

The critical care nursing role in low and lower-middle income settings: A scoping review protocol

Background

The high burden of critical illness in low-income countries is well documented (1, 2), with worse clinical outcomes commonly reported in low-income versus high-income settings (3, 4). Despite controversy pertaining to the development of Intensive Care Units (ICU) and critical care services in resource limited settings (5), there are an increasing number of dedicated ICU's reported in these regions. For example, in their 2015 systematic review; Murthy and colleagues (6) identified 36 ICU's in 31 low-income countries, which likely represents a conservative estimate of the actual number of ICU's situated in low-income and resource-limited settings.

Despite the human resource limitations commonly experienced in low-income settings (7), critical care nursing as a speciality is well established. As an example, in their 2009 paper, Okafor identified that critical care nursing with specialist training was introduced to Nigeria in 1982. A more recent indication of the prevalence of critical care nursing in these regions can be seen in the 2015 worldwide review of critical care nursing organisations and activities undertaken by Williams et al. (9), in which the investigators received responses from 58 national organisations, 16 of which were situated in low-income countries. Although, critical care nursing seems common in some lower-income settings, it is often reported that a lack of skilled staff with specialist training exist in many hospitals (10, 11). Additionally, it is noted that critically ill patients are cared for in some ICU's by physicians' assistants and nursing assistants, with additional care being provided by family and friends, rather than specialist critical care nurses (11).

It is recognised that the availability of resources to manage critically ill patients in low-income settings are restricted when compared to high-income countries (4). However, a standard, global definition of ICU has been suggested by Marshall et al (12) and includes stratification into level 1-3 ICU's achievable in a variety of resource contexts. Regardless of level, Marshall's definition centres on the provision of a discreet space within a healthcare centre, where patients with acute, life threatening organ dysfunction can be cared for by dedicated and skilled team of healthcare providers.

There is an expectation that ICU nursing will mean a higher nurse to patient ratio, enhanced skills and a variety of environment specific responsibilities (12). In resource rich settings these commonly include the titration of vasoactive medications, management of mechanical ventilation and advanced monitoring of cardio-respiratory function. Yet, little is known about the current resourcing and capacity of critical care services in lower-income and resource-limited settings generally (6). It is even less clear what is currently known of the ICU nursing role and how it is enacted in these settings. If future efforts are to be made in building ICU nursing capacity in resource limited critical care services, there is a pressing need to clarify what roles, tasks and responsibilities are fulfilled by nurses and their proxies working in these environments.

Objectives

The objectives of this review are aligned with those recommended by Lockwood and colleagues as being appropriate to be addressed by a scoping review (13). The objectives of this study are: 1) clarify the working definitions and conceptual boundaries relating to critical care nursing in lower income countries 2) report on the types of evidence that are published in this field 3) examine the

conduct of research on critical care nursing in these contexts, to inform the future design of research studies and the development of capacity building programs.

Methods

All sources of evidence, both published in peer reviewed formats or in the grey literature, will be considered for inclusion in this scoping review. It is probable that grey literature searching will yield evidence such as website data, reports and white papers as well as academic papers not easily retrieved through library database searching (14). The JBI Manual for Evidence Synthesis was used to develop this protocol and scoping review (15).

Developing the title and research questions

As recommended by Peters et al (15), the mnemonic: population, concept, context (PCC) was used to guide the development of the title and research questions for this scoping review. A primary research question and four sub-questions were created to address the objectives of this review. Therefore, the population for this research is nurses working in critical care settings. The concepts to be explored are: 1) their roles, responsibilities, and activities and 2) their training, preparedness for practice, and ongoing education. The context is low and lower-middle income countries, as defined by the World Bank (16)

Primary research question:

How is the critical care nursing role enacted in low- and lower-income countries?

Sub-questions:

Who is involved in providing nursing care in critical care settings in low-income and resource limited settings? What are the day to day roles and responsibilities of those providing nursing care in critical care settings in low-income and resource limited settings?

What professional scope of practices are reported for nurses working in critical care settings in low-income and resource limited settings?

What training and ongoing education is available to nurses working in critical care settings in lower-income countries

Inclusion criteria

A comprehensive search strategy will be developed to identify literature relevant to answering the research questions. The PCC framework (15) was also used to define the evidence to be included in this scoping review. To maintain a focus on nursing in low and lower-middle income country health systems, two exclusion criteria associated with population and context were determined (see table 1). This review will consider all sources of evidence that meet the criteria for inclusion in the analysis.

Table 1	
Inclusion criteria	
P-Population	Nurses and their proxies working in critical care settings
C-Concepts	Roles, responsibilities, scope of practices
	Training, education
C-Contexts	Low and lower-middle income countries
Other	Evidence published in the last 10 years
Exclusion criteria	

P-Population	Visiting international nurses engaged in capacity development programs
C-Context	Nursing undertaken in military hospitals
Other	Evidence published in languages other than English

Search strategy

As recommended within the JBI manual (15), the search strategy for a scoping review should be as comprehensive as possible while realistically considering time and resource constraints. A three-part search strategy is required to meet the JBI guidelines. To fulfil these criteria the search strategy will include:

- 1) An initial limited search of 3 databases: EMBASE, MEDLINE and EMCARE, accessed via the Ovid platform. These three databases have been chosen to include firstly, the MeSh and Emtree subject headings and secondly, publications found in journals with both a primarily medical or nursing and allied health focus. An analysis of text words contained in the title and abstract of retrieved papers, and of the index terms used to describe the articles will be used to guide the second stage of the search strategy.
- 2) A second search incorporating all identified keywords and index terms will be completed across all included databases: 1) EMBASE 2) MEDLINE 3) EMCARE 4) Global Health 5) SCOPUS 6) Web of Science. The terms will be adjusted and used in searching sources of grey literature. Sources of grey literature will include: 1) Keyword searching in Google™ and Google Scholar™ 2) Keyword searching within the World Health Organisation website 3) Hand searching documents, publications, and links found within the World Federation of Critical Care Nurses (WFCCN) website 4) Identification of local and regional federations and societies associated with critical care nursing and hand searching documents, publications, and links found within their websites.
- 3) Finally, forward, and backwards citation searching of papers and other evidence to be included in the review will be completed.

