

1 **Review title**

2 Individual and environmental factors that influence longevity of newcomers to nursing and midwifery: a
3 scoping review protocol

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6 **Abstract**

7 **Objective:** To identify and map the literature that describes as many individual and environmental
8 factors and the interaction between factors that influence nurses and midwives to stay in or leave their
9 discipline within the first three years of practice.

10 **Introduction:** The turnover rate of newcomers (within the first three years) to nursing and midwifery is
11 higher than in later years, thus contributing to the worldwide shortage. Both individual and
12 environmental factors, often in combination, contribute to this attrition. Many studies demonstrate the
13 associations of factors with turnover or intention to stay however, the scope of factors has not been
14 documented.

15 **Inclusion criteria:** Newcomers are registered nurses and registered midwives within the first three
16 years of entering their discipline. Quantitative and qualitative studies, systematic reviews, text and
17 opinion pieces that explore individual or environmental factors that influence the decisions to leave or
18 to remain in nursing and midwifery in any context, will be considered. Factors may include coping,
19 anxiety, mindfulness, practice environment or combinations such as resilience, satisfaction and
20 burnout. Articles must have been peer reviewed and/or written by a person of standing in the field.
21 Literature since 1974 and published in English will be considered. Newcomers who have completed
22 vocational training will be excluded.

23 **Methods:** The Joanna Briggs Institute method for scoping reviews will be followed. An extensive
24 search of multiple databases and the gray literature will be undertaken. Data extracted will be
25 synthesized and results reported using a mind map, tables and narrative form.

26

27 **Keywords:** attrition; early career; newly graduated nurses/midwives; retention; turnover

28 **Abstract word count:** 245

29 **Total manuscript word count:** 2504

30

31 Introduction

32 The World Health Organization has estimated that the worldwide shortage of nurses and midwives
33 will be 7.6 million by 2030.¹ Within this estimate, the regions of Africa, Americas, East Mediterranean,
34 South East Asia and Western Pacific have predicted shortages ranging from 0.5 million in the
35 Americas to 2.8 million in Africa.² More specifically, to avoid further shortages, the United States (US)
36 require an additional 370,000 nurses by 2028,³ Australia requires 85,000 nurses and midwives by
37 2025⁴ and Canada requires 60,000 nurses by 2022.⁵ Meanwhile, in 2018, the number of new entrants
38 onto the Nursing and Midwifery Council register to practice in the United Kingdom was exceeded by
39 the numbers leaving.⁶

40 To overcome this shortage there are two strategies that can be used: recruit new nurses and
41 midwives into the workforce and retain the nurses and midwives once they are in the workforce. The
42 latter strategy has had less focus until recently.⁴⁻⁶

43 Across the world reported turnover rates of nurses vary and range between 5 to 60%.⁷⁻¹⁰ Specifically,
44 a study of registered nurse (RN) turnover conducted in Western Australia (WA), New South Wales
45 (NSW) and Australian Capital Territory in 2014 found an annual turnover of 15.1% with rates ranging
46 from 12.6% in NSW to 16.7% in WA¹⁰ while a study in Indonesian private hospitals found turnover
47 rates between 15-44%.⁷ The turnover rates for RNs are higher in the early years of nursing^{4,5,7} with a
48 reported mean turnover of 22% in the first three years of practice in Indonesian hospitals,⁷ 28% in
49 Canada,⁵ up to 55% in Australia¹¹ and 30% in the first year of practice in the US rising as high as 57%
50 in the second year.¹²

51 The high turnover of nurses and midwives in the health care system has consequences for the
52 economy, patient care and staff. A loss of productivity and costs associated with replacement of
53 nurses and midwives often impact public funds.¹³ Disruption of nursing and midwifery teams and
54 increased workloads heighten levels of stress and burnout for those that remain which contributes to
55 job dissatisfaction.¹³ Further, the consequences of nurse and midwife shortages impact staff patient
56 ratios and skill mix which adversely impact patient outcomes with lower quality of care provided.¹⁴

57 The reasons for leaving the profession are complex as many personal and workplace issues can
58 impact job satisfaction. However, we do know that nurse retention can relate strongly to the nurses'
59 levels of psychological resilience.¹⁵ Recent efforts have been made to understand the key individual
60 variables that contribute to resilience in nurses. The International Consortium of Workforce Resilience
61 posits that nurses who believe that they have the ability to solve problems at work (self-efficacy) can
62 detach and reflect on difficult experiences (mindfulness) and use effective strategies to manage day
63 to day stress (coping), are likely to be more resilient than nurses who don't have or use these
64 particular skills.¹⁶ While a low level of psychological resilience has been associated with negative
65 outcomes such as burnout, it is also critical to consider the context or the environment in which the

