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1: Scoping reviews and evidence-based practice

Evidence-based practice is an expanding field and together with a rapid increase in the availability of primary research, the conduct of reviews has also escalated. Different forms of evidence and different kinds of review objectives and questions call for the development of new approaches that are designed to more effectively and rigorously synthesize the evidence. In 2009 Grant and Booth identified 14 different types of reviews (Grant and Booth, 2009). Scoping reviews, also called "mapping reviews" or "scoping studies" are one of these (Ehrich et al. 2002; Anderson et al. 2008). In 2005 Arksey and O'Malley proposed a framework for conducting them (Arksey and O'Malley, 2005). The Arksey and O'Malley framework was advanced and extended in 2010 by Levac, Colquhoun and O'Brien (2010) and then further refined and corresponding guidance developed by the present authors (Peters et al. 2015).

1.1 Why a scoping review?

There are a number of reasons why a scoping review might be conducted. Unlike other reviews that address relatively precise questions, such as a systematic review of the effectiveness of a particular intervention based on a precise set of outcomes, scoping reviews can be used to map the key concepts underpinning a research area as well as to clarify working definitions, and/or the conceptual boundaries of a topic (Arksey and O'Malley, 2005). A scoping review may focus on one of these aims or all of them as a set.

Scoping reviews can usefully map evidence in a number of ways (Anderson et al. 2008). Scoping reviews undertaken with the objective of providing a map of the range of the available evidence can be undertaken as a preliminary exercise prior to the conduct of a systematic review. Scoping reviews are useful for examining emerging evidence when it is still unclear what other, more specific questions can be posed and valuably addressed. For example, while there are few studies on the sustainability of knowledge translation interventions in the area of chronic disease management, a scoping review has provided the foundation for a future systematic review to investigate the impact of sustainable knowledge translation interventions on health outcomes (Tricco et al. 2016a).

Beyond underpinning future systematic review, scoping reviews can also inform clinical decision making and practice. For example, a scoping review might seek to map the types and details of tools used to assess quality of life following tonsillectomy (Kao et al. 2017a).. In this case, the scoping review could potentially be used both to provide direction for future systematic reviews as well as having value to knowledge users by providing a comprehensive evidence base to aid in the selection of quality of life tools for use in clinical practice.

Scoping reviews can be conducted to examine and clarify broad areas to identify gaps in the evidence, clarify key concepts, and report on the types of evidence that address and inform practice in a topic area. Scoping reviews can be used to map evidence in relation to time (when it was published), location (country), source (peer reviewed or grey literature), approach (how it was studied/researched), and/or origin (healthcare or academic discipline) (Anderson et al. 2008).

Davis, Drey and Gould (2009) explain how, as useful tools for evidence reconnaissance, scoping reviews can be used to provide a broad overview of a topic. For instance, a scoping review that seeks to develop a "concept map" may aim to explore how, by whom and for what

purpose a particular term is used in a given field (Anderson et al. 2008). Similarly, scoping reviews can be conducted in order to establish a comprehensive understanding of how scoping reviews themselves have been conducted and reported (Pham et al, 2014; Tricco et al. 2016b). Scoping review methodology was used to identify papers and guidelines that had either utilized or described scoping review methods and/or assessed the quality of reporting for scoping reviews (Tricco et al. 2016b). This review showed how the number of scoping reviews had steadily increased since 2012, that there was variation in terms of how they were conducted and reported, and that standardized reporting guidelines were absent.

Scoping reviews may also be used to develop "policy maps" by identifying and mapping evidence from policy documents and reports that guide practice in a particular field (Anderson et al. 2008). For example, a scoping review might include the objective of mapping research papers and policy documents that concern models of transition for young people to adult health services to provide evidence for best practice transitional care for children with complex health needs (Watson et al. 2011).

The value of scoping reviews to evidence-based practice is the examination of a broader area to identify gaps in the research knowledge base (Crilly, Jashapara and Ferlie, 2010), clarify key concepts (de Chavez et al. 2005), and report on the types of evidence that address and inform practice in the field (Decaria, Sharp and Petrella, 2012).

1.2 JBI scoping reviews

The synthesis of evidence in the form of the systematic review is at the center of evidence-based practice (Pearson et al. 2005). Systematic reviews traditionally bring together evidence from quantitative literature to answer questions on the effectiveness of a specific intervention for a particular condition. Beyond effectiveness, the Joanna Briggs Institute (JBI) is also interested in the context of care delivery, its cost-effectiveness, as well as patient, carer and healthcare provider preferences. These foci are explored in terms of the appropriateness, meaningfulness, and feasibility of healthcare practices and delivery. These sorts of questions are most commonly answered by consideration of other forms of primary evidence found in qualitative and economic research. The results of well-designed research studies of any methodology are regarded by the JBI as potential sources of credible evidence. To match this broader and more inclusive view of evidence, the Institute has developed a number of methodologies and methods for the synthesis of evidence to support healthcare decision-making.

All JBI systematic reviews – including scoping reviews – begin with the development of an *a-priori* protocol with inclusion and exclusion criteria that relate clearly to the objective/s and review question/s. A typical systematic review aims to answer a specific question (or series of questions) based on very precise inclusion criteria, for example, a systematic review may pose the following precise question based upon the PICO (Population, Intervention, Comparator, and Outcome) elements of its inclusion criteria:

> "What is the effectiveness of the Gardasil vaccine compared with the Cervarix vaccine in preventing Human Papillomavirus infection in adolescent and young adult women?"

