A practical guide:

Protocol Development for Scoping Reviews

covidence

Introduction

Welcome to this practical guide to protocol development for scoping reviews. Whether you're an experienced researcher or just starting out, this guide can help you develop your review protocol which will help you plan and manage your scoping review.

Inspired by the knowledge of hundreds of researchers, this guide compiles best practices and tips from the global scoping review community. It features clear definitions, practical advice, and real-world study examples.

We hope this guide becomes an essential part of your research journey.

About the author

We are Covidence. Launched in 2014, Covidence is a not-for-profit world leading Software as a Service (SaaS) platform. Our platform enables health and science research teams to rapidly synthesise and uncover actionable insights from the mountains of research produced around the world. Leading institutions worldwide use Covidence to create the knowledge that shapes our society.

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Introduction

What is a scoping review?

A scoping review is a type of evidence synthesis that aims to map the key concepts, types of evidence, and gaps in research related to a defined area or topic. Unlike systematic reviews, which often focus on answering narrowly defined questions using strict inclusion criteria and quality appraisal, scoping reviews are broader in scope and are particularly useful for exploring complex or under-researched areas.

Arksey and O'Malley (2005) published a seminal paper that described a 5-step framework for a scoping review that was subsequently refined by Levac et al. (2010):

- Identifying the research question
- Identifying relevant evidence sources
- Evidence selection
- Charting the data
- Collating and summarising, and reporting results
- Consultation (optional)

Key features of a scoping review:

There are some key features common to scoping reviews:

- Broad and exploratory with a flexible methodology.
- Focused on mapping evidence, concepts and knowledge gaps.
- Often includes a variety of study records and sources including grey literature.
- May or may not include quality assessment.

Why conduct a scoping review?

Scoping reviews are ideal when:

- Exploring a new or complex research area.
- The type of evidence and methodology is diverse.
- There is a need to clarify key concepts or definitions.
- There is a need to identify the types and sources of available evidence.
- There is a need to determine if a systematic review is required.
- You're informing policy, practice, or future research agendas.

The following comparison can help decide if a scoping or a systematic review would be more appropriate.

Scoping reviews versus Systematic reviews

Feature	Scoping Review	Systematic Review
Purpose	Map concepts and gaps	Answer a focused research question
Scope	Broad, often including diverse evidence sources	Narrow and specific, often selective about study types
Quality appraisal	Optional	Required
Synthesis	Descriptive or thematic	Quantitative or qualitative

Sources

Arskey H, & O'Malley L. Scoring studies: towards a methodological framework. Int J Soc Res Methodol. 2005;8(1):19-32.

Levac D, Colquhoun H, O'Brien KK. Scoping reviews: advancing the methodology. Implement Sci. 2010; 5(1):1.

Why is it important to write a scoping review protocol?

A scoping review protocol is key to ensuring the integrity, transparency, and rigour of the review process - leading to more reliable and credible research outcomes. The review protocol should be written by the review team which should, where possible, include both subject-matter experts and experienced reviewers.

The scoping review protocol is important for the following reasons:

- **Efficiency:** A protocol provides structured guidance on each section of the review. A protocol can be used to create the data charting or extraction template and form the basis of the final scoping review report, ultimately saving the review team time.

- **Planning:** Planning saves time and resources. It can be used to identify tasks for team members, keep the team on track and aligned during tasks, and avoid introducing biases. It can act as a quality assurance tool, allowing feedback prior to embarking on the full review and may increase the chance of publication, especially if the protocol has been registered or published. The protocol can be a useful planning tool for higher-degree students and their supervisors and as a piloting tool for search strategies, screening and data charting or extraction templates.

- **Transparency and reproducibility:** Protocols made available in repositories such as Open Science Framework (OSF), provide a transparent outline of the *planned* methods and procedures for the scoping review before it is conducted. Checking these repositories can minimise duplication of efforts. The review protocol can highlight issues around potential selective reporting. The protocol allows others to replicate the review and promotes confidence in the results and conclusions.

- **Minimising bias and ensuring accountability:** Pre-specifying criteria for study selection, data charting, and analysis can reduce the risk of introducing bias into a 1 scoping review. As scoping reviews can be iterative, it is important to be able to detect unintentional or undocumented changes. The review team should be accountable and justify any deviation from the protocol.

- **Reducing errors and discrepancies:** Planning and pre-specifying methods can help reduce errors and discrepancies during the review process. Clearly defined criteria and procedures minimise the chance of mistakes, prevent arbitrary decision-making and ensure consistency in the approach to study selection and data charting.

- **Prevents research waste:** In a time when there is increasing awareness of research waste, the development, and where possible registration or publication, of a scoping review protocol may reduce duplication of effort. This can be important to higher degree students to indicate that their area of research is under investigation.

Tips on writing style for a protocol

- **Tense:** Always write a scoping review protocol in the **future tense** "Two reviewers will independently screen titles and abstracts" rather than the past tense "Two reviewers screened titles and abstracts".
- **Voice:** Use the **active voice** "we will screen..." rather than the passive voice "the titles and abstracts will be screened".
- **Language:** Where possible use **accessible language** as not all readers of scoping reviews are academics or health professionals. Try to avoid technical jargon.
- **Structure:** Write your protocol using **full sentences** and where possible avoid bullet points.

Registering a Protocol

Scoping review authors should prepare a detailed protocol before data collection begins, and ideally prospectively register or publish it publicly. Registering the protocol promotes transparency, reduces bias, and avoids duplication. The protocol should state the exact registry (or platform) to which it will be submitted, along with version number and amendment plans.

Review teams may register their review protocols for the following reasons:

- **Transparency and reproducibility:** Transparency allows others to see that this scoping review is in progress. Research questions, objectives, eligibility criteria, and planned charting, presentation and analyses are clearly documented a *priori*. This reduces the risk of bias or selective reporting. Protocol registration allows other review teams to replicate and evaluate the methodology against best practices to help identify evidence gaps. Some registries or journals allow peer review of protocols, which can improve methodological rigour and highlight inconsistencies before the review is underway.
- **Minimisation of arbitrary decisions, and maintaining methodological rigour:** Creating and registering the scoping review protocol is a key step in minimising arbitrary decisions. Drafting a protocol upfront ensures the team defi nes and justifi es key elements (e.g. research questions, eligibility criteria, search strategy) before seeing the results. This prevents unplanned, arbitrary changes and preserves methodological consistency across the review process.
- **Reduction of research waste:** Protocol registration helps prevent duplication of effort and research waste. Review teams can confirm that their review has not been done before by checking available registries.
- **Publication and funding requirement:** The prospective registration of a review protocol is often a requirement of some funding agencies and journals, or is strongly recommended. It is worth checking with the target journal or the funding body if protocol registration is mandatory, and adhere to their guidelines.

PRISMA-ScR Item 5: Protocol and registration

The PRISMA Extension for Scoping Reviews (PRISMA-ScR) Reporting Standard lists the completion and registration of the review protocol as one of the important review steps.

Indicate whether a review protocol exists; state if and where it can be accessed (for example, a web address); and if available, provide registration information, including the registration number.

Main protocol registries

Common sites to register scoping reviews:

- INPLASY: accepts a wider variety of protocols including scoping reviews. Retrospective protocol registration is possible but is strongly discouraged. Protocols are usually published within 48 hours.

- Open Science Framework (OSF): contains pre-published manuscripts and pioneering research protocols. Pre-registration regarding the project is required to capture key information that is permanently stamped with a DOI. Information can be made private for up to four years. Updates can be made throughout this time. A central repository can be created to collaborate with other researchers on the team.

- Figshare: is a provider of open research repository infrastructure.