66 nurse is working and how this impacts on their ability to build and maintain resilience. Cusack et al.¹⁷
67 theorize that environmental factors of support and development of nurses and midwives' competence,
68 professionalism and wellbeing alongside the individual's personal and professional characteristics are
69 necessary to build resilience. A recent paper by Rees et al.¹⁸ found that both individual factors
70 (resilience and negative affect) and environmental factors (the practice environment) explained
71 burnout scores when considered together. The relationship between staff retention and a positive
72 practice environment has been established and strategies to create a positive practice environment
73 have been identified.¹⁹ Based on these, an international research group, RN4CAST Consortium,¹⁹
74 aims to produce models forecasting intention to leave and find new approaches to more effectively
75 manage nursing resources, particularly retention of nurses within the workforce.

76 While these studies are focused on retention of nurses at any stage of their career, due to the higher
77 turnover rate, researchers have studied newcomers to nursing and midwifery as a specific group.
78 Authors²⁰ of an integrative review on negative workplace behaviour towards graduate nurses reported
79 disrespectful, unprofessional and uncivil behaviour targeted towards them. They noted that at some
80 workplaces the negative behaviour was as high as 57.1% and that the 'precipitating factors included
81 perceived lack of capability, magnifying power and hierarchy, leadership style and the influence of
82 management'.^{20(p.41)} This behaviour towards graduates resulted in low job satisfaction, cynicism,
83 burnout and intention to leave.

84 Further, there has been considerable research into graduate nurse transition from the student role to
85 qualified nurse.²¹ Factors studied included the support provided to graduate nurses as well as the
86 preparation of their preceptors and mentors.²² While a systematic review on effective strategies and
87 interventions to assist transition is being updated,²³ a recent systematic review synthesized the
88 characteristics of interventions that were successful in reducing turnover and increasing retention of
89 early career nurses.²⁴ Although the relationship between the newcomer and the mentor or preceptor
90 was identified as an important characteristic influencing newcomer retention, the individual
91 characteristics of the newcomers were not identified and the remaining characteristics were
92 environmental. Transition to different geographical locations and specific specialities have also been
93 explored.^{25,26} For example, authors²⁵ undertook a scoping review of support for new graduates'
94 transition to rural and remote practice. While this review only considered the first year of transition,
95 they found that the lack of supportive programs and training for mentors; and poor resourcing
96 impacted retention.

97 While these latter studies focus on environmental factors it is evident that both individual and
98 environmental factors and the interaction between them contribute to newcomers' decisions to remain
99 or leave their professions in nursing and midwifery.

100 A search of PROSPERO, the Cochrane Library, the Joanna Briggs Institute Database of Systematic

101 Reviews and Implementation Reports and MEDLINE revealed a number of related systematic and
102 integrative reviews, and individual studies. Typically, these reviews and studies focussed on a few
103 factors that contributed to effective graduate nurse transition^{13,20,22-25} or retention of nurses at any
104 stage of their career.^{7-9,15,18} No reviews or studies appear to have captured all the characteristics that
105 influence the retention or turnover of newcomers or their intent to leave or stay in nursing and there
106 are very few studies focussing on midwifery. No current or underway scoping or systematic reviews
107 on the topic were identified. This scoping review seeks to identify and map the literature that
108 describes as many individual and environmental factors as possible and the interaction between
109 factors to inform a proposed mixed methods study. The future study plans to understand
110 characteristics of newcomers who stay in nursing and midwifery, natural and induced attrition during
111 the first three years in the nursing and midwifery professions, any differences within and between
112 nurses and midwives to identify vulnerable groups and any context specific factors.

113 **Review question**

114 What environmental and individual factors influence nurses and midwives to stay or leave their
115 profession within the first three years of clinical practice in their discipline?

116 **Inclusion criteria**

117 **Participants**

118 This review will consider studies that include RNs and registered midwives (RMs) who are newcomers
119 within the disciplines of either nursing or midwifery. Included within this, are those who became RM
120 following being a RN as midwifery is a separate discipline to nursing (eg. nurse-midwife).

121 Newcomer is defined as nurses and midwives employed in their first three years of practice in their
122 registered discipline. Three years is chosen as evidence suggests that nurses' stress levels are higher
123 in the first two years of practice compared to after the third year therefore influencing the decision to
124 stay or leave the profession.²⁷ Further, a recent study reported the RN turnover rate as eight times
125 greater in the first three years of clinical practice compared to later.⁷

126 Nurses and midwives whose educational preparation leads to registration on a part of the register that
127 allows them to work only under the supervision of registered nurses, midwives or physicians will be
128 excluded eg. enrolled, licensed practical and licensed vocational nurses. Nurses who become
129 registered having converted from these groups that could only work under supervision, will be excluded
130 as they are not newcomers to the discipline.