It is clear from this question that only certain types of quantitative evidence and data would be relevant and that the review will be very specific in terms of the population, intervention, comparator, and kinds of outcomes against which it will measure effectiveness.

A scoping review will have a broader "scope" with correspondingly less restrictive inclusion criteria. The following question based upon the PCC (Population, Concept and Context) elements of the inclusion criteria may be posed:

> "What types of neurological reactions to the Human Papillomavirus vaccination have been reported?"

This question leaves the population rather "open" and implies that both men and women of any age will be suitable for inclusion as long as they have received a HPV vaccination. The intervention in this example is also 'open' to any kind of HPV vaccine and does not stipulate that there will be any kind of measurement of outcomes or comparison involved. The "concept" of this scoping review (neurological reactions) is also broad, and could cover any kind of neurological outcome as long as it is a reaction to HPV vaccination. For this particular question, the 'context' has also been left open, so the evidence may come from any context (e.g. geographical, healthcare setting, sociocultural).

An especially important point is that the scoping review question may draw upon data from any type of evidence and research methodology, and is not restricted to quantitative studies (or any other study design) alone. This however is not prescriptive; reviewers may decide that particular study designs would be beyond the scope of their scoping review, or not be appropriate or useful for consideration. For example, in the protocol, this scoping review example may specify that text and opinion literature will not be included. Because of the broad nature of scoping reviews, they are particularly useful for bringing together evidence from disparate or heterogeneous sources. In the example scoping review question regarding HPV vaccination above, reports of neurological side effects such as syncope (fainting) from randomized controlled trials can be considered side by side with qualitative accounts of patients' experiences of paralysis following HPV vaccination.

It is important to highlight the distinction between scoping reviews and "mixed methods" systematic reviews that also rely on evidence from a number of different study designs (Pearson et al. 2015). While in a scoping review the goal is to determine what kind of evidence (quantitative and/or qualitative) is available on the topic and to represent this evidence by mapping or charting the data, mixed methods systematic reviews are designed to answer a question or questions based on the synthesis of evidence from for example qualitative, quantitative and economic research (Reilly et al. 2016). For example:

> "What is the effectiveness, cost effectiveness, acceptability and implementation barriers/enablers for chronic kidney disease management programs for Aboriginal and Torres Strait Islander Australians?"

The goal of this mixed methods systematic review was to: i) report on a the effectiveness of chronic kidney disease management programs from quantitative evidence of effectiveness, ii) report on the relative cost-effectives of chronic kidney disease management programs from economic evidence, and to iii) examine the experiences of Aboriginal and Torres Strait Islander Australians and healthcare providers regarding chronic kidney disease management programs in terms of acceptability as well as barriers and enablers of implementation.. Following separate methodological quality assessment, data extraction and synthesis, the results of each synthesis were then brought together in a comprehensive synthesis using evidence from each research type to answer a specific question. In this example, the knowledge gained from the qualitative and economic evidence can be used to enhance the knowledge gained from the quantitative evidence.

Another important distinction between scoping reviews and systematic reviews is that, unlike systematic reviews, scoping reviews provide an overview of the existing evidence, regardless of quality. This is because scoping reviews aim to provide a map of what evidence has been produced as opposed to seeking only the best available evidence to answer more specific questions related to policy and practice. Hence, unless otherwise specified, a formal assessment of methodological quality of the included studies of a scoping review is generally not performed or congruent with the purpose of scoping reviews.

While implications for research, including for primary research, other scoping reviews, or systematic reviews, may be generated from the results of a scoping review – especially those conducted with the objective of being precursors to systematic reviews, implications for practice are limited by the fact that a formal assessment of methodological quality of the included studies of a scoping review is generally not performed. If implications for practice are

developed, it is expected that they will clearly flow from the objectives of the scoping review.

1.3 The scoping review framework

The framework proposed by Arksey and O'Malley (2005) has been influential in the conduct of scoping reviews for some time. Their framework has been further enhanced by the work of Levac, Colquhoun and O'Brien (2010) (see Table 11.1). Levac and colleagues (2010) provide more explicit detail regarding what occurs at each stage of the review process and this enhancement increases both the clarity and rigor of the review process. Both of these frameworks have been drawn on in the development of the JBI approach to the conduct of scoping reviews (Peters et al. 2015).

Table 11.1: Scoping review frameworks

	Arksey and O'Malley framework (2005, p. 22-23)	Enhancements proposed by Levac, Colquhoun and O'Brien. (2010, p. 4-8)	Enhancements proposed by Peters et al (2015).
1.	Identifying the research question	Clarifying and linking the purpose and research question	Defining and aligning the objective/s and question/s
2.	Identifying relevant studies	Balancing feasibility with breadth and comprehensiveness of the scoping process	Developing and aligning the inclusion criteria with the objective/s and question/s
3.	Study selection	Using an iterative team approach to selecting studies and extracting data	Describing the planned approach to evidence searching, selection,
4.	Charting the data	Incorporating a numerical summary and qualitative thematic analysis	Searching for the evidence
5.	Collating, summarizing and reporting the results	Identifying the implications of the study findings for policy, practice or research	Selecting the evidence
6.	Consultation (optional)	Adopting consultation as a required component of scoping study methodology	Extracting the evidence
7.			Charting the evidence
8.			Summarizing the evidence in relation to the objective/s and question/s
9.			Consultation of information scientists, librarians, and/or experts (throughout)