Some journals request registration information as part of the manuscript submission process. Some registries provide a unique identifier that authors can include in their final publication.

Publication of protocols

There are several journals that accept submissions of scoping review protocols for publication, these include:

- Systematic Reviews
- JBI Evidence Synthesis
- BMJ Open

Example

In accordance with best practice, we plan to prospectively register the scoping review protocol with the Open Science Framework.

Tips

When registering a protocol, include keywords and a concise title so others can fi nd them in registry searches.
If there are any amendments made to a protocol or changes during the scoping review process, the update should also be applied to the registered protocol where possible.

02

Review information

Review Information: Authors/ Reviewers

The title of a scoping review protocol should provide a concise summary of the study's scope. Structuring titles using the PCC (Population, Concept, Context) framework can enhance clarity and relevance by systematically organising the key elements of the research question.

Consider including the term "protocol" in the title to indicate that it presents the *planned* methods and procedures for conducting the scoping review. This helps distinguish it from completed reviews and signals a prospective or ongoing research project.

The role of urban green spaces in promoting health and wellbeing in the general population: A scoping review protocol.

- **Population:** All age groups; general population.
- **Concept:** Exposure to or interaction with green spaces. Health outcomes (mental health, physical activity, cardiovascular health, social cohesion, etc.).
- **Context:** Urban settings including, community, residential, school, etc. Studies from all geographic locations.
- **Timepoints:** Some reviews include timepoints as part of the PCC framework.
- **Other:** Other essential eligibility criteria for your review such as study design.

Example

Title: "The role of urban green spaces in promoting health and wellbeing in the general population : A scoping review protocol"

Framework: PCC Explanation:

This title clearly identifies the Population (general population), Concept (exposure to, or interaction, with green spaces) and Context (any urban setting). It also includes "protocol" to indicate ongoing research.

Scoping Review Information: Authors/Reviewers

Providing a list of the review team members and their roles is critical to ensure quality, credibility and transparency in scoping reviews. By acknowledging contributions, defi ning responsibilities, and disclosing confl icts of interest, reviewers sustain high standards of research integrity which feeds into the reproducibility and accountability in the review.

Example review team

Reviewer	Role	Responsibilities
Reviewer 1 Harry Harper	Principal Investigator	Overall project oversight, protocol development, study selection, data charting, interpretation of results, manuscript preparation.
PhD Reviewer1@example.com Covidence University, Melbourne, Australia		
Reviewer 2 George Grant	Co-Investigator	Protocol development, study selection, data charting, interpretation of results, manuscript review.
MD Reviewer2@example.com College of Health, United States		
Reviewer 3 Millie Mills	Research Coordinator	Literature search, study selection, data charting, data management, coordination of team meetings, protocol adherence.
MPH Reviewer3@example.com College of Health, United States		

03

Background

Background

The background section, sometimes referred to as the rationale or introduction, of the scoping review protocol should provide **succinct** details on the importance of the review and the reason for conducting it in the context of what is already known. This section should set the scene and provide important definitions and a summary of existing evidence.

Set the scene

Set the scene for your review by starting with a brief overview of the topic. Provide a description of what is already known in the field based on the condition, health issue, research tool, exposure or problem that you want to investigate. Describe the gaps in the evidence that need to be explored. It is important that definitions are provided for any relevant terms used in the review. The scope of the review question and the theoretical framework used to develop the question should be introduced. A justification to the review inclusion criteria should be provided.

Justify the use of a scoping review

Provide a brief justification for why you are undertaking this review. Why has a scoping review been chosen over other review types? Are you trying to map previous evidence, identify tools that are commonly used or identify evidence gaps?

Provide details regarding current review evidence

Provide a summary of existing review evidence on the topic. This is used to demonstrate that the review is novel. This could be systematic, scoping or other reviews. The summary does not need to be comprehensive and should focus on the prioritisation of key citations. Explain how this current scoping review would differ from the current evidence. What are the strengths and weaknesses of the evidence?

04

Review question(s)

Scoping review objectives and question/s

Getting the review question and objectives right is critical to the whole scoping review process. It provides the roadmap to the following sections of your review.

The **review objectives** should be framed within the population, concepts and context framework that relate to the review eligibility criteria. The whole review team should be involved in development of the objectives to ensure that both methodology and content knowledge are taken into account.

The objectives will be used to determine:

- Eligibility criteria
- Search strategies
- Data collection
- Data synthesis or interpretation

If the review will investigate multiple concepts then the protocol should explain how these will be addressed within the review objectives. Consider if you will report on each concept separately, if the concepts will be combined in the summary, or if you plan to compare them directly.

Example objective

In order to provide a comprehensive picture of urban green spaces in promoting health and wellbeing in the general population, this review aims to identify and present the available information regarding exposure to, or interaction with green spaces in urban settings in the general population on health outcomes (mental health, physical activity, cardiovascular health, social cohesion, etc.).

Research questions in a scoping review are broad as they seek to provide a breadth of coverage rather than answer a specific focused question as is seen in systematic reviews. The research question/s should be provided in the protocol and should be directly linked to the review objectives.

Different frameworks can be used to help formulate your research question. The Population, Concept, Context (PCC) framework is most commonly used for scoping reviews.

The role of urban green spaces in promoting health and wellbeing in the general population

- **Population:** All age groups; general population.
- **Concept:** Exposure to, or interaction with, green spaces.
- **Context:** Urban settings including, community, residential, school etc. Studies from all geographic locations.

As well as the primary question of the review there may be secondary questions that will guide the exploration of subgroups or specific aspects of the concept or context of the review.

Example questions

Primary research question

- What is the role of exposure to, or interaction with, green spaces in promoting health and wellbeing among the general population in urban settings?

Secondary research questions

- What physical and mental health outcomes are associated with exposure to green spaces?
- What is known about the relationship between exposure to green spaces and subjective wellbeing and quality of life?
- How do passive (e.g., viewing nature) and active (e.g., exercising, gardening) interactions with green spaces differ in their effects?
- What is known about the relationship between green spaces and health across different urban contexts (e.g., residential, community, school, and workplace)?
- How does the role of green spaces in health and wellbeing vary across age groups (children, adults, older adults)?
- What differences exist across socioeconomic, cultural, or vulnerable population groups?
- What mechanisms or pathways (e.g., physical activity, stress reduction, social cohesion, environmental quality) have been proposed to explain the relationship between green spaces and health outcomes?

05

Methods

Eligibility criteria for selecting evidence sources (study characteristics)

It is critical to provide details of the eligibility (inclusion and exclusion) criteria for your review for transparency, determining applicability and comprehensiveness. The eligibility criteria will be used to help you decide on which evidence sources to include and exclude. Describing the eligibility criteria can help develop the search strategy and will be used during record selection/screening.

Frameworks

When developing your eligibility it is important that the entire team is clear on the criteria. Clarity on how eligibility criteria are applied is essential for consistent application by the research team. The most commonly used framework for scoping reviews is Population, Concept, Context (PCC).

Population (or Participants, people, sample):

Summarise the characteristics of the population that are being studied in your review and those you want to exclude, taking equity and special populations into consideration. This might include age, gender, ethnicity, health-, economic-, education level or other relevant status, as well as the impact of outcomes on different population groups. Provide clear definitions so that screeners can easily distinguish between inclusion and exclusion criteria

In some scoping reviews, the concept of “population” does not refer to people. For example, in methodological scoping reviews, the unit of analysis is the methodology itself rather than a group of individuals. Similarly, policy or systems reviews often focus on frameworks, practices, or organisational structures rather than human participants. Reviews may also examine technologies, tools, or aspects of environmental infrastructure, where the “population” can be defined as the set of tools, interventions, or systems under investigation. In these cases, the Population–Concept–Context (PCC) framework can still be applied, but the population element should be reframed to reflect the relevant unit of analysis, ensuring the scope of the review remains clear and bounded.

