

Chapter-8

Literature search and review

Rehan Ahmed Khan

Introduction

This chapter is divided into two main parts: the literature search, and the literature review. Both the parts are significant as the first part contributes to the systematic ways of searching the literature so it helps the reader to find the relevant article about the topic of research in writing articles and thesis. Any other reader of the thesis can find the same articles if s/he follow the steps given in the thesis. Whereas, the second part, the literature review, is significant to give the reader an in-depth understanding of the topic.

1. Literature search

Literature search is a systematic method of finding about a particular question or topic by identifying key words, their synonyms and using Boolean operators. It involves selecting and synthesizing the literature found including peer and non-peer-reviewed related to the topic or question of interest.¹

1.1: Steps of literature search

Decide the topic / research question

- * Topic or the research question determines the direction of literature search. The aims are; to find the existing literature about the topic of interest, and look for gaps and answers to the research question.

Decide the key words and their synonyms

- * Key words and their synonyms are identified. For example.

if the research question is: “What are the key indicators of a good assessment?”, the key words would be key indicators and assessment. The synonyms for ‘indicators’ can be main pointers or markers; whereas for ‘assessment’, it can be evaluation.

Decide the relevant database

- * There are several databases and search engines. Some of the most commonly used are: PubMed, ERIC, PsychINFO, Cochrane Collaboration, EBSCO, CINAHL, and Web of Science. The data base is selected according to the topic of interest. For instance, Cochrane collaboration is database of choice if search is to be done on Systematic reviews, and PubMed can be used to search a clinical topic.²
- * Apart from databases, grey literature is searched using Google Scholar.
- * Other sources of literature search include books, hard copies of journal not available on internet, non-indexed journals, thesis and conference proceedings.
- * If limited data is available on topic, secondary references can be found from the articles that have been found in the literature. This process is called Snow balling. Expert help can also be taken to identify sources of literature research.

Use Boolean operators

- * Boolean Operators are used to broaden or narrow search about a topic. These include ‘AND’, ‘OR and ‘NOT’. The Boolean operator ‘AND’ is used to narrow whereas ‘OR’ is used for broadening the search whereas ‘NOT’ is used when a topic is to be excluded.

Select the relevant articles

- * Searching the articles may reveal a large data. Inclusion and exclusion criteria are used to filter articles. Duplicates needs to be removed. PRISMA⁴ flow chart can be used to finalize the articles for critical appraisal.

- * At this stage, selected topic or research question is either finalized or it may be revised to modify, and to further extend the process of literature search.
- * After finalizing the literature search, full-text of selected articles is read and literature review is written.

1.2: Uses of Literature Search

- * It forms the basis of literature review
- * It helps in finding the gaps in the literature
- * It may find the answer to your research question
- * It helps in revising and modifying the research question

2. Literature Review

Literature review is organizing the literature found through literature search in systematic manner.

2.1: Different types of Literature review

There are several types of literature review reported in the literature, however some of the commonly used are:

Traditional literature reviews

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Systematic Reviews

It is a type of literature review which is done to find answer to a research question.³ It usually involves a team of experts and takes about more than a one year to complete. The aim of this type of review is to develop consensus on the best available evidence on the topic of research. In medical education, ‘Best evidence medical education’ or BEME is an example of systematic review whereas in clinical research, its equivalent is a Cochrane review.

Scoping Reviews

A scoping review is almost similar to systematic review except with a flexible inclusion and exclusion criteria for the

articles to be included for the review. The aim of the scoping review is to find everything available about the topic hence the stringent criteria of filtering in systematic review is by passed, however the systematic process used in systematic review should not be ignored. Scoping review generate themes and categories so information on a particular topic can easily be researched.

Meta-Analysis

It follows the same principles of a systematic review but the topic or research question is quantitative in nature. In this type of review, statistical analysis of data of quantitative research articles is done. “Pharmacological strategies to decrease excessive blood loss in cardiac surgery: a meta-analysis of clinically relevant endpoints” is an example of Meta-analysis.

2.2: Steps of literature review

After finalizing the articles found through literature search, a literature review can be written. Literature review forms the part of Introduction and discussion of an article. In case of a thesis or dissertation, it represents a separate chapter itself. Steps of writing literature review depends upon the method one choses for writing it. This can be done based on themes or in an inverted pyramid way. The more common method used is thematic. Steps of writing a literature review through a thematic method are as follows:

- * Decide different themes about your topic based on the literature search and the content finalized
- * Each theme should be separately dealt and the content written should have narrative and analytical perspective
- * There should be a flow of thought and continuity between different themes.
- * At the end, a paragraph summarizing the chapter of literature review should be written.

REFERENCES

1. Haig A, Dozier M. BEME guide No. 3: systematic searching for evidence in medical education--part 2: constructing searches. *Med Teach* [Internet]. 2003 Sep [cited 2015 Jan 12];25(5):463-84. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/14522667>
2. Sharma R, Gordon M, Dharamsi S, Gibbs T. Systematic reviews in medical education: A practical approach: AMEE Guide 94. *Med Teach* [Internet]. 2014 Oct 14 [cited 2014 Nov 14];0(0):1-17. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/25314376>
3. Liberati A, Altman DG, Tetzlaff J, Mulrow C, G? tzsche PC, Ioannidis JPA, et al. The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: explanation and elaboration. *J Clin Epidemiol*. 2009;62(10):e1-34.
4. Kmet LM, Lee RC, Cook LS. Standard quality assessment criteria for evaluating primary research papers from a variety of fields. Edmonton: Alberta Heritage Foundation for Medical Research; 2004 Feb.

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1. Prof. Dr. Rehan Ahmed Khan
MBBS (Pak), FCPS (Pak), FRCS (Ire), JM-HPE (Ned), MSc HPE (UK) ,
PhD (Scholar) University of Maastricht (Ned)
Assistant Dean Medical Education,
Riphah Academy of Research and Education
Professor of Surgery, IIMC-T,
Riphah International University
Chairperson Assessment Committee
Consultant/ In-charge Laparoscopic Surgery ,
Railway Hospital,
Rawalpindi - Pakistan.