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How to Submit a Revision and Tips on Being a Good Peer-Reviewer

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Abstract

Many instructional guides have been published on how to write scientific papers. Likewise, many published articles have focused on the reasons why submitted manuscripts are rejected. However, fewer publications have been presented to guide authors on how to address reviewers' comments in a manuscript revision. Even fewer papers counsel authors on how to deal with a rejection decision. In this paper, we will present a literature review on the strategies to get a paper accepted, despite an initial unfavorable review. We will share our experience on addressing reviewers' comments to get a paper accepted and published. Finally, we will discuss the process of peer-review and offer tips on how to be an effective peer-reviewer.

Keywords

manuscript; rejection; revision; peer-review

Physicians in academic medicine have most likely submitted a scientific manuscript for publication. After all, the famous saying is “publish or perish.” If all of your submitted manuscripts have been accepted straightaway without revision, you are one of the lucky few who no longer need to continue reading. The majority of authors, however, have had manuscript submissions that resulted in some form of rejection. Rejection should not be unexpected, as only 9% of the 6,000 annual manuscript submissions to JAMA are accepted for publication.¹ Nearly 85% of submissions to Plastic and Reconstructive Surgery are rejected. Even manuscripts that later resulted in a Nobel Prize have been rejected for publication.² For example, Nature rejected manuscripts of Cerenkov radiation (used in nuclear reactors), work on photosynthesis by Deisenhofer, Huber and Michel (who determined the first crystal structure of a protein that is essential to photosynthesis), and the initial rejection, but eventual acceptance, of Stephen Hawking's black-hole radiation. Rejected. Unaccepted. Refused. Declined. Whatever the word, they all have the same meaning. However, authors must remember that it is normal to go through a “grieving

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process” after receiving a letter of rejection. The purpose of this paper is to discuss the process of peer review in scientific manuscripts, provide pointers on how to tackle rejection and revision, and to offer guidance on how to be a good peer-reviewer.

What is Peer-Review?

A peer-reviewed journal is one that submits most of its published articles for outside review. Peer-review became the standard in biomedical journals in English-speaking countries in approximately the mid-20th century.³ The International Congress on Peer Review in Biomedical Publication was formed and held its first congress in 1989 to improve the manner in which science is reviewed, selected and disseminated.⁴ Peer-reviewers are considered experts in their field who critically assess manuscripts submitted for publication.⁵ Peer-reviewers help editors decide whether or not to publish a manuscript and ensure that the best manuscripts are published by providing the authors with critical feedback. Peer-review is usually assumed to raise the quality of the end-product⁶ and clinicians give greater weight to findings published in peer-reviewed journals.⁷ However, there is no standard method for conducting peer-review and a Cochrane study found that there was a lack of evidence to support the use of peer-review to improve biomedical studies.⁸ Studies assessing the impact of training sessions for peer reviewers have mainly found that they did not improve the quality of reviews.^{9–12} One study found that peer reviewers are biased in favor of orthodox forms of treatment versus alternative therapies,¹³ but another study found no such bias.¹⁴ Because of these contradictory findings, the Cochrane study suggested further research was needed on the effects of peer review.

Each journal has its own individual process regarding how peer-reviews are conducted. Several use a blinded review in which the reviewers’ identity is not revealed to the authors and others use masking (also known as double-blinding when used in combination with blinding) to withhold the authors’ identity (name, institution) from the reviewers.¹⁵ Some studies have found that masking improves the quality of the review¹⁶ whereas other have found no difference in the quality¹⁷ or in the likelihood of manuscript acceptance using masking.¹⁸ Furthermore, some have argued that masking is time-consuming and difficult due to inadvertent or deliberate self-identification of the authors throughout the manuscript.^{18–22} One study found that 46% of reviewers were able to correctly identify the authors of masked studies.²³ Thus, blinding may reduce the chance of receiving a biased review but it should not greatly affect the quality of the review or the chance of a paper being accepted.