Concept

The underlying concept should be clearly defined as it will guide the scope of the review. The concept is the core idea, topic, methodological approach, theory, intervention, exposure, phenomenon, or issue being examined. There may be additional elements that need to be considered alongside the overarching concept such as the method of administration or components of an intervention or instrument, or the validity and reliability of a test. While scoping reviews do not generally require predefi ned outcomes, outcomes may be incorporated if they are integral to the review objective. In our working example review the concept is the exposure to, or interaction with, green spaces.

Context

The context of the scoping review is dependent on the review objective/s and question/s. The context should be clearly defined and could include cultural, gender or social factors, or geographic location. In some cases, context may also encompass details about the specific setting (such as acute care, school, community, organisation, urban or rural). Teams may choose to focus their review on a particular context, such as a specific country or organisational setting, provided this is consistent with the objectives. The protocol should clearly define the review context and explicitly state any additional limitations (such as language or publication date restrictions) to maintain transparency. Any limitations should be clearly specified in the protocol.

Example

Eligibility criteria: We will include adults, 18 years of age and over. We will include studies that focus on the exposure to, or interaction with, green spaces, defined as an area of grass, trees, or other vegetation set apart for recreational or aesthetic purposes. We are interested in urban settings including, community, residential, and school. We will identify and map health-related outcomes associated with green spaces (mental health, physical activity, cardiovascular health, social cohesion, etc.).

We will exclude studies reporting on rural environments and a population <18 years of age.

Evidence sources

In a scoping review, the eligible study designs should be stated clearly, along with the rationale for their inclusion. This may involve specifying whether the review will include a range of quantitative, qualitative, and mixed-methods studies, or whether it will focus on particular designs (e.g., primary research only, or studies reporting psychometric properties of instruments). Any exclusions should also be justifi ed and reported in the protocol. Unlike systematic reviews of effectiveness, scoping reviews typically aim to capture a broad spectrum of evidence sources, and critical appraisal or exclusion based on methodological “risk” is generally not undertaken.

Example

We will include records of any design that addresses our review question. This includes both primary and secondary sources of evidence.

Tips on writing style for a protocol

Changing or amending eligibility criteria
It's inevitable that some changes may happen as you plan and conduct your review. That's okay but we recommend that you:

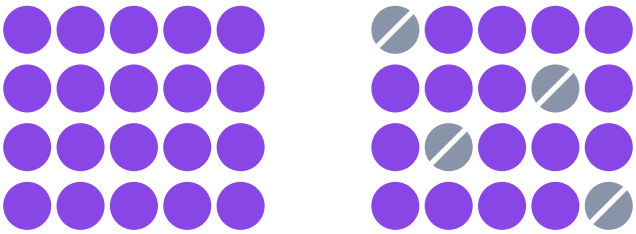
- Provide a rationale for any changes to eligibility criteria
- Review your original search terms if you change the eligibility criteria
- Apply changes to eligibility criteria consistently to all records assessed for inclusion
- Consider re-running the search to ensure you have not missed any relevant records
- Do not make changes to the protocol based on the results of the review.

Eligibility criteria for selecting evidence sources (report characteristics)

In addition to the study characteristics, the report characteristics can be used to select evidence sources for inclusion or exclusion. Always provide a justification for any limitations you impose on the body of available evidence. Limitations may affect the interpretation of the evidence and the generalisability of the findings.

PRISMA-ScR Item 6: Eligibility criteria

Specify characteristics of the sources of evidence used as eligibility criteria (for example, years considered, language, and publication status), and provide a rationale.



No limitations/filters | Limitations/filters applied

Some common report characteristics include:

- Publication years
- Language
- Publication status
- Geographical location
- Type of publication

Publication years

State if the search will be unrestricted by year of publication or if limitations will be applied. This aids the transparency and reproducibility of the review.

Some reviews limit publication years for:

- **Relevancy:** There is no need for literature searches to precede the availability of an intervention, tool or technology. Limiting publication dates can ensure that the study data reflects current rather than outdated practice which will not be useful or relevant to the review.

- **Resource efficiency:** Some scoping reviews include a large volume of records which can be unmanageable for the review team. Restricting the publication years can help streamline the screening process by reducing the number of older studies that need to be assessed for relevance. However, limiting the publication years based solely on the volume of studies could introduce bias to the review and needs to be justified.

Limiting the publication years of the review may have implications for the comprehensiveness and generalisability of the review findings.

Example

There will be no restrictions based on the year of publication.
Or
We will search databases from inception to the search date.

Example: As xxxx intervention/drug first appeared in the market in 2001, we will restrict the year of publication from January 2001 up to the search date based on relevancy.

Language

The protocol should detail any limitations based on the language of publication. If other languages are included, the protocol should detail how these will be translated (translator; App). Data extraction of studies in languages other than those of the review team may be time consuming, expensive and introduce errors.

Some reviews limit language of publication for:

- **Resource/time constraints:** Limiting the review to publications in specific languages can help manage resources, particularly when translation services may not be readily available or feasible.

- **Relevance:** Some teams may prioritise particular languages due to the relevancy of the review topic, setting or population.

- Restricting the language of included studies is likely to introduce bias, especially if relevant records published in other languages are excluded. Limiting by language risks "Tower of Babel bias", where exclusion of, for example, non-English studies skews the findings. The review team should carefully consider the potential impact of language restrictions on the comprehensiveness and generalisability of their findings. JBI strongly discourages restrictions based on language other than for feasibility reasons. Justify in your protocol any language criteria applied.

Tips

Rather than excluding records based on language of publication at the search stage, an alternative is to screen them. This provides transparency as to the volume of evidence sources and allows the team to revisit them if required.

Example

There will be no limitations based on language of publication. We will use Google Translate in the first instance to try and extract relevant details and data.

Publication status

The protocol needs to clearly detail any limitations on the publication status of included records and provide a rationale. Some scoping reviews, where time is short, may limit the review to peer-reviewed records to make the process more manageable for the team. However, these approaches could introduce bias by missing potentially relevant information and are not recommended. Grey literature is often critical in emerging or under-researched areas. Excluding it may worsen publication bias, since null or negative results are less likely to appear in journals. Unpublished evidence sources may provide critical null results and valuable insights and knowledge.

Review teams should carefully weigh up the potential benefits and drawbacks of publication status restrictions based on: the research question, the availability of evidence, and the desired scope and quality of the scoping review. Transparent reporting of eligibility criteria is essential to ensure the credibility and reproducibility of the review findings.

Example

There will be no limitations based on publication status.
We will only include evidence from peer-reviewed evidence sources.

Geographical location

Some scoping reviews focus on a specific geographical location of interest within the context and consequently restrict evidence sources to those that were conducted, or are concerned with, that location.

Some reviews limit geographical location based on relevance. Limiting the included records to those conducted in specific geographical locations means that the review findings are relevant to the population, exposure or context being investigated. There may be specific cultural, socioeconomic or environmental factors of interest. Some interventions may not be available in some geographical locations and the review may limit the search to exclude those locations. The findings may not be generalisable to other settings.

However, restricting geographical location may limit the breadth and diversity of the evidence base, potentially overlooking valuable contextual insights from other settings.

Sometimes records report geographical location as a city, state or region rather than a country. Multi-country/global studies may be missed if location is not explicitly coded. Limiting the search to a specific country/countries could miss these evidence sources.

