

## 10. Scoping reviews

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## Interim Guidance

JBI Methodology Groups are continuously working to improve, update and further the science of JBI Evidence Syntheses. JBI Methodology chapters are updated when there have been significant changes to a methodology, as determined by the JBI Scientific Committee. Interim guidance for steps, sections or stages of a review methodology is often provided via publications ahead of formal chapter updates. Please see below for relevant interim guidance:

<p><b>☰ Recommendations for the extraction, analysis, and presentation of results in scoping reviews</b></p> <p>Pollock et al 2023</p> <p>Scoping reviewers often face challenges in the extraction, analysis, and presentation of scoping review results. Using best-practice examples and drawing on the expertise of the JBI Scoping Review Methodology Group and an editor of a journal that publishes scoping reviews, this paper expands on existing JBI scoping review guidance. The aim of this article is to clarify the process of extracting data from different sources of evidence; discuss what data should be extracted (and what should not); outline how to analyze extracted data, including an explanation of basic qualitative content analysis; and offer suggestions for the presentation of results in scoping reviews.</p>	<p><b>☰ Best practice guidance and reporting items for the development of scoping review protocols</b></p> <p>Peters et al 2022</p> <p>The purpose of this article is to clearly describe how to develop a robust and detailed scoping review protocol, which is the first stage of the scoping review process. This paper provides detailed guidance and a checklist for prospective authors to ensure that their protocols adequately inform both the conduct of the ensuing review and their readership.</p>	<p><b>☰ Conducting high quality scoping reviews-challenges and solutions</b></p> <p>Khalil et al 2021</p> <p>In this paper, the JBI Scoping Review Methodology Group discuss the challenges that may be faced in the conduct and publishing of scoping reviews, such as developing an a-priori protocol, developing implications or recommendations for research, policy or practice and a lack of understanding of scoping reviews by journal editors, authors and peer reviewers. It presents solutions to these challenges to ensure better understanding of the process of scoping reviews.</p>
<p><b>☰ Moving from consultation to co-creation with knowledge users in scoping reviews: guidance from the JBI Scoping Review Methodology Group</b></p> <p>Pollock et al 2022</p> <p>This paper presents JBI's guidance for knowledge user engagement in scoping reviews based on the expert opinion of the JBI Scoping Review Methodology Group. We offer specific guidance on how this can occur and provide information regarding how to report and evaluate knowledge user engagement within scoping reviews.</p>	<p><b>☰ Updated methodological guidance for the conduct of scoping reviews</b></p> <p>Peters et al 2021</p> <p>The latest JBI scoping review guidance is described with this article. There is an updated section on when to conduct a scoping review, the role of methodological appraisal in scoping reviews and inclusion of the PRISMA-SCR reporting guidelines.</p>	<p><b>☰ PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation</b></p> <p>Tricco et al 2018</p> <p>Even though a scoping review is not considered systematic. An extensive search still needs to be undertaken to ensure that all available evidence is included within your review. This articles describes how you should report on that search in your publications.</p>

## 10.1 Introduction to Scoping reviews

Evidence-based healthcare is an expanding field. Together with the continual increase in the availability of primary research, the conduct of reviews has also increased and evolved. Different forms of evidence and different review objectives and questions have led to 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 & Booth 2009), whilst in 2016 Tricco and colleagues identified 25 knowledge synthesis methods (Tricco et al. 2016c). Scoping reviews, which have also been called “mapping reviews” or “scoping studies” are one type of review (Ehrich et al. 2002; Anderson et al. 2008). Arksey and O’Malley proposed an original framework for conducting scoping reviews (Arksey & O’Malley 2005). This framework was then advanced and extended by Levac and colleagues (2010). Scoping review methodology was then further refined, and corresponding guidance developed by a working group from JBI and the JBI Collaboration (JBIC) (Peters et al. 2015, 2017). The guidance from this group explicitly addressed the need for this type of knowledge synthesis to be rigorously conducted, transparent and trustworthy. Peters et al. (2015, 2017) used the label ‘systematic scoping review’ in their original guidance for conduct and reporting of these types of reviews (Peters et al. 2015, 2017). In this current update, the nomenclature has been refined to simply ‘scoping reviews’ in acknowledgement that all types of knowledge synthesis should be systematic in their conduct, and that this is the most common term used for these types of reviews (Tricco et al. 2016b). In 2018, the Preferred Reporting Items for Systematic Reviews (PRISMA) Statement was extended to Scoping Reviews – the PRISMA-ScR (Tricco et al. 2018). The PRISMA-ScR was developed by a number of experts in scoping reviews and evidence synthesis, including members of the JBI/JBIC working group, to be consistent with the JBI scoping review methodology (Peters et al. 2017). Following the PRISMA-ScR and meetings of the scoping review methodology group, an updated version of the JBI scoping review methodology is now available.

### 10.1.1 Why a scoping review?

There are a number of reasons why a scoping review might be conducted. Unlike other reviews that tend to address relatively precise questions (such as a systematic review of the effectiveness of an intervention assessed using a predefined set of outcomes), scoping reviews can be used to map the key concepts that underpin a field of research, as well as to clarify working definitions, and/or the conceptual boundaries of a topic (Arksey & O'Malley 2005). A scoping review may address one of these aims or all of them. A scoping review of scoping reviews found that the three most common reasons for conducting a scoping review were to explore the breadth or extent of the literature, map and summarize the evidence, and inform future research (Tricco et al. 2016b). The indications for scoping reviews are listed below: (Munn et al. 2018a)

- As a precursor to a systematic review.
- To identify the types of available evidence in a given field.
- To identify and analyse knowledge gaps.
- To clarify key concepts/ definitions in the literature.
- To examine how research is conducted on a certain topic or field.
- To identify key characteristics or factors related to a concept.

Scoping reviews undertaken with the objective of providing a 'map' of the available evidence can be undertaken as a preliminary exercise prior to the conduct of a systematic review (Anderson et al. 2008). Scoping reviews are useful for examining emerging evidence when it is still unclear what other, more specific questions can be posed for evidence syntheses 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).

Authors deciding between the systematic review or scoping review approach should carefully consider the indications discussed above and determine exactly what question they are asking and what purpose they are trying to achieve with their review (Munn et al. 2018a). It is important for authors to clearly articulate *why* they are undertaking a scoping review; i.e. why is it necessary to identify and map the evidence in a given field? What will mapping the evidence achieve in terms of the objective of the review? Perhaps the most important consideration is whether or not the authors wish to use the results of their review as the basis for a trustworthy clinical guideline, to answer a clinically meaningful question, or provide evidence to inform practice or policy (Munn et al. 2018a). If so, then a systematic review approach is best. If the authors have a question addressing the feasibility, appropriateness, meaningfulness or effectiveness of a certain treatment or practice, then a systematic review is likely the most valid approach (Pearson 2004, 2005). A diverse suite of approaches to conducting systematic reviews to answer different types of clinical questions (i.e. effectiveness, prognosis, risk, etc) exist (Munn et al. 2018b). However, authors do not always wish to ask single or precise clinical questions and may be more interested in the identification of certain characteristics/concepts in sources of

evidence, and in the mapping, reporting or discussion of these characteristics/concepts. In these cases, a scoping review is the better choice.

