duplicates. Once screened by title and abstract, 39 studies were screened by full text against the eligibility criteria, leaving eight studies for inclusion in the review (Figure 1).

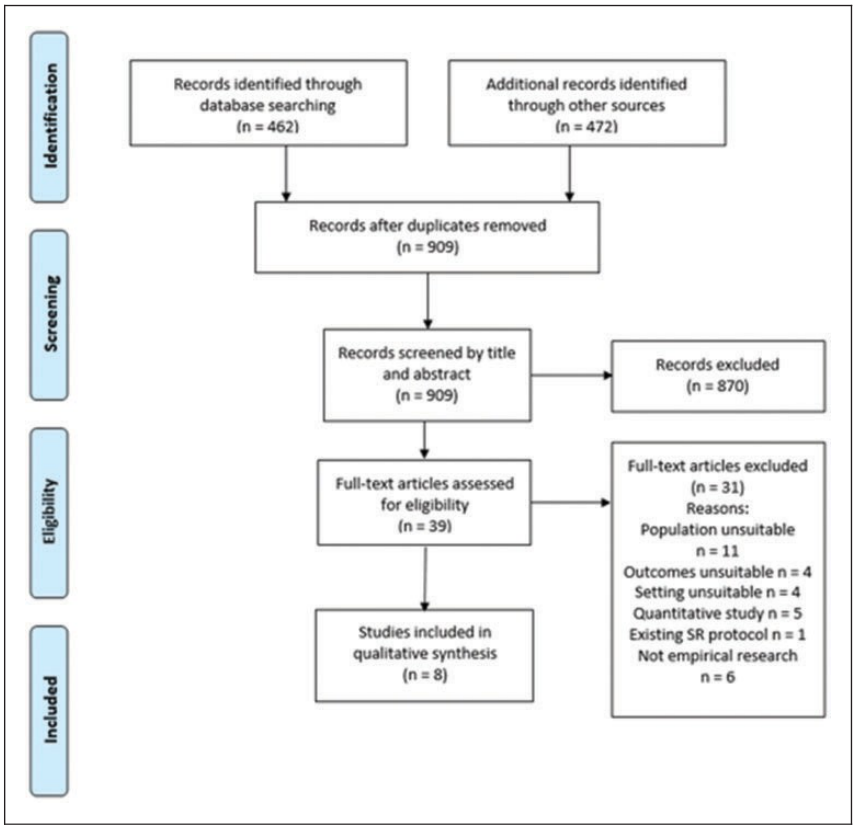

Figure 1. PRISMA flow diagram.[31]

Study characteristics

Included studies were based in England,[3] Australia[23,25,26] and The United States.[21,22,24,27] Three were multi-centre[21,22,27] and five were single-centre studies.[3,23–26] Studies occurred in tertiary referral centres[3,21,24,25,] and smaller district or private hospitals.[21,22,26] Dates ranged from 2000 to 2017. Data collection included interviews, focus groups and open-question surveys. The studies totalled 118 participants. A full summary of included studies can be viewed in Supplementary material online.

Findings

Five analytical themes emerged from the data: ICU Readiness; An Emotional Spectrum; Developing Relationships; The Journey to Self-Satisfaction and ICU Commitment. Participant quotes have been allocated pseudonyms by the original researcher.

ICU readiness

'ICU Readiness' encompasses how prepared NQNs felt to work in Critical Care; including preparation by undergraduate education, structure of orientation, supernumerary time and challenges faced during early days.