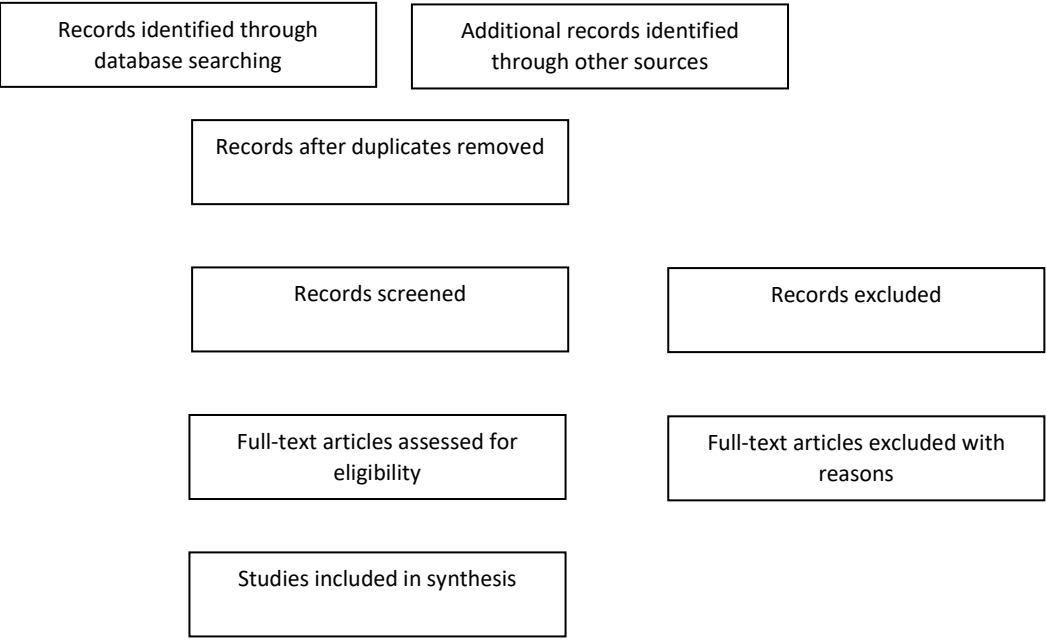
Within the available resourcing of this review, it will not be possible to undertake translation of languages other than English. Therefore, only papers and resources published in the English language will be included in the search strategy and review. Papers published in the last 10 years will be considered for inclusion. Advice will be sought from an experienced research librarian in designing and refining the searches.

Sources of evidence

As guided by the JBI methodology for scoping reviews (15), once the final searches have been completed the results will be exported into appropriate management software. The Covidence™ software package has been chosen for use in this review. Source selection at both the title and abstract and full text review stages will be completed by a minimum of two reviewers independently and will be guided by an eligibility criteria and definitions document. Disagreements will be solved firstly by discussion and if consensus is not reached, by the decision of a third reviewer.

The review process will follow the methods set out in the PRISMA-ScR statement (17), see figure 1

Figure 1:



Data extraction

A standardised extraction instrument (15) will be used to minimise the risk of error when extracting data (see figure 2)

Figure 2

Scoping Review Details	
Scoping Review title:	
Review objective/s:	
Review question/s:	
Inclusion Criteria	
Population Nurses and their proxies working in critical care settings	
Concept 1 Roles, responsibilities, scope of practices Concept 2 Training, education, preparation	

Context	
Low and lower-middle income countries	
Exclusion Criteria	
Visiting international nurses engaged in capacity development programs	
Nursing undertaken in military hospitals	
Evidence source Details and Characteristics	
Type of evidence source	
Citation details	
Country	
Context	
Participants	
Details/Results extracted from source of evidence	
Qualitative and quantitative data addressing the nursing role in low and lower middle income critical care settings	
Qualitative and quantitative data addressing the preparation, training and ongoing professional development of nurses and their proxies in low and lower middle income critical care settings	
The details of methodologies used to attain and analyse data	

As the process of data extraction is often iterative in scoping reviews (15), trial data extraction using the above tool will be undertaken on a minimum of three sources of evidence by two reviewers independently and the findings compared. The aforementioned step will help ensure all relevant results are extracted. Additional items for inclusion in the data extraction tool may be added as familiarity with the literature increases.

Data analysis

Guided by the framework developed by Arksey and O'malley (18) and later enhanced by Levac et al (19), a descriptive numerical summary analysis and qualitative thematic analysis will be undertaken.

Presentation of the results and reporting

Reporting of the review will be guided by the PRISMA-ScR statement (17). Data will be presented in tabular, graphical and narrative formats with final presentation styles decided upon once data extraction has occurred.

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