Unlike a systematic review, scoping reviews do not tend to produce and report results that have been synthesized from multiple evidence sources following a formal process of methodological appraisal to determine the quality of the evidence. Rather, scoping reviews aim to provide an overview or map of the evidence. Due to this, an assessment of methodological limitations or risk of bias of the evidence included within a scoping review is generally not performed (unless there is a specific requirement due to the nature of the scoping review aim) (Khalil et al. 2016; Peters et al. 2015). Given this assessment of bias is not conducted, the implications/recommendations for practice (from a clinical or policy making point of view) that arise from a scoping review are quite different compared to those of a systematic review. In some cases, there may be no need to articulate implications for practice and if there is a need to do so, these implications may be limited in terms of providing guidance from a clinical or policy making point of view. Conversely, when we compare this to systematic reviews, the provision of implications for practice is a key feature of systematic reviews and is recommended in reporting guidelines for systematic reviews (Liberati et al. 2009). To put it simply, systematic reviews normally inform the development of trustworthy clinical guidelines and recommendations. Scoping reviews are not conducted for this reason but rather to provide an overview of the evidence or to answer questions regarding the nature and diversity of the evidence/knowledge available

Davis and colleagues (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). Another example includes where scoping reviews have been performed to establish a comprehensive understanding of how scoping reviews 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). The review by Tricco et al (2016b) illustrates how the number of scoping reviews has 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 healthcare and practice lies in the examination of a broader area to identify gaps in the research knowledge base (Crilly et al. 2009, clarify key concepts (de Chavez et al. 2005), and report on the types of evidence that address and inform practice in the field (Decaria et al. 2012).

Due to the range of reasons why a scoping review may be conducted, it is important that reviewers clearly describe the rationale behind their particular scoping review within both the protocol and the review. This gives readers a clearer understanding of the importance of the topic and why a particular type of scoping review is being conducted.

## 10.1.2 Scoping reviews compared to other types of review

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, 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 studies. The results of well-designed research studies of any methodology are regarded by JBI as potential sources of credible evidence to inform healthcare practice and policy. To match this broader and more inclusive view of evidence, JBI has developed a number of methodologies and methods for the synthesis of evidence to support healthcare decision-making for a number of review types (Munn et al. 2018b).

All JBI knowledge syntheses – including scoping reviews – begin with the development of an *a priori* protocol with inclusion and exclusion criteria that relate clearly to the 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 (Marshall-Webb et al. 2018):

What is the effectiveness of Nissen fundoplication in comparison to anterior partial fundoplication (90 degree, 120 degree and 180 degree) and posterior 270 degree fundoplication in terms of symptom control of gastro-esophageal reflux disease, and what are the side effects of these surgical interventions?

It is clear from this question that only certain types of experimental evidence and data would be relevant and that the review will be very specific in terms of the population, intervention, comparator and outcomes against which it will determine 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; see [Section 11.2](#)) elements of the inclusion criteria may be posed (Kao et al. 2017a):

“What quality of life questionnaires are available for pediatric patients following tonsillectomies with or without adenoidectomies for chronic infections or sleep disordered breathing?”

The ‘population’ in this question is clearly specified (pediatric patients who have had tonsillectomies with or without adenoidectomies). The ‘concept’ in this example is also clear; the questionnaires used to assess quality of life for pediatric patients after a tonsillectomy performed for the purposes of treating either chronic infection or sleep disordered breathing. While not explicit, the ‘context’ in this case is quite ‘open’ in the sense that the quality of life instrument may be used in any setting (primary health care, acute care, or even specialist psychological care or counselling).

An especially important point is that the scoping review may draw upon data from any source 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 are beyond the scope of their review or not be appropriate or useful for consideration. For example, the protocol of the above example scoping review specifies that while any type of quantitative study design may be eligible for inclusion, as only psychometrically validated *quantitative* questionnaires

were sought, qualitative and gray literature was not considered for inclusion; In this example however, reports from published randomized controlled trials were considered side by side with observational studies (Kao et al. 2017a). Because of the broad nature of scoping review questions, they are particularly useful for bringing together evidence from disparate or heterogeneous sources.

It is important to highlight the distinction between scoping reviews and “mixed methods” systematic reviews that also rely on evidence from different study designs (Lizarondo et al. 2017). While the aim of a scoping review is to determine what kind of evidence (quantitative and/or qualitative etc.) 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, and quantitative research.

When contrasting systematic reviews, scoping reviews and traditional literature reviews, the following table (Table 11.1) from Munn et al. 2018 may be useful (as are the comparisons available in Tricco 2018):

**Table 11.1: Defining characteristics of traditional literature reviews, scoping reviews and systematic reviews**

	<b>Traditional Literature Reviews</b>	<b>Scoping reviews</b>	<b>Systematic reviews</b>
A priori review protocol	No	Yes (some)	Yes
PROSPERO registration of the review protocol	No	No*	Yes
Explicit, transparent, peer reviewed search strategy	No	Yes	Yes
Standardized data extraction forms	No	Yes	Yes
Mandatory Critical Appraisal (Risk of Bias Assessment)	No	No**	Yes
Synthesis of findings from individual studies and the generation of ‘summary’ findings***	No	No	Yes

\*Current situation; this may change in time, and we suggest registration/publication of scoping review protocols is critical. Examples of databases where scoping reviews may be registered are: is “Open Science Framework (<https://osf.io/>)” and “Figshare (<https://figshare.com/>). \*\*Critical appraisal is not mandatory, however, reviewers may decide to assess and report the risk of bias in scoping reviews depending on the purpose of the review. \*\*\*The use of statistical meta-analysis (for effectiveness, prevalence or incidence, diagnostic accuracy, aetiology or risk, prognostic or psychometric data), or meta-synthesis (experiential or expert opinion data) or both in mixed methods reviews is typically not conducted in a scoping review.

While recommendations or 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 (Anderson et al. 2008). Recommendations for practice are difficult due to the fact that a formal assessment of methodological quality of the included sources of evidence of a scoping review is generally not performed. In addition, a formal synthesis is not normally conducted in a scoping review (at least not in the same way for systematic reviews) and as such the methodology is not naturally aligned to establishing practice or policy recommendations. However, if recommendations for practice or policy are developed, it is expected that they will clearly flow from the objectives of the scoping review (Munn et al. 2018 a, b).

### 10.1.3 The scoping review framework

The framework originally proposed by Arksey and O'Malley (2005) has been influential in the conduct of scoping reviews. Their framework has been further enhanced by the work of Levac and colleagues (2010) (see Table 11.2). 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 underpinned the development of the JBI approach to the conduct of scoping reviews (Peters et al. 2015).