2: Development of a JBI scoping review protocol

As with all systematic reviews using JBI methodologies, an *a-priori* protocol must be developed before undertaking the scoping review. A scoping review protocol is important as it pre-defines the objectives and methods of the scoping review. It is a systematic approach to the conduct and reporting of the review and allows transparency of process. This in turn allows readers to see how the results of the scoping review were arrived at. The protocol should detail the criteria that the reviewers intend on using to include and exclude studies and to identify what data is relevant, and how the data will be extracted and mapped. The protocol provides the plan for the scoping review and is important in limiting the occurrence of reporting bias. Any deviations of the scoping review report from the protocol should be clearly addressed and explained in the scoping review report. It is also recommended that all scoping reviews should contain the following sentence:

> "The objectives, inclusion criteria and methods for this scoping review were specified in advance and documented in a protocol." (citation)

The citation should be to the corresponding protocol which may be published in the JBI Database of Systematic Reviews and Implementation Reports. Reviewers should also be aware that PROSPERO (the international prospective register of systematic reviews administered by the University of York's Centre for Reviews and Dissemination) states that scoping reviews (and literature reviews) are currently ineligible for registration in the database (Centre for Reviews and Dissemination, n.d. 'inclusion criteria', para. 5) despite appearing to contain a small number of recently registered scoping reviews. In accordance with the recommendations for reporting of systematic reviews detailed in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, this sentence should appear as the final line of the background/introduction section of the review report. Another point prospective scoping reviewers should be aware of is that an extension of the PRISMA statement called the PRISMA-ScR is currently under development and registered with the Enhancing the Quality and Transparency Of health Research (EQUATOR) Network (Tricco, Strauss and Moher, 2015). Led by Tricco, Strauss and Moher, this reporting checklist is being developed with the involvement of numerous international experts on scoping review methodology and evidence synthesis including authors of the JBI methodological guidance described in this chapter. The JBI approach to conducting and reporting scoping reviews described here and in Peters et al. (2015) will be congruent with the PRISMA-ScR checklist which will assist in standardizing the conduct and reporting of scoping reviews. Reviewers are therefore encouraged to use and cite the JBI methodology (Peters et al. 2015) and also indicate their compliance with the PRISMA-ScR checklist when it becomes available.

2.1 Author information

All reviews using JBI methodologies require at least two reviewers in order to minimize reporting bias. The names of all reviewers, institutional affiliations, and JBI center affiliations (if relevant), and email address for the corresponding author must be included.

2.2 Developing the title, objective, and question

Title of the scoping review protocol

The title of the protocol (and the subsequent review) should be informative and give a clear indication of the topic of the scoping review. It is recommended that the title should always include the

phrase "…: a scoping review" to allow easy identification of the type of document it represents. Correspondingly, protocols should also be identified as such. This is a simple example of a scoping review protocol title by Mordiffi, Peters and Ang, 2016):

"Non-invasive thermometers used in healthcare facilities: A scoping review protocol"

Scoping review titles should not be phrased as questions. For example:

"What types non-invasive thermometers have been used in healthcare facilities?"

The JBI uses a range of mnemonics for different types of review (and research) questions. It is suggested that the "PCC" mnemonic be used as a guide to construct a clear and meaningful title for a scoping review. The PCC mnemonic stands for the Population, Concept, and Context. There is no need for explicit outcomes, interventions or phenomena of interest to be stated for a scoping review; however elements of each of these may be implicit in the Concept under examination.

The title of the protocol (and subsequent review) should be structured to reflect the core elements of the PCC. Using the PCC mnemonic helps to construct a title that provides potential readers with important information about the focus and scope of the review, and its applicability to their needs. For example, if the review aims to map a range of devices as part of the concept (such as non-invasive thermometers) this should be stated in the title. Including the context in the title helps readers to position the review when they are searching for evidence related to their own particular information needs.

As discussed in further depth below, there should be congruence between the title, review objective/s, question/s and inclusion criteria.

Scoping review objectives

The objective of a scoping review must be clearly stated and be congruent with the title. The objective of the scoping review should indicate what the scoping review project is trying to achieve. The objective may be broad and will guide the scope of the enquiry. For the title example above, the objective has been phrased:

> "The objective of the review is to map the available evidence to provide an overview of the use of non-invasive thermometers in the general context of health care." (Mordiffi, Peters and Ang, 2016, p. 106)

The objective should also clearly underpin the question posed by the scoping review and direct the development of the specific inclusion criteria based on clearly identifiable PCC. Further considerations around the importance of clearly identifying the objective/s and review question/s for scoping reviews has been discussed elsewhere (Peters, 2016).

Scoping review questions

The scoping review question guides and directs the development of the specific inclusion criteria for the scoping review. Clarity in the review question assists in developing the protocol, facilitates effectiveness in the literature search, and provides a clear structure for the development of the scoping review report. As with the title, the question should incorporate the PCC elements. A scoping review will generally have one primary question, e.g.

> "What quality of life questionnaires are available for pediatric patients following tonsillectomies with or without adenoidectomies for chronic infections or sleep-disordered breathing?" (Kao, Peters and Ooi, 2017a, p. 1).

