



BMMB7009

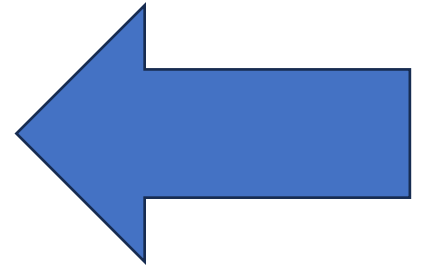
Critical Literature Review for doctoral students

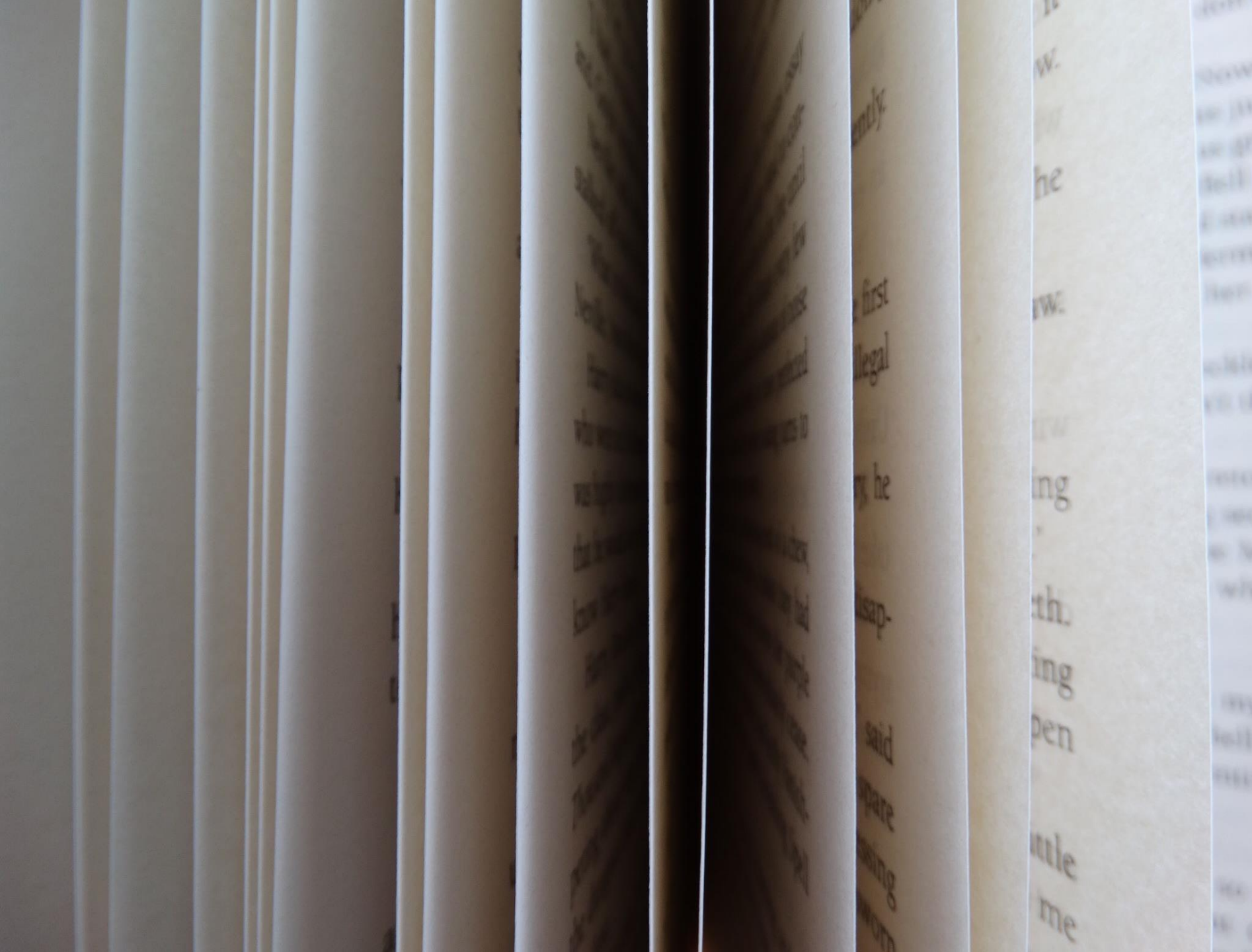
Week 5 – Types of Literature Review (II) – Scoping Review and Mapping Review



Approaches/methods to Literature review

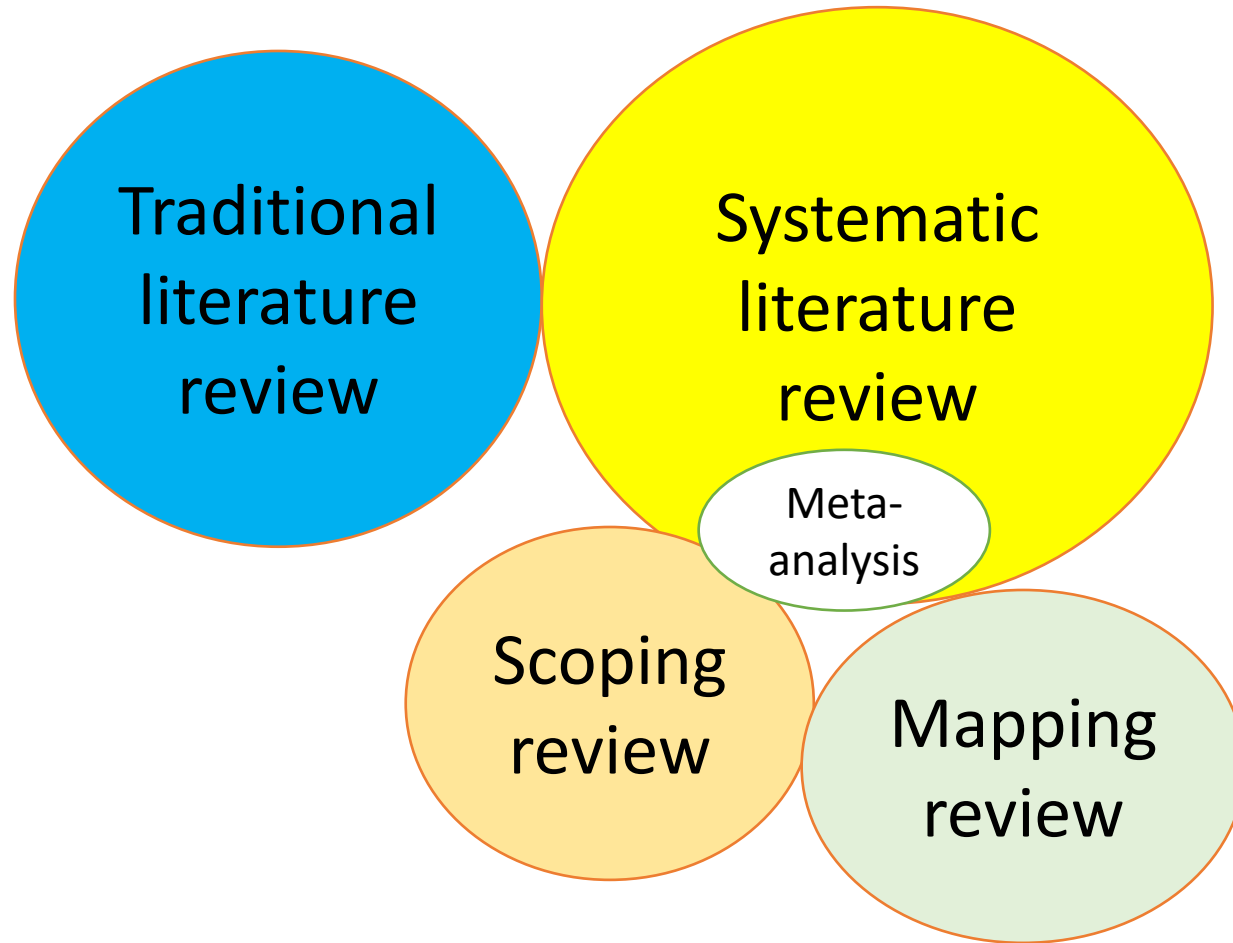
- Traditional literature review / Narrative literature review
 - Systematic literature review
 - **Scoping review**
 - **Mapping review**
 - Meta-analysis
- .