**Table 11.2: Scoping review frameworks**

	<b>Arksey and O'Malley framework (2005, p. 22-23)</b>	<b>Enhancements proposed by Levac et al. (2010, p. 4-8)</b>	<b>*Enhancements proposed by Peters et al (2015, 2017, 2020).</b>
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, data extraction, and presentation of the evidence.
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.			Analysis of the evidence
8.			Presentation of the results
9.			Summarizing the evidence in relation to the purpose of the review, making conclusions and noting any implications of the findings

<sup>a</sup>Consultation of information scientists, stakeholders and/or experts throughout, including in the topic prioritization, planning, execution and dissemination

## 10.2 Development of a scoping review protocol

As with all well-conducted systematic reviews, an *a priori* protocol must be developed before undertaking the scoping review. A scoping review protocol is important, as it pre-defines the objectives, methods, and reporting of the review and allows for transparency of the process. The protocol should detail the criteria that the reviewers intend to use to include and exclude sources of evidence and to identify what data is relevant, and how the data will be extracted and presented. 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 from the protocol should be clearly highlighted and explained in the scoping review.

Prospective scoping reviewers should be aware that an extension of the PRISMA statement called the PRISMA-ScR is now available (Tricco et al. 2018). [Appendix 10.2](#) to this chapter contains a fillable checklist for authors to check whether their scoping review conforms to this reporting standard. The JBI approach to conducting and reporting scoping reviews described here is congruent with the PRISMA-ScR checklist. 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). Although this may change in the future, scoping reviews can be registered with the Open Science Framework (<https://osf.io/>) or Figshare (<https://figshare.com/>) in the meantime, or their protocols published in some journals, such as *JBI Evidence Synthesis*.

## 10.2.1 Title

The title should be informative and give clear indication of the topic of the scoping review.

The title of a scoping review should always include the phrase "...:a scoping review" to allow easy identification of the type of document it represents.

## 10.2.2 Developing the title 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.

Titles should not be phrased as questions. This is a simple example of a scoping review protocol title by Kao et al. 2017a:

"Pediatric tonsillectomy quality of life assessment instruments: a scoping review protocol"

A range of mnemonics for different types of review (and research) questions have been suggested. The "PCC" mnemonic is recommended 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 quality of life instruments (concept) for pediatric patients (population) (Kao et al. 2017a) this should be stated in the title. Including the context in the title (if the context is a central focus of the review) can further help readers to position the review when they are searching for evidence related to their own particular information and/or decision-making needs.

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

### **Scoping review question(s)**

The scoping review question guides and directs the development of the specific inclusion criteria for the scoping review. Clarity of 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. 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?"

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 above relates to the

types of quality of life questionnaires; however, the further sub-questions could be posed to delve into potential particular issues relating to other important details, such as the population (or participants) of interest. For example:

“What are the ages of the pediatric patients where quality of life questionnaires have been or could be used within the sources of evidence identified for the primary review question?”

Likewise, a sub-question may help to justify mapping the evidence by context, e.g.

“In what geographical (i.e. countries) and clinical (i.e. primary care, acute care, etc.) contexts have the quality of life instruments included for the primary review question been used?”

## 10.2.3 Introduction

The introduction 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 all 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. The rationale of conducting a scoping review should be clearly articulated and stated in this section before stating the aim.

The suggested length for the introduction section of the scoping review protocol is approximately 1,000 words. This section should detail any definitions important to the topic of interest. The information in the introduction 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 Population, Concept and Context elements, the introduction 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 introduction 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 journals and databases searched and search platforms utilized must be stated,

e.g. [JBI Evidence Synthesis](#), [Cochrane Database of Systematic Reviews](#), Cumulative Index to Nursing and Allied Health Literature (CINAHL), PubMed, Evidence for Policy and Practice Information (EPPI), and [Epistemonikos](#), where relevant. If existing scoping 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.

The introduction should conclude with an overarching review objective that captures and aligns with the core elements/mnemonic of the inclusion criteria (e.g. PCC). 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 this scoping review is to investigate quality of life questionnaires available for pediatric patients following tonsillectomies with or without adenoidectomies for chronic infection or sleep-disordered breathing.”

## 10.2.4 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 in [Section 11.2.2](#), as for other review types, there must be clear congruence between the title, 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 some circumstances, participants *per se* are not a relevant inclusion criterion. For example, for a scoping review that is focused upon mapping the types and details of research designs that have been used in a particular field, it may not be useful or within scope to detail the types of participants involved in that research.

### ***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” (as relevant for the particular scoping review).

For example, the overarching concept of interest for the above scoping review is quality of life questionnaires that are used following tonsillectomies with or without adenoidectomies for chronic infection or sleep-disordered breathing.

Further elements of this overarching concept may be of importance to this review. For example, the format (e.g. paper or web-based) and contents (i.e. assessment domains) of the included instruments. The validity and reliability (i.e. if and how they have been psychometrically tested) may also be of interest for mapping.

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, this scoping review could also identify and map the outcomes of quality of life assessments and/or the outcomes of the psychometric testing of the tools themselves.

### ***Context***

The “Context” element of a scoping review 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 social, cultural, 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.

The context of the review in the example provided above has not been stated explicitly (i.e. it could be described to be 'open') as sources of evidence pertaining to any contextual setting would be eligible for inclusion. However, a context could be imposed to refine the scope of the review in different ways. For example; only within middle-high income countries or only within primary care settings.

### ***Types of evidence 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, blogs, etc. Reviewers may wish to leave the source of information "open" to allow for the inclusion of any and all types of evidence. 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 questionnaires available for pediatric patients following tonsillectomies with or without adenoidectomies for chronic infection or sleep-disordered breathing sought quantitative studies, specifically; experimental and epidemiological study designs including randomized controlled trials, non-randomized controlled trials, quasi-experimental, before and after studies, prospective and retrospective cohort studies, case-control studies, and analytical cross-sectional studies. Qualitative studies, reviews, and conference abstracts were excluded.

## 10.2.5 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 (gray or difficult to locate literature) primary sources of evidence, 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 or Ovid) 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 sources. This third stage may examine the reference lists of all identified sources or examine solely the reference lists of the sources that have been selected from full-text and/or included in the review. In any case, it should be clearly stated which group of sources will be examined. A statement should be included of the reviewers' intent to contact authors of primary sources or reviews for further information, if this is relevant. A search for gray (i.e., difficult to locate or unpublished) material might be necessary, and guidance exists on these search strategies. Finally, a complete search strategy for at least one major database should be included as an appendix to the protocol. McGowan et al. (2016) developed an evidence-based guideline for Peer Review of Electronic Search Strategies (PRESS) for systematic reviews, health technology assessments, and other evidence syntheses and recommended the main search to be done by a librarian and peer-reviewed by another librarian.