Justify in your protocol any limitations based on geographical location. Transparent reporting of inclusion criteria is essential to ensure the credibility and reproducibility of the scoping review.

Example

There will be no restrictions on the geographical location in this review.
This review will only include evidence sources conducted in Australia as this is the setting of interest in this review.

Type of evidence source

Some reviews exclude specific types of evidence sources such as letters, commentaries, press releases, and editorials.

Some reviews limit the type of evidence source for:

- **Not reporting primary evidence:** Letters, commentaries, and editorials often do not include empirical evidence from primary records and may not contain relevant data that could be added to the body of evidence.

Some letters contain primary data and along with commentaries can contain unique insights which are relevant to the review topic. Before limiting the evidence source, consider whether they might contribute to the review's objectives. Justify in your protocol excluding studies based on the evidence source.

Example

There will be no limitations based on type of publication.

We will exclude letters, commentaries, and editorials which do not include relevant primary empirical data.

Tips

When registering a protocol, include keywords and a concise title so others can fi nd them in registry searches.
If there are any amendments made to a protocol or changes during the scoping review process, the update should also be applied to the registered protocol where possible.

Trade-offs in Report Characteristics

Restriction Type	Common Justifications	Risks Introduced	Best Practice Recommendation
Publication years	Relevance; workload management	May exclude historical/ contextual data	Restrict only if justified; consider sensitivity analysis
Language	Feasibility; population relevance	“Tower of Babel” bias; loss of global insights	Avoid limits unless necessary; record excluded studies
Publication status	Manageability; focus on peer-reviewed	Misses grey literature; publication bias	Include grey literature where possible; justify exclusions
Geography	Population/ context-specific focus	Reduced generalisability; loss of global comparisons	Pre-specify; note potential exclusion of global/multi-country data
Type of publication	Excluding non-empirical sources	May exclude useful preliminary/unique data	Justify exclusions; consider conference abstracts and empirical letters

Eligibility criteria and search strategies

Clearly defined eligibility criteria are important when planning and developing search strategies in scoping reviews. The eligibility criteria guide the development of search strategies by detailing the types of evidence sources relevant to the review. This facilitates the creation of focused search terms and filters which result in targeted and relevant outputs.

Eligibility criteria are important for developing search strategies for:

- **Improving precision:** Pre-specifying the inclusion and exclusion criteria in the protocol can help the research team to design search strategies that target relevant evidence sources. This will minimise irrelevant retrieval and ensure that search results directly reflect the scope and objectives of the review.

- **Improving precision:** Detailing the eligibility criteria in the protocol will identify populations, concepts, context, outcomes, settings and study designs that should be included in the search strategy. A comprehensive and sensitive search will maximise the chances of capturing relevant evidence sources.

- **Facilitating Boolean logic:** When eligibility criteria are well defined, Boolean operators (AND, OR, NOT) can be used to combine, expand, or refine concepts. This results in search strategies that balance inclusivity with focus.

- **Optimising transparency and reproducibility:** Review methodology is reproducible when eligibility criteria are used to inform the search strategy. The team can easily report how the search was constructed based on pre-specified criteria. It also ensures that other researchers can replicate the search or update the review and critically appraise the methods.

Search methods for identification of evidence sources

The foundation of a robust scoping review is a well developed search strategy and identifying the sources to conduct your search. The protocol should clearly identify all sources that will be searched including databases and other sources as well as the date range of the search (start and end date) and the search platform provider (e.g., OVID, SCOPUS, ERIC or PubMed).

Bibliographic database searching

A comprehensive search of a minimum of one, but preferably several, bibliographic databases is an efficient foundation to identify relevant literature for your scoping review. The databases you search will largely depend on the topic of your research. Librarians can also help you select relevant databases to search based on your subject area and availability of databases via your institution. Note that some databases require payment to access and access may vary by institution. Check with your librarian for additional information.

Some common databases include but are not limited to:

- MEDLINE (commonly searched via PubMed, Ovid, or EBSCO)
- CENTRAL (Cochrane Central Register of Controlled Trials)
- EMBASE (Excerpta Medica dataBASE)
- PsycINFO for the fields of psychology and psychiatry
- ERIC (Education Resources Information Center) for the education field
- CINAHL (Cumulated Index to Nursing and Allied Health Literature) for nursing and allied health literature
- IEEE Explore for electrical and computing engineering
- Web of Science primarily covers science, social science and arts, and humanities.

Regional databases may be useful to some searches including:

LILACS (Latin American and Caribbean Health Sciences Literature) covers technical-scientific literature in Latin America and the Caribbean
CNKI (China National Knowledge Infrastructure) covers Chinese scholarly articles

Citation searching

In addition to searching bibliographic databases, research teams may use citation searching to locate relevant sources. The most basic form of citation searching checks the reference list of relevant articles that have been identified. Forward citation searching, also known as “cited by,” is available in Google Scholar, Web of Science, and PubMed. It is also possible to use the “similar article” or “related article” links in these sources.

Grey literature searching

You may plan to search for grey literature. According to the National Library of Medicine, grey literature is defined as

> information produced on all levels of government, academia, business and industry in electronic and print formats not controlled by commercial publishing i.e., where publishing is not the primary activity of the producing body.'

Grey literature broadly includes:

- reports
- theses and dissertations
- conference proceedings
- standards
- technical documentation
- datasets
- preprints
- web content
- government documents
- White papers

Sources to search for grey literature include Google Scholar, Proquest Dissertation and Theses, OECD, Overton, clinicaltrials.gov and professional organisation and association websites.

Example

We plan to search the following databases and sources from inception to 1 June 2024:

- MEDLINE via PubMed
- CINAHL
- Web of Science
- EMBASE
- PsycInfo
- SCOPUS

Tips

Search multiple and different sources for relevant evidence to reduce the risk of bias and the risk of missing evidence sources.

Search methods for identification of evidence sources (strategy)

It is important to consult with a **Librarian or Information Specialist** when developing a search strategy. This section of "Search methods for identification of studies" is meant to start you off in the right direction so when you meet with your Librarian, you can maximise the value of that conversation.

High-quality and accurate searches are key to identifying the relevant literature. Making errors in the search strategy can result in missing potentially relevant studies or retrieving irrelevant studies. The protocol should include a draft search strategy for at least one major database.

After developing the research question, it is time to build the search strategy using keywords and controlled vocabulary combined with Boolean operators, search filters and sometimes limitations. Refer to the review eligibility criteria when developing the search strategy.

Some teams find it useful to conduct a **'scoping' or 'pilot'** search, as an informal way to:

- Identify the literature already published
- Develop and refine the review question and PCC criteria
- Verify that there is not an existing review on the topic

Controlled vocabulary

Many bibliographic databases have a resource for controlled vocabulary. A controlled vocabulary thesaurus can help:

- Assist in the development of synonymous keyword terms
- Inform you of "official" medical terminology
- Inform you of how a term fits into the bigger picture of the concept
- Build a search specifically with controlled vocabulary terminology

The controlled vocabulary thesauruses in PubMed and EMBASE are called MeSH and EMTREE, respectively. The PsycINFO Thesaurus uses the APA Thesaurus of Psychological Index Terms and CINAHL Subject Headings. Controlled vocabulary is unique to each database because of differences in indexing.

Search filters or hedges

Another strategy is identifying search filters or hedges. Search filters and hedges are a pre-defined or validated combination of search terms used to retrieve journal articles. ISSG Search Filter Resource contains validated search filters. The Cochrane Handbook (section 4.4.7) contains Cochrane Highly Sensitive Search Strategies. McMaster University Health Information Research Unit developed a "Hedges Project" to assist in locating search hedges.

