

How to develop a focused research question for a rapid evidence review

Mala K. Mann

Specialist Unit for Review Evidence (SURE), University Library Service, Cardiff University, Cardiff, Wales, UK

Abstract

Rapid reviews are emerging as an alternative to systematic reviews, and they are now widely used to inform decision-making in healthcare. During COVID-19 pandemic, rapid reviews became more widespread. Some teams prepare reviews in a matter of days, instead of several weeks using streamlined systematic review methods. There are multiple roles for librarians within the evidence review process. As an expert searcher, the librarian must interact with the researchers, clinicians, and decision makers. A well-defined research question needs extreme specificity and preciseness which guides rest of the review. Developing a focused question workshop provided an overview of rapid review methods. Discussion and activities on developing a focused research question. How to start with broad topic and narrow it down to a question that is clear, relevant and answerable.

Key words: systematic review; rapid review; research question; evidence-based medicine.

Introduction

At the centre of the systematic review process is the concept of evidence-based medicine (EBM), which Sackett defines as “the conscientious, explicit and judicious use of current evidence in making decisions about the care of individual patients” (1). Evidence-Based Medicine (EBM) have expanded the role of the librarian beyond identification of the literature to be involved in other stages of the systematic review process. Systematic reviews are considered to be the “gold standard” research design, they attempt to identify, appraise, and synthesise all empirical evidence that meets an explicit eligibility criterion to answer a highly focused research question. However, conducting a systematic review can be time consuming and resource intensive. Healthcare organizations, clinicians, and policy makers require high-quality evidence in a timely manner to support decisions about healthcare policy and interventions. Therefore, rapid reviews are becoming increasingly commissioned and used within health and social care. Since librarians have been conducting systematic reviews for many decades, it is expected of librarians to be involved in the rapid review process. This paper will describe important issues discussed in

the workshop on “How to develop a focused research question for a rapid evidence review” held at the EAHIL 2023 conference in Trondheim, Norway and reiterate the importance of developing a well structured question.

Background to rapid review methods

Rapid reviews have emerged as a streamlined approach to synthesizing evidence. There is no formal methodology to perform rapid reviews. There are other challenges including no clear definition for a rapid review, and even the term “rapid” varies amongst the research community. During COVID-19 pandemic, rapid reviews have become more widespread. Number of rapid review teams prepare reviews in a matter of days, instead of in several weeks (2). In recent years there have been a number of publications on numerous rapid review approaches (3).

Cochrane Rapid Reviews Methods Group whose scope is to inform rapid reviews in general, both within the Cochrane Collaboration and beyond, have developed provisional rapid review methods recommendations (4). In 2017, the National Collaborating Centre for Methods and Tool published a rapid review guidebook

Address for correspondence: Mala K. Mann, Specialist Unit for Review Evidence (SURE), University Library Service, Cardiff University, 6th Floor, Neuadd Meirionnydd Heath Park, CF14 4YS Cardiff, Wales, UK. E-mail: MannMK@cardiff.ac.uk.

(5). The purpose of this document is to provide guidance on the process of conducting rapid reviews. The process is outlined, and it is implied that the timeline for preparing reviews may vary from a few days to several weeks due to the scope of the rapid review. The Palliative Care Evidence Review Service (PaCERS) review methods were published in 2019 and describe the stages of the rapid review process. The paper mentions the importance of engaging with the stakeholders throughout the review process, particularly developing and refining the review question.

In recent years there has been an attempt to identify a definition for a rapid review. In the EAHIL workshop, we discussed a variety of definitions. A widely used definition for a rapid review is "a rapid review is a type of knowledge synthesis in which components of the systematic review process are simplified or omitted to produce information in a short period of time" (6). Also, "a form of knowledge synthesis that accelerates the process of conducting a traditional systematic review through streamlining or omitting specific methods to produce evidence for stakeholders in a resource-efficient manner" (7). The PaCERS definition which clarifies the streamlined process and the time involved in conducting the review "a review conducted within 8-10 weeks using highly refined research question and search carried out within limited set of databases and other sources and increasing the transparency of our methodology and explicitly summarising it for each review" (8). This definition also refers to a "highly refined research question" which is a key component of a rapid review.

The EAHIL workshop

The overall workshop objective was to give participants experience of developing a focused research question for a rapid review.