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. Our strong recommendation is that there are no restrictions on source inclusion by language unless there are clear reasons for language restrictions (such as for feasibility reasons).

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. If this is the case, it is of the utmost importance that the entire search strategy and results are transparent and auditable. The input of a research librarian or information scientist can be invaluable in designing and refining the search.



## 10.2.6 Source of evidence selection

The scoping review protocol should describe the process of source selection for all stages of selection (based on title and abstract examination; based on full-text examination) and the procedures for solving disagreements between reviewers. Selection is performed based on inclusion criteria pre-specified in the review protocol. For any scoping review, source selection (both at title/abstract screening and full-text screening) is performed by two or more reviewers, independently. Any disagreements are solved by consensus or by the decision of a third reviewer.

There should be a narrative description of the process accompanied by a flowchart of review process (from the PRISMA-ScR statement) detailing the flow from the search, through source selection, duplicates, full-text retrieval, and any additions from third search, data extraction and presentation of the evidence. The software used for the management of the results of the search should be specified (e.g. Covidence, Endnote, JBI SUMARI). Details of full-text articles retrieved should be given. There should be separate appendices for details of included and a brief mention of the excluded sources, and for excluded sources; reasons should be stated on why they were excluded. We recommend some pilot testing of source selectors prior to embarking on source selection across a team. This will allow the review group to refine their guidance or source selection tool (if one is being used). One framework for pilot testing is described below:

- Random sample of 25 titles/abstracts is selected
- The entire team screens these using the eligibility criteria and definitions/elaboration document
- Team meets to discuss discrepancies and make modifications to the eligibility criteria and definitions/elaboration document
- Team only starts screening when 75% (or greater) agreement is achieved

## 10.2.7 Data extraction

In scoping reviews, the data extraction process may be referred to as “data charting”. 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 and piloted 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:

1. Author(s)
2. Year of publication
3. Origin/country of origin (where the source was published or conducted)
4. Aims/purpose
5. Population and sample size within the source of evidence (if applicable)
6. Methodology / methods
7. Intervention type, comparator and details of these (e.g. duration of the intervention) (if applicable). Duration of the intervention (if applicable)
8. Outcomes and details of these (e.g. how measured) (if applicable)
9. Key findings that relate to the scoping review question/s.

A template data extraction instrument for source details, characteristics and results extraction is provided in [Appendix 10.1](#) 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 identify each source. As reviewers chart each source, 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 sources to ensure all relevant results are extracted. This pilot step should be done by at least two members of the review team. This approach is favored by other authors on the conduct of scoping reviews (Arksey & O’Malley 2005; Armstrong et al. 2011; Valaitis et al. 2012). If this approach is not feasible, other approaches (such as one reviewer extracting and another verifying the data) can be considered. The most important thing is authors are transparent and clear in their methods regarding what and how they have extracted data. Once again, pilot testing is recommended.

## 10.2.8 Analysis of the evidence

There are many ways in which data can be analyzed and presented in scoping reviews. Whilst the next section discusses innovative ways to present the results in scoping reviews, this section discusses analysis of data extracted in scoping reviews.

It is important to point out that scoping reviews do not synthesize the results/outcomes of included sources of evidence as this is more appropriately done within the conduct of a systematic review. In some situations scoping review authors may choose to extract results and descriptively (rather than analytically) map them. For example, a scoping review may extract the results from included sources and map these but not attempt to assess certainty in these results or synthesize these in such a way as we would in systematic reviews.

For many scoping reviews, simple frequency counts of concepts, populations, characteristics or other fields of data will be all that is required. However, other scoping review authors may choose to perform more in-depth analyses, such as descriptive qualitative content analysis, including basic coding of data. This may result in scoping review results providing a summary of data coded to a particular category (i.e. coding and classifying interventions/strategies/behaviors to a behavioral change model or theory). For example, a scoping review on characteristics of indigenous primary health care service models (Harfield et al. 2018) performed content analysis techniques using NVivo as a way to code characteristics into overall categories. Principles of framework synthesis (where you may chart and sort findings/data from papers against an *a priori* identified framework) may also be useful in some scoping reviews (Davy et al. 2016; Carroll 2013; Glegg et al. 2018). It is important to note that qualitative content analysis in scoping reviews is generally descriptive in nature and reviewers should not undertake thematic analysis/synthesis (i.e. JBI's meta-aggregative approach or meta-ethnographic approaches) as this would be beyond the scope of a scoping review and would more appropriately fit within the objectives of a systematic review of qualitative evidence/ qualitative evidence synthesis.

In terms of quantitative data, scoping review authors may choose to investigate the occurrence of concepts, characteristics, populations etc with more advanced methods than simple frequency counts. Whilst this in-depth type of analysis is not normally required in scoping reviews, in other scoping reviews (depending on the aim), review authors may consider some form of more advanced analysis depending on the nature and purpose of their review. It is unlikely that a meta-analysis or interpretive qualitative analysis will be required in scoping reviews.

The way data is analysed in scoping reviews is largely dependent on the purpose of the review and the author's own judgement. The most important consideration regarding analysis is that the authors are transparent and explicit in the approach they have taken, including justifying their approach and clearly reporting any analyses, and as much as possible planned and stipulated *a priori*.

## 10.2.9 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, figure or table (Lockwood et al. 2019). It is recommended that the authors do plan carefully how they intend to present the data extracted from the sources of evidence. Planning at this stage is very useful for an initial sense of what sorts of data might be identified and how best to present that data in relation to the scoping review's objective and question/s. This may be further refined during the review process as the reviewers increase their awareness and consideration of the contents of all of their included sources.

The ultimate purpose of charting the data is to identify, characterize, and summarize research evidence on a topic, including identification of research gaps (Nyanchoka et al. 2019). 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 described above, because the objective was to map quality of life questionnaires used for pediatric patients following tonsillectomies with or without adenoidectomies for chronic infection or sleep-disordered breathing, the data may be usefully mapped by a tabular presentation of how the different components of the PCC includes as shown below. Other examples of presenting data from a scoping review can be found below (Table 11.3).

