

Navigating the Path to Publication: A Guide for the Novice Researcher

Mason A. Fawcett, B.A.¹, Micah K. Sinclair, M.D.²

¹University of Kansas School of Medicine, Kansas City, KS

²University of California-Davis, Sacramento, CA

Department of Orthopaedic Surgery

Received July 24, 2023; Accepted for publication Aug. 29, 2023; Published online Sept. 25, 2023
<https://doi.org/10.17161/kjm.voll6.21169>

INTRODUCTION

Case reports are some of the most fundamental forms of medical research. Their importance is often under-estimated, and they can be very useful ways to communicate new knowledge. Writing and publishing a case report is an excellent way for new researchers to practice presenting patient information and gain experience in the publication process. They also serve as a conduit for seasoned clinicians to convey their knowledge and experience with unique diagnoses, those which may not be found in text or cohort studies, for others to build on in their treatment strategy. This article serves to provide general information on the logistics of publishing case reports in a medical journal and may be applicable to other types of scientific literature.

Significance of Case Reports. Case reports are regarded as some of the oldest ways to communicate medical information, with the earliest forms of case reports dating back to the 17th century.¹ While case reports include limited scientifically significant evidence in the hierarchy of medical research, their importance is undeniable. Case reports are excellent ways to investigate new or unique presentations of a disease or treatment processes and have historically been responsible for many significant medical discoveries, such as the identification of Thalomid as a cause of congenital abnormalities in the 1960s.² Case reports also can be an excellent way for the novice medical researcher to develop familiarity with the process of publishing. Most researchers are eager for research and publication opportunities early in their career and case reports can facilitate this process.³ Additionally, for seasoned clinicians, there are a variety of situations that benefit from publication in the form of a case report as seen in Table 1.

Table 1. Situations that warrant a case report.

Novel or unusual presentation of a disease
Variations in a disease process
Unexpected event during treatment
Unique treatment approach
Adverse effects or interactions of medications

First and foremost, a literature search must be performed to ensure that the novel information has not been previously published. This often occurs during the diagnosis and treatment of the patient's condition and the decision to write a case report is a result of this process.

JOURNAL IDENTIFICATION

Once the decision has been made to pursue publication of a case report, one must identify a target journal within which the scientific information will be found relevant. The requirements or definition of what may be considered a "case report" will vary amongst journals and this should be identified prior to embarking upon the writing process

to ensure that the writing style and information conveyed meets the requirements of the journal. In a review of 249 medical journals, 65% accept case reports.⁴ While more influential journals may not accept a case report, authors should be able to identify a journal within a relevant discipline such that their information will be applicable. In fact, some journals exist that solely publish case reports such as the *Journal of Medical Case Reports*. Some of the preeminent specialty or subspecialty, peer-reviewed journals have begun to create sub-journals or online versions to serve this purpose.

Considerations in Journal Selection. Once a list of journal options for publication have been identified, there are several additional considerations that should be used to guide selection and subsequently the writing and publication process.

Access to Journal Articles. In general, there are three main types of journals to consider from both a reader-accessibility and authorship standpoint as seen in Table 2. One should pay attention to the peer-review process for publishing, as this is suggested to lend validity to the publication. Additionally, the cost associated with publication may differ between journals.

Table 2. Types of journals.

Journal Type	Who can Access	Who can Publish
Subscription	Only subscribers	Only subscribers
Open Access	Anyone	Anyone
Hybrid	Subscribers	Anyone

Comparative Metrics of Journal Significance.

Impact Factor. Assessing the quality of a journal is not as straightforward as it may appear initially, and should include serious consideration. For many authors, the most important method for determining journal quality has been impact factor. Before the implications of the impact factor are discussed, it is essential to understand how this metric is calculated.

a. $\text{Impact Factor} = X/Y$

- Where X = the total number of citations the journal received over the past two years
- And Y = the total number of citable articles in the journal over the past two years

Having a higher impact factor indicates that a journal has relatively more citations per article in comparison to another journal. Medical journals with the highest impact factors include the *New England Journal of Medicine* at 74.7 and *The Lancet* at 59.1. For perspective, less than 2% of all scientific journals have an impact factor above 10.5. One benefit of using impact factor to evaluate a journal is that it is a very simple metric that is widely used. Additionally, the impact factor includes data from the previous two years, which provides a longitudinal view of the activity of a journal. Criticisms of the impact factor are that it cannot be reliably used to compare journals across disciplines. Furthermore, journals may be selective to accepting articles that are

more likely to be cited than others to boost their impact factor. Finally, the impact factor can be artificially inflated by the presence of only a few highly impactful articles that do not actually reflect on the overall impact of the journal itself. Impact factor has been a highly debated metric, but it still retains value.