Submitted manuscripts are first scanned by the editor to determine whether the manuscript is suitable for the journal. If it is deemed not to be suitable, the editor will probably reject the manuscript outright before sending it for peer-review. The editor may also reject the manuscript outright if it has a “fatal flaw.” Fatal flaws could include a lack of importance of the research topic or an inappropriate study design.²⁴ Other fatal flaws may include invalid data, conclusions that are not supported by the data, or material that is not original or timely.²⁵ Fatal flaws cannot be corrected with additional data or clarity because they are errors in logic or approach.²⁶

The editor then routes the manuscript for peer-review, perhaps to 2 or 3 reviewers, depending on the journal. After the reviews are complete, dispositions may include: “rejection without further submission, rejection with an opportunity to resubmit, major revision without a promise of acceptance, minor revision, acceptance subject to minor revision, and outright acceptance.”²⁷

Dealing with Rejection

After receiving notification that a manuscript requires major revision or is rejected without the opportunity for revision, authors may feel disappointment and even resentment. However, the criticisms should not be taken personally.²⁸ As a note of encouragement, one study found that 76% of manuscripts rejected from *The Journal of Bone and Joint Surgery* were published by another journal within an average of less than 2 years and 27% of these manuscripts were published in high-impact general orthopaedic journals.²⁹ So, if the first journal does not accept your manuscript, you must try, try again.

When a major revision is required, the author should read the reviewers' comments then put them aside for a few days to think about how to reply so that an emotional response is avoided.²⁸ Pausing to think about a response before responding is also a good tip when receiving any type of critical feedback.³⁰ Rather than spending time and energy reacting to criticism, authors should respond to the reviewers' comments.²⁸ Do not spend too much time wallowing in your sorrows, as a long delay before resubmission may suggest that there is a problem or that the paper is not a high priority.³¹ Thus, try to revise and/or resubmit as quickly as possible.

Submitting a Revision

After accepting what has happened, the next step is to determine how to proceed with a rejected manuscript. How to proceed depends on what type of rejection was received. Figure 1 illustrates the choices that an author could make after receiving the feedback from his/her manuscript submission. Comments from the editor and/or reviewers are usually valuable pieces of information that can only improve a manuscript. After reading these comments carefully, the author then needs to decide if his/her revised manuscript should be submitted to a new journal that is more applicable to his/her research or if the manuscript can be resubmitted to the same journal.

If the manuscript requires major or minor revisions, the author should follow the journal's guidelines for revision as noted in the author's instructions. Usually, a reviewer response will involve addressing each of the reviewer's comments and specifying where in the manuscript the changes were made. The journal requirements may require that edits are indicated in a different color font. In the reviewer response, be specific as to where changes were made to the manuscript, such as, "As the reviewer requested, on page 5, paragraph 2, line 6, we have included the mean age of the sample as 56.5 years." Reviewers or editors should not be expected to be "manuscript detectives" to find all of the revisions made by the authors.³² Authors will make everyone's life easier by spelling out the changes the first time around. Responses should most likely include changes to the text of the manuscript rather than just addressing the reviewer in the response letter. After all, if a peer-reviewer had a reasonable question about a manuscript, others will likely have the same question when they read it. If no specific format is suggested, a good way to proceed is to copy and paste the reviewer's comments into the response document in an itemized fashion. Provide your response to each comment underneath. If the reviewer provided a compliment, the author can thank him or her for that compliment.³³ Examples of responses are provided in Table 1. Authors do not have to agree with all of the critiques, but they should compromise to make the changes that they are able to make and provide reasons why they are choosing not to make certain changes. "A well-prepared response document should be complete, polite, and based on evidence, not emotion!"³³ Authors should avoid inflammatory remarks, such as, "We do not agree with the reviewer..." or "We respectfully disagree..." Instead, remarks could be rephrased as, "We agree with the reviewer that our response rate is low, however..." Most likely a manuscript will be returned to the original reviewers, so they have

the upper-hand in its fate. On the other hand, authors do not need to be servile and agree with everything the reviewers' requested. Respond thoughtfully and without emotional overtone. In the end, authors need to use the comments to improve the manuscript. The Golden Rules for responding to reviewers are: 1) Answer completely; 2) Answer politely; 3) Answer with evidence, such as citations from the literature or additional analyses.³³

If the reviewer is requesting extensive changes (requiring more than a page), the authors can reasonably suggest that these additions are better suited in a subsequent article.³³ In the response, authors should not question whether the manuscript would have received a more favorable outcome had it been reviewed by other reviewers.³⁴ If the authors choose to submit to another journal, they may be able to suggest reviewers upon submission. Some journals suggest including the decision letters and responses to the reviewer's critiques in a submission to their journal. Before submitting to a different journal, the authors should clarify any points that were misunderstood by the previous reviewers and editors.³⁵