Keywords and Boolean operators

A search strategy will contain a combination of keywords and controlled vocabulary. Keywords are the main points and words from the research question or PCC criteria. Controlled vocabulary are pre-defined terms indexed to retrieve content. Boolean operators are words and symbols used to combine or limit words and phrases in a search strategy and include:

- AND - narrows search
- OR - expands search
- NOT - narrows search by excluding a term
- Truncation and wildcards * $? - expands search
- "Exact phrase search" - narrows search to a specific word phrase

Example

The following strategy will be used to search PuMed and Scopus:
((green space* OR park) AND (health OR wellbeing OR mental health OR physical health OR quality of life) AND (urban* OR city OR metropolitan))

JBI recommend a three-step search strategy that should be documented in the review protocol:

Step	Action
1	The first step is an initial limited search of at least two appropriate online databases relevant to the topic.
2	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 subsequent search using combined keywords and index terms should then be run across all included databases.
3	The third step is to search for additional sources in the reference list of identified studies. This stage may examine the reference lists of all identified sources or only the reference lists of the studies selected from full-text and/or those studies included in the review.

Tips

Searching in a scoping review can be iterative and there are often changes to the search strategy to add or remove search terms or keywords and add new sources/databases. Transparency is critical. Involve the expertise of your institutional librarians or information specialists to assist in designing and refining the search strategy.

Data management and evidence source selection (screening)

The use of literature review software and reference management software is becoming increasingly widespread.

Web-based platforms, such as Covidence, can assist review teams with tasks including: the importation and deduplication of references, screening of articles, importing of full-text articles, creation of PRISMA flow diagrams, data extraction and data export.

Commonly used reference management software include: Endnote, Zotero, Mendeley and RefWorks. These tools can be used to deduplicate references, locate and store full-text articles and screen records. Other data management tools may include Excel or Word documents.

You should describe if your team plans to use literature review management software, reference management software or any other tool to manage any stage of the review process. The description should contain sufficient detail that the process could be replicated if needed, including any relevant version number.

Example software

We will use Endnote 20 reference management and Covidence systematic review management software.

Endnote 20 will be used to store references identified from searching and full text articles. Covidence will be used for deduplication, screening, quality assessment and data extraction.

Describe procedure for selecting evidence sources

The protocol should describe the approach that will be used to identify potentially relevant records (title/abstract screening) and select included records (full text screening).

Consider outlining the following in the review protocol:

Merge search results and identify duplicates

If more than one database or source is being used it is important to explain how the search results will be merged. Will you use a reference manager or literature review management software?

The protocol should explain how duplicate records (i.e. records reporting the same journal title, volume and page numbers) will be handled and reported.

- Will they be screened manually? If so, how many reviewers will check for duplicates?
- Will they be screened using literature review management or reference manager software? If automated deduplication is used, will the excluded references be checked, and if so by how many reviewers?

Duplicates can be found before screening starts and at any time during screening and data extraction. Detail how manually identified duplicates will be handled and reported.

The protocol should detail that the number of duplicate records will be reported in the PRISMA flow diagram (or similar figure) and how they will be reported. Consider reporting the number of duplicates identified prior to screening and those identified manually during screening/data extraction. You might decide to report those duplicates identified by automation tools and those identified manually.

Example

Duplicates identified pre-screening: We will use Covidence literature review management software for the deduplication of all references imported to the software. MM will manually screen duplicates. Any non-duplicates identified will be returned to the pool for title and abstract screening.

Duplicates identified during screening/extraction: Records identified as duplicates during screening or data charting will be manually identified as duplicates. We will report these separately from duplicates identified by automation tools in the PRISMA flow diagram.

Calibration or pilot testing

The protocol should detail if piloting is planned. Piloting will help to ensure that the screening team understands any nuances of the eligibility criteria as they relate to the research question. This is especially important where there might be team members with different levels of knowledge and experience. Document in the protocol who will pilot. This can be done by all team members or a proportion. You will need to specify if the piloting will be done independently and if you will be taking a single- or dual-reviewer screening approach. Detail how you plan to deal with conflicts. Calibration or pilot testing can improve inter-rater reliability and ensure alignment. Once an acceptable level of agreement (typically 70-80%) or inter-rater reliability coefficient has been reached then screening can move forward in duplicate or single reviewer as specified in the protocol.

Example

The review team will pilot the eligibility criteria for study selection on approximately 10 title and abstracts for consistency and make and record any refinements made to the criteria.

Screen titles and abstracts

Title and abstract screening aims to remove irrelevant evidence sources. Document if screening will be by combined title and abstract or title followed by abstracts separately.

The protocol should document if one or more reviewers will be involved in screening records at both title and abstract and full text stages. Names of the reviewers allocated to these tasks should be included, where possible. It is strongly recommended that where possible two independent reviewers undertake screening to ensure objectivity is maintained and to reduce the risk of bias. Where screening is undertaken in duplicate by independent reviewers, the protocol should detail the process for resolving conflicts or discrepancies (e.g. involve a third reviewer for arbitration, contact original authors). Due to time or financial constraints it is not always possible for all records to be screened by two independent reviewers. Clearly detail in the protocol if you plan to conduct proportional screening (e.g. 20% screening with dual reviewers and the remainder screened by single reviewer) or single-reviewer screening and provide a justification.

The protocol should detail the judgements to be used during screening (Yes, No, Maybe/Unclear). Having an option for Maybe/Unclear allows for the full text to be retrieved for that study to confirm eligibility for inclusion in the review.

Conflicts can arise during title and abstract screening (conducted by two reviewers) when one reviewer votes Yes and the other reviewer votes No; or when one reviewer votes No and the other reviewer votes Maybe/Unclear. The protocol should explain how these conflicts will be resolved. Will the reviewers discuss the conflicts and come to a final decision? Will a third party resolve all conflicts? Will a third party only be involved where arbitration is required?

Example

Literature search results will be uploaded to Covidence, an internet-based literature review management software that allows collaboration between reviewers.

MM and GG will independently screen titles and abstracts for relevancy. Where disagreements can not be resolved, HH will act as an arbitrator and make the final screening decision.

Retrieve full text and link together multiple records

In order to conduct full text screening it is important to retrieve as many full-text articles as possible via reference management software and library resources. The protocol should explain the process for full text articles that cannot be retrieved, due to access or financial constraints for example. You can plan to report the number of articles sought for retrieval and those retrieved in the PRISMA flow diagram.

Some authors publish the same data multiple times which can introduce bias and potentially result in double-counting of participants to the review. Describe any steps that will be taken to avoid this scenario. This can include checking for the same authoring team, sample size and study location or study registration number. Check for any differences in key characteristics or outcomes between these publications, you may need to confirm data with the authoring team. Some evidence sources can have multiple records that include study registration, study protocols, conference abstracts, interim and final reports. They may report on different sample sizes. To avoid double-counting of participants, it is important to identify which primary publication will be used to provide the data in the review. This may be the most recent or comprehensive publication. Other publications relating to the same study should be merged or linked together. The PRISMA flow diagram will identify how many reports/publications were associated with the number of studies in the review. To identify multiple publications of the same study check the authoring team, location, and study registration number, where reported.

Full text screening

Full text screening is the process used to select the reports for inclusion in the review and is based on a thorough assessment of the full text article using the review eligibility criteria. The protocol should document if one or two independent reviewers will undertake the initial screening and if the screeners will be blinded or not.

The protocol should detail the judgements to be used during screening. For full text screening, these are usually include and exclude. If a study is excluded during full text screening a clear reason should be provided. The reasons for exclusion should appear on the PRISMA flow diagram.