In five studies, participants felt that undergraduate training had left them inadequately prepared for the environment.[3,21,24,26,27] Common complaints were that undergraduate training provided little exposure to critically ill patients, medications required or equipment used.[24,26] Consequently, some felt disadvantaged by not having an undergraduate placement in ICU.[24,26]

> I learned medications in the nursing schools but the discussions did not include all the ICU medications such as beta-blockers and analgesics. (G4: 94)[24]

> If I've [sic] done a ICU placement during university I probably would have known what to expect. (Catherine: 45)[26]

Supernumerary time was generally seen as a way of increasing ICU readiness, discussed in three studies.[3,21,26] Supernumerary periods varied from one day[26] to eight weeks.[3] Longer periods generally increased NQN satisfaction; however, in one study, a participant felt that it hindered their ability to function as a full member of the team.[3,26]

> [During supernumerary] You don't have the skills or competencies, you couldn't really help. So you can't really be visible as part of the team. You can't really contribute on the same level. (Participant 7: 47)[3]

An emotional spectrum

In all studies, participants described a range of emotions, fluctuating between positive and negative, depending on individual circumstances and events. Excitement was the most frequently discussed positive emotion, discussed in two studies.[21,26] One NQN described the 'adrenaline rush' when trying to 'save a life'.[21] Others were excited by the environment itself, perceiving it to be more 'fun' than in other areas (the ward), particularly when busy.[26]

> There is an excitement. It's that rush. I always like the excitement. It's the idea of trying to save them and doing all this stuff on the spur of the moment. (Susan: 126)[21]

Fear was the most prominent negative emotion, featuring in four studies.[3,26,27,30] Some NQNs worried about finishing their supernumerary period and no longer working alongside their mentor.[3,27] Others feared making mistakes and causing harm to patients.[21,26] Some tried to hide their fears from other members of staff to avoid looking inferior.[21]

> I think there's actually pressure that on you and how do I put it [pause] so yes, I'm scared at a point that you would do something wrong and that would harm the patient. (Sue: 39)[26]

Some NQNs found fear during an emergency situation debilitating; one described being unable to think when asked to get the drugs for rapid sequence intubation,[27] and another felt useless when senior help had to take over.[23] However, two studies described participants feeling conflicting emotions of excitement and fear during emergency situations.[21,26]

> A patient (HDU) clinically deteriorated and [I] felt very uncomfortable, useless, dumb as I did not know what to do and the team took over (Participant 4.15)[23]

> The charge nurse got a bunch of us new grads to practice chest compressions. That was

> pretty exciting … I haven't found my place in a code [cardiac arrest] yet. I hate to say this but I'm not real good at them … I get nervous and my hands start shaking. (Kelly: 193)[21]

Developing relationships

Developing relationships with service users, colleagues and peers was an important aspect of the NQNs' transition into Critical Care.

Family interactions featured in six studies.[21,22,24–27] Forming bonds with families often bolstered the NQNs confidence.[21] Others lacked confidence around families, for fear of saying the wrong thing.[24]

> As a new graduate, we are unsure of how to talk and communicate … Especially when their loved one is critically ill and not doing well, I don't know what to say. (G7: 92)[24]

Additionally, NQNs found it difficult to communicate with critically ill patients, due to barriers such as sedation or delirium.[24,26] However, a sense of satisfaction was described when they were able to overcome barriers and form a relationship with the patient.[21]

> I held his hand and I talked to him by his first name. He's confused at times and I'm trying to make sure he knows where he is and who he is because he doesn't always know that … The patient's comfort, that he sleeps good when I'm there, is important and I'm proud of that. (Carmen: 164)[21]

Mentor relationships were discussed in three studies.[21,22,27] NQNs had mixed experiences of mentorship, some described having 'role models'[21] and others described being 'belittled'.[27] NQNs overwhelmingly identified the negative impact of having multiple men- tors. Lack of consistency meant that they were having to prove themselves to a new person each day, different mentors underestimating or overestimating their abilities.[21,22]

> I felt like I had a different preceptor [mentor] every day … They never asked me what I felt comfortable doing. I had such a conflict about techniques. One would say you should really do it this way. Another would want me to do the same thing another way. I was so overwhelmed. (Karen: 158)[21]

Peer support was discussed in four studies.[21,22,25,27] Confiding in their peers helped NQNs feel as though they were 'not alone'.[22] The benefits of starting ICU in groups were highlighted, as NQNs described having others around with a 'mutual understanding'.[26]