131 **Concept**

132 This review will consider studies that explore individual or environmental factors that influence the
133 decisions to leave or to remain in nursing and midwifery within the first three years of practice. Individual

134 factors are defined as personal characteristics and may include but are not limited to, age, sex, marital
135 status, psychological capital (self-efficacy, hope and optimism) anxiety, perceived preparedness,
136 mindfulness, neuroticism and coping.

137 Environmental factors are structures that influence the practice environment in which care is delivered
138 such as staffing, work load, physical and human resources, management, support (work place
139 interventions that nurture and enable newcomers such as working relationships, leadership) and
140 development (interventions that empower newcomers such as professional development, mentoring,
141 explicit role expectations).¹⁷

142 Combinations of both individual and environmental characteristics may contribute to nurses and
143 midwives leaving or staying in their discipline such as resilience, job satisfaction and burnout^{18,26}
144 therefore, these factors will also be included.

145 Many of the individual, environmental and combination factors can be measured with reliable, validated
146 instruments such as the Spielberger State Trait Anxiety Inventory form Y2 (STAI-Y2), the Connor-
147 Davidson Resilience Scale, the Professional Quality of Life Scale version 5 (ProQoI5), the Positive and
148 Negative Affect Schedule short form (PANAS-SF), the Five Facet Mindfulness Questionnaire (FFMQ)
149 and Practice Environment Scale-Nursing Work Index (PES-NWI). These, and others, will be included.

150 **Context**

151 This review will consider studies that were carried out in primary, secondary or tertiary healthcare
152 settings including the community, mental health and aged care. Articles from any country will be
153 considered for inclusion. The newcomers will have been working clinically and provided direct patient
154 care. Newcomers who were employed in education, research, administration or non-nursing/midwifery
155 roles will be excluded.

156 **Types of sources**

157 The following research designs will be considered for inclusion: experimental and quasi-experimental
158 study designs including randomized controlled trials, non-randomized controlled trials, before and
159 after studies and interrupted time-series studies; analytical observational studies including prospective
160 and retrospective cohort studies, case-control studies and analytical cross-sectional studies;
161 descriptive observational study designs including case series, individual case reports and descriptive
162 cross-sectional studies. Qualitative studies will also be considered, including, but not limited to,
163 designs such as phenomenology, grounded theory, ethnography, qualitative descriptive, action
164 research and feminist research. In addition, mixed methods studies, systematic reviews, program
165 evaluations and quality improvement reports that meet the inclusion criteria will be considered. All
166 research articles will only be considered if they have been peer reviewed. Factors from individual
167 studies that have been incorporated in an included systematic review will not be counted a second
168 time. Text and opinion papers will be considered for inclusion in this scoping review if they are

169 published in peer-reviewed academic journals, meet the review objective and the source of the
170 opinion has standing in the field. Dissertations and theses will be included. Conference papers will be
171 included when full papers are available and have undergone peer review or authors have standing in
172 the field however, where only abstracts are available, conference papers will be excluded. Policy
173 documents will also be excluded as they should be based on peer reviewed documents.

174 The earliest publication highlighting attrition in nursing and the difficulties of transition for graduate
175 nurses was in 1974,²⁸ therefore all articles since this date to present will be considered for inclusion in
176 this review. Further, articles published in English will be included.

177 **Methods**

178 The proposed scoping review will be conducted in accordance with the Joanna Briggs Institute
179 methodology for scoping reviews.²⁹

180 **Search strategy**

181 The search strategy will aim to locate both published and unpublished primary studies, reviews and text
182 and opinion papers. An initial limited search of MEDLINE (Ovid) and CINAHL Plus (Ebsco) was
183 undertaken to identify articles on the topic. The text words contained in the titles and abstracts of
184 relevant articles, and the index terms used to describe the articles were used to develop a full search
185 strategy for MEDLINE (see Appendix I). This search strategy has been peer reviewed by the PRESS
186 Forum. The peer reviewed search strategy, including all identified keywords and index terms will be
187 adapted and translated across databases on the various platforms. The reference lists of articles
188 included in the review will be screened for additional papers. Key studies will be checked against citation
189 databases Scopus and Web of Science for forward citations.