**Table 11.3: Example tabular presentation of data for a scoping review**

Parameter	Results
<b>Numbers of publications</b>	<ol style="list-style-type: none"> <li>1. Total number of sources of evidence</li> <li>2. Total numbers between 2000 until 2016 (5 Sept)</li> <li>3. Number of publications every year</li> </ol>
<b>Types of studies</b>	<ol style="list-style-type: none"> <li>1. Randomized controlled trials</li> <li>2. Non-randomized controlled trials</li> <li>3. Quasi-experimental studies</li> <li>4. Before-and-after studies</li> <li>5. Prospective cohort studies</li> <li>6. Retrospective cohort studies</li> <li>7. Case-control studies</li> <li>8. Cross-sectional studies</li> <li>9. Other quantitative studies</li> </ol>
<b>Population/s identified</b>	<ol style="list-style-type: none"> <li>1. Children 0-4</li> <li>2. Children 5-7</li> <li>3. Children 8-10</li> <li>4. Children 11-13</li> <li>5. Children 14-16</li> <li>6. Children 17-18</li> <li>7. Parent/s and/or caregivers</li> <li>8. Health Care professionals</li> <li>9. Not applicable</li> <li>10. Services</li> </ol>

	11. Others (not classified in any of the above)
<b>Quality of life domains</b>	<ol style="list-style-type: none"> <li>1. Physical</li> <li>2. Emotional</li> <li>3. Social</li> <li>4. School/ learning/ education</li> <li>5. Behaviour</li> <li>6. Mental health</li> <li>7. General health</li> <li>8. Family</li> <li>9. Speech</li> <li>10. Other (not classified in any of the above)</li> </ol>
<b>Format/ number of items</b>	<ol style="list-style-type: none"> <li>1. Paper-based</li> <li>2. Web-based</li> <li>3. Mobile/tablet (e.g. App)</li> <li>4. Others</li> </ol>

The tables and charts may also show results as: distribution of sources of evidence by year or period of publication (depends on each case), countries of origin, area of intervention (clinical, policy, educational, etc.) and research methods. A descriptive 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", "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.

The examples below show various formats of charting the evidence depending on the scoping review question. In the first example (Figure 11.1), the authors aimed to clarify if intense sweeteners are effective tools to lower sugar consumption and maintain a healthy weight or, on the contrary, if these compounds promote weight gain (Mosdøl et al. 2018). This will result in identifying gaps where new systematic reviews or primary research are needed, including which hypotheses, types of intense sweeteners and outcomes that need further assessment.

In the second example (Figure 11.2), the authors were interested to map the types of family involvements in intensive care units and identify their level of involvement from passive to active (Olding et al. 2016). In this case, the authors used conventional content analysis to develop codes inductively through immersion with the text, deriving codes from the data itself rather than coding with preconceived categories.

In the third example (Figure 11.3), the authors used relational analysis to present their results. With this technique, all data from eligible sources were used to identify examples of an Integrated Knowledge Translation (IKT) approach or strategy, enabler, barrier, and outcome. This approach allowed gaps in the IKT literature to be identified (Gagliardi et al. 2015). These data were added to the IKT approaches or strategies, enablers, barriers, and outcomes identified in sources referenced in the background of this manuscript and then compiled in a summary of IKT conditions, influencing factors, and outcomes. This approach made clear what was known and not known about IKT interventions. To further understand knowledge gaps, the authors identified relationships between the characteristics of IKT strategies, contextual factors, and outcomes by categorizing IKT as used in eligible sources of evidence.

The fourth example (Figure 11.4) is derived from a scoping review by Pham et al. 2014. The authors provided an example of a bubble chart for results presentation. This method is frequently used in

the engineering sector but could also be employed in many other disciplines. The size of each 'bubble' is representative of the number of sources of evidence published in each year.

Reference	Evidence used				Intense sweeteners considered										Comparator			Outcomes presented					
	Human observational	Primary studies	From experts	From systematic	Other reviews	Aspartame	Sucralose	Saccharin	Sorbitol	Sucrose	Stevia	Other	None	Low	High	Body weight	Cardiovascular	Energy food intake	Satiety	Insulin	Glucose	Metabolic	
Bellisle 2007 [31]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Mattes 2009 [3]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Yang 2010 [2]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
EFSA 2011 [32]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Papano 2011 [33]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Sylvetsky 2011 [34]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Andersen 2012 [35]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Brown 2012 [36]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Rahm 2012 [37]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Swithers 2013 [38]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Araujo 2014 [39]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Ferreira 2014 [40]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Frewick 2014 [41]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Chardier 2014 [42]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Bellisle 2015 [43]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Stoke 2015 [44]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Fernstrom 2015 [45]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Papano 2015 [46]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Roberts 2015 [47]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Swithers 2015 [48]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Fowler 2016 [49]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Gleadow 2016 [50]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Nattinen 2016 [51]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Preiss 2016 [52]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Shearer 2016 [53]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Swithers 2016 [54]	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Figure 11.1: Example of data presentation (artificial sweeteners and weight loss/ gain). (Mosdøl et al. 2018)

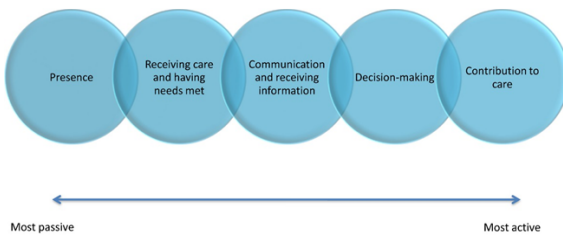


Figure 11.2: Example of data presentation (types of family involvements in intensive care units and level of involvement from passive to active). (Olding et al. 2016)

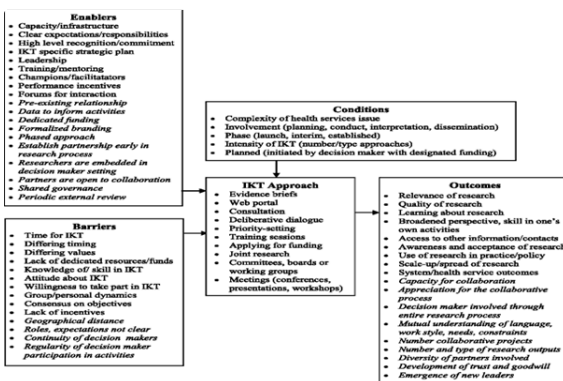


Figure 11.3: Example of data presentation (IKT approaches or strategies, enablers, barriers, and outcomes). (Gagliardi et al. 2015)

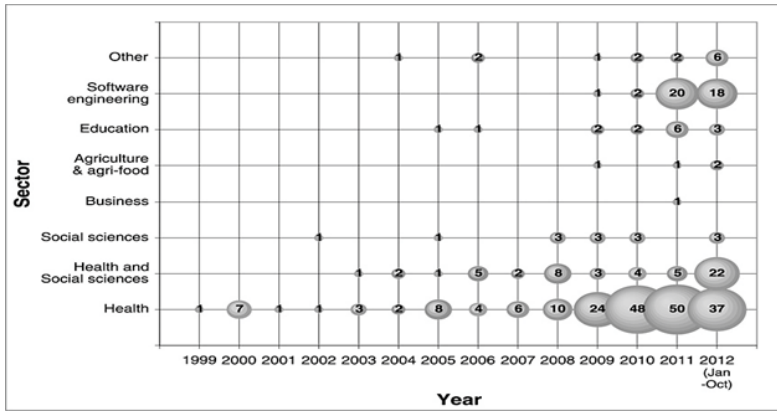


Figure 11:4: Example of data presentation (sources of evidence published by year) (Pham et al 2014)

## 10.3 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. For authors submitting to *JBI Evidence Synthesis*, please refer closely to the author guidelines available on the *JBI Evidence Synthesis* website.