If that question sufficiently addresses the PCC and adequately corresponds with the objective of the review, sub questions will not be needed. However, some scoping review questions benefit from one or more sub questions that delve into particular attributes of Context, Population or Concept. Sub questions can be useful in outlining how the evidence is likely to be mapped. For example, the primary question relates to the broad population; however, the sub questions delve into potential particular issues relate to males or particular age groups of females as distinct sub populations may be relevant. Likewise, a sub question may help to justify mapping the evidence by context, e.g.

> "What nutritional screening instruments have been validated for use for the adult population in primary healthcare settings?" (Håkonsen et al. 2015, p. 92).

2.3 Background

The background section should be comprehensive and cover all the main elements of the topic

under review. Due to scoping reviews being essentially exploratory, it is not expected that the background covers the extant knowledge in the area under review. The reason for undertaking the scoping review should be clearly stated together with what the scoping review is intended to inform.

For publication in the JBI Database of Systematic Reviews and Implementation Reports, the suggested length for the background section of the scoping review protocol is approximately 1000 words. The background should detail any definitions important to the topic of interest. The information in the background section must also be sufficient to put the inclusion criteria in context, including an indication of whether or not there are existing scoping reviews, systematic reviews, research syntheses, and/or primary research papers available on the topic, hence supporting the rationale to conduct the scoping review. While the inclusion criteria section of the protocol (explained below) should contain clear details of each of the PCC elements, the background must provide sufficient detail in terms of the rationale for each element. Explaining for example, why only primary care settings are of interest in terms of the context of the review question above.

The background section should conclude with a statement that a preliminary search for existing scoping reviews (and ideally systematic reviews too) on the topic has been conducted. The date of the search/es and databases searched or search platforms utilized must be stated, e.g. JBI Database of Systematic Reviews and Implementation Reports, Cochrane Database of Systematic Reviews, CINAHL, PubMed, EPPI, and Epistemonikos, where relevant. If existing reviews or systematic reviews are available on the topic, a justification that specifies how the proposed review will differ from those already conducted should be detailed. This is so that readers can easily establish what new knowledge or insight the proposed review will contain in relation to existing evidence syntheses.

For publication in the JBI Database of Systematic Reviews and Implementation Reports, The Vancouver style of referencing should be used throughout the protocol with superscript numbers without brackets, used for in-text citations. A guide to the Vancouver style of referencing can be found at: http://openjournals.net/files/Ref/VANCOUVER%20Reference%20guide.pdf

2.4 Inclusion criteria

The "inclusion criteria" of the protocol details the basis on which sources will be considered for inclusion in the scoping review and should be clearly defined. These criteria provide a guide for the reader to clearly understand what is proposed by the reviewers and, more importantly, a guide for the reviewers themselves on which to base decisions about the sources to be included in the scoping review. As explained above, as for other review types, there must be clear congruence between the tile, objective/s, question/s, and inclusion criteria of a scoping review.

Types of participants

Important characteristics of participants should be detailed, including age and other qualifying criteria that make them appropriate for the objectives of the scoping review and for the review question. In the example question above regarding pediatric tonsillectomy quality of life assessment instruments, these characteristics included pediatric patients 16 years of age or younger undergoing tonsillectomy with or without adenoidectomy for chronic tonsillitis or sleep-disordered breathing.. Justification for the inclusion or exclusion of participants should be explained. Confounding population factors, e.g. co-morbidities or co-existing conditions (e.g. congenital heart defects), can also be detailed here as exclusion criteria.

Concept

The core concept examined by the scoping review should be clearly articulated to guide the scope and breadth of the inquiry. This may include details that pertain to elements that would be detailed in a standard systematic review, such as the "interventions" and/or "phenomena of interest" and/or "outcomes". For example, quality of life assessment tools – which could be understood to be interventions or approaches to measuring outcomes – was part of the concept of a scoping review designed to map the types and details of existing tools . It would then be necessary to explain any relevant details pertaining to the concept that may be important for the review, for example, whether only particular tools are to be investigated (e.g. validated tools only) or whether any/all tools are eligible for inclusion.

Outcomes may also be a component of a scoping review's "Concept". If outcomes of interest are to be explained, they should be linked closely to the objective and purpose for undertaking the scoping review. For example, the exemplar review was also concerned with mapping the outcomes of any psychometric assessments that had been used to measure the validity, reliability, and responsiveness to change of included quality of life tools. Details of this were also a part of the "Concept" in terms of defining psychometric testing as well as the different types of validity outcomes being sought (e.g. construct and criterion).

Context

The "Context" element of a scoping review of will vary depending on the objective/s and question/s of the review. The context should be clearly defined and may include, but is not limited to, consideration of cultural factors such as geographic location and/or specific racial or gender-based interests. In some cases, context may also encompass details about the specific setting (such as acute care, primary health care or the community). Reviewers may choose to limit the context of their review to a particular country or health system or healthcare setting, depending on the topic and objectives.

In the scoping review example above, quality of life assessment tools were broadly sought from within the context of pediatric care both pre- and/or postoperatively.

Types of sources

For the purposes of a scoping review, the "source" of information can include any existing literature, e.g. primary research studies, systematic reviews, meta-analyses, letters, guidelines, websites etc. Reviewers may wish to leave the source of information "open" to allow for the inclusion of any and all sources. Otherwise, the reviewers may wish to impose limits on the types of sources they wish to include. This may be done on the basis of having some knowledge of the types of sources that would be most useful and appropriate for a particular topic. For example, the scoping review example on quality of life assessment tools sought only quantitative studies based upon the knowledge that qualitative papers focusing on peoples' experiences were unlikely to contain relevant details regarding the tools themselves or the results of psychometric testing as as such would not be particularly appropriate or useful for meeting the objectives of the review.