Two types of conflicts arise during full text screening. The first is when one reviewer votes to include and one votes to exclude a study. The second conflict can arise when both reviewers have voted to exclude a study but provide differing reasons. Only one reason per study can be added to the PRISMA flow diagram. The protocol should explain how these conflicts will be resolved. Will the reviewers get together and discuss the conflicts and come to a final decision? Will a third party resolve all conflicts? Will a third party only be involved where arbitration is required?

The protocol should detail any attempts to contact original authors to obtain clarification of data. Some reviews list these records in a table of 'Characteristics of studies awaiting classification' where there is no response from authors or clarification is unavailable.

If you plan to search trial registries then the protocol will need to explain how the records will be documented. They are often identified as 'ongoing studies' and are summarised in an 'ongoing studies' table.

Example

MM and GG will independently review full text articles for inclusion or exclusion and record exclusion reasons. Where disagreements can not be resolved, HH will act as an arbitrator and make the final screening decision.

Inter-rater reliability (optional)

Inter-rater reliability is the level of agreement between the screeners and is often reported as a Cohen's kappa value. The protocol should detail if inter-rater reliability will be reported and if this will be calculated on all screening or a proportion of the records screened. Provide a rationale for only reporting on a proportion of records. Explain what the process will be if the Cohen's kappa value is low. You could, for example, revisit the eligibility criteria or provide more training to the screening team.

Example

Inter-rater reliability will be assessed after 20% of records have been screened at both title and abstract and full text screening stages. If Kappa score is <0.5, we will explore potential reasons and reassess Kappa after changes have been implemented.

Tips

Providing a hierarchy of reasons for exclusion in your protocol can save time when screening. It helps the review team consistently select reasons for exclusion and reduce the number of conflicts where both reviewers exclude a study but give different reasons.

Charting the data

You should have carefully planned and considered all the previous sections of the protocol before planning the data synthesis.

Data charting is a process within a scoping review workflow in which review teams collect and present relevant information from included records, and organise it in a way that enables them to make use of the data in future stages.

Planning data charting and synthesis at the protocol stage can help to ensure the process is:

- rigorous, transparent and reproducible
- done in a way that reduces errors and bias (e.g blinding and duplication)
- documented clearly

Define the data items to be collected for study details, methods, populations, concepts, context and timepoints to save time and avoid over-extraction (collecting more data than you need). The data items you intend to collect should allow you to effectively compare records without needing to revisit the original source because you didn't extract the data you need. If you have used a framework (e.g. PCC) to create the research question, this can guide what data to collect.

Data management

Describe how data will be managed. Consider if you will use paper templates, electronic templates or literature review software to chart data.

Example

We will use Covidence systematic review software to create a data extraction template to chart relevant data.

Creating a template

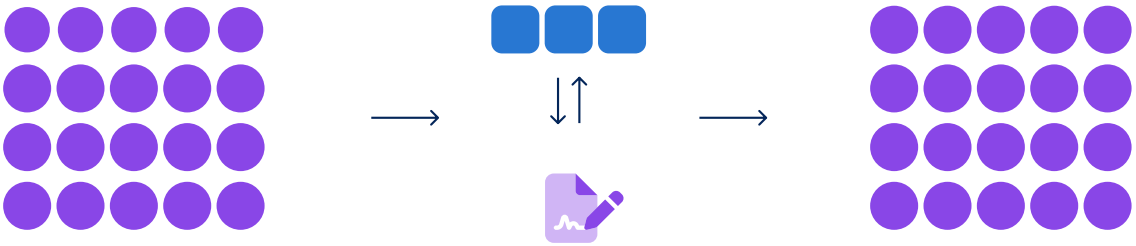
Planning a well-defined data extraction approach before starting the extraction process is crucial. This will minimise the need for rework, mitigate unforeseen circumstances, and address uncertainties. A good data extraction template means that you should not have to go back to the original source. You will have recorded everything you need for subsequent analysis or synthesis and interpretation. You may want to consider any planned subgroup analysis (e.g. sex, geographic location, tool, study design) as you design the subsections of the template. The draft template should be included in the protocol.

Some key information that reviewers frequently chart are:

- Author(s)
- Year of publication
- Country where study was conducted
- Aims/purpose or objective
- Population and sample size (if applicable)
- Methodology / methods
- Details of the intervention type, comparator, exposure or concept
- Outcome details including how they were measured (if applicable)
- Key findings or conclusions.

Why piloting is important

Piloting is the process of completing data extraction for a select number of records to evaluate the process before extraction starts across all records. The protocol should state if there will be a piloting step for data extraction, who will be involved in the process and how many records will be piloted.



The objective is to assess the effectiveness of the extraction template that has been developed, to ensure that:

- The template's layout and sequence are logically organised. 2
- Any missed or irrelevant data points are identified early.
- The guidance and/or instructions for extractors are as comprehensive as possible.
- Extractors have had enough training to perform extraction effectively.
- The anticipated output will enable you to compare and group records so you can analyse results for your review.

Number and blinding of data extractors

In the protocol, describe who will extract data. This should include the number of extractors and any procedures for resolving conflict/s. Indicate if data charting/extraction will be blinded.

Example blinding

Two reviewers will conduct data charting/extraction independently. We will resolve conflicts by consensus. Where conflicts cannot be resolved, a third reviewer will act as an arbitrator.

Describe how multiple reports of same study will be handled

Reporting of multiple publications from the same study may occur in a scoping review is a common scenario, especially when dealing with multiple papers or publications in different formats over time. Multiple publications could include primary research papers, conference abstracts, posters, personal correspondence or supplementary materials.

It is important to maintain the rigour of your review and to be transparent about how you handle these records to avoid duplication of data and/or double counting of participants (if relevant).

The protocol should explain how publications from the same study will be handled. Consider detailing how you will check publications are related. Related records are usually merged - this means that there is one primary reference (usually the most recent or most complete) linked to other references. Any relevant data from the publications can be reported under the primary reference.

Example multiple reports of the same study

We will identify and merge records reporting on the same study. We will identify a primary reference for reporting purposes. If related references are suspected, we will check the following for confirmation:

- study sponsors or ethics committee numbers
- location/s of where the study was conducted
- start date and duration of the study
- number of participants recruited and baseline characteristics (if applicable)
- author names

Describe plan for quantitative synthesis

Scoping reviews are not intended to include advanced quantitative synthesis such as meta-analysis. Instead, they generally provide descriptive summaries of the evidence, which may include basic numerical statistics (e.g., counts, percentages, ranges) as well as tabular or graphical presentations. Narrative synthesis is also commonly used to describe patterns, concepts, and gaps in the evidence. The protocol should outline the planned approach to summarising and presenting the extracted data, specifying whether it will be numerical, narrative, or both.

Data presentation

Scoping reviews do not synthesise findings in the same way as systematic reviews but instead map and describe the literature to identify themes, knowledge and evidence gaps.

Reporting of data from a scoping review can be:

- Quantitative: simple frequency counts and percentages of identified concepts, population, intervention type, methodology, key findings, and other characteristics that are relevant to the review. Organising the data to align with pre-defined concepts is common practice.

- Qualitative: within scoping review content analysis is usually descriptive. Thematic analysis is generally beyond the scope of scoping reviews and aligns more closely with systematic or qualitative evidence syntheses.

The protocol should give a broad overview of how the team plans to pre-specify key variables, categories, or frameworks for data charting as well as the plan to present the data (maps, diagrammes, tables etc.).

