Int J Cardiovasc Sci. 2023; 36:e20230115

EDITORIAL

Publication of a Scientific Article: What Authors Need to Know

Marcella dos Santos Lopes da Silva,[1,2] Cláudio Tinoco Mesquita[1,2,3]

Universidade Federal Fluminense,[1] Niterói, Rio de Janeiro, RJ – Brazil
Laboratório de Fabricação Digital, Health Science & Education Lab, Departamento de Radiologia, Universidade Federal Fluminense,[2] Niterói, Rio de Janeiro, RJ – Brazil
Hospital Universitário Antônio Pedro, EBSERH-UFF,[3] Niterói, Rio de Janeiro, RJ – Brazil

Science is a tireless systematic pursuit of knowledge, where researchers, using established methods, invest their time and dedication to contribute to a better world.[1] Scientific communication is a precious way to disseminate the knowledge acquired by researchers to others interested in the subject and must be done in a clear, concise manner that conveys the authors' intentions to the article's readers. One of the most important ways to share the results of the quest for knowledge is through the publication of articles, which are scientific documents that describe research through the discussion of ideas, innovative methodologies, techniques, processes, and results in various areas of knowledge.[2]

Data from the Bori Agency indicate that Brazil, although it continues to hold fourteenth position in the ranking of the highest number of scientific article publications, experienced a decrease of 7.4% in article publications in 2022 compared to 2021.[3] One of the main reasons for this reduction is the impact of the COVID-19 pandemic; however, Brazil was the country that experienced the most significant decline in article publications. Thus, it is crucial to understand the processes involved in the preparation and submission of articles and to contribute to higher acceptance rates.

The publication of scientific articles is one of the most important ways to subject the knowledge produced to peer review, an essential process for the production of accurate knowledge; it is also crucial for the community of interest regarding certain themes and objects of investigation.[4] Nowadays, the main means of disseminating these articles are journals. Therefore, it is by means of journals that the information the author presents is transformed into scientific knowledge, which is in the public domain. If the article is adequately disseminated, it can be read, cited, and used by healthcare professionals in their daily activities.[5]

The process of article publication can be considered complex. Therefore, the purpose of this editorial is to address, in a practical manner, the main characteristics that lead a scientific article to be approved or rejected by a journal, thus serving as a guide for authors seeking to transform the results of their research into publications.[6]

The large volume of submissions to high-impact journals also reinforces the emphasis on effective communication of scientific work.[6] The thorough evaluations by editors and reviewers require authors to pay greater attention not only to the content of their texts but also to how they are written.[7] Therefore, it is not enough to simply publish; instead, authors must follow a series of steps to ensure that their text is evaluated and interpreted in the most appropriate manner.

Commonly, standout articles are those that have social and scientific relevance, innovative potential, originality, well-organized information, and up-to-date references.[8] However, several authors, whose articles meet these highlighted criteria, sometimes have their work approved with reservations or rejected due to common errors that could have been prevented.[9] The article submission process is a moment of excitement, but it requires calmness and attention to minimize errors. After the stage of meeting the criteria of the selected journal, an article proceeds to evaluation. The role of the editor-in-chief and associate editors of a journal is to select articles for publication through the peer review system, where

Keywords

Scientific Communication and Diffusion; Authorship in Scientific Publications; Science.

Mailing Address: Cláudio Tinoco Mesquita
Hospital Universitário Antonio Pedro, Serviço de Radiologia, Setor de Medicina Nuclear. Av. Marques do Paraná, 303, segundo andar, Centro, Niterói, Rio de Janeiro – Brazil
E-mail: claudiotinocomesquita@id.uff.br

DOI: https://doi.org/10.36660/ijcs.20230115

experts in the field are asked to assess the scientific merit of an article submitted to the journal.[8]

It is in this review process that errors are found, errors that can determine whether an article gets approved or not. Not giving up on seeking the necessary adjustments during the peer review process is crucial for the success of scientific publication. There are reports of articles that were initially rejected but later led the authors to international awards. Understanding how to improve the article with the reviewers' suggestions is an important part of the publication process. In Table 1, we list some points that lead to article rejection and should be areas of attention before submission.

