

Peer Review Process in Medical Journals

Review

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Reviewers play key roles in manuscript processing and publication. This article describes in detail how the reviewer serves their two key roles as a gatekeeper of making publication recommendations for the editorial board and a consultant providing constructive comments to authors to improve the quality of the manuscripts to be published.

Keywords: Review; Peer Review; Manuscript; Medical Journal

INTRODUCTION

The aim of peer reviewing is to provide an unbiased, independent, and critical assessment of submitted manuscripts,¹⁾ and is an essential component of the scientific process and medical publishing. The reviewers serve two key roles during reviewing manuscripts. First, the reviewers help editors judge whether a submitted manuscript is suitable for publication by providing their expert opinion. This is critical for editors who rely heavily on reviewers to determine which of the many competing manuscripts will be published. The second role is to provide constructive feedback to authors about how to improve the manuscript so that they will be acceptable for publication.

It is essential that reviewers reflect the aim, scope, and reputation of the journal he is reviewing. However, formal education programs for peer reviewing are limited. Only few reviewers received formal education to become a peer reviewer.²⁾ Most became reviewers by 'self-teaching' as experience accumulated. Nonetheless, the

techniques of peer reviewing can be nurtured and developed. In recognition of the lack of peer reviewer training and in order to enhance the collaborations of peer reviewers and editors, this article was developed to provide an overview of the peer review process in medical publishing and to describe basic elements that should be included in a high-quality review.

THE GENERAL REVIEW PROCESS

When a manuscript is first submitted to a medical journal, at first, the topic and scope of the manuscript and its contribution to the existing literature is checked. This is done by the editor-in-chief, typically in consultation with the associate editor. This process usually takes less than one month.

For a manuscript deemed appropriate, editors will send it to an average of two to three reviewers for peer review. Editors decide the reviewers for a particular manuscript based on their expertise and availability. If the reviewer accepts an email invitation to the review, full text manuscript can be accessed via the online submission system. Usually reviewers are asked to send their comments back within two to four weeks of receipt of the manuscripts. After finishing the review, reviewers should upload their review results on the submission system.

The manuscripts and reviews are discussed at the editorial board's meetings. These discussions, along with the responses from reviewers, help the board members make a final decision on each manuscript. When differences of opinion between reviewers

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occur, the editorial board weighs all comments and arrives at a balanced decision based on these comments. Reviewers whose opinion differs from the final board decision should not be discouraged, for their hard work is nonetheless fully appreciated. The editorial board is the final decision maker on publication.

The decision letter of the editorial board and reviewers' comments are sent to authors via email. The medical journals usually notify reviewers of the ultimate decision to accept or reject a manuscript and allow them to share the review of co-reviewer(s) of the same paper so that they learn from each other in the review process.

THINGS TO CONSIDER BEFORE ACCEPTING PEER REVIEW

Before accepting peer review, the reviewer should consider three things.

1. Is the Article Being Asked to Review Consistent with the Reviewer's Expertise?

The editor may not know the reviewer's work intimately, and may only be aware of their abilities in a broader context. The reviewer should only accept the invitation if he/she feels competent enough to review the article.

2. Does the Reviewer Have Sufficient Time to Review the Manuscript before the Deadline?

Reviewing a manuscript can be time consuming. The usual recommended time for a review is two to four weeks. Sometimes, unforeseen circumstances arise that keep a reviewer from meeting a deadline. In such cases, the reviewer should contact the editor immediately. The editors then reassign the manuscript to alternative reviewers.

3. Are There Any Potential Conflicts of Interest?

The reviewer should disclose conflicts of interest. Examples of conflicts of interest are as follows: the reviewer works in the same department or institute, or is involved in a contentious dispute with the author, or has a professional or financial connection to the article. A conflict of interest will not necessarily eliminate reviewers from reviewing an article, but full disclosure

to the editor will allow them to make an informed decision. Additionally, if the reviewer has significant concerns about being able to review the manuscripts objectively, he/she should decline the invitation.

ETHICS FOR REVIEWERS

The submitted manuscript is a piece of intellectual property belonging to the authors, and the author owns the copyright of the unpublished manuscript. Reviewers therefore should keep manuscripts and the information they contain strictly confidential. It is not appropriate to share the manuscript or to discuss it in detail with others unless formerly approved by the editors.¹⁾ Reviewers should not quote, cite or refer to the manuscript before publication, nor should he/she use information from the manuscript to advance his/her own work, especially when the manuscript is related to his/her research interest.

COMPONENTS OF A REVIEW

General questions that reviewers keep in mind when reviewing articles are the following.

1. Originality

The reviewer should consider whether the article is sufficiently novel and warrants publication, whether it adds to the accumulation of existing knowledge. The reviewers should search websites like PubMed and Google to check the originality of the article. If the research has been covered previously, pass on references of these works to the editor.

2. Structure

The reviewer may refer the instructions to authors, enlisted on the journal's web site. The reviewers should be familiar with the instructions to authors and standard of the journal for which they are reviewing. A checklist for the structure of manuscript is shown in Table 1.

