

Original Research

A guide to demystify the literature search for writing the systematic literature review in dentistry: A missing link in a Research forum

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ABSTRACT:

Extensive literature writing is a type of research that results in improved comprehension of the subject under consideration. Because there is a scarcity of information this article explains how to put together and write an integrative literature review, as well as provides examples of integrative literature that has been published reviews that demonstrate how this type of research have influenced a significant contribution to the set of skills for humanresource development

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INTRODUCTION

A critical appraisal of a text, event, object, or phenomena is called a review. Books, essays, entire disciplines of literature, architecture, art, fashion, policies, exhibitions, performances, and a variety of other forms can all be evaluated in reviews. A review's most crucial feature is that it is a commentary rather than a summary. It allows us to converse and debate with the work's creator as well as other audiences.¹

We can express our agreement or disappointment with the work, as well as where we think the information, judgments, or organization are lacking. We can clearly express our feelings about the work in question, and that statement will most likely mirror other sorts of academic writing. They rarely exceed 1000 words in newspapers and academic journals, yet we may find longer assignments.²

SYSTEMATIC REVIEW

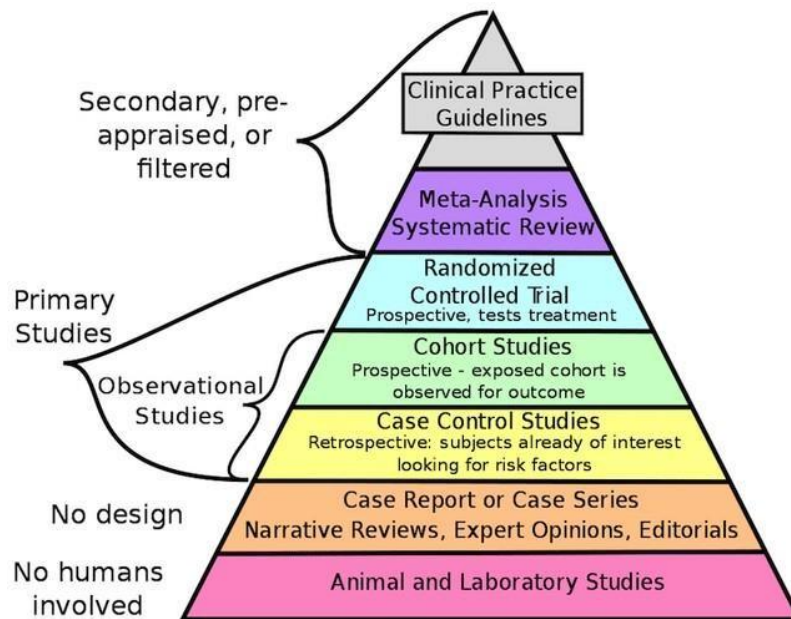
A systematic review is a journal article which specialize in a particular topic and attempts to find, evaluate, and choose, and refine all finest research data linked to that question. It locates, analyses, and reconstructs all available literature on a given topic using a rigorous scientific design. As a result, a "systematic review" should be:

- Systematic (for example, in the recognition of literature)
- Precise (for example, the presentation of objectives, materials, and techniques)
- Replicable (for example in its methods and findings)

Systematic reviews, as per substantial proof medicine experts, are the highest level of medical evidence (Fig 1), and they are a research overview that employs clear and specific methods for conducting a thorough literature search and critical evaluation of different

studies in order to identify valid and relevant evidence.

Fig 1: Pyramid of evidence-based studies



META-ANALYSIS

Meta-analysis is a statistical technique that is repeatedly adopted in systematic reviews. It entails merging the statistical analyses of multiple different experiments into a single report. When these research data is linked, the size of the sample and power increase. As a result, the overall effect can enhance the accuracy of treatment effect and exposure risk assessments.³

LITERATURE REVIEW

A report will concentrate on site content published in a given specific topic as well as information published within a given time frame. A review can be as simple as a citation, but it usually has a structure and contains overview and formulation.

A summary is a rearrangement or reshuffling of the researcher's important information, while a formulation is a reorganization or rearranging of that subject matter. It may offer a new outlook on current information or combine new and old ideas.⁴

WHY DO WE WRITE LITERATURE REVIEW?

A literature review is an in-depth examination of a particular topic. If we just have a limited amount of time to do research, literature reviews might be a good place to start. Professionals gain from these reports since they keep them up and running on what's

going on in the industry. A strong foundation for the analysis in a research paper is also offered by literature reviews.⁵

PURPOSE OF LITERATURE REVIEW^{4,5}

1. Analyze each work in terms of its contribution to the understanding of the issue under consideration.
2. Explain how each work relates to the others under discussion.
3. Identify innovative approaches to explain and fill in gaps in previous studies.
4. Resolve conflicts between seemingly conflicting past findings.
5. Set one's own work (theses or dissertations) in the context of current literature.