2.5 Search strategy

The search strategy for a scoping review should ideally aim to be as comprehensive as possible within the constraints of time and resources in order to identify both published and unpublished (grey literature) primary studies as well as reviews. Any limitations in terms of the breadth and comprehensiveness of the search strategy should be detailed and justified. As recommended in all JBI types of reviews, a three-step search strategy is to be utilized. Each step must be clearly stated in this section of the protocol. The first step is an initial limited search of at least two appropriate online databases relevant to the topic. The databases MEDLINE (PubMed) and CINAHL would be appropriate for a scoping review on quality of life assessment tools. This initial search is then followed by an analysis of the text words contained in the title and abstract of retrieved papers, and of the index terms used to describe the articles. A second search using all identified keywords and index terms should then be undertaken across all included databases. Thirdly, the reference list of identified reports and articles should be searched for

additional studies. This third stage may examine the reference lists of all identified studies or examine solely the reference lists of the studies that have been selected from full-text and/or included in the review. In any case, it should be clearly stated which group of studies will be examined. A statement should be included of the reviewers' intent to contact authors of primary studies or reviews for further information, if this is relevant. Finally, a full search strategy for at least one database should be included as an appendix to the protocol.

Reviewers should include the languages that will be considered for inclusion in the review as well as the timeframe, with an appropriate and clear justification for choices.

As the review question might be broad, authors may find that it is appropriate to search for all sources of evidence (e.g. primary studies and text/opinion articles) simultaneously with the one search strategy. This also depends on the relevance of the evidence sources to the topic under review and its objectives. This approach will lead to a greater sensitivity in the search, which is desirable for scoping reviews.

The search for a scoping review may be quite iterative as reviewers become more familiar with the evidence base, additional keywords and sources, and potentially useful search terms may be discovered and incorporated into the search strategy. The input of a research librarian or information scientist can be invaluable in designing and refining the search.

2.6 Extraction of the results

In scoping reviews, the data extraction process may be referred to as "charting the results". This process provides the reader with a logical and descriptive summary of the results that aligns with the objective/s and question/s of the scoping review.

A draft charting table or form should be developed at the protocol stage to record the key information of the source, such as author, reference, and results or findings relevant to the review question/s. This may be further refined at the review stage and the charting table updated accordingly. Some key information that reviewers might choose to chart are:

a. Author(s)
b. Year of publication
c. Origin/country of origin (where the study was published or conducted)
d. Aims/purpose
e. Study population and sample size (if applicable)
f. Methodology / methods
g. Intervention type, comparator and details of these (e.g. duration of the intervention) (if applicable)
h. Duration of the intervention (if applicable)
i. Outcomes and details of these (e.g. how measures) (if applicable)
j. Key findings that relate to the scoping review question/s.

A template data extraction instrument for study details, characteristics and results extraction is provided in Appendix 1 of this chapter which can be adapted by reviewers to use in their own scoping review protocols and reviews with citation to the JBI methodology guidance for scoping reviews.

For ease of reference and tracking, it is suggested that reviewers keep careful records to identity each source. As reviewers chart each study, it may become apparent that additional unforeseen data can be usefully charted. Charting the results can therefore be an iterative process whereby the charting table is continually updated. It is suggested that the review team become familiar with the source results and trial the extraction form on two or three studies to ensure all relevant results are extracted. This approach is favored by other experts on the conduct of scoping

reviews (Arksey and O'Malley, 2005; Armstrong et al. 2011; Valaitis et al. 2012).

2.7 Presentation of the results

At the time of protocol development, the reviewers should provide some plan for the presentation of results – for example, a draft chart or table. This would be expected to be further refined toward the end of the review when the reviewers have the greatest awareness of the contents of their included studies.

The results of a scoping review may be presented as a map of the data extracted from the included papers in a diagrammatic or tabular form, and/or in a descriptive format that aligns with the objective/s and scope of the review. The elements of the PCC inclusion criteria may be useful to guide how the data should be mapped most appropriately. In the scoping review example, because the objective was to map the types and details of quality of life assessment tools used in relation to pediatric tonsillectomy, the data may be usefully mapped by a tabular presentation of how the different tools reported in each included paper contain the same or different measurement domains, number of items, and differences in terms of the results of validity, reliability, and/or responsiveness to change testing.

The tables and charts may also show results as: distribution of studies by year or period of publication (depends on each case), countries of origin, area of intervention (clinical, policy, educational, etc.) and research methods. A narrative summary should accompany the tabulated and/or charted results and should describe how the results relate to the review objective/s and question/s.

The results can also be classified under main conceptual categories, such as: “intervention type”, “study population” (and sample size, if it is the case), “duration of intervention”, “aims”, “methodology adopted”, “key findings” (evidence established), and “gaps in the research”. For each category reported, a clear explanation should be provided.

