

Research Skills

Module 5

- Why do a literature review?
- Basic format of a literature review
- PRISMA guidelines

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Literature Review

Why do a literature review?

- Determines to what extent the issue or research question has been previously researched
- Identifies past relevant studies as well as the methods used
- Assists in refining your research question
- Puts the project and methodology into a relevant context
- Adds valuable background to the study or formal report
- Suggests areas requiring further investigation

The two main components are conducting the search and critically appraising the results of your search, the published papers.

A good literature search involves the following steps which should be worked through systematically:

1. Background reading and preparation.
2. Working with your title: identify search terms.
3. Identify the resources to search.
4. Search using search techniques.
5. Collate your results.

More help can be found by accessing 'Doing a literature search: a step by step guide', at https://www.hope.ac.uk/media/liverpoolhope/contentassets/documents/library/help/media_1256_en.pdf

Critical appraisal skills

Critical appraisal skills are essential for helping to decide if published research is of sufficiently high quality.

What should a Literature Review look like (Literature Review Genre)?

Literature Review genre

A literature review is a critical analysis of a body of published texts.

Format

Your *introduction* should explain why you are conducting the review and comment on the current state of literature in the field such as gaps in the research.

Organise the *main body* of your paper by the aspects that are common among sources, such as method used, conclusions drawn, philosophical approaches, or even chronology.

Your *conclusion* should summarise significant contributions to the field, place the literature you have reviewed in the larger context of the Nutrition discipline, highlight any limitations or gaps in the research, and/or suggest future areas in need of study.

Key questions to ask for a literature review

What is similar about the sources: method, reliability of results, philosophies, claims, choice and interpretation of evidence?

What is different about the sources?

Can you see any gaps in the research?

Are there any limitations or problems with the research or text?

The things you need to do

Be clear in your mind about why you are conducting the review.

Remember to write a brief summary for each source.

Make a table to record how each source relates to or contrasts with one another.

The space you allocate to each source should be based on its importance to the field and not the length of the article.

Duke University. (2014). *Literature Review*. Duke University, Retrieved from:

http://twp.duke.edu/uploads/assets/lit_review.pdf

PRISMA guidelines for reporting systematic reviews and meta-analyses of studies

The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate healthcare interventions: explanation and elaboration

BMJ 2009 ; 339 doi: <https://doi.org/10.1136/bmj.b2700> (Published 21 July 2009)

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Article

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Abstract

Systematic reviews and meta-analyses are essential to summarise evidence relating to efficacy and safety of healthcare interventions accurately and reliably. The clarity and transparency of these reports, however, are not optimal. Poor reporting of systematic reviews diminishes their value to clinicians, policy makers, and other users.

Since the development of the QUOROM (quality of reporting of meta-analysis) statement—a reporting guideline published in 1999—there have been several conceptual, methodological, and practical advances regarding the conduct and reporting of systematic reviews and meta-analyses. Also, reviews of published systematic reviews have found that key information about these studies is often poorly reported. Realising these issues, an international group that included experienced authors and methodologists developed PRISMA (preferred reporting items for systematic reviews and meta-analyses) as an evolution of the original QUOROM guideline for systematic reviews and meta-analyses of evaluations of health care interventions.

The PRISMA statement consists of a 27-item checklist and a four-phase flow diagram. The checklist includes items deemed essential for transparent reporting of a systematic review. In this explanation and elaboration document, we explain the meaning and rationale for each checklist item. For each item, we include an example of good reporting and, where possible, references to relevant empirical studies and methodological literature. The PRISMA statement, this document, and the associated website (www.prisma-statement.org/) should be helpful resources to improve reporting of systematic reviews and meta-analyses.

Read the entire document to understand requirements for literature reviews using the systematic review format.

<https://www.bmj.com/content/339/bmj.b2700>



PRISMA 2009 Checklist

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	

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<http://prisma-statement.org/documents/PRISMA%202009%20checklist.pdf>



PRISMA 2009 Checklist

Section/topic	#	Checklist item	Reported on page #
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	
DISCUSSION			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	
FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

For more information, visit: www.prisma-statement.org.

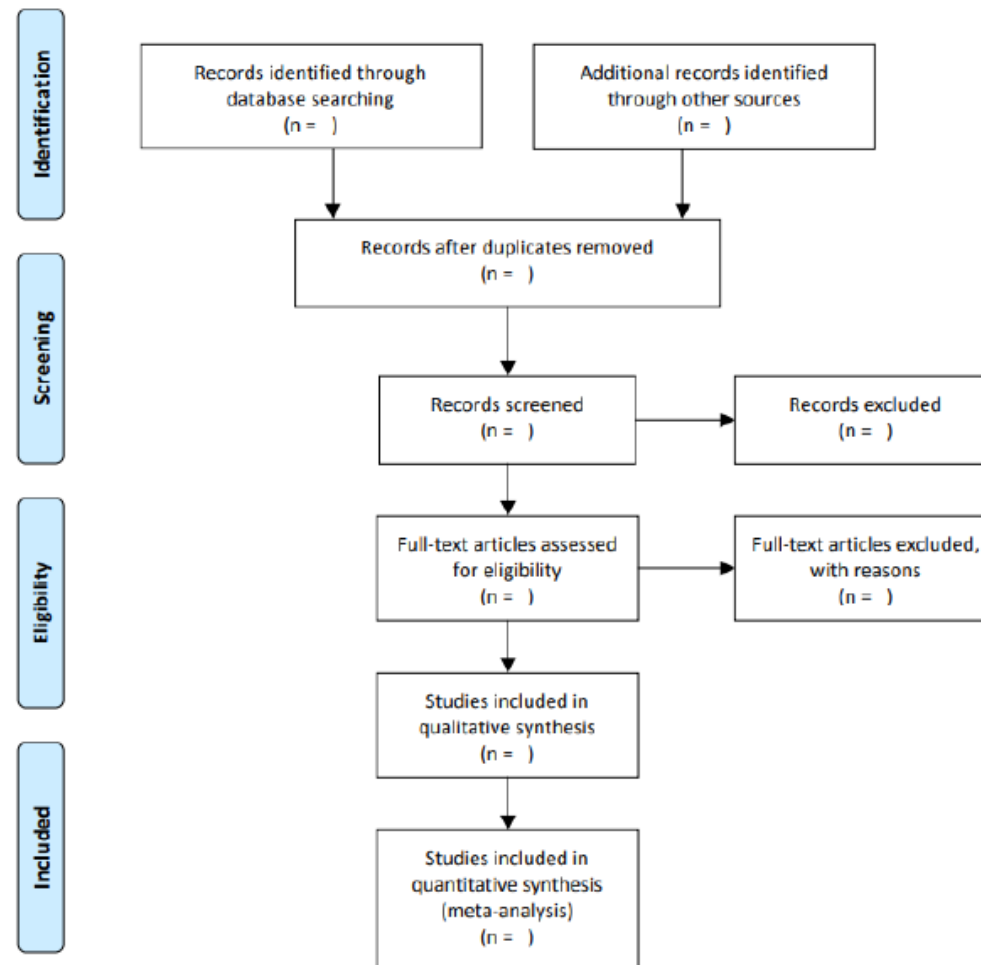
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<http://prisma-statement.org/documents/PRISMA%202009%20checklist.pdf>

AARNP Learning Resources 2019.



PRISMA 2009 Flow Diagram



<http://prisma-statement.org/documents/PRISMA%202009%20flow%20diagram.pdf>