



Key points on writing an effective literature review article: A review of a review

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Abstract

The main goal of this point of view, a review of a review is to give directions and information on easier article writing, available literature databases, and to address crucial issues during writing, as well as to encourage scientists to write down their ideas, critical opinions, and to document their impressions in a specific research field. Literature review usually represents the systematization of a large amount of research data and an evidence overview on the most recent findings in a particular research domain, while in some cases the magnum opus of the author's work with the highest impact. An effective scientific literature review can significantly reshape research impact and sometimes influence clinical decisions. An impactful review article may significantly enhance the visibility and excellence of the researcher's work, and has the power to serve as a lighthouse during a stormy sea of information that is waiting for an experienced guide to arrange research data into the right place for a higher goal.

Keywords: literature review, narrative review, systematic review, meta-analysis, umbrella review

Introduction

Literature review articles represent the crown of the summary, systematization, and critical overview of the state-of-the-art techniques, approaches, evidence, and findings of a specific research field. An effective scientific literature review article has the strength to shape the perspectives, challenges, and directions in the research topic. The number of published review articles in the field of medical sciences has dramatically increased over the past ten years and has rapidly grown in parallel with knowledge in biology and medicine (1, 2).

Review article types

Pre-writing process of a good-to-great-quality review starts with targeting an issue through defining a **scientific (research) question**. The issue an author wants to elucidate and resolve through the review should be coherent with the current problems of the research field, which should take a central place in the manuscript. In practice, it starts with an idea, inspiration, creativity, and eagerness of the author (usually an expert in the field) to share, acquire, systematize, reshape knowledge, and spice it up with potential solutions or directions on how to overcome the problems. The story behind the brilliant idea should be elaborated at the beginning, and ways to overcome a scientific problem should be mentioned throughout the article. The next step usually begins with the choice of the most suitable **review type**. According to readers'/researchers' information requirements, several types of reviews have evolved. In general, the three review article types are the most frequent in the research community: **traditional** or **narrative**

review, systematic review, and meta-analysis (3).

Narrative review is a type of article where knowledge in the field is harmonized into a coherent unit. A traditional review article should be well-framed and shaped in a meaningful story based on up-to-date article information integration. Hierarchically based on evidence importance and impact, it is beneath systematic review and meta-analysis. However, this does not mean that it is less worthy and important (4). It may be a good basis for the researchers to systematize their previous findings and compare with recent findings in the field, and to gain new knowledge for planning future research directions. There are some variations on a review article theme, such as **critical review**, **integrative review**, and many others (4).

The core of the **systematic review** is evidence synthesis. Evidence synthesis is a scientific approach that systematically combines findings from previous studies selected according to strict criteria. The major goal of the systematic review is to draw broader, panoramic conclusions based on carefully summarized data. The key element is defining precise exclusion and inclusion criteria for the selection of the studies to avoid bias and misinterpretations (5).

Meta-analysis is an approach that statistically analyzes and combines results from more than one study. It is usually used to estimate the precision and effectiveness of the study results, especially when a small sample size is analyzed in an individual study. It is usually interpreted and visualized by a forest plot diagram containing parameters, such as the weight of each included study and its confidence interval (6).

Umbrella review is frequently described as a review of other reviews. It is usually written in the form of an overview and synthesis of meta-analyses, systematic reviews, and clinical trials, and based on this, it has the highest ranking not only in the “review field”, but also in the medical field, serving as the summary of the most relevant and the latest evidence that may be used in clinical practice for decision-making (7). A review article should be distinguished from “position statement” (which is more in the form of a guideline), though both use similar approaches in the writing process.

Key steps in writing an effective literature review article

When the topic is clarified and the major research question is defined, the literature should be carefully surveyed and selected. The literature selection process starts with bibliographic database mining. Setting appropriate **keywords** and properly using **Medical Subject Headings (MeSH)** is crucial. Choosing inadequate keywords can significantly prolong survey time and deviate from the topic. The most popular electronic **bibliographic databases** are Medical Literature Analysis and Retrieval System Online (MEDLINE), Scopus, Excerpta Medica database (EMBASE), Cochrane Library, Cochrane Register of Trials, Web of Science, etc. (8). PubMed, on the other hand, is a great search engine with links to published articles, while PubMedCentral (PMC) is a database of deposited articles (9). It is always a better choice to explore and cross through more than one database when writing a systematic review or meta-analysis. Selection of the literature is based on the authors’ experience and preferences. Some criteria may involve publication date range (for example, last ten or five years); type of article (for example, to filter only systematic reviews and/or meta-analysis; clinical studies, etc.); type of journal (with specific limited scope, or multidisciplinary); impact of the journal (which is not so relevant criteria, because some great quality articles may be published in lower impact journal and vice versa). The **title** of the review is the first thing that affects and attracts the reader. For the first draft of the title, keywords may be used. Later, when the manuscript gains its shape and matures, the title can be upgraded into an informative, trendy title, clearly reflecting the topic, focus, issues, and novelty.

The next step should be setting the **structure** of the review. Authors should determine how to describe and summarize what has been found, and then start reading and collecting literature. After the critical assessment of the literature, the most relevant studies should be singled out and described in the text and/or in the tables. Tables should contain parameters relevant to the topic, and studies should be sorted and described accordingly.

Inclusion and exclusion criteria must also be considered (10). After the literature survey, a large number of studies will not meet the criteria for inclusion and will not be acceptable according to the thematically-based parameters previously defined by the authors. If exclusion criteria are set properly, it will significantly speed up the process of omitting ineligible references.