How to be a Good Peer-Reviewer

Being asked to review a manuscript is a responsibility that all reviewers should honor. Of course, the reviewer comments are beneficial to authors, but reviewing can also be beneficial to the reviewer by improving critical thinking skills.³² Although peer-review takes time and does not involve monetary compensation, it is a request that should not be taken lightly. After receiving a request to provide a review, one should first decide whether one has the time to do it. A thorough review for an experienced reviewer is expected to take approximately 3 hours^{36,37} and will range from one-half to two pages.²⁶ A reviewer's tardiness potentially impacts the career of a younger colleague who is relying on a publication for promotion or tenure.³⁸ Furthermore, if the peer-reviewer only has enough time to provide a cursory review that is one sentence in length, this will not be helpful to the editor or to the authors. Second, one should decline the review if one feels that the manuscript does not fit one's expertise.³⁶ A study found that reviewers with training in epidemiology or statistics provided higher-quality reviews.³⁷ Likewise, the review should be declined if there is a conflict of interest. A conflict of interest may include knowing the authors personally, investigating the same topic, or working for a company with an interest in the manuscript results.³⁶ Working in the same institution as the authors is a conflict unless the institution is large enough that the reviewer is not working colleagues with the authors.³⁹

Reviewers may wish to first give a quick read of the manuscript to determine its quality after deciding to proceed with the review. If the quality is poor, including one of the fatal flaws discussed previously, the reviewer may wish to only include major comments in the revision. Similarly, if the manuscript is poorly written to interfere with understanding or interpretation, the reviewer may request that it is rewritten before providing a full review.³² Other journals have received an increasing number of manuscript submissions from authors who reside outside of the United States.^{40,41} The American Journal of Roentgenology found that the acceptance rate of manuscripts from countries where English is not the primary language was significantly lower than the acceptance rate in countries where English is the primary language.⁴² However, language barrier was not a major reason for manuscript rejection from most countries. In fact, "major language problems" was the cause of rejection of only two articles, both from Japan. If a reviewer encounters language barriers from international authors, he/she can guide them to web sites for companies that provide editing for scientific writing. Our observation is that authors whose native language is not English do have a distinct advantage. If international authors spend the effort to write their paper to conform to standard scientific English and the flow of the paper is clear and understandable, reviewers will tend to view the submission more favorably because they recognize the intense effort by the authors to deliver a competitive product. Therefore, all authors need to

spend the time and resources necessary to assure that a paper is not rejected because of poor prose and unconventional expression.

The structure of a review could begin with a short summary of the key findings and value of the manuscript. A summary benefits the reviewer, editor, and authors by giving the reviewer's perspective of the manuscript. Comments to the authors can then be structured under major and minor points. It is best to itemize the comments so that the authors can easily address them. Major comments are critical to the validity of the study and could include whether the appropriate study sample was chosen and if proper statistical tests were conducted. Plastic and Reconstructive Surgery will reject a paper outright if inappropriate or incorrect statistical analysis is presented. The editor will use these major comments to decide whether to accept or reject the manuscript.^{32,36} Minor comments should also be itemized and may include clarification of specific sentences, requests for additional data, or grammatical errors. However, reviewers should not focus on correcting grammar and spelling. If possible, the reviewer can reference specific line numbers where clarification is requested. The reviewer should not include their recommendation as to the fate of the manuscript in their comments to the authors. These recommendations as well as confidential comments to the editor should be separate. "A critical aspect of all reviews is consistency between the comments to the authors and the recommended disposition, and comments to the editor are often the best solution."³² For example, if the reviewer suggests rejecting the manuscript, but provides comments to the authors for revisions, he/she may wish to clarify to the editor that the topic of the paper is worthwhile but the way the manuscript is currently written is not of sufficient quality for publication.³² A checklist of study criteria for reviewers is provided in Table 2. Although the editor may have scanned the manuscript for fatal flaws, the reviewer should still be on alert for them. Reviewers need to provide constructive advice on how authors can improve their research and communicate their findings clearly.³⁵ During journal club review, students and residents are often "trained" to identify faults in papers. Turning off the instinct to find faults can be difficult, but the reviewer must remember that there are limitations in every study. Likewise, the manuscript should be judged on the study that was conducted rather than the study the reviewer thinks the authors should have done.³¹ Reviewing should be approached as a collaborative effort to encourage colleagues. The authors need to be given specific recommendations on how they can improve their manuscript. There is no need for rudeness or criticism. Instead of saying that a study needs to expand the background section, the reviewer can refer to a few specific studies for the authors to consider. If the authors failed to include a reviewer's publications that are relevant to the study, he/she can simply guide them towards those papers.³⁸