Specifically, guidance is provided on the following components: outline of the review, inclusion criteria (i.e. PCC), search strategy, extraction, presenting and summarizing the results, and any potential implications of the findings for research and practice. 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 if and when they occur.

Please note that more detailed guidance for the conduct of scoping reviews is outlined in the [protocol](#) section of this chapter.

### 10.3.1 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 25 words for ease of understanding (see example above in [Section 11.2.2](#)).

## 10.3.2 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.

## 10.3.3 Abstract

This section forms a structured abstract of the main features of the scoping review. The abstract should accurately reflect and summarize the review with the main focus on the results of the review. Refer to the author guidelines of the journal you plan to submit for journal related guidance.

The abstract should report the essential elements of the review using the following sub-headings in this order:

- **Objective:** State an overarching review objective structured using the key components of the inclusion criteria (approximately one to two sentences).
- **Introduction:** Briefly describe what the issue is under review and what is already known on the topic (approximately two to three sentences).
- **Inclusion criteria:** Summarize the inclusion criteria as it relates to the type of review being conducted. Present the information in one or two sentences – **NOT** under individual subheadings.
- **Methods:** List the key information sources searched (those that provided the majority of included sources of evidence), any limits placed on the scope of the search (e.g. language), and the date range, or the date of the last search. If the recommended JBI approach (i.e. this chapter) to source selection, data extraction, and the presentation of the data was used. (Alternatively, briefly describe any notable deviations to the methodological approach taken).
- **Results:** The bulk of the abstract should be reserved to convey the main results of the review.
  - As a general rule, report the number and type of included sources and participants, as well as any pertinent source characteristics.
  - Report the main findings and results that have been charted in relation to the review's objective and question/s.
- **Conclusions:** Articulate brief overall conclusions based on the scoping review findings. This should be articulated in a way that directly responds to the objective and question/s of the scoping review. Briefly convey key implications for practice and/or research (if made).

## 10.3.4 Introduction

The introduction should be comprehensive and cover all of the main elements of the topic under review, as well as important information and why the topic or question of interest lends itself to a scoping review with a clear rationale for conducting the scoping review.

The primary objective of the scoping review should be evident in this section as the introduction situates the justification and importance of the question/s posed. While many of these details will already have been addressed in the "Introduction" section of the protocol, reviewers should find that the background information provided with the protocol needs modification or extension following the conduct of the scoping review which now introduces the results of the review project. The introduction 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 Evidence Synthesis](#), [The Cochrane Database of Systematic Reviews](#), [Campbell Library](#), etc.).

The introduction should conclude with an overarching review objective that captures and aligns with the core elements/mnemonic of the inclusion criteria (e.g. PCC).

### 10.3.5 Review question(s)

The primary question(s) addressed by the scoping review should be stated. It can be followed by sub-questions 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 11.2.2](#))

## 10.3.6 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 posed. The PCC should be stipulated (Population, Concept, and Context).

### *Types of participants*

The types of participants in the sources of evidence 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 introduction section of the scoping review.

### *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 of evidence*

The types of sources of evidence to be included in the scoping review should be explained. ‘Sources of evidence ’ 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 of evidence and rationale for this should be provided. Otherwise, any limits imposed on the types of studies should be detailed and explained. For example, some sources of evidence such as text and opinion papers and letters would not be particularly appropriate or useful in order to meet the objectives and answer the question(s) of particular scoping reviews.

## 10.3.7 Methods

This section of the review report is reserved for the methods used to conduct the review and should be presented under the relevant subheadings (See [Sections 11.3.7.1 - 11.3.7.4](#)), including any deviations from the method outlined in the *a priori* protocol. A reference to the published or publicly available protocol should be clearly included and cited in this section. In empty reviews for example, this section should not refer to methods that were not performed.

Directly below the Methods heading provide the following information:

- State and appropriately cite the JBI methodology that was employed in the conduct of the review and synthesis.
- Refer to and cite the *a priori* protocol that was either publicly available, published, or accepted for publication/'in press' (e.g. in [JBI Evidence Synthesis](#)).

An example:

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

### 10.3.7.1 Search strategy

This section documents how the reviewers searched for relevant sources of information for inclusion in the scoping review. The search strategy must be comprehensively reported and the detailed search strategy for all of the major bibliographic citation databases and other sources that have been searched should be appended to the review. 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 with justification of the dates of the search included in the protocol. A scoping review should ideally consider sources of evidence (primary studies, textual papers and reviews) both published and unpublished (gray literature). The time frame (start and end dates) chosen for the search should be clearly justified and any language restrictions specified (e.g. "only sources of evidence 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 sources of evidence should also be included along with the outcomes of that contact.

### 10.3.7.2 Source of evidence screening and selection

The review should describe the actual process of source of evidence screening and for all stages of selection (based on title and abstract examination; based on full-text examination) and the actual procedures used for solving disagreements between reviewers.

### 10.3.7.3 Data extraction

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 10.1](#) for a template tool). A descriptive summary of the main results organized based on the review inclusion criteria 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 sources of evidence 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, social, ethnic, or gender factors may be relevant.

### 10.3.7.4 Analysis and Presentation of results

The authors should clearly articulate the method(s) used to present the results of the review. These may be a map of the data extracted from the included papers in a diagrammatic or tabular form, and/or in a descriptive format that responds to the questions of the review.

The tables and charts may also show results as: distribution of sources of evidence by year or period of publication (depends on each case), countries of origin, area of intervention (clinical, policy, educational, etc.) and research methods. A descriptive 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”, “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.

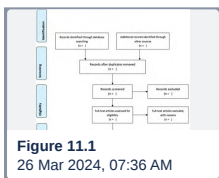
### 10.3.8 Results

### 10.3.8.1 Search results

The presentation of results section should identify how many sources of evidence were identified and selected. There should be a narrative description of the search decision process accompanied by the source of evidence identification and inclusion decision flowchart (see Figure 11.1 below). This flowchart has been adapted from the PRISMA flowchart developed by Moher et al. (2009). The flow chart should clearly detail the review decision process, indicating the results from the search, removal of duplicate citations, source 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”, “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.



**Figure 11.1**  
26 Mar 2024, 07:36 AM

### 10.3.8.2 Inclusion of sources of evidence

This section should include an overall description of the included sources with reference to the detailed Table of Included Source of Evidence Characteristics in the appendices (the template data extraction tool in [Appendix 10.1](#) 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 sources of evidence should be provided in the appendices of the scoping review.

