

Principles of Writing Review Articles

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Abstract

Background: Review studies (Literature review) are instructive scholarly papers with low cost of preparation and acceptable novelty and they are considered interesting material for scientific journals. These articles summarize previously published studies and provide a critical and useful analysis of the current literature in a particular topic through summarizing, classification, and comparison of related research papers.

Methods: Data from international databases including PubMed, Scopus, Google Scholar and Web of science were collected and evaluated.

Results and conclusion: In this paper, a brief glance and instruction about the organizational pattern of the text and appropriate writing methods in narrative review articles were provided for enthusiastic students who want to take steps in this field.

Keywords: Bibliometrics, Humans, PubMed, Publications, Research Design, Students, Writing

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Introduction

A review article is an investigation that evaluates original studies in a specific area and classifies, reviews, and criticizes them and concludes the results by synthesizing their key findings (1). The review articles are useful for researchers in various scientific fields such as students and novice researchers, decision makers like managers, policymakers, doctors, etc (2). The related literature in a specific field cannot be fully covered due to great volume of science production and experimental research in the specified field. Therefore, summarizing reliable evidence for the use of health care providers will save a lot of time (3). Statistical evaluation of the results of similar studies and the expression of a definite result will also make a significant contribution to the preparation of the guidelines. Also, they help the young researchers to know the scope and important achievements of previous studies (1,4). Overviews provide the chance to have access to the conclusions and opinions of prominent scientists in a specific field of study by reviewing prior investigations which assists the researchers to evaluate and conclude their own studies and experiences, and ultimately introduce weaknesses and strengths, and offer recommendations for further research. Being up to date is an important feature of overviews and they are often updated over short periods (4). It should be noted that these articles are secondary sources, and do not report new or original experimental work.

In the current short paper, an attempt was made to improve the quality of these articles by addressing the principles of writing and the common problems of this field and presenting a suitable model in this regard for enthusiastic students who want to take steps in this field.

Materials and Methods

In this paper, the international databases of PubMed, Scopus, Google Scholar and Web of Science were searched with the keywords of "Scientific writing", "Review article", "Narrative review" and "Literature review" without time limit.

Result and Discussion

What's the difference between narrative and systematic reviews?

Narrative reviews are generally traditional literature

review in comprehensive and detailed topics (The topics that cannot be systematically reviewed) (5). Summarizing original studies of a special field is a researcher's choice, and the results are mainly expressed in qualitative terms. So the author's opinion is very important and the author must be an expert (6). In contrast, a systematic review is a structured review focusing on a specific problem by analyzing all the evidence and resources. In this research, all sources, indexes and languages should be searched (7,8). So the systematic review of general topics is very difficult. The criterion for including or excluding the sources depends on critical evaluation of evidence and the data provided by them (9,10). Hence, a systematic review applies precise and sensitive methods. The generated data, especially from the meta-analysis of a systematic review, could be used to solve clinical problems. Meta-analysis is the statistical procedure for combining data from related and the same studies (Figure 1).

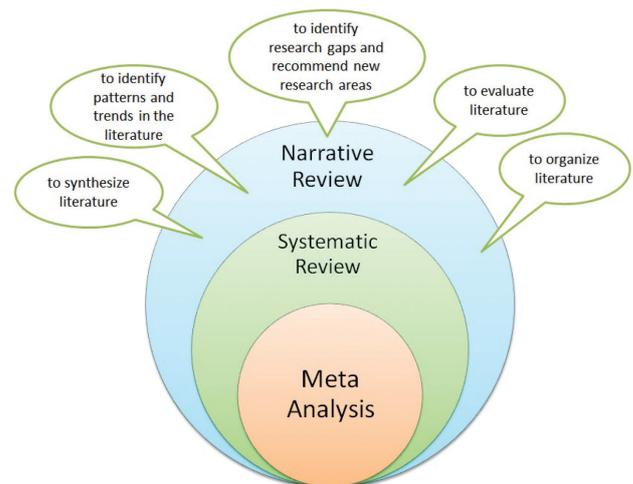


Figure 1. A variety of review articles in quantitative analysis and the function of a review article (9,10).

Contrary to the above, in narrative review, it is more feasible to evaluate more general topics. Also as noted, in a narrative review, mainly comprehensive and detailed topics and the topics which cannot be systematically reviewed, are evaluated and the inclusion of original studies in a field are of a researcher's own choice; also, the results are expressed qualitatively (8). Table 1 compares the characteristics of articles in a systematic and narrative review. Table 2 provides an example of a topic that can be systematically reviewed or evaluated generally as a traditional literature review.