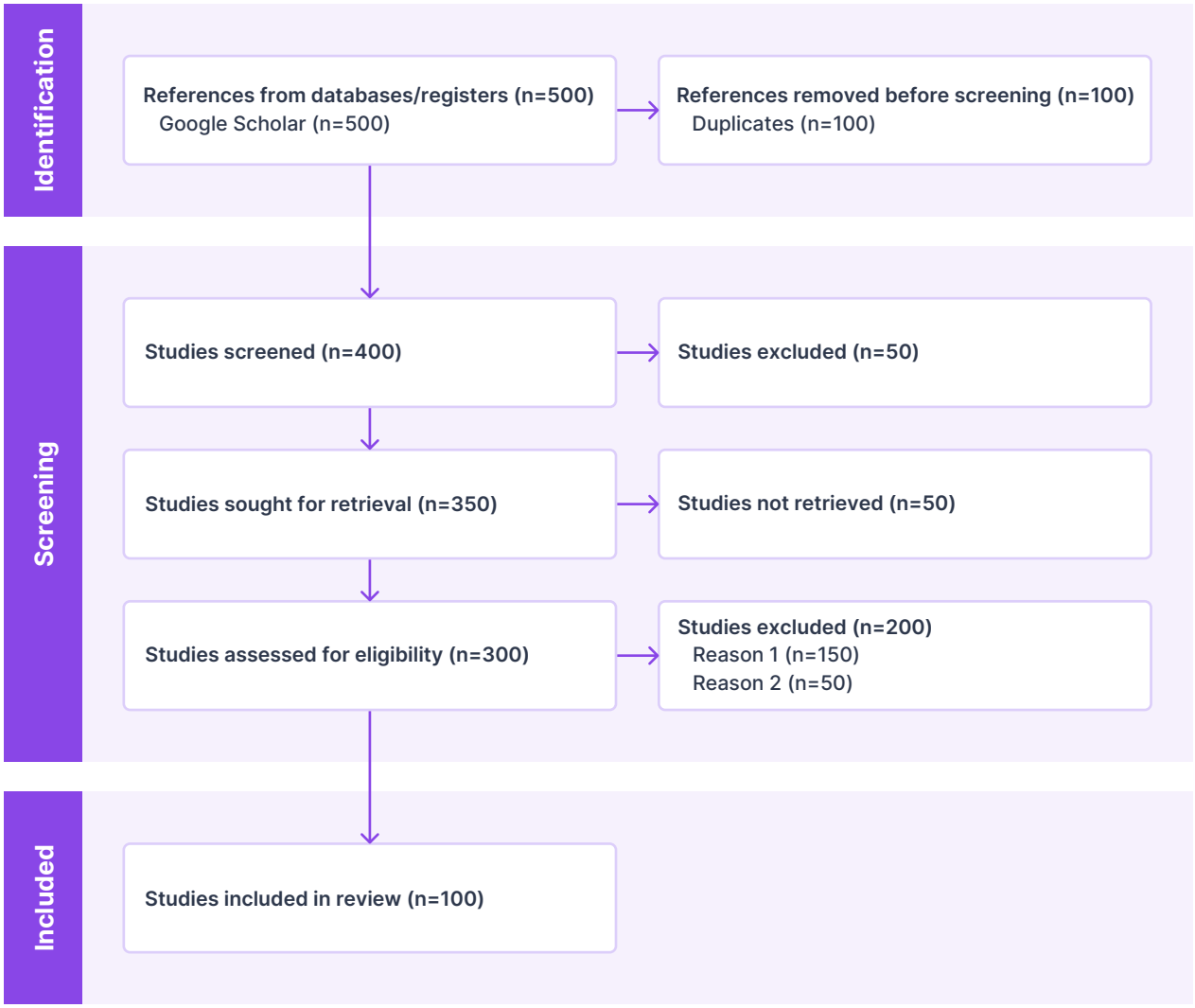
Key figures and tables

Including the right figures and tables is crucial for effectively summarising and presenting findings. The protocol should provide a descriptive summary of each presentation type and how it relates to the review question/s and objective/s.

The PCC framework itself can be a great guide for planning the draft tables to map the data. JBI suggests using 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”.

The following examples could be applied as either tables, graphs, visual maps (evidence gap maps, bubble charts) and figures (integrative or analytical frameworks) depending on the review team preference.

PRISMA figure: The PRISMA-ScR figure is a flow diagram that illustrates the process of study selection in a scoping review. The figure shows the number of records identified, excluded before screening (e.g. duplicates), included, and excluded at title and abstract screening, and full-text screening. The figure is accompanied with reasons for exclusions at full-text review. Some teams also include reasons for exclusion after title and abstract screening. Sources (databases, registries, other sources) for the records identified can also be included for transparency.



Example PRISMA

We will use a PRISMA flow diagram to detail the flow of records through the systematic review. We will include details of sources of records and reasons for exclusion at full text review. We will summarise how many records were available for qualitative (narrative) and quantitative (meta-analysis) analysis.

Table Examples

Reference	Evidence type			Comparator			Setting				Outcomes				
	RCT	Observational	Review	Green roof	Park	Garden	Allotments	School	Community	City	Workplace	Mental health	Physical activity	CV health	Social cohesion
Gordon 2021		x				x			x		x	x	x		
Miles 2023	x				x	x			x	x		x	x	x	
McCann 2019			x	x	x	x	x		x			x	x	x	x

RCT: randomised controlled trial; CV cardiovascular

Table: Overview of the mental health outcomes per green space category.

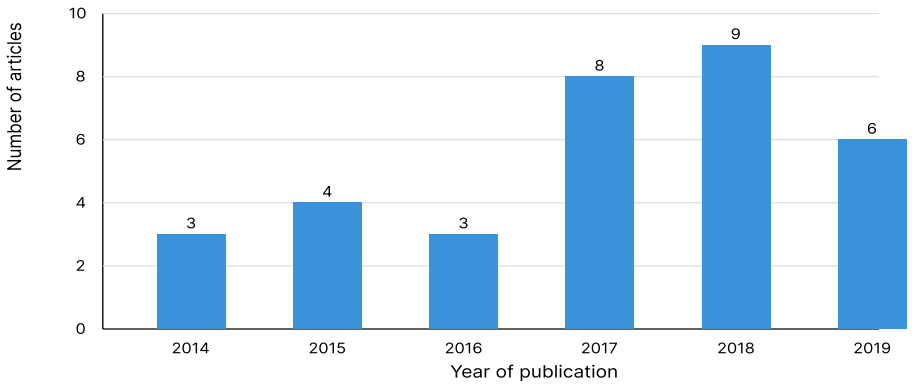
Mental health outcome	Green roof			Park			Garden			Allotments		
	E	O	Q	E	O	Q	E	O	Q	E	O	Q
Affect	0	7	6	10	25	15	30	15	3	0	3	1
Anxiety	1	6	5	30	27	12	29	30	15	0	2	1
Depression	0	0	0	27	29	18	30	30	12	1	3	2
Well-being	0	1	0	21	10	4	25	13	11	0	10	5
Quality of life	1	8	6	28	31	15	29	32	16	1	12	7