Scoping Review

Approaches/methods to Literature review



Scoping Review

- Scoping review and mapping review are evidence synthesis methodologies that address broad research questions, aiming to describe a bigger picture rather than address a specific question about intervention effectiveness. (Campbell, et. al., 2023)

Scoping Review

- Scoping review is a type of knowledge synthesis that uses a systematic process to map the evidence on a subject and identify key ideas, theories, sources, and knowledge gaps.

Scoping Review

- The purpose of a scoping review is to include all relevant information that is available, including 'grey' literature, which includes unpublished research findings, therefore including all available literature and evidence.
- This can include information such as government reports, conference proceedings, graduate dissertations, unpublished clinical trials, and so forth.

Scoping Review

- The reviewers can decide what type of publications they would like to include [[8](#),[9](#),[10](#),[11](#)].

Scoping Review

- The approach can be more iterative, inductive, or deductive [[32](#)].



PCC (Population, Concept, and Context) and PICO format (Population, Intervention, Comparator and Outcome)

- It is recommended that research questions for scoping reviews follow the **PCC format** and include all of its components [[17](#), [18](#), [21](#)].
- **Participants** (e.g. age), the principal idea or “**concept**,” and the setting of the review, should all be included in the research question.
- The **context** should be made explicit and may take into account geographical or locational considerations, cultural considerations, and particular racial or gender-based concerns [[10](#)].

Scoping Review - Searching Strategy

- Researchers use the PCC format in order to determine the eligibility of their research questions, as well as to define their inclusion criteria (e.g [[22](#),[23](#),[24](#),[25](#),[26](#)]).
- Most **scoping reviews have a single main question**, but some of them are better served by one or more sub-questions that focus on specific PCC characteristics [[8](#), [18](#)].

Scoping Review

Methodological framework of Arksey and O'Malley (2005)

2.1 Search terms and search strategies

2.2 Study screening and selection

2.3 Charting, collating, and reporting the results

Cubbon, L., Darga, K., Wisnesky, U.D. *et al.* Depression among entrepreneurs: a scoping review. *Small Bus Econ* 57, 781–805 (2021). <https://doi.org/10.1007/s11187-020-00382-4> [W5 Scoping review and entrepreneurship example.pdf](#)

Scoping Review

Generally, the application of inductive approach is associated with [qualitative methods](#) of data collection and data analysis, whereas [deductive approach](#) is perceived to be related to [quantitative methods](#).

Scoping Review vs Systematic Review

	Scoping review	<u>Systematic review</u>
What is it ?	Rapid gathering of literature in a given policy or clinical area where the aims are to accumulate as much evidence as possible and map the results to provide an overview of the type, extent and quantity of research available on a given topic.	Attempts to identify, appraise and synthesise all empirical evidence that meets prespecified eligibility criteria to answer a given research question. Uses explicit, reproducible methods aimed at minimizing bias, to produce reliable findings and inform decision making.
Why do it?	To capture breadth instead of depth of literature; identify gaps within the research area; occasionally used as a precursor to a systematic review.	To address a clearly focused review question by finding the best available, relevant research studies and synthesising the results
Question	Often broad e.g. trying to find out what is already known about a topic. However, there is also scope to have a preconceived question to assess what literature is available around the subject.	Focused on a single topic.
Sources/search	Ideally, a protocol or plan is included. Clear objectives are identified. Comprehensive sources and explicit and reproducible search strategy. Use of a wide range of resources, including published and grey literature, of any study type.	A peer reviewed protocol or plan is included. Clear objectives are identified. Comprehensive sources and explicit and reproducible search strategy. Use of a wide range of resources, including published literature. Often a focus on randomised controlled trials.

Scoping Review vs Systematic Review

(Cont'd)	Scoping review	<u>Systematic review</u>
Eligibility criteria	Eligibility criteria are clearly defined before the review is conducted but may be revisited throughout the review. Due to the iterative nature of a scoping review, some changes may be necessary.	Eligibility criteria are clearly defined before the review is conducted.
Selection/screening	Often broad - may differ depending on resources found. Criterion-based selection is uniformly applied, clear and explicit.	Criterion-based selection is uniformly applied, clear and explicit.
Appraisal	Variable - typically not done, or done in narrative form.	Rigorous critical appraisal, and evaluation of study quality.
Synthesis	Depends on the purpose, usually a descriptive summary (tabulation is optional).	Clear summaries of studies based on high quality evidence. May include a meta-analysis.
Inferences	Evidence-based	Evidence-based