DIFFERENCE BETWEEN LITERATURE REVIEW AND ACADEMIC RESEARCH PAPER

The principal goal of an educational published paper is to support our point of view, the goal of a literature paper is to review and synthesize the disagreements and thoughts of other scholars. A literature review can include a "disagreement," even though it is not as essential as assessing a range of sources. The type of document relies on the component of the research on which it is focused (the argument or the sources).⁵

DIFFERENCE BETWEEN SYSTEMATIC REVIEW AND LITERATURE REVIEW

Table 1 depicts the various differences between the systematic and literature review.

	SYSTEMATIC REVIEW	LITERATURE REVIEW
Focus of review	The problem is specific, and the emphasis is restricted.	A wide emphasis on a topic with a variety of concerns.
Selection of studies	Pre-determined criteria depending on the research design's validity and the	Criteria that aren't

	situation at hand.	predetermined or reported in the techniques; search for a variety of difficulties.
Reported findings	Representation of research design, topics, duration of test, health/disease status, and treatment outcomes.	Informative in nature, reporting study outcomes rather than study designs.
Synthesis of studies	Determine whether or if the results could be statistically integrated, and if so, how the meta-analysis was carried out.	Rather than merging data or undertaking a statistical analysis, studies that support and those that do not support a technique or position are reported.
Main results	Conclusions on the findings in relation to the goals and outcomes measurements.	Author's summary of findings in connection to the goal of the literature review and particular objectives.
Conclusions	Discussion of major findings, including potential biases and recommendations for future studies, as well as interpretation of the data.	Discussing major findings, including limits and recommendations for future trials, as well as interpretation of the data.

TABLE 1: DIFFERENCE BETWEEN SYSTEMATIC REVIEW AND LITERATURE REVIEW: ELEMENTS OF LITERATURE REVIEW^{5,6,7}

- 1. Project scope:** What topic or field has been investigated, and what issues are involved?
- 2. Literature search:** locating information related to the topic under consideration.
- 3. Analysis of data:** assessing if the literature adds greatly to the analysis of the issue.
- 4. Overview and Assessment:** Deliberating on the conclusions and inferences of relevant literature

SOURCES OF LITERATURE

Usually there are 2 types of sources of literature:

- 1. Primary Sources:** These would be actual research articles that have not been vetted or processed.
- 2. Secondary Sources:** These are publications that integrate primary material, including systematic reviews, meta-analyses, evidence-based article

reviews, and literature reviews.

SEARCH TOOLS

1. GOOGLE

Today, Google is the most widely used search engine on the internet. It ranks websites based on their popularity using a technique known as Page Optimization. This is calculated using a variety of factors, considering the count of external links they have. As a result, the more references a webpage has, the greater its Google ranking. Users simply enter a keywords or sentences into the browse and press "Quick google," which produces a list of results.^{6,7}

You could create a query using autocomplete feature by filling in an amount of boxes to narrow down the scope for sayings or words (Fig 2). You can search inside a certain topic area, such as universities, in a separate section. You can limit your search to pages written in a specific language. The "Language Tools" tab also allows you to search in a given language or translate websites (Fig 3).

Fig 2: Google has an “advanced search” template



Fig 3: Various tools on Google



2. METACRAWLER

MetaCrawler is a search engine that scans other search engines. The search results are combined and stand out by relevancy, along with the brief summaries for each. You can change it by selecting "preference" from the break list at the bottom of the search field. This helps to keep track of your most recent searches, the amount of results from each source, and whether the outcome should be arranged by relevance or date. When you sort by date, the most current articles appear at the top of the list. Users can utilize the advanced search feature to add specific terms or phrases, as well as perform Boolean searches and select preferred languages.^{8,9}

3. BIOME

BIOME is a network of reference portals which will provide link to materials in the fields of sciences of health and life. It is purposed at academics, educators and professionals in a wide range of fields. It was developed by a group of research scholars and specialists from the University of Nottingham's Greenfield Medical Library.

BIOME has a significant advantage over other search engines in that the resources are reviewed.

Each specific topic platform in BIOME enables users to conduct a pursuit in a specific field; for instance, the health and biomedicine subject gateway is Organizing Medical Networked

Information, or OMNI. It can be found by going to the BIOME website and selecting "OMNI" from the left margin.^{8,9,10}

4. SUMSEARCH

SUMSearch, a specialized medical search engine, was created by Professor Bob Badgett and Linda Levy of

the University of Texas Health Science Centre in San Antonio. It was created with the goal of automating medical literature searches on the Internet.