E, experimental; O, observational; Q, qualitative

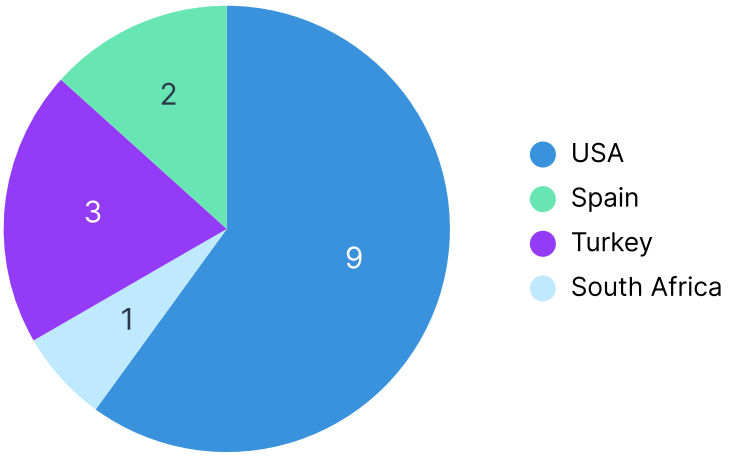
Graphs Examples

Distribution by Year of Publication

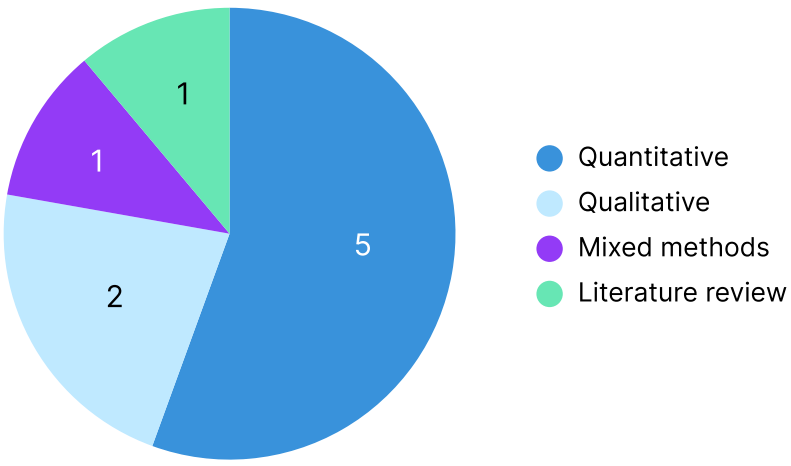
Figure 2



Distribution by country



Distribution by research methods



Risk of bias summary and graph: If you plan to conduct a risk of bias assessment of the included records in your review, specify how you plan to present that information. You might want to tabulate it or use a graphical representation as illustrated below.

Example

We plan to abstract data on publication characteristics (e.g, country of origin, funder, setting), engagement characteristics and contextual factors (country income level, type of engagement activity), participant perceptions, barriers and facilitators to engagement - attitudes, beliefs, knowledge, benefits, unintended consequences.

Risk of bias in individual studies

Unlike systematic reviews, scoping reviews do not usually assess the methodological quality (risk of bias) of the included evidence.

Inclusion of a risk of bias assessment should be clearly justified in the protocol. The methods and tools to be used should be clearly outlined. Note: that as the purpose of a scoping review is to comprehensively map a body of literature, methodological quality assessment should not be used as a criteria for inclusion/exclusion from the review. In the protocol, describe who will assess risk of bias. Include details on the number of reviewers and any procedures for resolving conflict/s. Indicate if assessment will be independent and/or blinded. If you plan to use your own tool then a strong rationale should be provided for not using a previously validated/reliable tool.

Common tools for assessing risk of bias include:

- Cochrane Risk of Bias Tool (RoB 2 and RoB 1) for intervention studies.
- ROBINS-I for non-randomised studies of interventions.
- Newcastle-Ottawa Scale for observational studies.
- Critical Appraisal Skills Program (CASP) checklist.
- QUADAS-C tool | Cochrane Methods within systematic reviews of diagnostic test accuracy

Example

Randomised trials: We will use the Cochrane Risk of Bias Tool V1 for the assessment of risk of bias in each study. This includes an assessment of sequence generation, allocation concealment, blinding, incomplete outcome data and selective outcome reporting. A judgement of 'High risk', 'Low risk', or 'Unclear risk' will be made for each domain. These judgements will be made by two independent (blinded) reviewers, with a third reviewer for arbitration where conflicts cannot be resolved.

Non-randomised studies: We will assess the methodological quality of non-randomised studies (case-control and cohort studies) using the Newcastle-Ottawa scale. Scoring will be undertaken by two independent (blinded) reviewers with a third reviewer for arbitration where conflicts cannot be resolved.

06

Protocol amendments and deviations

Protocol amendments

Protocol amendments are a normal part of conducting a scoping review, but they should always be managed transparently. Amendments may arise if a search strategy needs refi nement, if new subgroups or outcomes are identifi ed, or if team roles change. Minor deviations (e.g., clarifi cations of criteria) should be documented, while formal amendments (changes to the protocol text) should be updated in the registered protocol. It's fine to make these changes as long as a clear rationale is provided. The main protocol registries (INPLASY, Open Science Framework, Research Registry) allow you to amend or update registered protocols. However, making amendments to a protocol after completion of data extraction is a potential source of bias and should be avoided where possible as it can compromise the reproducibility and credibility of the review.

(PRISMA-P) - Item 4

PRISMA for systematic review protocols (PRISMA-P) - Item 4 can be a useful guide for scoping reviews but is not a formal reporting requirement.

If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments.

To make an amendment to a protocol requires:

- **Clear rationale:** Clearly state the reasons for amending the protocol. There could be new evidence, changes in the research question, or modifications in the methodology. It is insufficient to state that the reason for an amendment was based on the request of a co-reviewer or a supervisor.
- **Documentation:** Keep an accurate record of all changes made to the protocol, including date of amendment and rationale. This is key for transparency and accountability.
- **Communication:** If the protocol has been registered with a protocol registry, such as INPLASY, update the registration with the amended protocol to maintain transparency and avoid duplication. Decisions to make amendments should be agreed by the review team.

Amendments can be documented in a paragraph, supplement or tabulated (see example).

Tips

- Deviations in the middle of the review process, that require a protocol amendment, can often be avoided by piloting search strategies, screening processes and data extraction templates in advance.
- Where possible, remember to update submissions to protocol registers with any amendments.
- Remember to update team members and changes to roles and responsibilities.

Example protocol amendment table

Date	Protocol section	Original text	Amended text	Rationale
Add in the date that the amendment was made	Report which section of the protocol was updated e.g. outcomes	Add in the relevant original text of the protocol	Add in the change to the protocol text based on the amendment	Justify the amendment with a clear rationale

07

Top Tips

Key takeaways

In this eBook we have shared the knowledge we have gained through our literature review experts, our community of users, and best practice content from PRISMA and JBI. Here are our top 5 tips for scoping review protocols.

Top 5 tips for scoping review protocols

1. **Prepare before you start your scoping review.** Planning ahead will ensure that your review processes will be efficient with fewer chances of discrepancies, reduced arbitrary decisions and improved consistency. Your review will be transparent and reproducible. Don't underestimate the length of time this process takes. A project plan like a Gantt chart can help you stay on track.

2. **Use a review framework** to create clear and well-defined eligibility criteria to guide the development of the search strategy and facilitate screening, using PCC (Population,Concept, Context).

3. **Use the protocol to guide the data charting template.** A well-thought-out protocol can be used to structure the data charting or extraction template. It will minimise the risk of selective reporting. It can also act as a roadmap for the review team and can reduce arbitrary decision making.

4. **Register your protocol** if you plan to publish the review findings and to avoid research waste.

5. **Use the protocol as a framework to write up the final report.** A good protocol provides all the necessary background and methodological content for the final report or publication of the scoping review.

Did you know that we have other resources available on our website?

Visit our blog page for insights, announcements, and product updates: www.covidence.com/blog

Already working on a review using Covidence?

Visit our Knowledge Base for a step by step guide on extracting data within the Covidence platform: https://support.covidence.org/

Connect with us

Find out more about how we are helping institutions worldwide empower their researchers. Visit www.covidence.org and join our growing social media community.

 LinkedIn

 YouTube

 X (formerly Twitter)

Appendix

Sources used to support the development of this ebook:

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