3: The scoping review and summary of the evidence

This section provides further guidance on the components that should comprise the final report of a scoping review and the information that each component should contain. It illustrates how each component of the review is to be managed in the scoping reviews analytical module of JBI's System for the Unified Management, Assessment and Review of Information (SUMARI) software. This section also provides a brief outline of how the scoping review should be formatted and the stylistic conventions that should be followed to ensure the review meets the criteria for publication in the JBI Database of Systematic Reviews and Implementation Reports. For further information please refer to the Author Guidelines of the journal:

http://journals.lww.com/jbisrir/Pages/informationforauthors.aspx Specifically, guidance is provided on the following components: outline of the report, inclusion criteria (i.e. PCC), search strategy, extraction, presenting and summarizing the results, and any potential implications for research and practice. All scoping reviews published in the JBI Database of Systematic Reviews and Implementation Reports must be based on a peer reviewed, scoping review protocol that has been accepted for publication in the same journal. For a traditional systematic review, while deviations from a published review protocol are rare, due to the more iterative nature of a scoping review, some changes may be necessary. These must still be clearly detailed and justified in the methods section of the scoping review report if and when they occur.

3.1 Title of the scoping review

The title should be clear, explicit and reflect the core elements of the review. Titles should not be phrased as questions or conclusions and there should be congruence between the title, review objective/question/s, and inclusion criteria. The title should include the phrase: "….: a scoping review". The title should not be more than 12-14 words for ease of understanding (see example above in Section 2).

3.2 Review authors

Affiliations for each author need to be stated, including the JBI affiliation of each reviewer (if relevant). A valid email address must be provided as contact details for the corresponding author.

3.3 Executive summary

This section is a structured abstract of the main features of the scoping review. It should be no longer than 500 words and should contain no abbreviations or references. The executive summary must accurately reflect and summarize the review for the reader, in particular the results of the review. The executive summary includes the following required headings:

3.3.1 Background

This section briefly describes the issue under review. While avoiding self-plagiarism, much of the detail in the background section of the scoping review report may be adapted from the background of the protocol.

3.3.2 Objective/s and Question/s

The review objective/s and question/s should be stated in full, as described in the protocol section.

3.3.3 Inclusion criteria

Types of participants

Important characteristics of participants should be detailed, including age and other qualifying criteria that make them appropriate for the objectives of the scoping review and match the review question.

Concept

The core concept examined by the scoping review should be clearly articulated to guide the scope and breadth of the inquiry should be explained.

Context

The context should be clearly defined and explained.

Types of sources

The source of information can include any existing literature e.g. primary research studies, systematic reviews, meta-analyses, letters, guidelines, etc. should be explained.

3.3.4 Search Strategy

Details of the approach to searching as well as the sources searched should be detailed. Any limits on the search such as dates or languages should also be included.

3.3.5 Extraction of results

The methods/tools used to extract results from the included sources should be described in brief (see Appendix 11.1 for an example).

3.3.6 Presentation of results

Details of results should be described in brief as well as how they have been organized in relation to the objective and question/s of the scoping review. This should be the principle focus of the Executive Summary. Important details of the results, including the number of studies located and included. The results extracted from the literature should be clearly detailed as well as an explanation of how the data has been charted.

3.3.7 Conclusions

Brief overall conclusions based on the scoping review results should be articulated, including a clear answer to the question/s of the scoping review and how the objective was/was not met.

Implications for research

Succinctly detail the key implications for research and further need for primary research and or systematic reviews in the field.

Implications for practice

Succinctly detail the key results that can be used to inform practice. There may be significant limitations on the kinds of implications for practice able to be developed from the results of a

scoping review as no methodological appraisal of the quality of included studies takes place. This section may be left out if no implications for practice are made.

3.4 Main body of the scoping review

The main body of the scoping review report follows much the same structure as the protocol; there is a section for the background, objective/s and question/s, the inclusion criteria, methods, and then the presentation of the results of the scoping review, discussion of the results and conclusions. The following sections deal with each in detail.

3.4.1 Background

The background section should be comprehensive and cover all of the main elements of the topic under review, as well as appropriate information important to the review and why the topic or question of interest lends itself to a scoping review. The primary objective of the scoping review should be evident in the background as the background situates the justification and importance of the question/s posed. While many of these details will already have been addressed in the "Background" section of the protocol, reviewers may often find that the background provided with the protocol needs modification or extension following the conduct of the scoping review itself. The background section should conclude with a statement that a preliminary search for previous scoping reviews (and ideally, systematic reviews) on the topic aligning to the same concept was conducted (state the sources searched e.g. JBI Database of Systematic Reviews and Implementation Reports, The Cochrane Database of Systematic Reviews, Campbell Collection, etc.). The background section must include a citation of the original protocol and the following sentence: "The objectives, inclusion criteria and methods of analysis for this review were specified in advance and documented in a protocol." (citation)

For publication in the JBI Database of Systematic Reviews and Implementation Reports , Vancouver style referencing must be used throughout the review with superscript numbers without brackets used for in-text citations.

3.4.2 Objective/s and Question/s

The primary objective/s of the scoping review should be stated. It can be followed by specific objectives that relate to differing conceptual foci contained in the scoping review, such as, participant groups, interventions or outcome measures or a more in depth understanding of a particular phenomenon of interest or concept. (See example above in Section 2.)

The question/s posed by the scoping review should also be included in this section.

3.4.3 Inclusion criteria

This section of the scoping review specifies the basis upon which sources were considered for inclusion in the scoping review. This section should necessarily be as transparent and unambiguous as possible. The inclusion criteria for a scoping review will be contingent on the question/s asked. The PCC should be stipulated (Population, Concept, and Context).