Other Metrics. Fortunately, there exist several alternatives to the impact factor that can be useful when judging a journal. Journal Citation Reports is a powerful tool that allows for comparison of journals based on a few different metrics and filtering options.⁶ One metric, known as the Eigenfactor Score, is similar to the impact factor but instead includes data from the past five years rather than two, and cannot include any self-citations which are allowed in the impact factor calculation.⁷ Another measure, the Source Normalized Impact per Paper (SNIP), can adjust the citation impact of a journal by comparing it to the average number of citations that journals in similar fields receive.⁸ This can give a more accurate representation of journals within a discipline. A recent metric that has been gaining in popularity is the Scimago Journal and Country Rank.⁹ It considers the quantity of citations that a journal receives as well as the quality of the sources that cite the journal. Scimago Journal and Country Rank has a useful website that ranks journals according to their own metrics, but also includes other data on journals as well.⁹ CiteScore is another tool powered by the publisher Elsevier that ranks journals according to their own custom metrics.¹⁰ Google Scholar has developed its own metric for journal evaluation as well.¹¹ An astute author or reader should always be aware of the advantages and limitations of these metrics and should utilize several different resources when selecting a journal for publication. These metrics are shown in Figure 1.

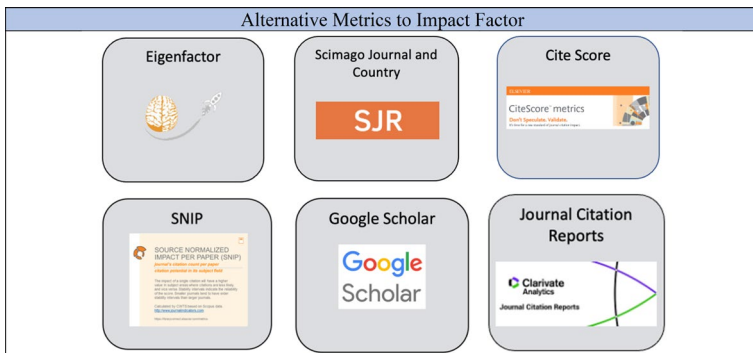


Figure 1. Alternative metrics to impact factor.

Indexing to an External Database. One of the most important factors of a journal is how the articles will be indexed, which drives how they are accessed and read by the public. This is an aspect of publishing that can be overlooked, and it is not always made obvious by the journal. The most impactful medical journals will be indexed in several different databases. This means that individuals with access to databases such as PubMed, SCOPUS, MedLine, EMBASE and others could all theoretically access the abstract and/or complete article written in any journal that is indexed to those databases. Without being indexed to an external database, an article is only visible when searched to subscribers of the

journal. This concept is visualized in Figure 2.

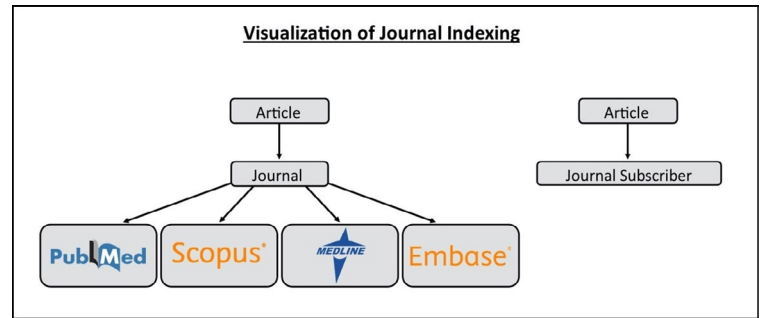


Figure 2. Visualization of Journal Indexing. The pathway on the left represents an indexed journal. In indexed journals, articles are available in the indexed database. The pathway on the right represents journals that are not indexed. In these journals, articles can only be accessed by subscribers.