However, after understanding the errors that lead to article rejection, it is necessary to grasp the proper methodology for writing and publishing a high-quality article.

What are the first steps to write a scientific article?

It is always important to remember who the authors of a scientific article should be, namely, the people who: (1) helped to conceive or design the work; or obtained, analyzed, or interpreted research data; and (2) participated in writing the manuscript or critically reviewed it for important intellectual content; and (3) gave final approval of the version of the text to be published; and (4) agreed to ensure that questions regarding the accuracy or completeness of any part of the work are properly investigated and resolved.[10]

A scientific article is structured to allow other researchers to understand the context, objectives, methods used, results obtained, and conclusions of the study (Figure 1).

The typical structure of a scientific article includes a title with a concise and informative summary of the article's content. In this regard, before starting the writing process, it is important to conduct a thorough literature review to identify gaps in existing knowledge and contribute significantly to the chosen field of study. Additionally, it is crucial to clearly define the objectives and research questions of the article, as this will guide the entire writing process. The article's abstract should provide a brief overview of the study, highlighting the objectives, methods, and main results. The introduction should present the context and relevance of the study, discuss the existing literature, and establish the research objectives.[11]

Table 1 – Common errors that lead to article rejection

Wrong choice of journal and incorrect format	Article not aligned with the journal's interests or does not match the content typically published by the journal. For example, submitting an opinion article to a research journal.
Not following the journal's guidelines	Ignoring the journal's requirements and submitting the document without corrections. However, a thorough reading of the guidelines prevents this error.
Inadequate writing	A subjective text hinders the reader's ability to understand what is being presented. Expressing the subject matter in a simple, direct, clear, and concise manner is essential to avoid redundancy.
Incorrect way of presenting the results	Interpretative comments, missing/incomplete data, and values without thorough analysis are the main mistakes. Excluding these enhances the value of your text.
Insufficient description of the methodology	The methodology is crucial for understanding the whole study. Therefore, it should be well-detailed and properly related to the type of study addressed, significant sample size, statistical analysis, etc.
Duplication or significant overlap	Sometimes journals may temporarily reject a work due to a high volume of submissions on a particular topic.
Old results	Old research in which the results have already been published.
Low research quality	Articles with low methodological rigor, subjective content, and weak discussion.
Lack of key elements	In general, those that characterize quality research: convincing hypotheses, appropriate and well-described methodology, well-presented results, and in-depth discussion with relevant conclusions.
Suspected or confirmed plagiarism	There is no room for doubt. Therefore, it is necessary to write a text with originality.

Source: Adapted from Sullivan, 1999.[9]

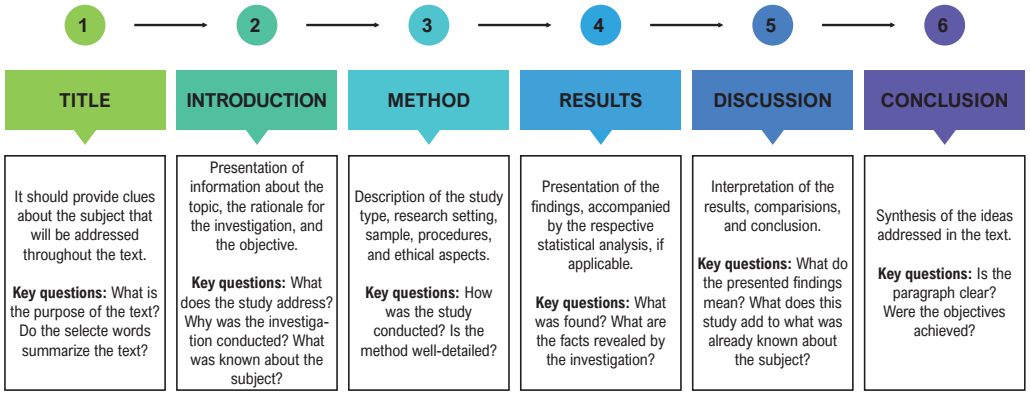

Figure 1 – What to do at each stage of the scientific article?
Source: Adapted from Pereira, 2011.[12]

