Experiences of new graduate nurses working in a neonatal intensive care setting: a systematic review protocol of qualitative evidence

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Review question/objective: The overall objective of this systematic review is to identify, critically appraise and synthesize the experiences of new graduate nurses in the neonatal intensive care unit (NICU). The specific review question is: what are the experiences of new graduate nurses working in a NICU setting?

Keywords Neonatal intensive care; neonatal intensive care unit; new graduate nurses; novice nurses; special care nursery

Background

New graduate nurses are regarded as a precious health resource in light of the current workforce shortage.1 As the global deficit of nurses and doctors reaches 2.4 million,2 there has been a growing interest in new graduate nurse turnover rates and the extent to which these rates are linked to their experiences in the first 12 months of employment as a registered nurse. For instance, it was forecast in 2012 that by 2025, Australia would have a critical shortfall of nurses3 resulting in increased demand for new graduate nurses. In addition to this, the turnover rates for new graduate nurses have increased, with a proportion of new graduates choosing to leave their employer or change clinical area within the first 12 months of their career.4,5 This results in unforeseen costs due to hiring of temporary staff, additional induction programs and loss of department productivity.6-9

Commencing employment as a graduate nurse signals the genesis of a complex transitional period for the individual10,11 that can be a stressful and challenging experience due to the increased accountability and responsibility as they journey from a student to registered nurse.11-14 Many new graduates are inclined to choose a hospital as their first employment setting and, as a result, are exposed to demanding work conditions, large patient loads, shift work and mandatory overtime with limited opportunity to exercise the quality patient care that they practised in nursing school.15

In a phenomenon known as “reality shock”, new graduates (especially those working in acute care wards) may experience anxiety and stress due to the internal conflict that arises when their perceived role does not meet the reality of the role, resulting in feelings such as job dissatisfaction, low self-esteem or lack of confidence in the performance of clinical skills.6,7,16 Furthermore, other reasons cited for the high attrition rates of new graduate nurses during their first 12 months post-registration include being allocated to clinical areas outside of their choice, socialization expectations, unsupportive work environments and organizational culture.12,16 Understanding the impact of these complex health workforce issues on the experiences of new graduate nurses is essential in maintaining a productive work environment and a sustainable workforce future.6

The transition from student to registered nurse has been an area of focus in Australia since the 1990s, when nurse education was transferred from a hospital-based learning environment to the tertiary sector.5,17 As a result, health agencies and organizations developed a 12-month long graduate
year program to assist new graduates in assimilating into their new role and providing an opportunity for mentoring, feedback,\textsuperscript{6,18} debriefing\textsuperscript{7} and praise.\textsuperscript{1,2,16,19} Preceptorship programs have been identified as a positive factor in the retention and recruitment of nursing staff.\textsuperscript{20-22} In the United States, there is no specific undergraduate coursework for neonatal nurses to undertake; however, some neonatal intensive care units (NICUs) will offer new graduates a preceptorship program as part of orientation to the ward.\textsuperscript{23} In the United Kingdom, some universities offer a specific undergraduate degree in child nursing,\textsuperscript{24} which may assist students in the transition to working in the NICU. Therefore, not all new graduates have the opportunity to participate in a formalized support program.

The NICU or special care nursery is an example of a specialized care ward that assists in the care of sick, premature or dying infants. Working in this area requires nurses to acquire a range of specialized skills and knowledge specific to perinatal, antenatal and neonatal development, treating prematurity, illness, congenital abnormalities, surgery, breastfeeding and an ability to cope physically and emotionally with the demands of the role as to effectively assist the families of these infants during this time.\textsuperscript{25,26} The environment of the NICU is greatly affected by the high-intensity stress experienced by family members, which can lead to poor understanding of clinical explanations and advanced care decisions for the family,\textsuperscript{27} as well as increased stress during service provision for the novice nurse. As nurse’s practice is based strongly on the philosophy of family centered care,\textsuperscript{28} nurses in the NICU must be able to support parents during this emotionally turbulent time and ensure clinical explanations and advanced care decisions are done so in an informed manner.\textsuperscript{27}

Previous research exploring the perceptions of experienced nurses working in the NICU has highlighted the issues of burnout, understaffing, physiological and physical stress.\textsuperscript{29,30} Research in this area has shown that nurses who work in the NICU have expressed feelings of helplessness, emotional exhaustion and a reduction in personal accomplishment.\textsuperscript{29} A study in 2008 reported that approximately 50\% of new graduate nurses leave their positions within the first year of working in the NICU due to the harsh realities of the working environment, feelings of distress or an inability to cope when dealing with the outcomes of ethical dilemmas.\textsuperscript{29} Due to the nature of the NICU or special care nursery, new graduate nurses may experience a different and more complex role transition in comparison to other new graduates working in general wards.

Although there has been growing interest in the transition experience of new graduate nurses and the factors that could contribute to turnover and retention,\textsuperscript{6,9} a search of sources, including the JBI Database of Systematic Reviews and Implementation Reports, Cochrane Library and Google Scholar, identified no systematic reviews of new graduate nurse experiences in the neonatal intensive care setting or special care nursery setting. Many articles discussing the experiences of new graduate nurses highlight a need for more in-depth research to develop a better understanding of their overall experience, improve organizational support, job satisfaction and retention rates in specialized care wards.\textsuperscript{6,17,18,31} This systematic review will aim to appraise and synthesize the current evidence regarding the experiences of new graduate nurses working in the NICU. As a result, the findings of this review may be used to provide evidence to assist nurse managers, educators and organizations in the development of appropriate programs that adequately support the needs of new graduate nurses.