### 10.3.8.3 Review findings

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

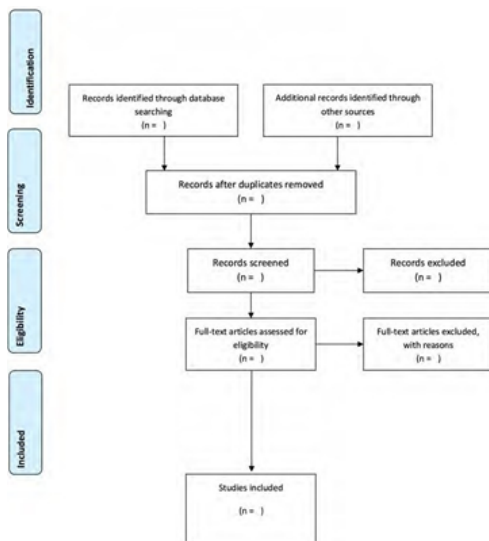


Figure 11.5: Flow diagram for the scoping review process adapted from the PRISMA statement by Moher and colleagues (2009)

### 10.3.9 Discussion

This section should discuss the results of the review as well as any limitations of the sources included in the scoping review; it should not repeat the results of the 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 implications for practice or policy cannot be graded.

## 10.3.10 Conclusions and recommendations

### **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.

### **Implications of the findings for research**

This sub-section of the conclusions should include clear, specific implications 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.

### **Implications of the findings for practice**

If implications for practice are made (note, scoping reviews do not tend to include implications for practice) this sub-section of the conclusions should refer and align to results from the scoping review that can be used to inform practice. It may not be possible to develop implications for practice from the results of a scoping review as no assessment of methodological quality and formal synthesis takes place as part of a scoping review. As such this section may be omitted.

## 10.3.11 Conflicts and acknowledgements

Details of requirements in these sections are described in [Section 1.6](#) of this Manual.

### **Conflicts of interest**

A statement which either declares the absence of any conflicts of interest or which describes a specified or potential conflict of interest should be made by the authors in this section.

### **Funding**

Authors should provide details regarding any sources of funding for the review project. The role of all funders in the review process, if any, should be explicitly described. If the review is funded, then any potential conflicts of interest or intellectual bias of the funders should be specified in the review. Sources of funding of included sources in the scoping review may also be stated.

### **Acknowledgements**

Any acknowledgements should be made in this section. Acknowledgements should be reserved to individuals who have contributed to the manuscript yet whose contribution does not constitute authorship. Details of the contribution should be included, for example conceptualization, review of draft and feedback. It should also be noted if the scoping review is to count towards a degree award.

## 10.3.12 References

For publication in the *JBIR Evidence Synthesis*, 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).

## 10.3.13 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 three required appendices for a JBI scoping review:

### **Appendix I: Search strategy**

A detailed search strategy for all sources searched must be appended.

### **Appendix II: Sources excluded following full-text review**

A list of sources excluded following full-text review with primary reasons for exclusion

### **Appendix III: Data extraction instrument**

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

## 10.4 Chapter references

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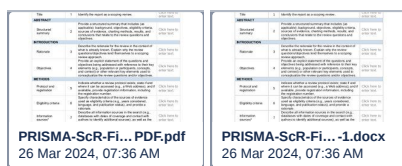
## Appendix 10.1 JBI template source of evidence details, characteristics and results extraction instrument

<b>Scoping Review Details</b>	
Scoping Review title:	
Review objective/s:	
Review question/s:	
<b>Inclusion/Exclusion Criteria</b>	
Population	
Concept	
Context	
Types of evidence source	
<b>Evidence source Details and Characteristics</b>	
Citation details (e.g. author/s, date, title, journal, volume, issue, pages)	
Country	
Context	
Participants (details e.g. age/sex and number)	
<b>Details/Results extracted from source of evidence</b> (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	



## Appendix 10.2 PRISMA ScR Extension Fillable Checklist

The below checklists can be downloaded for review authors to refer to when reporting scoping reviews to ensure they are in line with the PRISMA scoping reviews extension.



## Update: Implications of PRISMA 2020 for the reporting of Scoping Reviews

Currently, those that undertake Scoping Reviews are asked to use the PRISMA extension for Scoping Reviews reporting guidance.<sup>1</sup> In 2021, the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) statement was updated from its 2009 version.<sup>2</sup> The changes, whilst necessary to ensure increased transparency and rigour in reporting for systematic reviews, has had some implications for scoping reviews. Since the PRISMA 2020 statement, the following changes can be considered when reporting a scoping review using the PRISMA ScR (table 1):

**Table 1: PRISMA- ScR with associated changes**

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	CHANGES TO CONSIDER SINCE PRISMA 2020	REPORTED ON PAGE #
<b>TITLE</b>				
Title	1	Identify the report as a scoping review.		Click here to enter text.
<b>ABSTRACT</b>				

Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	Use the abstract reporting checklist (see Item 2 in PRISMA 2020)	Click here to enter text.
<b>INTRODUCTION</b>				
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.		Click here to enter text.
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.		Click here to enter text.
<b>METHODS</b>				
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	Report any protocol amendments (see item 24 in PRISMA 2020)	Click here to enter text.
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.		Click here to enter text.
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.		Click here to enter text.
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	Include the full search strategies for <b>all</b> databases, registers, and websites (see item 7 in PRISMA 2020)	Click here to enter text.

Selection of sources of evidence †	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	Describe if automation tools were used for study selection (see item 8 in PRISMA 2020)	Click here to enter text.
Data charting process ‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	If outcomes were included, describe how they were defined and which results were sought (see item 10 in PRISMA 2020)	Click here to enter text.
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.		Click here to enter text.
Critical appraisal of individual sources of evidence §	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).		Click here to enter text.
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.		Click here to enter text.
<b>RESULTS</b>				
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	Use the updated PRISMA 2020 flow diagram, which has optional boxes for review updates, as well as studies that were identified through means other than searching databases/registers and cite any studies that appeared to meet the inclusion criteria but were excluded (see item 16 in PRISMA 2020)	Click here to enter text.
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.		Click here to enter text.
Critical appraisal within	16	If done, present data on critical appraisal of included sources of evidence (see item 12).		Click here to

sources of evidence				enter text.
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.		Click here to enter text.
Syntheses of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.		Click here to enter text.
<b>DISCUSSION</b>				
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.		Click here to enter text.
Limitations	20	Discuss the limitations of the scoping review process.		Click here to enter text.
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.		Click here to enter text.
<b>FUNDING</b>				
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	Report conflicts of interest (see item 26 in PRISMA 2020)	Click here to enter text.