Table 1. Checklist for reviewing a manuscript

Title	Dose it clearly describe the manuscript?
Abstract	Does the abstract accurately summarize the manuscript?
	Can the abstract be understood without reading the manuscript?
Introduction	Does the introduction provide a rationale for performing the study?
	Is the rationale based on a thorough review of previous medical literature?
	Is the purpose of the study clearly defined?
Methods	Are the methods selected by the authors suitable for answering the research questions?
	Are the methods used valid and reliable?
	Are the methods used accurately described in sufficient detail?
Results	Are the results clearly described in a logical consequence?
	Are the results reasonable and expected?
	Are the statistical methods selected appropriate?
Discussion	Do the authors state whether the research question was answered?
	Are the authors' conclusions supported by the results found in the study?
	If there are unexpected results, do the authors adequately account for them?
	Do the authors indicate whether the results support or contradict previous research?
Figures and Tables	Do the figures and tables adequately show the important results?
	Are the figures and tables self-explanatory?
References	Are there references in the reference list that are not fully represented in the article?
	Are there important references that are not mentioned that should be noted?
	Does the reference list follow the format for the journal?
Overall	Is the manuscript concise and easily understood?

3. Ethical Issues

The reviewer also has the responsibility of reporting suspected duplicate publication, fraud, or other ethical concerns about the use of animals or humans in the research.

CONDUCTING THE REVIEW

Each reviewer has a personal method of reviewing a manuscript, and a number of different approaches can exist. Some experienced reviewers can write a review after the first reading of the manuscript. However, most reviewers begin by initially scanning through the entire manuscript once in order to assess the overall quality, to understand the message from the authors,

and to check the readability of the manuscript. Through the first read, the reviewer can estimate the amount of time and effort further needed.³⁾

The first read is followed by several rereads. With them, the reviewer can analyze the manuscript sequentially and systematically in a number of specific areas, giving more specific notes and comments. The critical process of the reread should focus on two important questions: 1) how relevant or important is this article? and 2) can this article be improved? Sometimes, three to five reads are required to answer these questions properly.³⁾

WRITING COMMENTS FOR THE AUTHORS

The golden rule of peer reviewing is ‘treat other manuscripts as you would want your own to be treated.’ Reviewers are expected to provide a critical, objective, and balanced review. Prepare the comments and suggestions as if one’s identification were sent to the authors together with the review. Sarcastic or insulting words should not be used. Reviewers are usually asked to use the online form that can be accessed from the journal’s main website.

1. Comments for the Authors

Many reviewers begin their comments with the manuscript title and a brief summary of the article including a statement about the importance of the article to the scientific community as well as overall strengths and weaknesses. The opening summary provides the editors and authors proof that the reviewer understood the intended contents.⁴⁾

Some reviewers categorize their comments into general comments and specific comments. Others write the review under the headings of introduction, methods, results, and discussion.²⁾ Reviewers may use any format. However, listing all the suggestions that reviewer has in a numbered list is helpful.

Comments should be specific, helpful, and focused on manuscripts instead of authors. Generalizations such as ‘this paper contains a number of inaccuracies,’ or ‘this manuscript is poorly organized’ are of little value to the author. Give specific directions for changing the manuscript. In pointing out areas in need of improvement, be respectful and supportive to authors. Be sure to explicitly state where in the article a specific suggestion is referring to, making it easy for the author and editor to identify the target of communication. This can be done by referencing a specific page number, paragraph, and row number or by including a quote from the text.

Too short reviews are not favored by editors as they do not help the editors who may not be an expert in that particular field, and are often not helpful to the authors as well. Even in the case that the manuscript seems to have high possibility of rejection, a carefully worded review with appropriate suggestions for revision can be very helpful.⁵⁾

Reviewers should always focus on the big picture. Minor

spelling, grammar, and publication style errors will be corrected by editorial coordinators. Recommendation for publication should not be included in this section because the editorial board may decide differently. Comments to the authors must be consistent with the reviewer’s rating lest confusion will occur. Identifying oneself in the comments is not permitted to maintain the double-blind review system.

2. Comments to the Editor

This document addressed to the editors is a letter briefly outlining the strengths and weaknesses of the paper with recommendations for actions to be taken. Because this part is not sent to the author, the reviewer can include confidential comments.

3. Publication Recommendation (Rating)

Publication recommendation should be checked and selected. The journal usually provides one of the following ratings: accept, minor revision, major revision, or reject.

REVIEWING THE REVISED MANUSCRIPT

Some believe that the reviewer’s task of reading a revised manuscript is to determine if the author has responded to all of the reviewer’s suggestions. Others feel the revised manuscript should be read ‘as new’ when determining its publication quality. Reviewers of a medical journal may blend together both approaches. However, please remember that authors might be frustrated if the reviewers make too many new suggestions on the revised manuscript, especially if he/she has already corrected it diligently and carefully with the hope of publication.

REWARDS FOR REVIEWING

Reviewing manuscripts written by fellow scientists is a privilege. However, reviewing a manuscript is much similar to volunteer work. It takes hours to compile a detailed and balanced review. The estimated time for reviewing a manuscript may range from 45 minutes to eight hours, with a median of 2.7 hours.⁶⁾ For example, the Korean Journal of Family Medicine pays only

30,000 to 50,000 won for each review, depending on the time consumed. However, no reviewer accepts this low paying duty for financial rewards. Then what motivates anyone to serve as a peer reviewer? For some reviewers, reviewing is the opportunity to have early access to new information in one's field of science or practice. Sometimes, a reviewer may be motivated by loyalty to specific editors, the mission of a journal, or a professional organization that sponsors the journal. Some may view reviewing as an opportunity to improve their literature evaluation skills and critical thinking skills.³⁾

The most important reward for the reviewer is one's contribution to the quality of the published science manuscript and to the profession in general. Every journal and its editors, authors, and readers appreciate each individual reviewer's willingness to accept this responsibility and dedication.

CONCLUSION

Peer reviewing for medical journals is a responsibility, a privilege, and a contribution to professional society and, fundamentally, the improvement of the quality of patient care.³⁾ It is hoped that the information presented here will assist reviewers in fulfilling this important professional role.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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