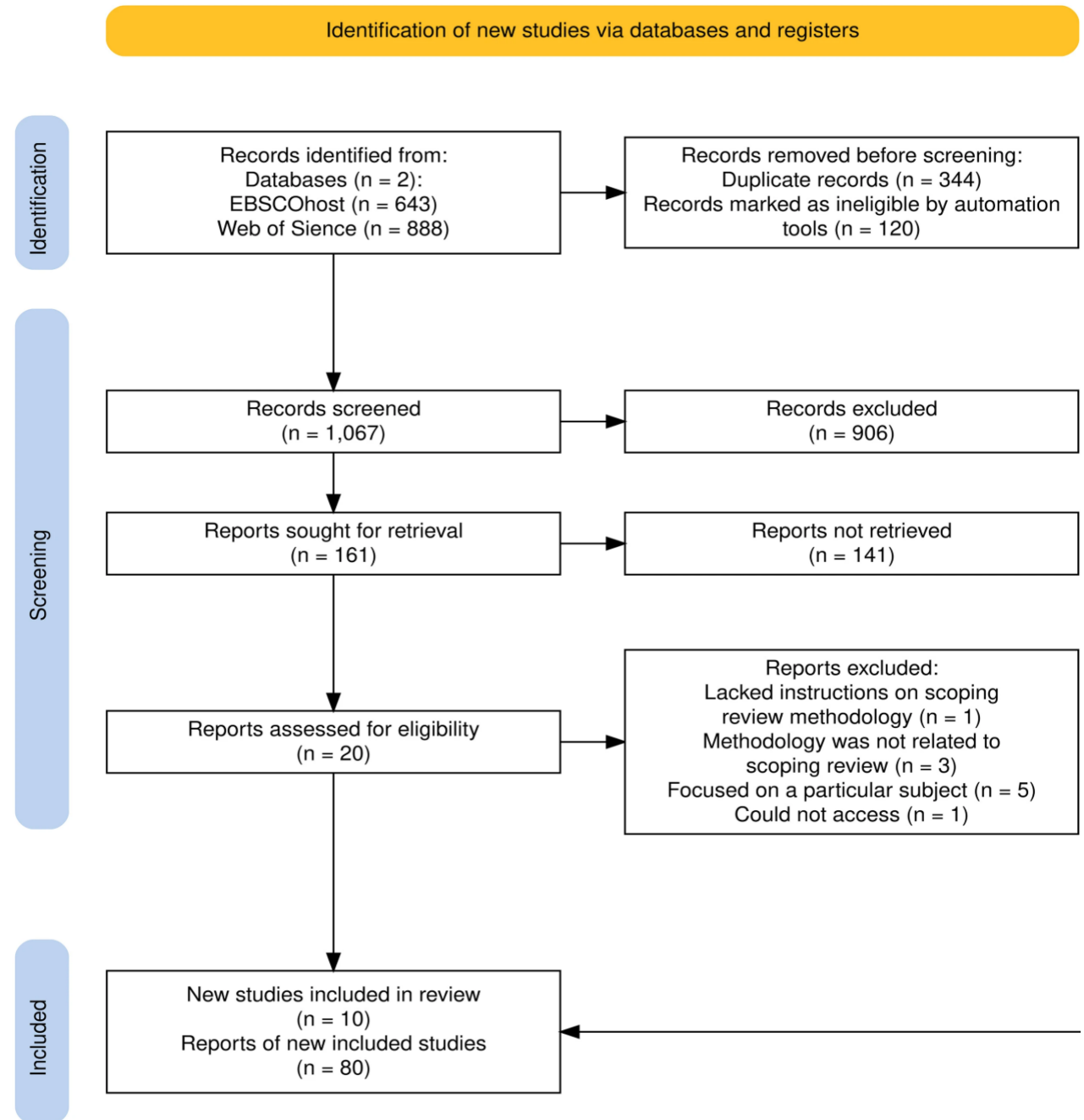
[Systematic or scoping? - Scoping Reviews - Guides at University of South Australia](#)

Scoping Review

Setting the Scoping Review Objective and Questions (9:18 mins)

[Setting the Scoping Review Objective and Questions](#)

Scoping Review - Methodology



Scoping Review – PCC (Population-Concept-Context) rule for research question design

Example

Topic: Models of nurse-led care in chronic disease in high-income countries

Primary review question:

- What nurse-led models of care are used to manage chronic disease in high income countries?

PCC element	Definition (per JBI Reviewer's Manual Ch. 10)	Example
Population	<i>"Important characteristics of participants, including age and other qualifying criteria" (10.2.4)</i> You may not need to include this element unless your question focuses on a specific condition or cohort.	NA*
Concept	<i>"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"" (10.2.4)</i>	nurse-led models of care used to manage chronic disease
Context	<i>"May include... 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."</i>	high income countries

Scoping Review - Example PCC question

What is the extent and nature of research on the use of artificial intelligence tools (Context) among graduate students (Population) in higher education settings worldwide (Context)?

[How to Conduct a Scoping Review: Steps + Examples \(2026\)](#)

Activity 1 – Scoping Review

Based upon your selected theme, please conduct use Population-Concept-Context (PCC) rule to conduct a Scoping Review.

1. Make your own topic based upon your selected them.
2. Please adopt The PRISMA extension for scoping reviews (PRISMA-ScR) of 2018 to conduct Scoping Review
3. Please produce a PRISMA diagram
4. Please produce an excel file to show your results

Supplementary searching

- To minimise the likelihood of missing relevant material:
 - Check reference lists of included papers
 - Use citation searching to find more recent papers which cite those you have included
 - If time allows, consider contacting key authors in case they have work in progress and are able to share early findings with you, or suggest others you might have missed.