#### OTHER CONSIDERATIONS

where sources of evidence (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites. † A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as

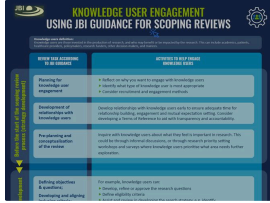

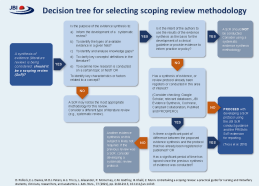







opposed to only studies. This is not to be confused with information sources (see first footnote). ‡ The frameworks by Arksey and O'Malley and Levac and colleagues refer to the process of data extraction in a scoping review as data charting. JBI Guidance uses the term data extraction. § The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

## References

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# Scoping Review Resources

## Digital Resources

 <p><b>Knowledge User Engagement</b> An Infographic regarding using JBI Guidance for Scoping Reviews and knowledge user engagement</p>	 <p><b>The Big Picture Review Family</b> Infographic: Scoping Reviews, Mapping Reviews, and Evidence and Gap Maps explained</p>	 <p><b>Decision Tree for Selecting Scoping Review Methodology</b> A synthesis of evidence is being considered: should it be a scoping review?</p>	 <p><b>Recommendations for the extraction, analysis and presentation of results in Scoping Reviews</b> A video abstract of the published paper</p>
 <p><b>How to Extract, Analyse and Present Data in Scoping Reviews</b> This presentation provides a practical approach to extracting, analysing and presenting data within scoping reviews, with step-by-step examples</p>	 <p><b>How to conduct and report your scoping review: latest guidance</b> Assoc Prof Andrea Tricco explains how to conduct and report your scoping review using the latest guidance in this one-hour JBI LIVE webinar</p>	 <p><b>Challenges &amp; Solutions in Scoping Reviews</b> Watch the recorded seminar which provides solutions to challenges that can be implemented by research teams</p>	 <p><b>An Introduction and Overview of Scoping Reviews - Prof Zachary Munn</b> This webinar provides an overview of JBI methods for conducting scoping reviews, a comparison and contrast with other types of evidence synthesis, and recommendations for resources and support</p>
 <p><b>Steps for scoping reviews</b> We break down the process of beginning and completing a scoping review using JBI methodology. These are the steps you should know before beginning your scoping review</p>	 <p><b>Should I undertake a scoping review or a systematic review?</b> Our expert at JBI, Prof Zachary Munn, answers scoping review FAQs</p>		

## Publications

<p><b>What are scoping reviews? Providing a formal definition of scoping reviews as a type of evidence synthesis</b> Munn et al 2022</p> <p>Scoping reviews have been variously defined in the literature. In this article, we provide the following formal definition for scoping reviews: Scoping reviews are a type of evidence synthesis that aims to systematically identify</p>	<p><b>Recommendations for the extraction, analysis, and presentation of results in scoping reviews</b> Pollock et al 2023</p> <p>Scoping reviewers often face challenges in the extraction, analysis, and presentation of scoping review results. Using best-practice examples and drawing on the expertise of the JBI Scoping Review Methodology Group and an editor of a journal that publishes scoping reviews,</p>	<p><b>Best practice guidance and reporting items for the development of scoping review protocols</b> Peters et al 2022</p> <p>The purpose of this article is to clearly describe how to develop a robust and detailed scoping review protocol, which is the first stage of the scoping review process. This paper provides detailed guidance and a checklist for prospective authors to ensure that their protocols</p>
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<p>and map the breadth of evidence available on a particular topic, field, concept, or issue, often irrespective of source (ie, primary research, reviews, non-empirical evidence) within or across particular contexts.</p>	<p>this paper expands on existing JBI scoping review guidance. The aim of this article is to clarify the process of extracting data from different sources of evidence; discuss what data should be extracted (and what should not); outline how to analyze extracted data, including an explanation of basic qualitative content analysis; and offer suggestions for the presentation of results in scoping reviews.</p>	<p>adequately inform both the conduct of the ensuing review and their readership.</p>
<p><b>Conducting high quality scoping reviews-challenges and solutions</b></p> <p>Khalil et al 2021</p> <p>In this paper, the JBI Scoping Review Methodology Group discuss the challenges that may be faced in the conduct and publishing of scoping reviews, such as developing an a-priori protocol, developing implications or recommendations for research, policy or practice and a lack of understanding of scoping reviews by journal editors, authors and peer reviewers. It presents solutions to these challenges to ensure better understanding of the process of scoping reviews.</p>	<p><b>Moving from consultation to co-creation with knowledge users in scoping reviews: guidance from the JBI Scoping Review Methodology Group</b></p> <p>Pollock et al 2022</p> <p>This paper presents JBI's guidance for knowledge user engagement in scoping reviews based on the expert opinion of the JBI Scoping Review Methodology Group. We offer specific guidance on how this can occur and provide information regarding how to report and evaluate knowledge user engagement within scoping reviews.</p>	<p><b>Updated methodological guidance for the conduct of scoping reviews</b></p> <p>Peters et al 2021</p> <p>The latest JBI scoping review guidance is described with this article. There is an updated section on when to conduct a scoping review, the role of methodological appraisal in scoping reviews and inclusion of the PRISMA-SCR reporting guidelines.</p>
<p><b>PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation</b></p> <p>Tricco et al 2018</p> <p>Even though a scoping review is not considered systematic. An extensive search still needs to be undertaken to ensure that all available evidence is included within your review. This articles describes how you should report on that search in your publications.</p>	<p><b>Systematic review or scoping review? Guidance for authors when choosing between a systematic or scoping review approach</b></p> <p>Zachary Munn, Micah D. J. Peters, Cindy Stern, Catalin Tufanaru, Alexa McArthur &amp; Edoardo Aromataris</p> <p>Have you ever had trouble deciding what type of review you should do? This paper will help you decide and assess if a scoping review is the right choice for research.</p>	

## External Methodological Guidance

The following external synthesis methodologies have been endorsed for adoption by the JBI Scientific Committee as follows:

### Systematic reviews of prevalence and incidence

The PERSyst (Prevalence Estimates Reviews – Systematic Review Methodology Group) is an academic, collaborative group, with the aim to develop and to disseminate methods for systematic reviews of prevalence and cumulative incidence. Methodological articles published by the group can be found here: <https://persyst.group/> . Although this is an external methodology JBI's synthesis software, JBI SUMARI, can support reviews of this nature.

### Systematic reviews of diagnostic test accuracy

The *Cochrane Handbook for Systematic Reviews of Diagnostic Test Accuracy* is the official guide that describes in detail the process of preparing and maintaining systematic reviews of test accuracy for Cochrane. The *Handbook* has been produced by the [Cochrane Screening and Diagnostic Test Methods Group](#). It is a guide for those conducting systematic reviews of test accuracy and a reference for more experienced authors and is available at: [Cochrane Handbook for Systematic Reviews of Diagnostic](#)

[Test Accuracy](#)

### Systematic reviews of measurement properties

Consensus based Standards for the selection of health Measurement Instruments (COSMIN) is an initiative of an international multidisciplinary team of researchers with a background in epidemiology, psychometrics, medicine, qualitative research, and healthcare who have expertise in the development and evaluation of outcome measurement instruments. A comprehensive user manual for systematic reviews of outcomes measurement instruments is available on the COSMIN website: [Guideline fo](#)

[r Systematic Reviews of Outcome Measurement Instruments • COSMIN](#)

## Previous versions

April 2021



June 2020



March 2020



Spanish Translation

**Manual del JBI para la Síntesis de la Evidencia (2020)**