Types of participants

The types of participants in the papers specified sought for inclusion should be related to the objectives of the scoping review. The reasons for the inclusion or exclusion of particular participants detailed in this section should be explained clearly in the background section of the scoping review report.

Concept

The core concept examined by the scoping review should be clearly articulated to guide the scope and breadth of the inquiry. This may include details that pertain to the "interventions" and/or "phenomena of interest" that would be explained in greater detail in a systematic review.

Outcomes may also be a component of a scoping review's "Concept". If outcomes of interest are to be explained, they should be linked closely to the objective and the purpose for undertaking the scoping review.

Context

Context will vary depending on the objective/s and question/s of the review. The context should be clearly defined and may include, but is not limited to, consideration of cultural factors, such as geographic location and/or specific racial or gender-based interests. In some cases, context may also encompass details about the specific setting (such as acute care, primary health care or the community).

Types of sources

The sources of information for the scoping review should be explained. Sources can include any existing literature, e.g. primary research studies, systematic reviews, meta-analyses, letters, guidelines, etc. The source of information may be left "open" to allow for the inclusion of any, and all sources and rationale for this should be provided. Otherwise, any limits imposed on the types of sources should be detailed and explained. For example, some sources such as text and opinion papers and letters would not be particularly appropriate or useful in order to meet the objectives of particular scoping reviews.

3.4.4 Search strategy

This section documents how the reviewers search for relevant sources of information for inclusion in the scoping review. The search strategy must be comprehensively reported and the detailed search strategy for a minimum of three major bibliographic citation databases that have been searched should be appended to the review. Ideally the individual search strategies for every database searched should be presented in sequence and in a consistent format in an appendix. Clear documentation of the search strategy is a vital component of the scientific validity of any scoping review. A scoping review should ideally consider papers (primary studies, textual papers and reviews) both published and unpublished (grey literature). The timeframe (start and end dates) chosen for the search should be clearly justified and any language restrictions specified (e.g. "only studies published in English were considered for inclusion"). Any hand searching of particular relevant journals should be detailed with the journal names and years examined. Author contact, for example, to request access to known but unavailable articles should also be included along with the outcomes of that contact.

3.4.5 Extraction of results

Extraction of results for a scoping review should include extraction of all data relevant to inform the scoping review objective/s and question/s. Charting table or forms may be used (see Appendix 11.1 for a template tool). A descriptive summary of the main results organized based on the theoretical concept underpinning the review must be included. Examples of extraction fields are identified below.

Author/year

Citation details should be consistent throughout the document. The citation details include the name of the first author (Vancouver referencing style) and year of publication.

Objective/s

A clear description of the objective of the paper should be stated.

Participants (characteristics/total number)

The defining characteristics of the participants in included sources should be provided. This includes demographic details and total numbers.

Concept

Data from included studies in relation to the concept should be extracted and mapped. The concept examined by the scoping review will vary depending on the review, and should be clearly articulated to guide the scope and breadth of the inquiry. This may include details that pertain to the "interventions" and/or "phenomena of interest" that would be explained in greater detail in a systematic review. Outcomes may also be a component of a scoping review's "Concept". If outcomes of interest are to be explained, they should be linked closely to the objective and the purpose for undertaking the scoping review.

Context

Details of the context, such as location of care (acute, primary health care, community, long term care, etc.) or a particular geographical location, should be described. Cultural, racial or gender factors may be relevant.

3.6 Presenting the results

Results

The presentation of results section should identify how many studies were identified and selected. There should be a narrative description of the search decision process accompanied by the search decision flowchart (see Figure 11.1). This flowchart has been adapted from the PRISMA flowchart developed by Moher et al. (2009), but will be likely to be replaced with a purpose designed flowchart when the PRISMA-ScR is released. The flow chart should clearly detail the review decision process, indicating the results from the search, removal of duplicate citations, study selection, full retrieval and additions from a third search, and final summary presentation.

The narrative summary should logically describe the aims or purposes of the reviewed sources, concepts adopted and results that relate to the review question/s.

The results may be classified under main conceptual categories such as: "intervention type", "study population" (and sample size, if it is the case), "duration of intervention", "aims", "methodology adopted", "key findings" (evidence established) and "gaps in the research". For each category, a clear explanation should be provided.

This section should include an overall description of the included sources with reference to the detailed Table of Included Study Characteristics in the appendices (the template data extraction tool in Appendix 1 can be readily modified by reviewers to suit this purpose) . The aim of this section is to provide detail to support the inclusion of each source (paper, study, report, etc.) in the scoping review. For each source, identify the relevance to the scoping review objective and evidence for the review question. Specific results from sources may be highlighted. A summary table of included studies should be provided in the appendices of the scoping review.

Presentation of the results may map out the reviewed material in logical, diagrammatic or tabular form, and/or in a descriptive format that aligns with the objective and scope of the review. The tables and charts may show results as: distribution of studies by year or period of publication (depends on each case), countries of origin, area of intervention (clinical, policy,

educational, etc.), and research methods.