> There were a lot of other GNPs [graduate nurse programme] starting with me or around about the same time as me … you have people to relate to, you can understand (Ashton: 48)[26]

The journey to self-satisfaction

This theme encompassed the NQNs' development of critical thinking skills and ability to self-reflect. Critical thinking skills were discussed in five studies.[21,22,24,25,27] NQNs began to observe trends and treatment patterns, therefore anticipating interventions. Some had the confidence to make recommendations to the doctor.[21,22] They began to trust their instincts and as their confidence grew, they advocated for their patients if they 'felt that something wasn't right'.[27]

In four studies, participants were reflective, describing scenarios they had learnt from.[21,22,25,27] Often critical of their own practice, they questioned what they could have done better, without appreciating other contributing factors.[21,27]

> I was so busy and so overwhelmed that night. It was such a pain to have an isolation patient.

> I felt like my other two patients didn't get my attention. When she died, I felt like I could have done something different … I could have been a little bit more compassionate. I beat myself up for that. (Carmen: 194)[21]

In two studies, NQNs reflected upon scenarios, where they felt that they had 'made a difference' and achieved 'an incredible accomplishment'; this helped increase self-satisfaction and sense of belonging in ICU.[21,25]

> I have had a couple of patients that have said ... 'you are a really good nurse keep going this way, don't change, make sure you stay in nursing so that other people have the same experience that I have'; and you come out and you feel really good; and you think like wow ... I really made a difference to someone ... .(Rose: 24)[25]

ICU commitment

This theme explores NQNs preconceptions of ICU and their current position having now worked there. In three studies, NQNs were motivated to work in ICU by a 'dream' or 'calling'.[3,21,26] One attempted to get their 'foot in the door' by gaining experience as a Healthcare Assistant.[21] Some NQNs perceived that a lower nurse–patient ratio would give them more time
to look after their patients.[3]

> I felt that I could do a better job here (ICU) than on an understaffed ward. I feel that on a ward, if there isn't enough staff, I couldn't give the standard of care which is not only acceptable to the patient but to me and the reason I went into nursing. (Participant 4: 48)[3]

One study asked NQNs if they felt that ICU was an appropriate place to start their career and whether they wished to stay.[26] They held mixed views on whether ICU was an appropriate place for NQNs; most felt that it was dependent on previous experience, but others did not think this was necessary. Most NQNs in this study expressed a preference to stay in ICU.[26]

> For someone with absolutely no past nursing experience who from undergraduate go out and do GNP [graduate nurse programme] placement, ICU should not be the first placement. I think you should integrate all your basic nursing skills first .. . .(Carmen: 54)[26]

> I know that a lot of the senior staff sort of want their GNPs to have a placement on the ward first. But, I don't personally think it's necessary. I think we have those experiences through the undergraduate program. (Ashton: 56)[26]

Discussion

The initial aim of this review was to explore the experiences of NQNs beginning their career in Critical Care. The subsequent themes have been illustrated using a conceptual framework shown in Figure 2.

The base of the pyramid represents a strong foundation for building ICU readiness, achieved through undergraduate education, addressing knowledge deficits and inexperience, supernumerary time and the ICU orientation process. The journey to self-satisfaction is a large section at the centre of the pyramid, representing a significant period of self-reflection and developing critical thinking skills. ICU commitment is a slender portion at the top, where the NQN accepts themselves as an 'ICU nurse' and expresses a desire to stay. This is a fragile state, and the double-headed arrows flanking the pyramid represent how the NQN may take steps backwards. Having experienced a spectrum of emotions to get to this stage, revisiting negative emotions at the top of the pyramid may cause the NQN to regress. Relationships are equally fragile, positive relationships may strengthen

ICU commitment, but confrontations may cause the NQN to question their resolve. However, some NQNs may never reach the top of the pyramid, becoming trapped in the orientation phase, struggling to developing ICU readiness or never completing the journey to self-satisfaction. At this point, they may seek an alternative career path.