Reporting your searches

- Keep notes throughout the process
- Save your searches wherever possible, allowing you to edit and re-run as required
- Provide a prose description of your searches in the Methods section of your review
- Reproduce at least one database search string in full as an appendix/supplementary material
- Follow the [PRISMA-S](#) guidance on reporting searches

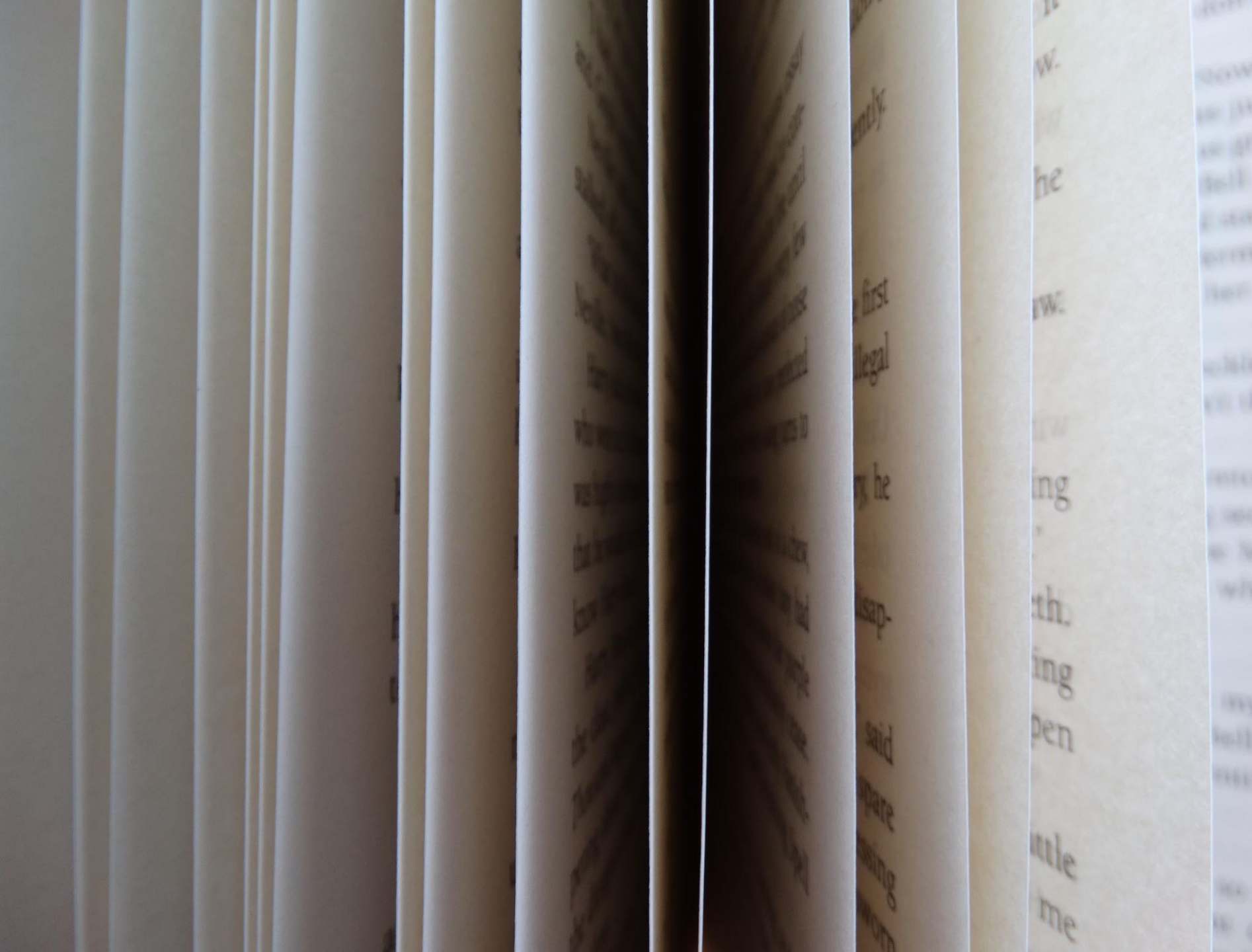
Methodology

Steps :

1. Title
2. Rationale
3. Objectives
4. Protocol and registration
5. Eligibility criteria
6. Information sources
7. Search
8. Selection of sources of evidence
9. Data charting process
10. Data items
11. Critical appraisal of individual sources of evidence (Optional)
12. Synthesis of results (Describe the methods of handling and summarizing the data that were charted)

Source : PRISMA for Scoping Reviews (PRISMA-ScR) 2018

<https://www.prisma-statement.org/scoping>



Mapping Review

Mapping review

- According to [Booth \(2016\)](#), "a mapping review aims at categorising, classifying, characterising patterns, trends or themes in evidence production or publication" (p.14).
- [Grant & Booth \(2009\)](#) add that the point in conducting a mapping review is to "map out" and thematically understand the pre-existing research on a particular topic including **assessing any gaps that could be addressed by future research**.
- Mapping reviews are not to be confused with scoping reviews, and differ as the outcome of a mapping review can be to produce primary research or more reviews. Mapping reviews are also known as **systematic maps**

[Mapping Review - Literature Reviews in the Health Sciences - Guides at University of Houston](#)

Mapping Review

- **When to Use It:** [Booth \(2016\)](#) states that "a mapping review is best used where a clear target for a more focused evidence product has not yet been identified" (p.14).
- Mapping reviews are especially useful topics where there is a lot of preexisting literature, for investigating if there are **gaps** in the literature, and are useful to conduct before larger knowledge syntheses such as a systematic review.

Mapping Review

- The term “mapping” is used to describe the process of synthesizing and representing the literature **numerically** and **thematically** in tables, **figures**, or **graphical** representations, which can be thought of as the review output.
- Mapping enables researchers to pinpoint potential areas for further study as well as gaps in the literature [[19](#)].

[A systematic exploration of scoping and mapping literature reviews | Universal Access in the Information Society](#)