190 **Information sources**

191 The databases to be searched include:

192 On the Ovid Platform: Medline, Embase, Emcare, Global Health, Joanna Briggs Institute EBP, Maternity
193 & Infant Care Database and PsycInfo.

194 Cochrane Library.

195 On the Ebsco Platform: CINAHL Plus with full text.

196 On the ProQuest Platform: ERIC, ABI Inform, Business Source Complete, Healthcare Administration.

197 On the Informit Platform: Health Collection, APAIS Health, AMI.

198 Citation databases: Scopus and Web of Science.

199 Sources of unpublished studies and gray literature to be searched include: OpenGrey, Google Scholar,
200 ProQuest Dissertations and Theses, CORE, BASE, OpenDOAR.

201 **Study selection**

202 Following the search, all identified records will be collated and uploaded into EndNote version X9
203 (Clarivate Analytics, PA, USA) and duplicates removed. Each title and abstract will then be screened
204 by two reviewers independently for assessment against the inclusion criteria for the review. Potentially
205 relevant papers will be retrieved in full and their citation details imported into the Joanna Briggs
206 Institute's System for the Unified Management, Assessment and Review of Information (JBI SUMARI)
207 (The Joanna Briggs Institute, Adelaide, Australia). The full text of selected citations will be assessed
208 in detail against the inclusion criteria by two independent reviewers. Reasons for exclusion of full text
209 papers that do not meet the inclusion criteria will be recorded and reported in the scoping review. Any
210 disagreements that arise between the reviewers at each stage of the selection process will be
211 resolved through discussion, or with a third reviewer. The results of the search will be reported in full
212 in the final scoping review and presented in a Preferred Reporting Items for Systematic Reviews and
213 Meta-analyses (PRISMA) flow diagram³⁰

214 **Data extraction**

215 Data will be extracted from papers included in the scoping review by independent reviewers using a
216 data extraction tool developed by the reviewers. The data extracted will include specific details about
217 the population, concept, context, methods and key findings relevant to the review question.
218 Psychometric properties and details of the instruments used to measure the individual and
219 environmental factors identified will be extracted.²⁹ The data extraction tool will be modified and
220 revised as necessary during the process of extracting data from each included paper. Modifications
221 will be detailed in the full scoping review. Any disagreements that arise between the reviewers will be
222 resolved through discussion, or with a third reviewer. Authors of papers will be contacted to request
223 missing or additional data, where required.

224 **Data presentation**

225 The extracted data will be presented in diagrammatic and tabular form in a manner that aligns with
226 the objective of this scoping review. Mind maps maybe used to demonstrate the associations between
227 factors. A narrative summary will accompany the tabulated and diagrammatic results and will describe
228 how the results relate to the review's question.

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313 **Appendix I: Search strategy**

314 Database: Ovid MEDLINE(R) ALL <1946 to January 10, 2020>

315 Search conducted on 13th January 2020

316 -----

317 1 (new graduate nurs* or new graduate midwi* or new nurs* or new midwi* or graduate nurs* or
318 graduate midwi* or novice nurs* or novice midwi* or neophyte nurs* or neophyte midwi*).ti,ab,kf.
319 (4294)

320 2 (early career adj3 (nurs* or midwi*).ti,ab,kf. (66)

321 3 (newcomer* adj5 (nurs* or midwi*).ti,ab,kf. (16)

322 4 (recent* graduate* adj3 (nurs* or midwi)).ti,ab,kf. (57)

323 5 (newly hired adj3 (nurs* or midwi*).ti,ab,kf. (69)

324 6 (newly qualified adj3 (nurs* or midwi*).ti,ab,kf. (336)

325 7 nursing staff/ or nursing staff, hospital/ (65294)

326 8 *Nurses/ (28529)

327 9 *Nurse Midwives/ (5443)

328 10 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 (101415)

329 11 (intent* adj3 (stay* or remain* or resign* or leav* or quit*).ti,ab,kf. (2522)

330 12 (Retention adj3 (staff or Nurs* or midwi*).ti,ab,kf. (1932)

331 13 (Attrition adj3 (staff or nurs* or midwi*).ti,ab,kf. (234)

332 14 (Turnover adj3 (staff or nurs* or midwi*).ti,ab,kf. (1753)

333 15 Career intention*.ti,ab,kf. (281)

334 16 Personnel turnover.ti,ab,kf. (99)

335 17 exp Personnel Turnover/ (5067)

336 18 11 or 12 or 13 or 14 or 15 or 16 or 17 (9890)

337 19 10 and 18 (3150)

338 20 limit 19 to english language (3031)

339 21 limit 20 to yr="1974 -Current" (3021)