Those findings with direct practice implications will now be discussed further. Despite the inclusion of international studies, it is beyond the scope of this review and the author's expertise to critique the domestic health policy of other countries. Consequently, the discussion of findings takes place within a UK context, but the findings may have relevance in other healthcare systems, and the reader may assess their transferability.

Figure 2. The Newly Qualified Nurses' journey in Critical Care.

Preparation by undergraduate education

Preparation by undergraduate education for working in Critical Care was a key component of 'ICU Readiness'. NQNs who had not experienced an undergraduate placement in ICU felt disadvantaged now that they were employed as a registered nurse. The Nursing and Midwifery Council (NMC)[32] takes a generalist view on the range of undergraduate placement experiences that should be provided, recommending that 'training take place in hospitals, other health institutions and in the community', likely recognising the challenges of finding suitable practice placements. Some of these challenges include the provision of mentors; multiple cohorts of students per year causing peaks and troughs in student activity in practice; factors affecting local services, for instance local rules regarding student placement, ward closures, fluctuating staff, beds and altering clinical priorities as well as wider political and economic influences.[33]

Consistent mentorship

Mentor interactions were an important aspect of 'Developing Relationships'. NQNs expressed particular dissatisfaction in having multiple mentors. Some felt unable to practice new skills, having to prove themselves to each new mentor. Evans et al.[34] found that NQNs valued working the same shift patterns as their mentors. Chenery-Morris's[35] study supports this, with NQNs describing being 'pushed from pillar to post', as detrimental to their development. However, some learners felt that it was beneficial to work with other people in order to observe a range of practices. In reality, the availability of experienced staff, mentor workload and willingness to accept the role presents barriers to achieving continuity in mentorship,[36] alongside day-to-day challenges of staffing levels and patient acuity.

The Guidelines for the Provision of Intensive Care Services (GPICS)[13] previously advocated that all

newly appointed registered nurses, new to Critical Care, be allocated a mentor with a recognised mentorship qualification and that the learner spend a minimum of 40% of their time with 'their mentor/ assessor/practice educator and/or delegated appropriate other.' GPICS Edition 2[37] no longer makes recommendations upon nursing mentorship provision; instead, simply advocating that all staff newly appointed to Critical Care receive a supernumerary period to 'enable achievement of basic specialist competence'. This leaves it to individual units to determine their own model for supporting new staff.

Peer support

The importance of peer support from other NQNs emerged in this review. Boyle et al.'s[38] study supports this, reporting that group cohesion and developing friendships had a positive impact on clinical performance. Recently, Innes and Calleja[39] found that forming relationships with other graduates helped create a culture of support during the transition process, particularly when graduates attended an introductory education programme together.

One study in this review[26] revealed that employing NQNs in groups provided an opportunity for socialisation. Personal experience indicates that this helps new staff integrate and feel accepted as part of the team. Van Rooyen et al.[40] suggest that it may also help to develop professional identity, with positive outcomes for clinical practice. Arguably, this may also cause peaks and troughs in the workforce skill mix, placing additional pressure on mentors, frequently juggling supporting novice nurses with the demands of their workload.[41]

Employment of NQNs in critical care

One study[26] directly asked NQNs if they felt that Critical Care was a suitable environment to begin their career. Responses were mixed, but ultimately participants felt that it was dependent on previous experience. Some felt their undergraduate training was sufficient, and others expressed that ICU was more suited to those who had previously worked elsewhere in healthcare. The data in this review is insufficient to pass judgement on this issue, but existing literature discusses manager's perspectives. Ihlenfeld[1] recognises that due to nursing shortages, hiring NQNs is unavoidable; therefore, a thorough recruitment process is essential, with candidates who have experienced an undergraduate placement preferable. Everhart et al.[42] agree recognising that ICU is emotionally challenging. Ideal candidates possess maturity and willingness to develop long-term relationships with patients and families; previous experience an important indicator of this. Kirwan[43] provides a junior nurses' perspective, suggesting that with the right support, a novice can be empowered to cope in this environment. The NMC[44] states that undergraduate training should produce 'safe and effective' nurses at the point of registration, regardless of the environment, thus ultimately the recruitment of NQNs in ICU remains a matter for individual units. Arguably, capability is based as much on personal attributes, as on underpinning knowledge and skills; therefore, NQNs should be judged on individual merit, rather than past experience.[45]