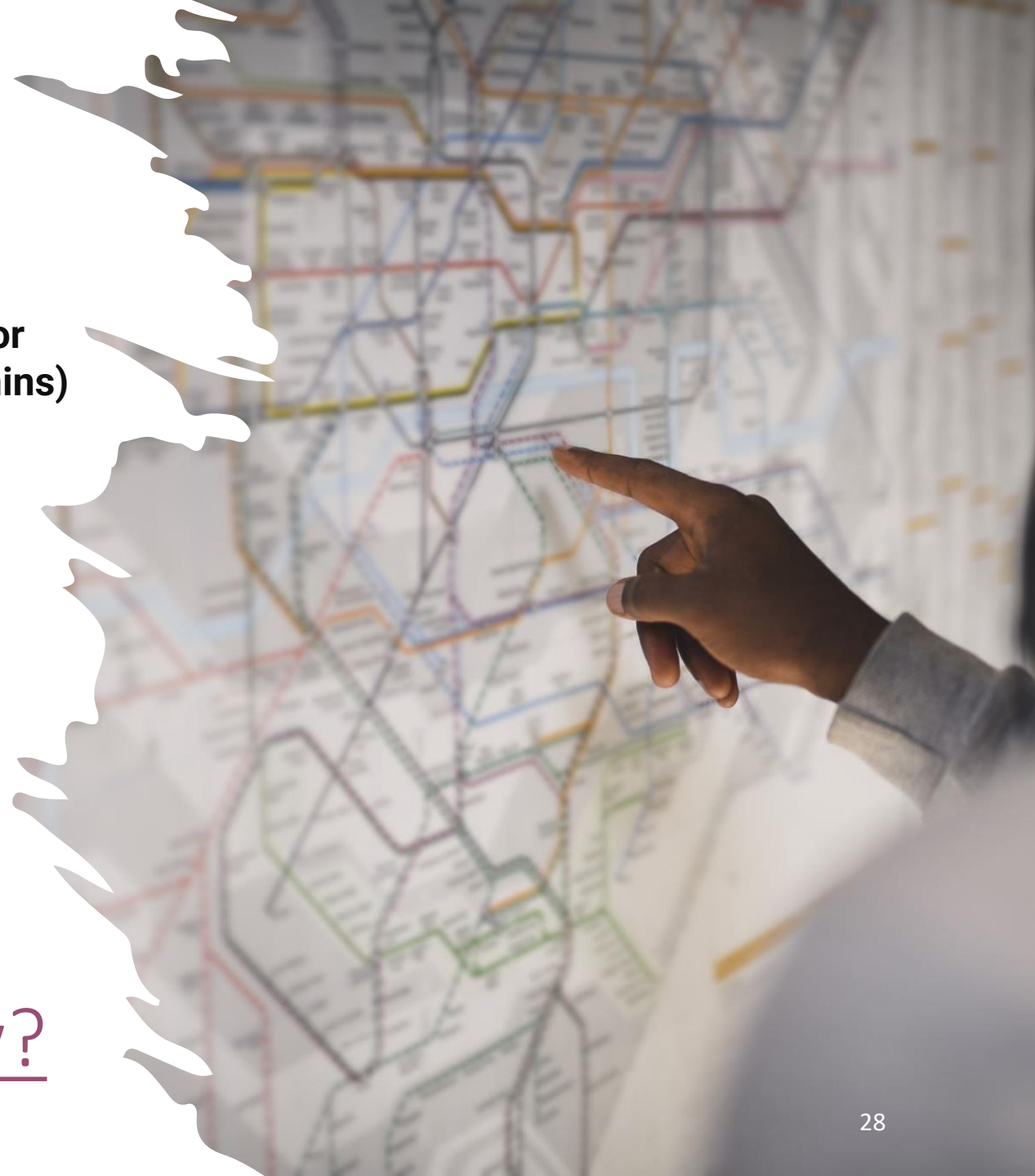
Mapping Review

Systematic mapping of the literature: a key method for literature review & synthesis (From 0:47 mins-9:10 mins)

<https://youtu.be/O2Xnxn39L-4>

Mapping Review (9:01 mins)

What is a Mapping Review?



Scoping Review vs Mapping Review

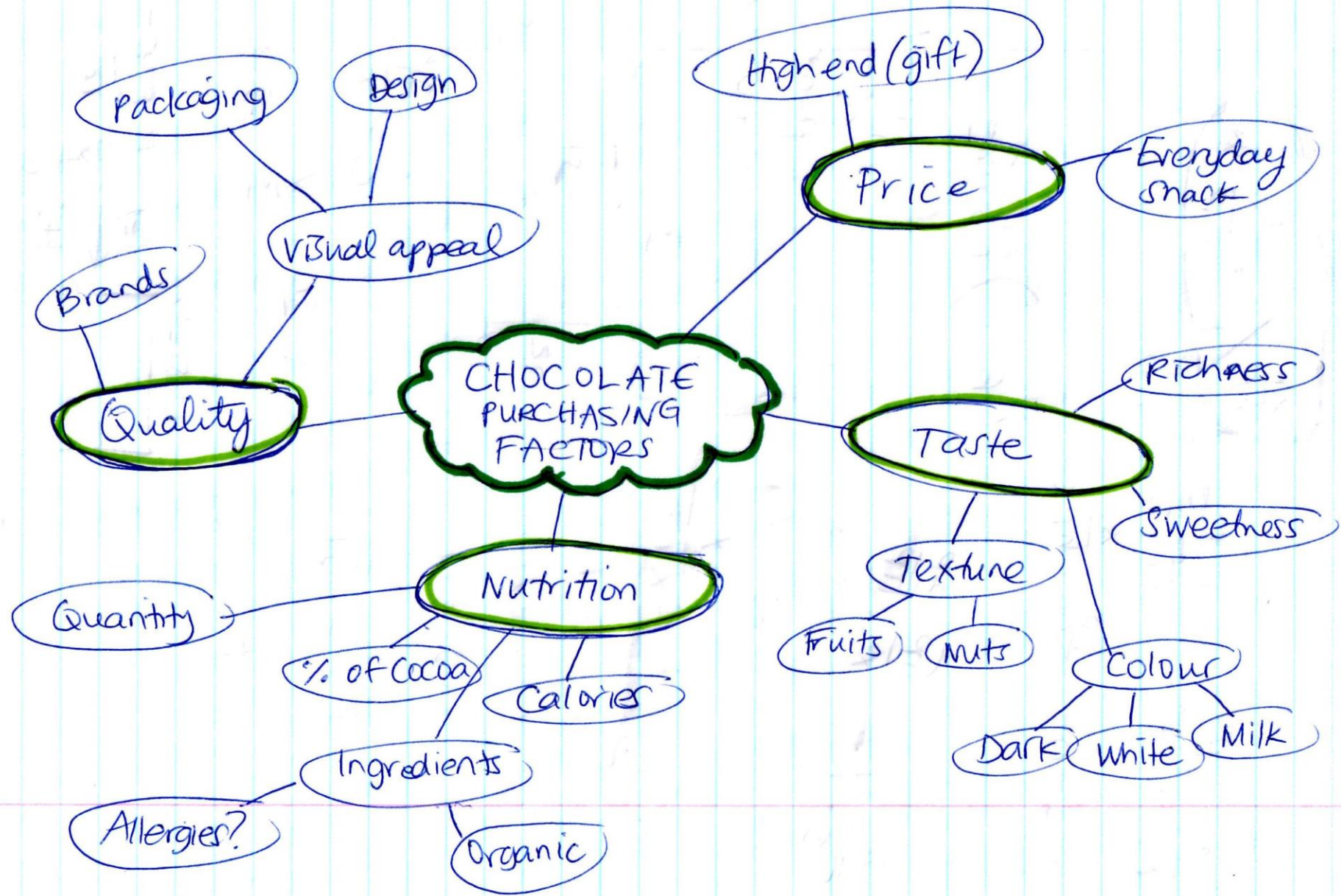
<https://link.springer.com/article/10.1007/s10209-024-01120-3/tables/2>