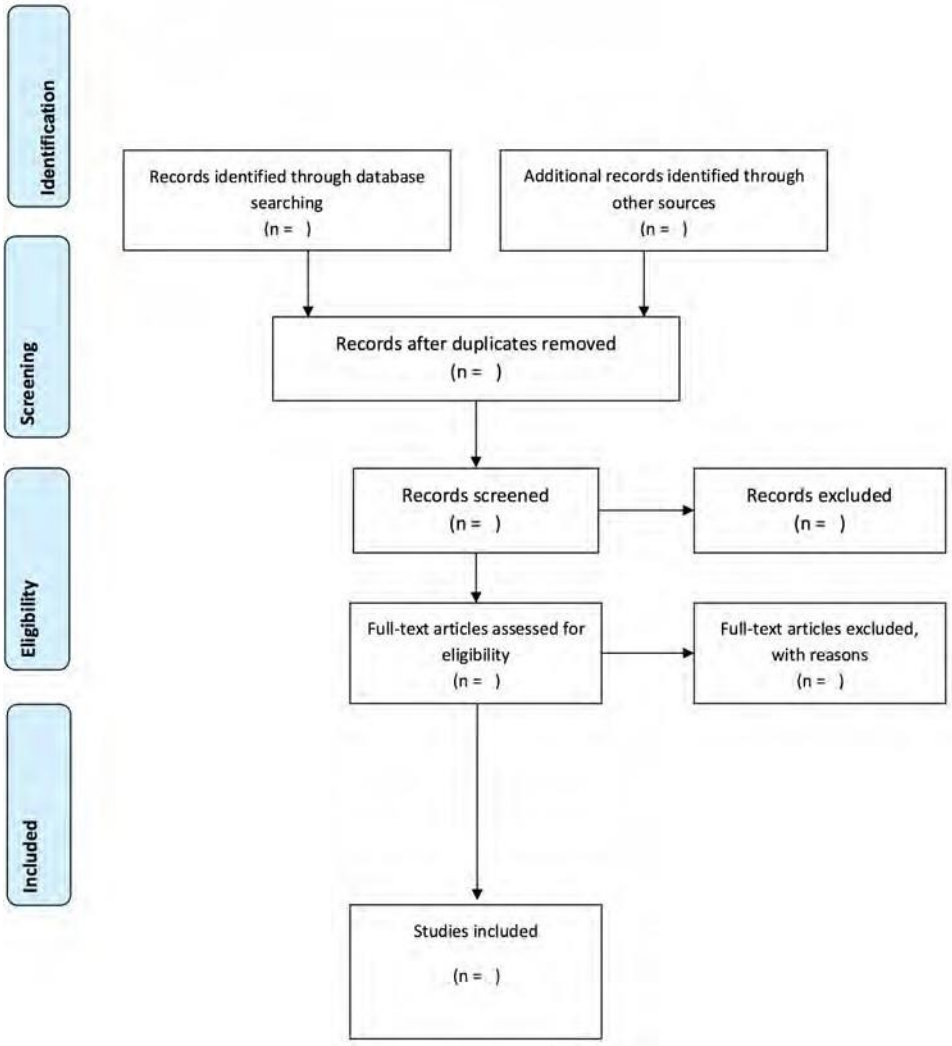


Figure 11.1: Flow Diagram for the scoping review process adapted from the PRISMA statement by Moher and colleagues (2009).

3.7 Discussion, Conclusion, and Implications for research and practice

3.7.1 Discussion

This section should discuss the results of the review as well as any limitations of the sources included in the scoping review. Results should be discussed in the context of current literature, practice and policy. Scoping reviews are subject to the limitations of any review, relevant sources of information may be omitted and the review is dependent on information on the review question being available. In a scoping review no rating of the quality of evidence is provided, therefore recommendations for practice cannot be graded.

3.7.2 Conclusions

This section should begin with an overall conclusion based on the results. The conclusions drawn should match the review objective/s and question/s.

3.7.3 Implications for research

This section should include clear, specific recommendations for future research based on gaps in knowledge identified from the results of the review. Authors may be able to make comments about the future conduct of systematic reviews that may be appropriate, or primary research in the area of interest.

3.7.4 Implications for practice

This section should include clear results from the scoping review that can be used to inform practice. It may not be possible to develop recommendations for practice from the results of a scoping review as no assessment of methodological quality takes place as part of a scoping review. As such this section may be left out. If implications for practice are included, the JBI Grades of Recommendation must be used (The Joanna Briggs Institute, 2014).

3.5 References

For publication in the JBI Database of Systematic Reviews and Implementation Reports, all references should be listed in full using the Vancouver referencing style, in the order in which they appear in the review. Abbreviated journal titles must be used in accordance with the United States National Library of Medicine (2016).

4 Review Appendices

Appendices should be numbered using Roman numerals in the order in which they have been referred to in the body of the text. While reviewers may choose to develop additional appendices for details that are unfeasible to present in the main body of the report, there are two required appendices for a JBI scoping review:

Appendix I: Search strategy

A detailed search strategy for at least one of the major databases searched must be appended.

Appendix II: Data extraction instrument

The data extraction instrument used must be appended (see the template in Appendix 11.1)

5. Chapter References

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4.1:Appendix 1: JBI Template study details, characteristics and results extraction instrument

Scoping Review Details	
Scoping Review title:	
Review objective/s:	
Review question/s:	
Inclusion/Exclusion Criteria	
Population	
Concept	
Context	
Types of Study	
Study Details and Characteristics	
Study citation details (e.g. author/s, date, title, journal, volume, issue, pages)	
Country	
Context	
Participants (details e.g. age/sex and number)	
Details/Results extracted from study (in relation to the concept of the scoping review)	
E.g. Quality of Life Domains assessed	
E.g. Number of items in tool	
E.g. details of psychometric validation of tool	