Table 1. A comparison between the characteristics of a narrative and systematic review (3)

Feature	Narrative review article	Systematic review study
Research question	Wide	Concentrated
References	Not generally specified	Extensive
Selection	Not generally specified	Citation based on the author's opinion
Appraisal	Variable	Rigorous assessment
Combination	Mostly qualitative	Mostly quantitative
Conclusion and inference	Every so often evidence-based	Commonly evidence-based

Table 2. The subject selection based on narrative review and systematic review (3)

Titles			
Narrative Review	The cytoprotective effects of vitamin E on cardiac toxicity of Doxorubicin	The cytoprotective effects of vitamin E on cardiac toxicity	The cytoprotective effects of vitamin E
Systematic review	The cytoprotective effects of vitamin E on cardiac toxicity of Doxorubicin	The cytoprotective effects of vitamin E on cardiac toxicity	The cytoprotective effects of vitamin E

Principles of writing a review articles

The principles of writing and the parts of the article are very similar to the original research article, which will be mentioned below. Narrative reviews may range between 8,000 and 40,000 words (11).

Title

The title should be attractive, illustrative, and rational with no additional and unnecessary words and abbreviations (12). It should be the briefest and the most informative part of the manuscript and may include the message of the article. It should also be attractive enough to encourage the interested person to read the whole article (13,14). Figure 2 shows an example of how to select a suitable and concise title for an article.

Authors' names

According to the recommendation of the International Committee Of Medical Journal Editors (ICMJE), it is only permitted to mention the names of those who contribute to the preparation and compilation of the article as follows:

- Significant contributions to collecting or analyzing or interpreting data,
- Writing the first version of the article or modifying it impressively
- Verifying the final version of the article after reading
- Understanding the role of other researchers in the study (15).

An author must have all the four characteristics. The presence of one or more items of these four criteria is

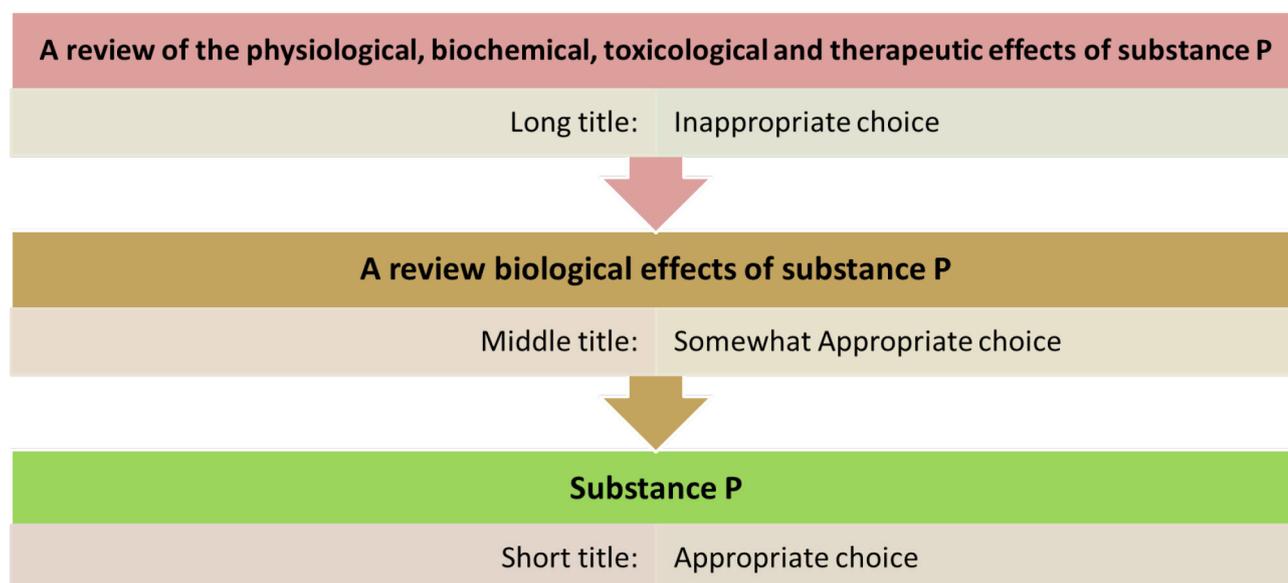


Figure 2. An example of how to choose an appropriate title for a review (12,14).

not sufficient for a person to include her or his name in the article. In such cases, specific contributions of the individual can be appreciated in the acknowledgment part of the manuscript (15).

Abstract

An appropriate abstract informs about the main objectives and result of the review article or indicates the text structure (12). There are two ways to submit an abstract:

- A) Describing the whole subject of the study: In this case, there is no need to split introduction, material and methods, result, discussion, and conclusion parts.
- B) Constructive abstract: All parts mentioned above should be summarized and cited.