Steps and Characteristics	Review Types	
	Scoping Review	Mapping Review
Step 1. Formulating the problem		
Uses a broad research question	✓	✓
Uses a wide range of research question types	✓	✓
Follows PICO/PCC format	✓	✓
Step 2. Establishing and validating the review procedure		
Follows a systematic process and protocol	✓	✓
Does early, exploratory evaluations of the body of literature	✓	✓
Requires at least two reviewers	✓	✓
Step 3. Searching the literature		
Conducts systematic search of a wide field	X	✓
Search in multiple databases	✓	✓
Step 4. Screening for inclusion		
Employs inclusion and exclusion criteria	✓	✓
Includes grey literature	✓	✓
Step 5. Evaluating quality		
Undergoes quality assessment	X	X
Step 6. Extracting data		
Follows iterative data extraction process	✓	✓
Is restricted to important study characteristics and outcomes	X	✓
Step 7. Analyzing and synthesizing data		
Synthesises the body of literature	✓	✓
Undergoes in-depth data analysis	○	X
Identifies literature gaps and trends	X	✓
Step 8. Reporting the findings		
Provides visualisations of the body of available literature	X	✓
Includes PRISMA flow diagram	✓	X

The symbols in the above table have the following meaning: ✓ supported, ○ somewhat supported, X not supported

Mapping Review

- **Scoping Reviews, Mapping Reviews and Evidence and Gap Maps (29:57 mins) From 2:26 -**



Mapping Review

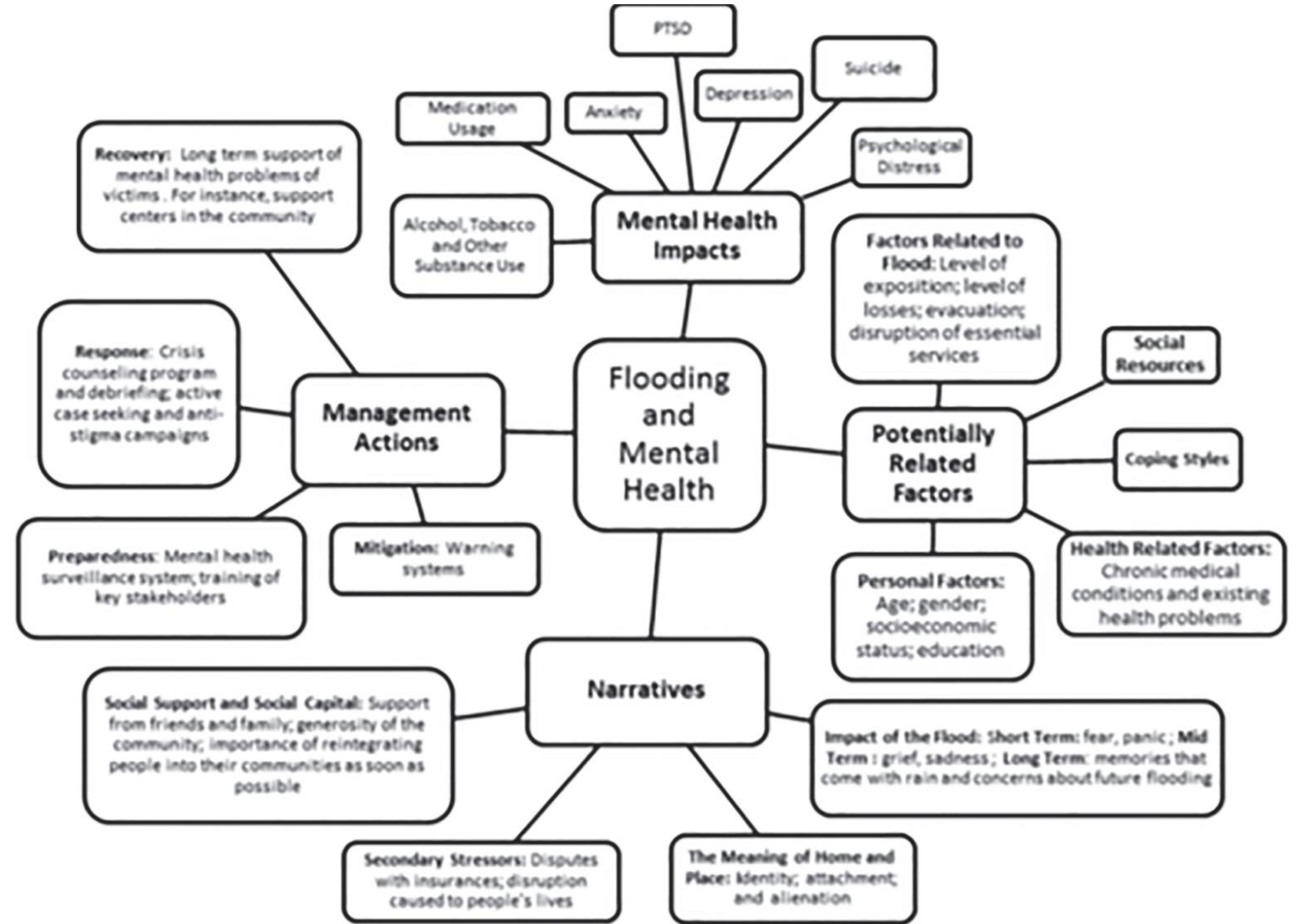


Fig 2. Conceptual Map.

doi:10.1371/journal.pone.0119929.g002

Fernandez, A., Black, J., Jones, M., Wilson, L., Salvador-Carulla, L., Astell-Burt, T., & Black, D. (2015). Flooding and mental health: a systematic mapping review. *PloS one*, 10(4), e0119929. [Flooding and Mental Health: A Systematic Mapping Review | PLOS One](https://doi.org/10.1371/journal.pone.0119929)

Scoping review and mapping review



• Inductive or deductive • More in-depth data extraction • A 'narrower' focus to a 'broad' question • Generally < 40 – 80 studies • May include some iterative processes in searching, data extraction and analysis • May include qualitative analysis	• Deductive questions • Higher level data extraction with predefined coding categories • Predefined coding framework • A 'broader' focus of a 'broad' question • Generally > 80 studies • Greater use of visual displays of findings
---	---