The choice of **methodology** for review writing is also important. It is always a good option to follow the guidelines and flow diagrams when writing a systematic review or a meta-analysis. An example of a great guideline for how to write a systematic review or meta-analysis is the “Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA)” which has different flow diagram templates for various review types (11). Some research and academic

institutions have paved the path towards easier article review writing by providing a list of frameworks, guidelines, and links to resources with valuable information on how to prepare a systematic review or meta-analysis, followed by a brief description of each article type. In this way, academic and scientific institutions encourage their employees and members of the broader scientific community to write review articles, thereby increasing and improving their writing and scientific/research skills and the impact of their research activities.

Crucial steps for review writing and the most frequently used article types are shown in **Figure 1**.

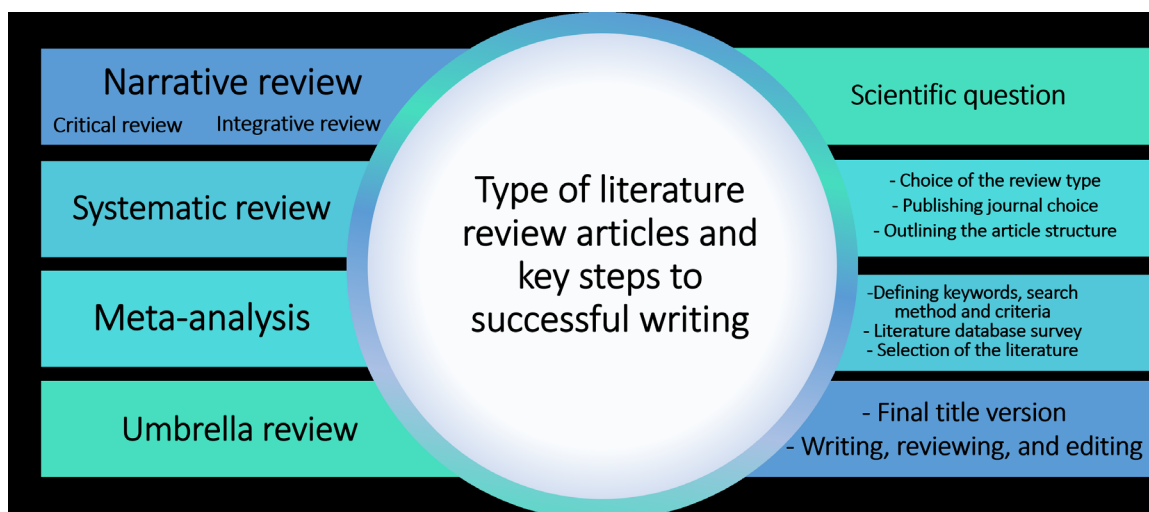


Figure 1. Crucial steps and directions towards successful review article writing.

The final part of a good review usually describes perspectives and challenges, and proposes ways to overcome the issue in the scientific field-potential answers to the question from the beginning of the manuscript.

Even the most brilliant scientific thought and idea needs to be put into a frame to be published and easily read. The recommendation is to target a journal of an adequate scope, even at the beginning, and then to follow the instructions during manuscript writing, which significantly speeds up the process of manuscript submission and adjustments in word count requirements.

The entire manuscript should fluently follow the narrative. A good quality and effective review should not be repetitive, neither inside the manuscript (repetition segments that are paraphrased from the previous thought/s) nor outside to represent the redescription of previous articles. If review article writing aims solely to increase researchers' personal citation index, then it may lead to the overproduction of low-quality review articles.

Perspectives and challenges in “reviewing” (review writing and review reviewing)

The enhanced need for larger data processing and publishing in science and research has developed the need for artificial intelligence (AI) based software to assist the entire process. The use of AI-based tools for writing requires good knowledge about all aspects of scientific writing and publishing. AI-based software, besides the writing, may help with title shaping, structure of the manuscript, language assistance, paraphrasing, etc. The most important thing when using these tools is to avoid plagiarism and to leave a personal intellectual mark by the author. Also, if authors decide to use AI-based tools, the journal's requirements and statements should be strictly followed and unequivocally addressed. The greatest challenge in scientific writing and publishing with the assistance of AI may be to estimate the contribution of the author.

On the other hand, besides the role in manuscript creation, the use of ChatGPT (OpenAI, San Francisco, California) was discussed and observed in the process of article reviewing by Biswas et al. (12). The authors emphasized that use of ChatGPT may significantly speed up the review process and publication time; avoid bias among report of different reviewers; give linguistic support, and a brief guide on how to improve manuscript (12). The authors also suggest that human involvement in the review process should not be underestimated because AI-based tools rely exclusively on available data, which may be unrepresentative, or low-scientific-quality, and biased if trained on similar content. Scientists can easily observe these issues and critically analyze the particular situation. The discussion between reviewers and involvement of a person in the reviewing process is crucial because that is how new ideas emerge and how the manuscript quality is significantly improved (12).

Conclusion

An effective and good-quality article should contain an attractive topic, clearly targeted issues in the field, critically analyzed previous research, and a well-organized structure. A good review article should be written in an appropriate scientific manner to attract readers to read further. Effective review articles significantly increase the visibility of the researcher's work and impact on the scientific and broader public. The number of published review articles per researcher tends to increase with time spent in science, and it is always better to balance them with original research performed or published, which is based on experimental work. If balanced with and based on previous researchers' work, then the strength of the review is higher, as well as the researchers' relevance and competence in the field, and the quality of the review is usually higher. The extensive literature survey results in knowledge expansion and new ideas for future scientific work of junior and senior scientists, as well.

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Contribution

Conceptualization, manuscript and figure design, article writing, editing, and review-Nina Petrović.

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