Limitations

Only one study was set in the UK,[3] which may limit transferability of the findings. However, transferability is not the primary aim of qualitative research, which seeks to understand phenomena, and it is the responsibility of the reader to contextualise the findings.[46]

This work was undertaken as part of an MSc dissertation; thus, it was not possible to achieve triangulation through involving multiple researchers, due to academic constraints. Therefore, all aspects of the design, data extraction, synthesis and interpretation of findings were scrutinised by the academic supervisor regularly.

In this review, solely, the raw data (participant quotes) were synthesised to avoid including the primary reviewer's interpretations, a potential source of researcher bias. Arguably, this approach may not be representative of all the participants' views. However, four of the eight studies in this review were doctoral theses providing greater raw data than traditionally presented in published articles, and the authors of this review were satisfied that data saturation had been met through this method.

Conclusions

There is a perceived knowledge and skills deficit amongst NQNs entering Critical Care. An undergraduate placement in the area may enhance confidence in caring for the critically ill. Consistent mentorship is valued by NQNs, helping to develop supportive relationships and ensuring their skills are recognised and valued. Although mentorship provision is no longer dictated by national guidance if unit pressures permit, senior nurses coordinating the shift should aim to allocate NQNs to work with mentors consistently during the supernumerary phase and in the early days of independent working. Peer support was found to be an important coping mechanism. Although commencing employment of NQNs in groups may not always be possible, opportunities to facilitate socialisation should be provided. The data does not sufficiently address the suitability of employing NQNs in Critical Care; however, based upon existing literature, it is the author's opinion that the NQN should be judged on individual merit, rather than past experience. Instead, recommendations are provided to enhance support for NQNs transitioning in this area. This review has highlighted an overall paucity of research in this subject area; therefore, it is recommended that further studies on NQNs experience be carried out, in particular with a UK focus.

Acknowledgements

The lead author would like express thanks to King's College London and in particular academic supervisor Dr Tina Day, for supporting completion of this work; to the University of Gloucestershire for their support, particularly in granting study time and to CC3N for their encouragement in publishing this work. This work was completed with King's College London, as a dissertation project for an MSc in Education for Healthcare Professionals.