Scoping Review vs Mapping Review

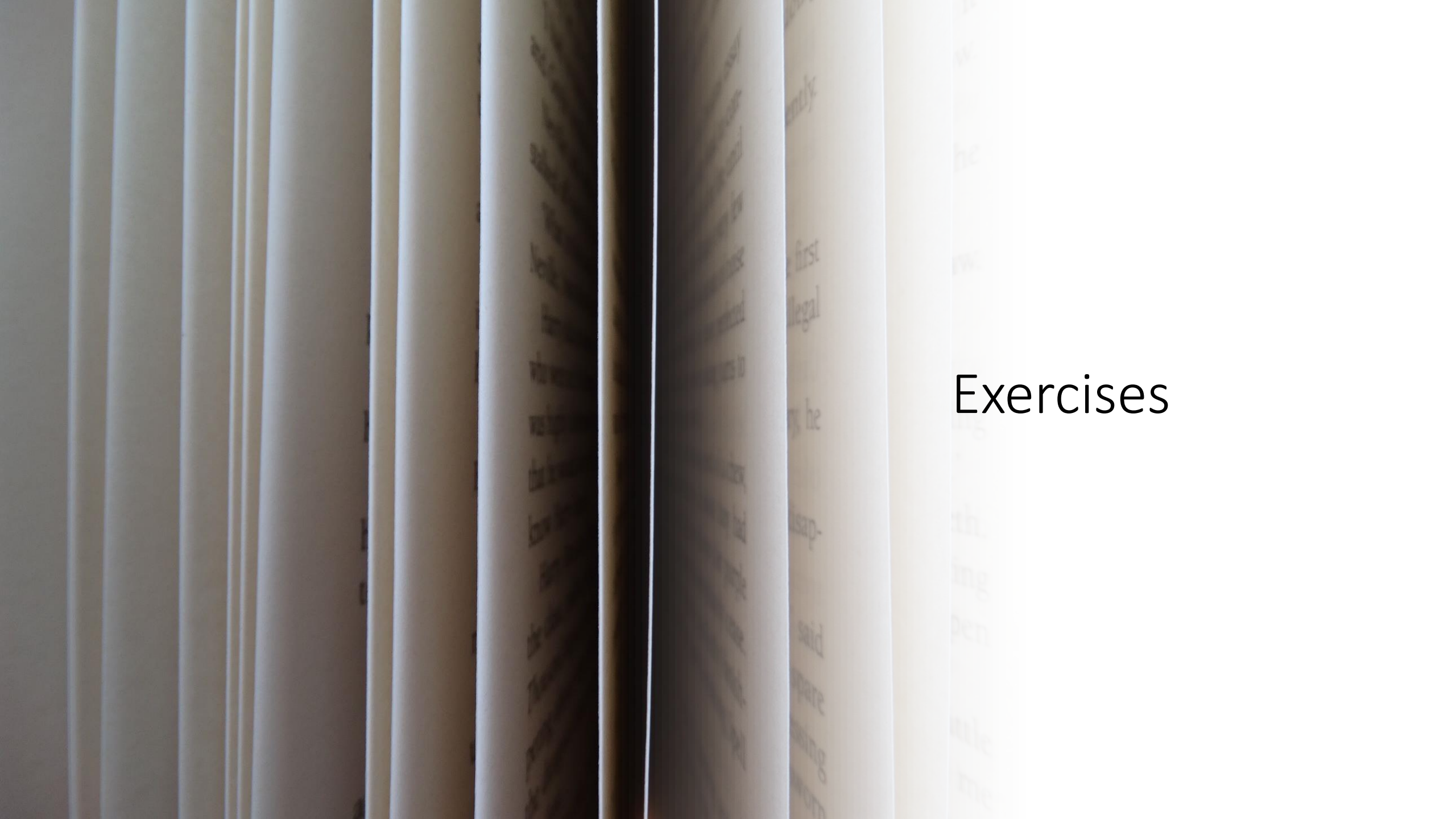
	Scoping review	Mapping review
Academic roots	Social sciences Arksey & O'Malley 2005 [23] Levac 2010 [24] Khalil et al. 2016 [4] Peters et al. 2020 [12]	Public health, Biomedical sciences, Environmental science James 2016 [18]
Research concepts	*Inductive and *Deductive	Deductive
	*Configurative *Aggregative	Aggregative
Guidance for methods (and reporting)	JB1 (PRISMA ScR) [5,6,7,8]	SCIE, Campbell Collaboration (PRISMA ScR)
Identifies gaps in the research	Yes	Yes
Visual and interactive web-based gap map	No—but may contain tables and diagrams within text	No—but may contain within text tables and diagrams—and may be produced with an EGM

[A systematic exploration of scoping and mapping literature reviews](#) | Universal Access in the Information Society

Scoping review vs Mapping review

Type of approach	Aim
Scoping review	To report in detail the methodology employed to identify relevant theories and provide a list of agreed criteria for judging the quality of theories (Davis et al. 2015) [41] To document and describe the evidence base relating to stakeholder involvement in systematic reviews and to use this evidence to describe how stakeholders have been involved in systematic reviews (Pollock 2018) [42]
Mapping review	A mapping review of research on gambling harm in three regulatory environments (Baxter et al. 2019) [43]

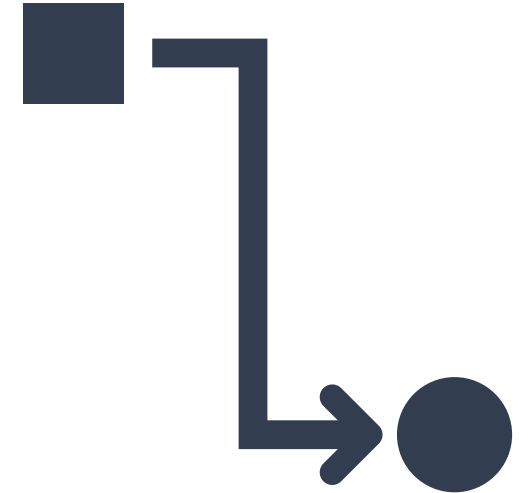
[A systematic exploration of scoping and mapping literature reviews | Universal Access in the Information Society](#)



Exercises

Activity 2: Literature search on Scoping Review

- Download or select 5 articles adopting scoping review*.
- Examine how the review has been conducted and write down a detailed list of all the stages of the review process. Pay attention to the various checks they used to ensure that they had done a thorough job.
- Then download the flow diagram and the checklist provided by [PRISMA](#). Use these resources to evaluate the review process.



* Kolk, A., Rivera-Santos, M. and Rufín, C. (2013) 'Reviewing a decade of research on the "Base/Bottom of the Pyramid" (BOP) concept', *Business & Society*, 53 (3): 338–77.