The first stage in the review process is formulating the research question. The process of translating a general research aim or purpose into a research question can be challenging. The research question must be clear and answerable. It is possible to use a broad topic of interest and importance, then to narrow the topic to focus on a different component to develop the review question (*Figure 1*). An advantage of a broad question is the ability to assess generalizability of findings across types of participants. An advantage of a narrow scope is the manageability for review team and the ease of

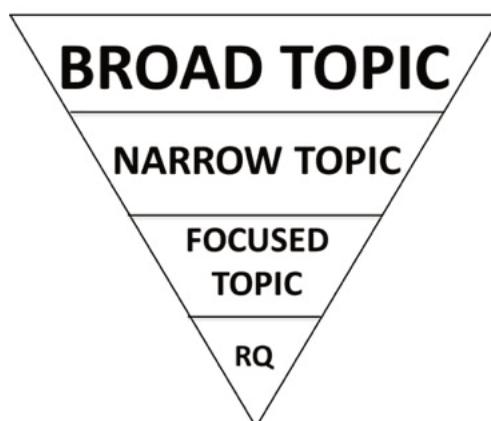


Fig. 1. From a broad topic to a research question.

reading of the review (9). For a rapid review it is essential to ensure the question is clearly articulated and narrow in its structure.

A poorly structured research question may create problems that affect all subsequent stages and impact on the timeliness of the review (10). A well-defined research question needs specificity and preciseness which facilitates rest of the review process. It determines eligibility criteria; informs the development of the search strategy and the data extraction forms. In addition, the review synthesis depends on the type of review question.

Using frameworks to develop research questions

A good rapid review question should be clear and focused, consider using a research framework. FINER criteria (11) help reviewers to formulate an answerable research question, by highlighting useful concepts. For example, could the research be:

- feasible;
- interesting;
- novel;
- ethical;
- relevant.

When developing questions for policy makers and clinicians, it is crucial to understand the feasibility of the research question. Though the FINER criteria outline the important aspects of the question in general, it is helpful to use a framework to develop the question. There are a vast range of formats that can be utilised when developing research questions.

Research question for a rapid evidence review

The most used format is the PICO/PECO format for clinical and healthcare related questions, frequently used for searching for quantitatively designed studies (12, 13) (Table 1).

Population	Population/problem/disease (i.e., age, gender, ethnicity, with a certain disorder)
Intervention/ Exposure	Intervention or variable of interest (exposure to a disease, risk behaviour, prognostic factor)
Comparison	Comparison could be a placebo or "business as usual" as in no disease, absence of risk factor
Outcome	Outcome: risk of disease, accuracy of a diagnosis, change in lifestyle
Types of studies	Types of studies (RCT's, CCT's, Case Control etc.)

Table 1. PICO/PECO Framework.

Whereas for a qualitative question the SPIDER tool adapted from the PICO format and is designed to structure qualitative and mixed-methods research (14) (Table 2).

S: Sample	The sample you are focusing on
PI: Phenomenon of Interest	The behaviour or experience your research is examining
D: Design	How the research will be carried out?
E: Evaluation	What are the outcomes (experiences and views)
R: Research type	What is the research type you are undertaking?

Table 2. SPIDER tool.

The SPICE format is useful for social sciences topics, or qualitative research questions that require subjective evaluation (15) (Table 3).

Setting	Where? In what context?
Perspective	From whose perspective will the research be conducted for/from
Intervention / Phenomenon of interest	What?
Comparison	What else?
Evaluation	How well? What results?

Table 3. SPICE framework.

Framing the question helps to identify key concepts, which would provide the focus for developing the search strategy. Question formats are helpful tools researchers can use to structure a question that will facilitate a focused search. However, if it is not feasible to use a conceptual structure, it is important to break your research question into separate parts and identify the main components.

Conclusion

One cannot argue that a search strategy underpins any well-conducted evidence synthesis. However, a clearly defined review question and inclusion criteria provide the foundation for a well-constructed search strategy (16). To develop a robust search strategy, the review question needs to be well defined. Formulating a focused research question for a rapid review can be a lengthy process. While you may have an idea about the topic you want to explore, your specific research question is what will drive your review and requires some consideration.

A strong research question will accurately and succinctly demonstrate up the review's line of inquiry.

Acknowledgements

The author of this paper received the award for best Interactive Workshop overall at the EAHIL 2023 Workshop, "Radical positive change agent" The Norwegian University of Science and Technology, Trondheim, Norway, 12-16 June 2023.

Submitted on invitation.

Accepted on 25 August 2023.