References

1. Ihlenfeld JT. Hiring and mentoring graduate nurses in the intensive care unit. *Dim Crit Care Nurs* 2005; 24: 175–178.
2. The Migration Advisory Committee (MAC). Partial review of the shortage occupation list: Review of nursing, www.gov.uk/government/uploads/system/uploads/attachment_data/file/510630/Partial_review_of_the_shortage_occupation_list_-_review_of_nursing. pdf (2016, accessed 19 March 2018).
3. O'Kane CE. Newly qualified nurses' experiences in the intensive care unit. *BACCN Nurs Crit Care* 2011; 17: 44–50.
4. O'Shea M and Kelly B. The lived experience of newly qualified nurses on clinical placement during the six months following registration in the Republic of Ireland. *J Clin Nurs* 2007; 16: 1534–1542.
5. Rudman A and Gustavsson JP. Early-career burnout among new graduate nurses: a prospective observational study of intra-individual change trajectories. *Int J Nurs Stud* 2007; 48: 292–306.
6. Maslach C. Different perspectives on job burnout. *Psych-CRTIQUES* 2004; 49: 168–170.
7. Kramer M. *Reality shock; why nurses leave nursing*. California: C.V. Mosby Company, 1974.
8. Higgins G, Spencer RL and Kane R. A systematic review of experiences and perceptions of the newly qualified nurse in the United Kingdom. *Nurs Educ Today* 2010; 30: 499–508.
9. Patterson B, Bayley E, Burnell K, et al. Orientation to emergency nursing: perceptions of new graduate nurses. *J Emerg Nurs* 2010; 36: 203–211.
10. Farnell S and Dawson D. 'It's not like the wards'. Experiences of nurses new to critical care: a qualitative study. *Int J Nurs Stud* 2006; 43: 319–331.
11. King L and Macleod Clark J. Intuition and the development of expertise in surgical ward and intensive care nurses. *J Adv Nurs* 2002; 37: 322–329.
12. Parker V, Giles M, Lantry G, et al. New graduate nurses' experiences in their first year of practice. *Nurs Educ Today* 2014; 34: 150–156.
13. Faculty of Intensive Care Medicine and Intensive Care Society. Guidelines for the provision of intensive care services, www.ficm.ac.uk/sites/default/files/GPICS% 20%20Ed.1%20%282015%29_0.pdf (2015, accessed 23 March 2018).
14. Aromataris E and Munn Z. *Joanna Briggs Institute reviewer's manual*. 4th ed, https://wiki.joannabriggs.org/display/MANUAL/JBI Reviewer%27s Manual (2017, accessed 4 December 2017).
15. Higgins J and Green S. Cochrane handbook for systematic reviews of interventions. Version 5.1.0. *The*