Another relevant point is the methodology employed. Authors should describe in detail the methods, materials, and procedures used to collect data and conduct statistical analyses. Transparency and clarity are essential at this stage to ensure the robustness and reliability of the study. As for the results, it is important to present them objectively and concisely, often using graphs, tables, or other visual representations. Moreover, it is necessary to interpret the results in the discussion section, relating them to the proposed objectives and discussing their implications for the field of study.[11]

The discussion should analyze and interpret the results, relating them to the study's objectives and the existing literature. It also discusses limitations and potential directions for future research. The conclusion summarizes the main findings of the study and their implications, highlighting their relevance to the field of study. Finally, the references should list the bibliographic sources cited throughout the article, allowing readers to consult them for further information.[11]

In short, demystifying the process of crafting and submitting a scientific article is essential to encourage and empower authors to share their findings and contribute to the advancement of science. Understanding the structure, the relevance of the topic, the methodology, scientific writing, and peer review are key elements for producing a high-quality article. By mastering these aspects, authors will be better prepared to engage in global scientific discourse and contribute to the expansion of human knowledge.

References

1. Gopen GD, Swan JA. The Science of Scientific Writing. Am Sci. 1990;78(6):550-8.
2. Fontelles MJ, Simões MG, Farias SH, Fontelles RGS. Metodologia da Pesquisa Científica: Diretrizes para a Elaboração de um Protocolo de Pesquisa. Rev Param Med. 2009;23(3):1-8.
3. Agência Bori. 2022: Um Ano de Queda na Produção Científica para 23 Países, Inclusive o Brasil [Internet]. São Paulo: Agência Bori; 2023 [cited 2023 Jul 31]. Available from: https://abori.com.br/relatorios/2022-um-ano-de-queda-na-producao-cientifica-para-23-paises-inclusive-o-brasil/.
4. Hofmann AH. Scientific Writing and Communication: Papers, Proposals, and Resentations. Oxford: Oxford University Press; 2013.
5. Pereira MG. Estrutura do Artigo Científico. Epidemiol Serv Saúde. 2012;21(2):351-2. doi: 10.5123/S1679-49742012000200018.
6. Barata RB. Desafios da Editoração de Revistas Científicas Brasileiras da Área da Saúde. Ciênc Saúde Coletiva. 2019;24(3):929-39. doi: 10.1590/1413-81232018243.29952016.
7. Garcia DCF, Gattaz CC, Gattaz NC. A Relevância do Título, do Resumo e de Palavras-Chave para a Escrita de Artigos Científicos. Rev Adm Contemp. 2019;23(3):1-9. doi: 10.1590/1982-7849rac2019190178.
8. Rochitte CE, Mesquita CT. Quais as Características de uma Excelente Revisão de Artigos Científicos? Arq Bras Cardiol. 2018;110(2):106-8. doi: 10.5935/abc.20180032.
9. Sullivan EJ. Yes, Virginia, There is a Right Way to Write. J Prof Nurs. 1999;15(1):1-2.
10. Day RA, Gastel B. How to Write and Publish a Scientific Paper. Phoenix: Oryx Press; 2012.
11. Mesquita CT. Integridade na Pesquisa Científica. Int J Cardiovasc Sci. 2017;30(1):1-3. doi: 10.5935/2359-4802.20170026.
12. Pereira MG. Artigos Científicos: Como Redigir, Publicar e Avaliar. Rio de Janeiro: Guanabara Koogan; 2011.