REFERENCES

1. Sackett DL, Rosenberg WM, Gray JA, Haynes RB, Richardson WS. Evidence based medicine: what it is and what it isn't. *BMJ*. 1996 Jan 13;312(7023):71-2. doi: 10.1136/bmj.312.7023.71. PMID: 8555924; PMCID: PMC2349778.
2. Fretheim A, Brurberg KG, Forland F. Rapid reviews for rapid decision-making during the coronavirus disease (COVID-19) pandemic, Norway, 2020. *Euro Surveill*. 2020;May;25(19):2000687. doi: 10.2807/1560-7917.ES.2020.25.19.2000687. PMID: 32431291; PMCID: PMC7238744.
3. Tricco AC, Antony J, Zarin W et al. A scoping review of rapid review methods. *BMC Med* 2015;13:224 (). <https://doi.org/10.1186/s12916-015-0465-6>
4. Garritty C, Gartlehner G, Nussbaumer-Streit B, King VJ, Hamel C, Kamel C, Affengruber L, Stevens A. Cochrane Rapid Reviews Methods Group offers evidence-informed guidance to conduct rapid reviews. *J Clin Epidemiol*. 2021;Feb;130:13-22. doi: 10.1016/j.jclinepi.2020.10.007. Epub 2020 Oct 15. PMID: 33068715; PMCID: PMC7557165.
5. Dobbins M. Rapid Review Guidebook. Hamilton, ON: National Collaborating Centre for Methods and Tools; 2017. Available at <https://www.nccmt.ca/capacity-development/rapid-review-guidebook>, Accessed 31st July 2023.
6. Khangura S, Polisena J, Clifford TJ, Farrah K, Kamel C. Rapid review: an emerging approach to evidence synthesis in health technology assessment. *Int J Technol Assess Health Care*. 2014 Jan;30(1):20-7. doi: 10.1017/S0266462313000664. Epub 2014 Jan 22. PMID: 24451157.
7. Hamel C, Michaud A, Thuku M, Skidmore B, Stevens A, Nussbaumer-Streit B, Garritty C. Defining Rapid Reviews: a systematic scoping review and thematic analysis of definitions and defining characteristics of rapid reviews. *J Clin Epidemiol*. 2021 Jan;129:74-85. doi: 10.1016/j.jclinepi.2020.09.041. Epub 2020 Oct 8. PMID: 33038541.
8. Mann M, Woodward A, Nelson A, Byrne A. Palliative Care Evidence Review Service (PaCERS): a knowledge transfer partnership. *Health Res Policy Syst*. 2019 Dec 16;17(1):100. doi: 10.1186/s12961-019-0504-4. PMID: 31842886; PMCID: PMC6916007.
9. Thomas J, Kneale D, McKenzie JE, Brennan SE, Bhaumik S. Chapter 2: Determining the scope of the review and the questions it will address. In: Higgins JPT, Thomas J, Chandler J, Cumpston M, Li T, Page MJ, Welch VA (editors). *Cochrane Handbook for Systematic Reviews of Interventions* version 6.3 (updated February 2022). Cochrane, 2022. Available from www.training.cochrane.org/handbook.
10. Agee J. Developing qualitative research questions: A reflective process. *Int J Qual Stud Educ*. 2019; 22(4), 431-47. <https://doi.org/10.1080/09518390902736512>
11. Hulley SB, Cummings SR, Browner WS, Grady DG, Newman TB. *Designing clinical research*. 3rd ed. Philadelphia (PA): Lippincott Williams and Wilkins; 2007.
12. Aslam S, Emmanuel P. Formulating a researchable question: A critical step for facilitating good clinical research. *Indian J Sex Transm Dis AIDS*. 2010 Jan;31(1):47-50. doi: 10.4103/0253-7184.69003. PMID: 21808439; PMCID: PMC3140151.
13. Morgan RL, Whaley P, Thayer KA, Schünemann HJ. Identifying the PECO: A framework for formulating good questions to explore the association of environmental and other exposures with health outcomes. *Environ Int*. 2018 Dec;121(Pt 1):1027-1031. doi: 10.1016/j.envint.2018.07.015. Epub 2018 Aug 27. PMID: 30166065; PMCID: PMC6908441.

14. Cooke A, Smith D, Booth A. Beyond PICO: the SPIDER tool for qualitative evidence synthesis. *Qual Health Res.* 2012 Oct;22(10):1435-43. doi: 10.1177/1049732312452938. Epub 2012 Jul 24. PMID: 22829486.
15. Booth A. Clear and present questions: Formulating questions for evidence-based practice. *Library Hi Tech*, 2006; 24(3), 355-368.
16. Aromataris E, Riitano D. Constructing a search strategy and searching for evidence. A guide to the literature search for a systematic review. *Am J Nurs.* 2014 May;114(5):49-56. doi: 10.1097/01.NAJ.0000446779.99522.f6. PMID: 24759479.