\textbf{Inclusion criteria}

\textbf{Types of participants}

The current review will consider studies that include new graduate nurses of any age, gender or background that have been working in an NICU for a period of 12 months or less in any country. For the purpose of this review, a new graduate nurse is a person who has completed a baccalaureate course (the degree awarded to an individual who has completed undergraduate studies usually at a university/college level), associate degree, diploma or equivalent course in nursing, has qualified for registration or licensure and is working within the first year post-registration as a registered nurse.

\textbf{Phenomena of interest}

The phenomenon of interest for this systematic review is the experiences of new graduate nurses working in the NICU setting. These experiences can include the nurse’s perceptions, perspectives, views, challenges, feelings, beliefs, thoughts, facilitators
and barriers that they have experienced during their 12 months post-registration. The experiences may include, but are not limited to, communication, advocacy, education and minimization of distress in dealing with patients and families.

**Context**
The current review will include new graduate nurses working in an NICU or special care nursery in any country. A neonatal setting is a place where care is provided to sick infants from birth up to 28 days postnatal age. Special care nurseries can be co-located within an NICU (tertiary special care nursery) or not located within an NICU (non-tertiary special care nursery). Pediatric intensive care settings will be excluded in this review.

**Types of studies**
The current systematic review will consider studies that focus on qualitative data including, but not limited to, designs such as phenomenology, grounded theory, ethnography and qualitative components of studies using mixed method designs.

**Search strategy**
The search strategy aims to find both published and unpublished studies. Studies published in English will be considered for inclusion in this review. Studies published from 2000 to the present will be considered for inclusion in this review. The time range was established to capture a wide range of data that would yield results relevant to current practice. At present, no systematic reviews that the authors are aware of have been undertaken on this topic. A three-stage search strategy will be utilized in this review.

**Stage 1:** An initial search of MEDLINE (PubMed) and CINAHL will be undertaken using a limited set of keywords. Initial keywords to be used will be experiences, neonatal intensive care, new graduate nurses, novice nurses, perceptions, support, barriers, facilitators, resources, perinatal and special care nursery. The titles of studies in the initial search will be reviewed to expand the keywords, and the index terms used to describe the studies will be identified.

**Stage 2:** Individual search strategies will be developed for each database using identified keywords and index terms. A second search will then be undertaken using the individual search strategies developed for each database. The databases that will be searched for published literature include: CINAHL, MEDLINE (PubMed), Scopus, PsycInfo, Cochrane library, Science Direct, and ProQuest Dissertations & Theses.

**Stage 3:** The reference lists of all included studies will be searched for additional studies.

**Assessment of methodological quality**
Papers selected for retrieval will be assessed by two independent reviewers for methodological quality prior to inclusion in the review using standardized critical appraisal instruments from the Joanna Briggs Institute Qualitative Assessment and Review Instrument (JBI-QARI) (Appendix I). Any disagreements that arise between the reviewers will be resolved through discussion or with a third reviewer.

**Data extraction**
Data will be extracted from papers included in the review using the standardized data extraction tool from JBI-QARI (Appendix II). The data extracted will include specific details such as the phenomena of interest, participants and method. Data extraction will be completed independently by two or more reviewers. The information extracted will be analyzed for similarities and differences. Where there are differences, a third reviewer will be utilized followed by a consensus meeting between the reviewers to assist in further standardizing the data extraction procedure.

**Data synthesis**
Qualitative research findings will, where possible, be pooled using JBI-QARI. This will involve the aggregation or synthesis of findings to generate a set of statements that represent that aggregation, through assembling the findings rated according to their quality, and categorizing these findings on the basis of similarity in meaning. These categories are then subjected to a meta-synthesis to produce a single...
comprehensive set of synthesized findings that can be used as a basis for evidence-based practice. Where textual pooling is not possible, the findings will be presented in narrative form.

References
Appendix I: QARI appraisal checklist

**JBI QARI Critical Appraisal Checklist for Interpretive & Critical Research**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Unclear</th>
<th>Not Applicable</th>
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<tr>
<td>1. Is there congruity between the stated philosophical perspective and the research methodology?</td>
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<td>2. Is there congruity between the research methodology and the research question or objectives?</td>
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<td>3. Is there congruity between the research methodology and the methods used to collect data?</td>
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<td>4. Is there congruity between the research methodology and the representation and analysis of data?</td>
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<td>5. Is there congruity between the research methodology and the interpretation of results?</td>
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<td>6. Is there a statement locating the researcher culturally or theoretically?</td>
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<td>7. Is the influence of the researcher on the research, and vice-versa, addressed?</td>
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<td>8. Are participants, and their voices, adequately represented?</td>
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<td>9. Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?</td>
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<td>10. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?</td>
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Overall appraisal: Include Exclude Seek further info.

Comments (Including reason for exclusion)
Appendix II: JBI QARI data extraction instrument

**JBI QARI Data Extraction Form for Interpretive & Critical Research**

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<thead>
<tr>
<th><strong>Reviewer</strong></th>
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<tr>
<td><strong>Author</strong></td>
<td>Year</td>
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<td><strong>Journal</strong></td>
<td>Record Number</td>
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**Study Description**

- Methodology
- Method
- Phenomena of Interest
- Setting
- Geographical
- Cultural
- Participants
- Data analysis
- Authors Conclusions
- Comments

Complete: Yes ☐ No ☐
<table>
<thead>
<tr>
<th>Findings</th>
<th>Illustration from Publication (page number)</th>
<th>Evidence</th>
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Extraction of findings complete: Yes ☐ No ☐