According to the journal’s instructions, items A or B can be selected. Moreover, the abstract should not exceed the number of characters allowed (According to the journal guidelines for authors). Generally, best abstracts are both simple (Understandable) and pleasant (Appealing to the reader) (11,16).

Keywords

The best way to select keywords is to use the Medical Subject Headings (MeSH). This controlled thesaurus indicates a collection of controlled vocabularies that are produced by the national library of medicine and indexed, cataloged, and searched for texts and information related to the field of health (17). In Figure 3, an example is given for obtaining the keywords related to “Resveratrol”.

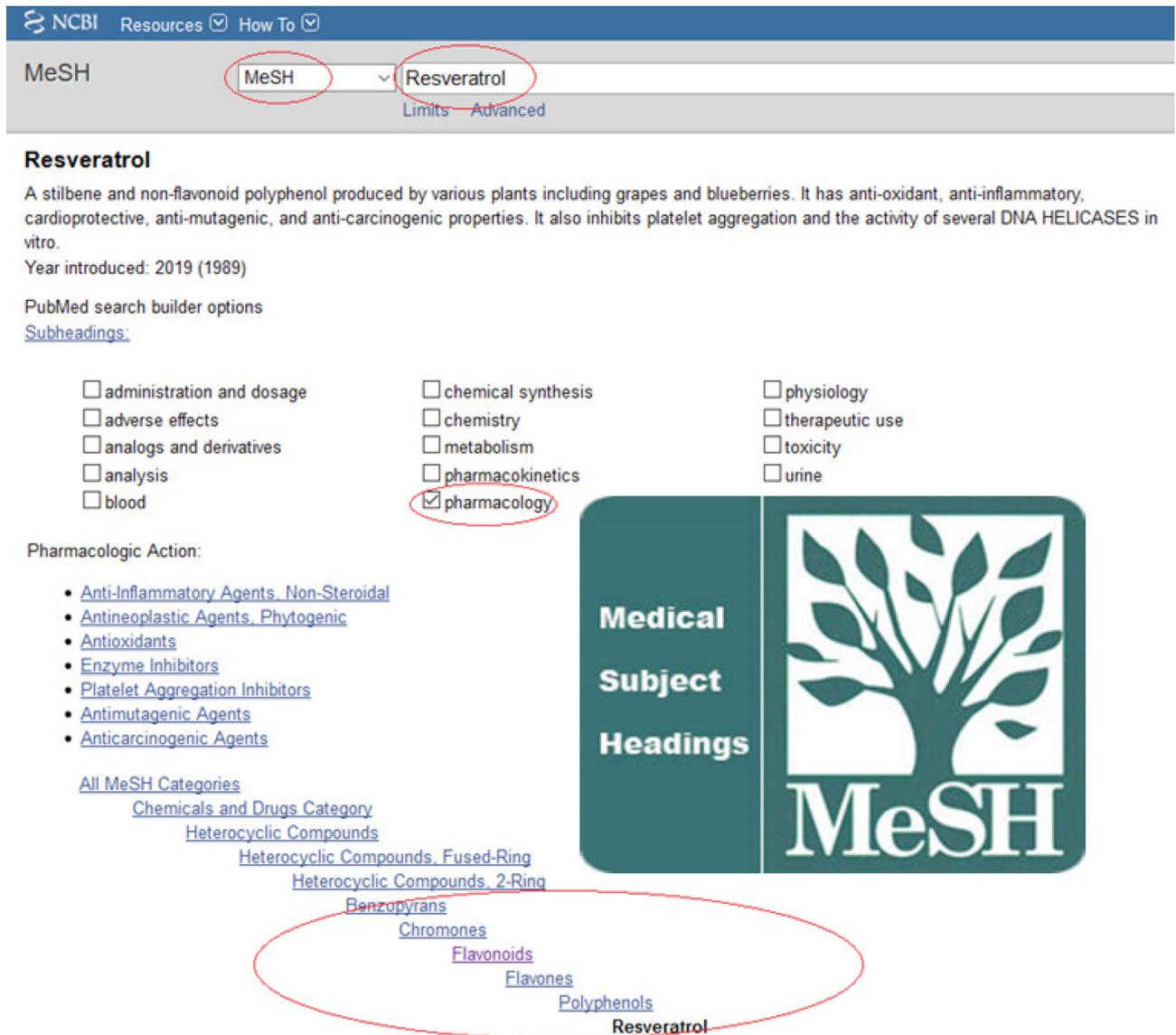


Figure 3. An example of how to obtain keywords from the MeSH (17).