Cochrane collaboration, rhttp://handbook-5-1. cochrane.org/ (2011, accessed 21 April 2018).
16. Hannes K. Critical appraisal of qualitative research. In: Noyes J, Booth A, Hannes K, et al. (eds) *The Cochrane qualitative and implementation methods group supplementary guidance for inclusion of qualitative research in Cochrane systematic reviews of interventions. Version 1.* The Cochrane Qualitative and Implementation Methods Group, http://cqrmg.cochrane.org/supple- mental-handbook-guidance (2011, accessed 3 December 2017).
17. Spence-Laschinger H. Job and career satisfaction and turnover intentions of newly graduated nurses. *J Nurs Manage* 2012; 20: 472–484.
18. Shrewsbury and Telford Health Libraries. The literature search process: guidance for NHS researchers. Version 5, www.library.sath.nhs.uk/wp-content/uploads/2013/09/researchguidance.pdf (2013, accessed 22 April 2018).
19. Tong A, Sainsbury P and Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32 item checklist for interviews and focus groups. *Int J Qual Health Care* 2007; 19: 349–357.
20. Joanna Briggs Institute. Critical appraisal checklist for qualitative research, http://joannabriggs.org/assets/docs/critical-appraisal-tools/JBI_Critical_Appraisal-Checklist_for_Qualitative_Research2017.pdf (2017, accessed 8 May 2018).
21. Davenport JM. *The experience of new nurses beginning critical care practice: an interpretive phenomenologic study*. Doctoral Dissertation, University of Maryland, USA, 2000.
22. Ratta CD. Challenging graduate nurses' transition: care of the deteriorating patient. *J Clin Nurs* 2016; 25: 3036–3048.
23. Hussein R, Everett B, Ramjan LM, et al. New graduate nurses' experiences in a clinical speciality: a follow up study of new comer perceptions of transitional support. *BMC Nurs* 2017; 16: 1–9.
24. Lewis-Pierre L. *Workplace readiness of new ICU nurses: perceptions of managers, educators, preceptors and new RN graduates*. Doctoral Dissertation, University of Phoenix, USA, 2013.
25. Saghafi F, Hardy J and Hillege S. New graduate nurses' experiences of interactions in the critical care unit. *Contemp Nurs* 2012; 42: 20–27.
26. Salkaya A. *The lived experiences of graduate nurses working in an intensive care unit as their first placement after graduation: a phenomenological study*. Master of Nursing Science Dissertation, University of Adelaide, Australia, 2012.
27. Wiles LL. *Basic knowledge in critical care: a comparison of experienced and newly graduated nurses augmented with an examination of newly graduated nurses' experience making clinical judgements*. Doctoral Thesis, Duquesne University, USA, 2010.
28. Thomas J and Harden A. Methods for thematic synthesis of qualitative research in systematic review. *BMC Med Res Method* 2008; 8: 45.
29. Mohammed AM, Moles RJ and Chen TF. Meta-synthesis of qualitative research: the challenges and opportunities. *Int J Clin Pharm* 2016; 38: 695–704.
30. QRS International. NVivo 11 Pro. In: *Kings College London library guide. IT skills: NVivo*, http://libguides.kcl.ac.uk/ITSkills/NVIVO (2015, accessed 1 May 2018).
31. Moher D, Liberati A, Tetzlaff J, et al. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. The PRISMA group. *Ann Intern Med* 2009; 151: 264–269.
32. Nursing and Midwifery Council. Part 3: Standards for pre-registration nursing programmes, www.nmc.org.uk/standards/standards-for-nurses/standards-for-pre-registration-nursing-programmes (2018, accessed 31 July 2018).
33. Robinson S, Cornish J, Driscoll C, et al. Sustaining and managing the delivery of student nurse mentorship: roles, resources, standards and debates. National Nursing Research Unit, www.kcl.ac.uk/nursing/research/nnru/publications/Reports/Nurse-Mentorship-Report-Nov2012.pdf (2012, accessed 31 July 2018).
34. Evans J, Boxer E and Sanber S. The strengths and weaknesses of transitional support programmes for newly registered nurses. *Aust J Adv Nurs* 2008; 25: 16–22.
35. Chenery-Morris S. The importance of continuity of mentorship in pre-registration midwifery education. *Evid Based Midw* 2015; 13: 47–53.
36. Hurley C and Snowden S. Mentoring in times of change. *BACCN Nurs Crit Care* 2008; 13: 269–275.
37. Faculty of Intensive Care Medicine and Intensive Care Society. *Guidelines for the provision of intensive care services*. 2nd ed, www.ficm.ac.uk/sites/default/files/gpics-v2-final2019.pdf (2019, accessed 9 July 2019).
38. Boyle DK, Popkess-Vawter S and Taunton RL. Socialisation of new graduate nurses in critical care. *Heart Lung: J Acute Crit Care* 1996; 25: 141–154.
39. Innes T and Calleja P. Transition support for new graduate and novice nurses in critical care settings: an integrative review of the literature. *Nurs Educ Pract* 2018; 30: 62–72.
40. van Rooyen DRM, Jordan PJ, ten Ham-Baloyi W, et al. A comprehensive literature review of guidelines facilitating transition of newly graduated nurses to professional nurses. *Nurs Educ Pract* 2018; 30: 35–41.

41. Dziedzic ME. Preventing preceptor burnout. American nurse today online editorial, www.americannursetoday.com/preventing-preceptor-burnout (2010, accessed 15 July 2018).
42. Everhart B, Slate M and Flynn MB. New graduates in the burn unit. *Crit Care Nurs Clin N Am* 2004; 16: 51–60.
43. Kirwan L. Starting out – an intensive experience. *Nurs Child Young People* 2015; 27: 14.
44. Nursing and Midwifery Council. Future nurse: standards of proficiency for registered nurses, www.nmc.org. uk/globalassets/sitedocuments/education-standards/future-nurse-proficiencies.pdf (2018, accessed 31 July 2018).
45. Clark T and Holmes S. Fit for practice? An exploration of the development of newly qualified nurses using focus groups. *Int J Nurs Stud* 2007; 44: 1210–1220.
46. Walsh D and Downe S. Appraising the quality of qualitative research. *Midwifery* 2006; 22: 108–119.