Giving and receiving critical feedback are both difficult jobs. Authors who have received a rejection letter should remember to respond politely and with evidence rather than reacting in anger to any criticism. On the other hand, peer-reviewers should remember this variant of the Golden Rule: "Review unto others as you would have them review unto you."³⁵

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Figure 1.
Choices that can be made after receiving a manuscript rejection³⁴

Table 1

Example of Reviewer Responses

Reviewer 1:
<p>Comment 1: “The authors failed to include a recent article on this topic by Smith et al.”</p> <p>Response: We appreciate the reviewer bringing the article by Smith et al. to our attention. We have added it to our Discussion section on page 12, paragraph 2, “Smith et al. found results similar to this study in their retrospective analysis...”</p>
<p>Comment 2: “The Discussion section is often confusing and poorly written.”</p> <p>Response: We apologize for the lack of clarity in the Discussion section. We have re-written the entire section so that it is now clearer. We agree that discussing procedures A and B together could be confusing so we have separated them into their own paragraphs and included the strengths and limitations of using each procedure. We hope that the reviewer finds these changes to improve the readability of the Discussion.</p>
<p>Comment 3: “The authors have clearly outlined their statistical analysis.”</p> <p>Response: We thank the reviewer for his/her kind remark.</p>

Table 2**Reviewer Checklist**^{26,36,43,44}

<p>General:</p> <hr/> <p>Is the research question relevant to the readers of the journal?</p> <p>Is the research question original?</p> <p>Does the study answer a question or contribute to the field?</p> <p>Was the study conducted ethically and with Institutional Review Board approval, if necessary?</p> <p>Did the authors follow the Standards for Reporting of Diagnostic Accuracy (STARD)⁴⁵/Consolidated Standards of Reporting Trials (CONSORT)⁴⁶/Preferred Reporting Items for Systematic Systematic Reviews and Meta-Analyses (PRISMA)⁴⁷/Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) Statement⁴⁸?</p> <hr/> <p>Background:</p> <hr/> <p>Was a thorough review of pre-existing research conducted?</p> <p>Were other research studies properly referenced?</p> <p>Is the rationale for the question provided?</p> <p>Are the purpose and/or hypothesis clearly stated?</p> <hr/> <p>Methods:</p> <hr/> <p>Is the study design clear?</p> <p>Was it the appropriate study design for the research objectives?</p> <p>Are the methods sufficiently detailed so that someone else could repeat what was done?</p> <p>Was the source of subjects discussed?</p> <p>Are inclusion and exclusion criteria of the sample discussed?</p> <p>Did the authors conduct an a priori power analysis?</p> <p>If more than one sample is used (ie. cases and controls), were they similar? Was this tested statistically?</p> <p>Were subjects randomized? If so, was the method of randomization described?</p> <p>Is the sample biased? Are the results generalizable based on the sample?</p> <p>Was blinding used and discussed?</p> <p>Were the treatments well defined?</p> <p>Were the correct measurements used? (ie. Objective functional measurements) Is there great measurement error?</p> <p>Were the outcome measures appropriate? (ie. Validated questionnaires to assess subjective measurements such as pain)</p> <p>Was the duration of follow-up discussed?</p> <p>Were the proper statistical tests conducted? Are they clearly stated?</p> <p>Were p-values and/or confidence intervals reported?</p> <p>Are losses to follow-up/missing data/low response rate reported and discussed?</p> <hr/> <p>Results:</p> <hr/> <p>Are the results clearly presented?</p> <p>Is variability of the data discussed?</p> <p>Do the tables and figures stand on their own?</p> <p>Do the findings unambiguously answer the question or address the purpose or hypothesis?</p> <p>Were side effects/complications reported?</p> <hr/>

Conclusion:

Are the conclusions supported by the data?

Are important discussion points missing?

Do the authors suggest future research on this topic?

Does previous research on this topic support or refute the findings? Do the authors discuss these other studies?

Do the authors discuss assumptions, limitations and sources of bias?

Have the authors overlooked critical references and/or only selected a biased range of papers?

* Items marked in red font could be considered fatal flaws