Introduction

Generally, the introduction gives information about the context, demonstrates the motivation for the review, defines the key points and the research question and describes the text structure (11). To write this section, at least three paragraphs are needed: knowledge (Subject background), ignorance (Problem) and the main purpose (Motivation/justification) of the research. Furthermore, the concept and hypothesis should be expressed in the best possible way (11,18). It is better not to give all the knowledge since sufficient material is also needed for other sections. By reading this section, the reader should be encouraged to follow the rest of the article (14).

Methods of the work (Materials and methods)

All searched databases should be listed like PubMed, ISI, Scopus, Google Scholar, etc (4). The keywords and how they are chosen, search timeframe, the criteria and method for choosing favorable articles, the languages and how to use the checklist to compile the content should be mentioned clearly (19). If only the abstract of the article has been reviewed, it should be noted. Like the other types of articles, the methods should be expressed in such a way that if someone else decides to replicate the study, similar results would be obtained (20).

Results

Authors should summarize and evaluate all data obtained from the selected articles. There are two common sorting methods:

- Sort by a historical process
- Subject classification (4)

The selected method should help the reader to realize and understand the main point of scientific achievements. The author must compare and critique the content of the prior articles and as a skillful scientist add major points of view (12,19). Furthermore, each paragraph should cover one idea, aspect or topic and it's important to include several studies in each paragraph rather than citing one study in a single paragraph (11). Figure 4 shows a summary of the main stages of writing a review article.

Conclusion

In this section, the reader should be able to summarize

the main idea obtained from all the papers that have been studied and the research question is answered (13,19). In the review articles, there are four possible ways to conclude:

- Support of primary hypothesis,
- Failure to prove the primary hypothesis but reporting evidence in favor of verification.
- Failure to announce results due to disagreement.
- Rejecting the primary hypothesis (11).

The author must honestly choose one of these four items.

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In this section, the authors should thank everyone or funding agencies that helped in preparing the article. Figure 5 shows the persons whose names should be included in acknowledgment.

References

Generally, in the narrative review article, the number



Figure 4. A summary of the steps to write a review article (11,21).

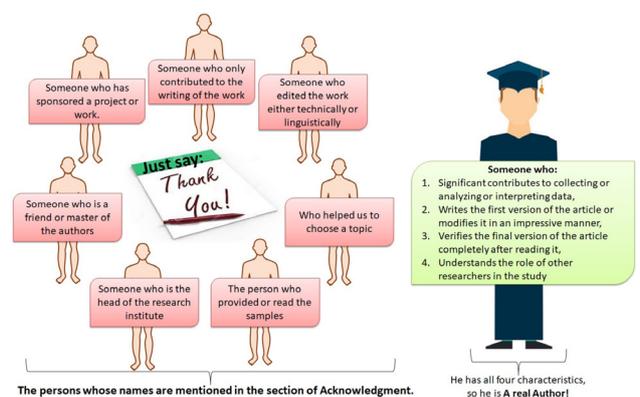


Figure 5. The characteristics of persons whose names are mentioned as authors versus persons who are only appreciated (11,15).

of references depends on the value of the research. But this is not always a common principle (11). The references must be selected from the previous original researches of manuscript corresponding author. The referencing method should be in accordance with the format of the journal to which the manuscript should be submitted (16,22).

How to choose a suitable journal for publication?

The goals and scope of the journal's activity should be investigated and the answer to the following questions would help to choose the suitable journal:

- Are articles published in this journal similar to your article?
- What are the limitations of this journal?
- What is the impact factor (IF) and the journal indexes (23)?

The journals should not be in the blacklist (23). Also, the average time of review and publication and the interest of readers of journal are important factors. Document copy detection is also a very critical tool for publishing a review article. So, the authors should use online and offline software based on plagiarism pattern checking (24).

How an inexperienced researcher can write a narrative review article?

A specialist who is the author of numerous original researches in the field of research can be the corresponding author of the review article in that area. Many journals want at least 5 related research references from the corresponding author. In this case, the author can collaborate with well-known scholars and professional scientists in the relevant field (8,19) (Figure 6).

Conclusion

Currently, narrative review articles play an important role in scientific societies. Objectives, methods of writing, and the limitations of its methodology are different from original articles, and according to these differences, the authors of these papers should pay particular attention to specific writing principles.

Ethical consideration

This study was conducted with the support of the Student Research Committee at Baqiyatallah University of Medical Sciences (BMSU) and was approved by the ethics committee and supported by research deputy of BMSU.



Figure 6. The path that a novice researcher must go through in order to write a narrative review article in a particular area (24).

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