Activity 2 : Systematic searching

1. Selecting Sources

- Identify a selection of bibliographic databases that will cover all the disciplines likely to be relevant to your topic.
 - These might include broad multidisciplinary sources (Web of Science, Scopus, Google Scholar). Consider what types of grey (unpublished) literature may be relevant and how you will obtain them
 - Eg, would you be interested in reports from government organisations? Preliminary results from ongoing studies? Dissertations and theses? These types of material may be difficult to obtain but for some topics they may be essential.

Activity 2 : Systematic search

2: Developing your search strategy

- Make a list of terms relating to each of the **key concepts** of your review question
- Search one concept at a time, using thesaurus searching (where databases offer subject headings) in addition to free text searching of **titles and abstracts**
- Consider alternative **spellings**, and use truncation (*) to find different word endings (eg, **vaccin*** to find **vaccine, vaccines, vaccination**)
- Combine searches relating to **the same concept** with OR
- Combine searches relating to **different concepts** with AND
- Use **search filters** to limit your search to specific types of study

Activity 2: Example search string (Google Scholar / PubMed)

- In this simple search, concepts are searched one at a time (lines 1-2 smoking cessation, line 3 motivational interviewing).
- Each concept is searched in MeSH (subject headings) and title/abstract.
- Similar lines (1&2) are combined with OR; different concepts (3&4) with AND.
- More examples of search strings can be found in chapter 5.

History and Search Details						 Download  Delete	
Search	Actions	Details	Query	Results	Time		
#5	...	>	Search: #3 and #4 Sort by: Most Recent	543	09:24:10		
#4	...	>	Search: #1 or #2 Sort by: Most Recent	103,203	09:23:54		
#3	...	>	Search: (motivational interviewing[MeSH Terms]) OR ("motivational interview*" [Title/Abstract]) Sort by: Most Recent	5,093	09:23:36		
#2	...	>	Search: (smok*[Title/Abstract] OR tobacco[Title/Abstract]) AND (cessation[Title/Abstract] OR quit*[Title/Abstract] OR reduc*[Title/Abstract] OR stop*[Title/Abstract]) Sort by: Most Recent	95,947	09:21:24		
#1	...	>	Search: smoking cessation[MeSH Terms] Sort by: Most Recent	29,761	09:20:43		

Showing 1 to 5 of 5 entries

Activity 3 – Mapping Review

Based upon your selected theme, please conduct use Population-Concept-Context (PCC) rule to conduct Mapping Review .

1. Based upon your selected theme, please follow steps for mapping review to produce a PRISMA diagram
2. Produce an excel file to indicate your results
3. Basing upon your results of excel file Draw a map to visualise your results and identify the research gap.

* Kolk, A., Rivera-Santos, M. and Rufín, C. (2013) 'Reviewing a decade of research on the "Base/Bottom of the Pyramid" (BOP) concept', *Business & Society*, 53 (3): 338–77.

Exercises: coding procedure of Mapping Review or Scoping Review

- Have a closer look at the coding procedure outlined in the paper. In your view, did they cover all important points? What sections are fairly generic (could be used for any systematic review) and which ones are more topic-specific?
- Pick one article listed in the appendix of the paper and search for it. If you cannot get access to it, try another one. Once you have downloaded one of the articles reviewed for this paper, apply the **coding framework** used by the authors. Prepare a brief summary to share in class.

‘Take homes’ (1 of 2)

- Pre-plan your search and conduct a scoping search.
- Select the most appropriate sources to search.
- Take into account limitations of the literature, such as inconsistent terminology and problematic indexing, and include alternative search terms (including those used in known papers).
- Select the most appropriate search techniques for the sources that you have chosen. Consider whether it is appropriate to use search filters.

‘Take homes’ (2 of 2)

- Employ supplementary search approaches (for example citation searching as well as traditional database searching).
- Evaluate your search results, modify your search strategies accordingly and be sure to document the search process to allow you to report it accurately when you write up your review.

References :

- Fernandez, A., Black, J., Jones, M., Wilson, L., Salvador-Carulla, L., Astell-Burt, T., & Black, D. (2015). Flooding and mental health: a systematic mapping review. *PloS one*, 10(4), e0119929. [Flooding and Mental Health: A Systematic Mapping Review | PLOS One](#)



Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

References :

- Campbell, F., Tricco, A.C., Munn, Z. *et al.* (2023) Mapping reviews, scoping reviews, and evidence and gap maps (EGMs): the same but different— the “Big Picture” review family. *Syst Rev* **12**, 45 (2023).
<https://doi.org/10.1186/s13643-023-02178-5>
- Cubbon, L., Darga, K., Wisnesky, U.D. *et al.* Depression among entrepreneurs: a scoping review. *Small Bus Econ* **57**, 781–805 (2021). <https://doi.org/10.1007/s11187-020-00382-4>
[W5 Scoping review and entrepreneurship example.pdf](#)
- Chapter 5 of the Sage Book: Searching The Evidence. In: **Systematic Approaches to a Successful Literature Review**, 3rd ed, 2021.
- You might also find the following useful:
Levay, P. & Craven, J. (eds). 2019. *Systematic Searching: Practical Ideas for Improving Results*.
Facet: London. ISBN 9781783303731
Tricco, AC, Lillie, E, Zarin, W, O'Brien, KK, Colquhoun, H, Levac, D, Moher, D, Peters, MD, Horsley, T, Weeks, L, Hempel, S et al. PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation. *Ann Intern Med*. 2018,169(7):467-473. doi: [10.7326/M18-0850](https://doi.org/10.7326/M18-0850)
[Scoping — PRISMA statement](#)



References

- Pollock, D., Evans, C., Jia, R. M., Alexander, L., Pieper, D., de Moraes, E. B., ... & Munn, Z. (2024). 'How-To:' Scoping Review?. *Journal of clinical epidemiology*, 111572.

<https://doi.org/10.1016/j.jclinepi.2024.111572>.

- Kannisto, K. A., Koivunen, M. H., & Välimäki, M. A. (2014). Use of mobile phone text message reminders in health care services: a narrative literature review. *Journal of medical Internet research*, 16(10), e3442. <https://doi.org/10.2196/jmir.3442>
- Batbaatar, E., Dorjdagva, J., Luvsannyam, A., & Amenta, P. (2015). Conceptualisation of patient satisfaction: a systematic narrative literature review. *Perspectives in public health*, 135(5), 243-250.