Publication of an open access article most often requires payment by the author, and journals charge fees that correspond to the level of accessibility that a publication will have. The two most common open access levels are gold and green.

Gold. Immediately after publication, the article will be available to anyone, and the copyright is maintained by the author. This option is often found in open-access or hybrid journals and is the most expensive access option.

Green. The journal itself will maintain the copyright to the article and will subject it to an “embargo” period before making the article accessible to the public and is the cheaper access option.

Once an article is published, it will be subjected to creative commons licensing that varies based on the journal that the article is published in. Many journals utilize the Creative Commons Attribution licensing style which means that anyone can take the author’s work to share, alter, and use, even for commercial purposes, which can be a surprising realization for some authors.

Adopting “Rules” of Journal Selection. Some authors have identified essential characteristics that any journal must have to be considered safe for submission (Table 4).^{12,13}

Table 4. Characteristics of trustworthy journals.

The journal is indexed in PubMed
The journal is not predatory
The journal is associated with a publisher or professional group
The journal utilizes a peer review process
The journal has an editorial board
The journal follows recognized publishing standards
The journal is transparent about fees

The term “predatory journal” refers to journals that lack a substantial peer-review process and will publish almost any article for the sole reason of collecting submission fees. These journals have even been known to mimic respected journals in attempts to lure authors.¹⁴ Other signs of a predatory journal include obvious grammatical or formatting errors on their website or in their emails.¹⁴ These journals also may have an editorial board made up of people with irrelevant degrees and backgrounds that may be entirely fictional.¹⁴ Predatory journals are often aggressive in their marketing and may repeatedly email or contact potential authors inviting a submission.¹⁴ Any sign of these red flags should be an immediate deterrence and authors should seek to publish their work elsewhere. Identifying a reputable journal can be challenging, especially when considering the lengths that some predatory journals will go to entice authors. While it is natural to want to publish in “top-tier” journals, it is also important to recognize that there are plenty of excellent journals that hold themselves to high standards that are searchable, accessible, and potentially more appropriate for publication of a case report than the gold-standard journal for one’s specialty.

LOGISTICS OF SUBMISSION

Cost of Publishing. Often there can be a financial cost associated with paper submission to a journal. Many journals require publishing fees, with some also requiring compensation upon submission for the paper to undergo the review process, regardless of acceptance. These fees, in combination with potential open access costs, should be calculated and explored prior to embarking upon submission to a specific journal. A review of 1,370 open-access journals in 2010 found that the cost of publishing can range from \$8-\$3,900.¹⁵ A 2016 review of over 14,000 papers published by four large research institutions in the U.S. and Canada has shown that the average article processing fee for an open-access journal is around \$2,000 and the fee for a hybrid journal is around \$3,000.¹⁶ Some journals will reduce or even waive various fees with the submission of several exemption forms, and that should be explored on a case-by-case basis, as the commonality of this is not well known.

Instructions for Authors Page. After a journal is identified, the process of submitting the case report should begin prior to writing the manuscript. Journals have a website that includes a section with instructions for authors that contain a wide variety of information ranging from authorship criteria to specific formatting requirements. These pages are not always easy to locate and sometimes can require an email to the publisher for assistance in the creation of an account for access. A standard protocol of information regarding publication criteria or formatting does not exist across journals. Sorniola and colleagues reviewed 249 journal websites and found that the instructions for authors pages did not always contain consistent or adequate information on how to publish a case report in the journal.⁴

Process and Timeline. Once a manuscript is completed for submission, the timeline to publication has many variables involved. The Editor-in-Chief of the journal sets a timeline for their reviewers, and this is variable between journals and is not published or shared to the submitting authors. This alone requires several factors, including the fact that the peer-reviewers are often full-time clinicians who are

participating in this process in the interest of collegiality and altruism. Often the journal requires two to three peer reviewers to provide feedback on the opportunity for revisions and/or acceptance to the journal. The potential result of the review process includes acceptance with minor (rare) or major revisions or immediate rejection. The revision process often can have a time limit for the author(s) and should be considered. The revision process for authors adds to consideration of the timeline to publication as well. A 2015 analysis of every paper listed in PubMed that contained publishing dates showed that the median time from submission to publication was around 100 days.¹⁷ This search reflected on publishing times for over 9,000 different scientific journals across a huge variety of fields. Interestingly, the journals that had the longest time periods from submission to publication were those with either very high or very low impact factors. Journals with moderate impact factors typically had shorter waiting times.