SUMSearch searches the Internet in the same way as a meta-search engine does, but it also performs what are known as contingency searches. This implies that if a site delivers too many results, SUMSearch will perform up to 4 additional browsing till the optimal findings is found. If a certain site returns few results, it may also search another site. Another benefit is that the SUMSearch team has decided to be of high quality, giving users confidence that the information is trustworthy.^{9,10}

5. TRIP

Jon Brassey established the TRIP (Turning Research into Practice) database in 1997 to provide information to healthcare providers. It has evolved and grown as a result of user feedback. The TRIP database is searchable through a prominent search bar that will be familiar to everyone who uses the internet on a regular basis.^{9,10}

6. EVIDENTS

EviDents is an evidence-based dentistry search engine. The concept was devised by Richard Niederman, Director of the Forsyth Centre for Evidence-based Dentistry at the Forsyth Institute in Boston, USA. It's a convenient feature with a number of boxes to help you narrow down your options.

A help screen appears when you click on the title above each box, explaining what you can type in the box. By choosing the "clues" option at the top of the page, you can access a short series of tips. Selecting "MeSH Browser" brings up a search box in the PubMed Browser, which allows you to look up the

web word or sentence.^{9,10}

ELECTRONIC DATABASES^{10,11}

1. COCHRANE DATABASE

The Cochrane Library is a trustworthy source of evidence on health-care outcomes. Personal and institutional membership are available.

- The Cochrane Database of Systematic Reviews (Cochrane Reviews): A fast increasing collection of up-to-date summaries of the best available evidence generated by Cochrane Collaboration members.
- The Database of Abstracts of Reviews of Effects (DARE): Other published reviews done by persons outside of the Cochrane Collaboration.
- The Cochrane Central Register of Controlled Trials (CENTRAL): It is utilized to obtain the original studies - the most detailed source of controlled trials.
- The Cochrane Database of Methodology Reviews (Methodology Reviews): Conducts research on the best technique to perform a systematic review.
- The Cochrane Methodology Register (CMR): It identifies research that investigate the science of systematic review.
- The Cochrane Collaboration (Objectives or oals): It seeks data regarding Cochrane review groups and other Cochrane Collaboration initiatives.

2. MEDLINE DATABASE

Medline, a database of biomedical journal citations and abstracts, was created by the National Library of Medicine (NLM®) in the United States. This database covers the fields of dentistry, medicine, veterinary medicine, nursing and the health service. Medline contains citations to over 4800 author abstracts from biopharmaceutical publications in the United States and seven other countries. Since 1966, the database has gathered almost 12 million citations. Every year, it attracts almost 520,000 new citations.

3. PUBMED

The National Library of Medicine's PubMed database service cites articles from MEDLINE. The most important part of PubMed is the MEDLINE database. PubMed also includes:

- In-process mentions serve as a record for an article prior to its inclusion in MEDLINE.
- Citations made before a publication was chosen to be indexed in MEDLINE (when supplied electronically by the publisher).
- Some OLD MEDLINE mentions that have not been converted to MEDLINE status or updated with modern terminology.
- Citations to out-of-scope manuscripts from several MEDLINE journals, notably from general science and general chemistry journals (e.g., astrophysics).
- Some life science journals that submit full text

to PubMed Center may not yet be approved for inclusion in MEDLINE, despite having been reviewed by the NLM.

❖ OTHER PUBMED SERVICES INCLUDE

- Links to several sites that offer full-text articles and other related items.
- Search filters for clinical inquiries and special questions.
- Links to more citations or information, such as related articles.
- Links to more citations or information, such as related articles. The ability to keep and automatically update searches, as well as save collections of citations.
- A spell checker.
- Filters for categorizing search results.

4. GOOGLE SCHOLAR

Google Scholar looks for research publications including peer-reviewed papers, theses, technical reports, and abstracts. It searches for publications from academic publishers, professional organizations, universities, and other sources, as well as scholarly articles available on the internet, and ranks the results based on how relevant they are to your search. Google Scholar offers many benefits, including a large database, ease of use, and the ability to search full text within articles. The major downside is that full text access is only available with a membership, and updates are inconsistent.

STEPS BEFORE WRITING THE LITERATURE REVIEW^{12,13,14}

1. CLARIFICATION

If the assignment isn't clear, ask the instructor for elaboration:

- How many sources must be included in total?
- What sorts of sources are there?
- Literature
- Articles in publications
- Internet sites
- Should you mention a common theme or topic while outlining, synthesizing, or critiquing your sources?
- Is it necessary to assess your sources?
- Should you include subtopics and/or additional additional details, such as descriptions and/or a background?