CONCLUSIONS

The journey of a research project from inception to publication requires attention to detail, willingness to receive and review feedback, commitment, and persistence. Even for the most experienced experts in the field, this process is involved. Consider it akin to the journey to a career in medicine: even after completion of organic chemistry, taking the Medical College Admissions Test, completing applications, and interviewing for medical school, one must become accepted to medical school and complete the courses required to graduate. The process of carefully evaluating a journal and understand indexing and open access can aid in selecting the appropriate match for the knowledge that an author strives to share with peers. These skills are not taught explicitly in medical school or residency and often are learned through experience. This brief overview of considerations in the process of publishing a case report is intended to shed light on and facilitate the process for the reader.

ACKNOWLEDGEMENTS

We would like to thank the Children’s Mercy Medical Writing Center for their writing assistance and proofreading.

REFERENCES

- Carey JC. Significance of case reports in the advancement of medical scientific knowledge. *Am J Med Genet A* 2006; 140(19):2131-2134. PMID: 16964619.
- Pimlott N. Two cheers for case reports. *Can Fam Physician* 2014; 60(11):966-967. PMID: 25392428.
- Florek AG, Dellavalle RP. Case reports in medical education: A platform for training medical students, residents, and fellows in scientific writing and critical thinking. *J Med Case Rep* 2016; 10:86. PMID: 27048362.
- Sorinola O, Olufowobi O, Coomarasamy A, Khan KS. Instructions to authors for case reporting are limited: A review of a core journal list. *BMC Med Educ* 2004; 4:4. PMID: 15043755.
- Mani IA, Jarvis S, W. J, Tacto B. What’s a good impact factor (ranking in 27 categories) 2023 [Internet]. 2022 [cited 2021 Oct 12]. Available from: <https://www.scijournal.org/articles/good-impact-factor>. Accessed October 12, 2021.
- Clarivate. Journal Citations Reports JCR – Clarivate [Internet]. Clarivate. 2023. Available from: <https://clarivate.com/products/scientific-and-academic-research/research-analytics-evaluation-and-management-solutions/journal-citation-reports/>.

⁷ Eigenfactor: The eigenfactor metrics [Internet]. Available from: <http://www.eigenfactor.org/projects/journalRank/journalsearch.php>.

⁸ Journal Metrics in Scopus: Source Normalized Impact per Paper (SNIP) | Elsevier Scopus blog [Internet]. Available from: <https://blog.scopus.com/posts/journal-metrics-in-scopus-source-normalized-impact-per-paper-snip>.

⁹ Scimago Journal & Country Rank [Internet]. Available from: <https://www.scimagojr.com/>.

¹⁰ McCullough HZR. CiteScore: A new metric to help you track journal performance and make decisions. *beta.elsevier.com* [Internet]. 2016 Dec 7; Available from: <https://beta.elsevier.com/connect/citescore-a-new-metric-to-help-you-choose-the-right-journal?trial=true>.

¹¹ Google Scholar [Internet]. Available from: <https://scholar.google.com/>.

¹² Fiala C, Diamandis EP. The democratization of scientific publishing. *BMC Med* 2019; 17(1):12. PMID: 30654795.

¹³ Happe LE. Distinguishing predatory from reputable publishing practices. *J Manag Care Spec Pharm* 2020; 26(8):956-960. PMID: 32715959.

¹⁴ Elmore SA, Weston EH. Predatory journals: What they are and how to avoid them. *Toxicol Pathol* 2020; 48(4):607-610. PMID: 32319351.

¹⁵ Van Noorden R. Open access: The true cost of science publishing. *Nature* 2013; 495(7442):426-429. Erratum in: *Nature* 2013; 496(7444):151. Erratum in: *Nature* 2013; 499(7456):19. PMID: 23538808.

¹⁶ Solomon D, Björk BC. Article processing charges for open access publication—the situation for research intensive universities in the USA and Canada. *PeerJ* 2016; 4:e2264. PMID: 27547569.

¹⁷ Powell K. Does it take too long to publish research? *Nature* 2016; 530(7589):148-151. PMID: 26863966.

Keywords: case report, open-access publishing, journal impact factor, predatory journals, impact factor