2. FIND MODELS

Other research articles in the given subject area should be searched to obtain a feel of the sorts of topics that could be relevant to the current study or strategies to construct the final review. Simple phrases like "review" and other topic terms in a search engine can be used to discover articles of this sort in an electronic database.

3. NARROWING OF TOPIC

On almost every subject, there are hundreds and thousands, of articles and books. The fewer sources you need to study to gain a solid overview of the content, the easier it will be to limit your topic.

4. CONSIDERATION WHETHER SOURCES ARE CURRENT?

Some fields demand that you acquire the most up-to-date information feasible. Treatments for medical disorders, for example, are frequently altering in the sciences as new research emerges. Even information that seems to be two years old may be outdated.

STRATEGIES FOR WRITING THE LITERATURE REVIEW^{15,16,17}

A. FIND A FOCUS

Descriptive bibliographies are typically organized between sources, whereas literature reviews are frequently organized around themes. This implies that you might not simply review your resource and then go into detail about each one. Think about what concepts or difficulties connect your sources together rather than what concepts or difficulties connect your sources as you read extensively but arbitrarily in your subject area.

B. CREATE A WORKING HYPOTHESIS

To begin writing a thesis statement, begin with a focus. The research proposal will not always say for a particular stance or opinion; rather, it will claim for a particular point of view on the subject.

C. ORGANIZATION

Literature reviews, like most academic papers, must include at least three components:

- Introduction
- Body
- Conclusion

(I) INTRODUCTION

It presents a summary of the literature review's subject, such as the core theme or management structure. It establishes a framework for studying the literature by defining or identifying the broad subject, problem, or area of concern. It highlights the broad trends in what has been published on the subject, as well as any inconsistencies in theory, technique, evidence, and conclusions, research gaps, or a particular problem or novel perspective of urgent relevance.

(II) BODY

It includes a discussion of the sources. Consider presenting the sources themselves inside the body of the article once the primary divisions are in place. It is structured in one of two ways:

- **Chronologically:** Literature reviews are arranged in chronological order.

- **Thematically:** Thematic literary evaluations are grouped around a theme or issue rather than chronologically.

- **Methodologically:** The sorts of documents included in the review, as well as the manner in which they are addressed, will be influenced by the methodological scope.

- **Additional sections:** -It may be necessary to include statement and objectives that are necessary for the study but do not match within the body's organizational plan, such as:

- *Current scenario:* Knowledge required to comprehend the literature review's topic or emphasis.
- *Background:* If the body of the literature review does not already include a timeline of events, the historical evolution of the field, the literature, or a concept important to understanding the review of literature should be included.
- *Techniques and/or Guidelines:* The factors you used to select sources for your review, as well as how you presented your data.
- *Queries for Further Investigation:* What questions has the review raised about the research area? What additional research will be conducted as a result of the review?

(III) CONCLUSION

The conclusion can operate as a ridge to assist readers in returning to their professional life, just as the introduction did to transport them from their personal lives into the "location" of your study. After they've set the paper down, a conclusion like this will help readers understand why all your analyses and facts are important to them. The conclusion allows the author to make a final statement on the topics discussed in your paper, to sum your views, to highlight the significance of your ideas, and to lead the reader to a new perspective on the subject.

HOW TO WRITE THE CONCLUSION OF THE LITERATURE REVIEW?

- a) Return to the introduction's subject or concepts method completes the circle for thereader.
- b) Synthesize, not summarize: Include a useful description of the paper's important themes, but do not just restate what was previously said.
- c) Include a thought-provoking quote or insight from your study or reading for your article.
- d) Make a recommendation for a plan of action, a solution to a problem, or research topics. This might assist the reader reroute their thought process and apply your information and thoughts to their own study.

GUIDELINES DURING WRITING OF LITERATURE REVIEW¹⁷

- 1) *Provide evidence:* To demonstrate that what you are saying is correct, your interpretation of

- the available sources must be supported by
- 2) **Be selective:** Only emphasize the most significant aspects from each source in the review.
 - 3) **Summarize and synthesize:** In each paragraph, as well as throughout the review, remember to summarize and synthesize your sources.
 - 4) **Keep our own voice:** While references to other sources should be woven into your own content, you should also maintain your own voice by beginning and closing each paragraph with your own ideas and language.
 - 5) **Be cautious while paraphrasing:** When paraphrasing a source that isn't your own, make careful to portray the source accurately.

CONCLUSION

A literature review is a useful tool for learning about a certain topic. Literature reviews and systematic reviews bridge the gap between clinical research and clinical practice by teaching dental professionals how to identify, filter, analyze, and apply research results so that what is known is reflected in the treatment they deliver. The capacity to locate, discern, assess, and use knowledge is the most critical talent a professional can acquire. However, one must use extreme caution when it comes to the accuracy of information.

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