

HOW TO REVIEW SCIENTIFIC MANUSCRIPTS AND CLINICAL CASE REPORTS FOR JOURNAL OF ORAL IMPLANTOLOGY

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Peer review is a vital component of the publication process for the *Journal of Oral Implantology (JOI)*, as with any scientific or professional journal. The ability to write constructive critical reviews, therefore, is a valued skill of benefit to authors, editors, and the journal. The purpose of this article is to discuss techniques for crafting useful reviews. A review should address both broad issues of wording and perception. A review should include specific issues of what to look for in each section of research papers and clinical case reports. While the article is written with *JOI* in mind, most guidelines expressed therein are applicable to reviewing for any journal.

Key Words: peer review, editorial process, scientific manuscripts, case reports

INTRODUCTION

The peer review process is a vital element in ensuring the publication of the highest quality of scientific writing, and is of immense benefit to all involved including authors, reviewers, journals, and their readership. The ability to write constructive and beneficial reviews is a valued talent which, like any other, can be improved both through practice and instruction. However, relatively few scientists and clinicians receive instruction regarding the review process as part of their formal academic training.

It is important for both authors and reviewers to understand that the purpose of the review process is not simply to judge whether to accept or reject manuscripts for publication, but to ensure quality. Thus, the reviewer should not regard the manuscript as the final work of another researcher or clinician to be evaluated, but rather should provide feedback to facilitate the improvement of scientific writing and the advancement of dental implantation. Peer review is a process of cooperation between colleagues within one's discipline.

THE REVIEW PROCESS

Upon initial submission to a journal, manuscripts are first given a cursory evaluation by the editors and/or

editorial assistants. Papers may be rejected at this stage if the editors feel the topic is inappropriate to the focus of the *Journal of Oral Implantology (JOI)*, or are insufficiently novel in their findings. Different journals have their own standards at this stage.¹ *JOI* rarely rejects a reasonable paper on a relevant topic prior to peer review.

Editors then ask others in the field to review the submission based on their expertise with the subject of research, their availability, and their helpfulness as a reviewer in the past. Typically a submission will have at least 2 but no more than 5 reviewers. Reviewing is exclusively a pro bono service the implant dentistry community provides. In most journals, including *JOI*, the peer review process is conducted in a double-blind fashion. This means that reviewers are not given the names of authors of a manuscript, nor are authors given the names of their reviewers. Many journals, including *JOI*, handle reviews electronically through a web service, helping to both expedite and organize the process.

The journal will specify a 30-day period of time for the review process to take place, selecting reviewers who can commit to submitting their review within that time period. The editorial staff will periodically contact any reviewers who are delayed in their reviews and find replacements as it may become necessary.

The reviewers will make a recommendation for acceptance, minor revision, major revision, or rejection.

tion. Additionally, a good review will provide specific comments on the strengths and weaknesses of a submission, regardless of their recommendation. Reviewer comments may vary in length from a few paragraphs to a few pages. Some journals include numerical ratings or dichotomous checklists to evaluate many aspects of the submission; however, *JOI* uses numerical ratings only for worthiness of investigation, novelty of findings, and support of conclusions, leaving other matters for subjective review. Editors will typically wait to receive all peer reviews before making a decision, and often reviews are mixed in their recommendations.¹ The most typical outcome is for editors to request a revision to address any critical points brought up in peer review.

After revision, the editorial staff will review the revised version, and again at this stage may choose to accept or reject the article. In the event that editors feel the authors' revision does not meet their criteria for publication, they may also elect to submit a manuscript to further rounds of the peer review and author revision process before rendering a final decision to accept or reject publication. Good peer reviews are therefore vital to both editors and authors, as they both inform the editorial decision and also inform the authors on how to write their revisions, if necessary.

REVIEWER RESPONSIBILITIES

Timeliness

One of a reviewer's primary responsibilities is to submit his or her review in a reasonably timely manner. While reviewers should certainly not rush through a manuscript or treat their role cavalierly, nor should they belabor or delay the task to such an extent that peer review comes to constitute an unreasonable portion of the publication process. Potential reviewers who cannot reliably commit the time to submit a useful review in a timely fashion should decline the invitation. Likewise, if a reviewer for some reason feels, after having accepted the role, that they lack the time, expertise, or neutrality to complete a fair and useful review in a timely fashion, he or she should communicate this promptly to the editorial staff so that the process is not held up. It is worth noting that the electronic peer review system used by *JOI* records the date of submission on reviews received.

Disclosure of expertise

It is highly unlikely that an editor will ever find a group of reviewers fully knowledgeable in all of the aspects, methods, and literature covered by a given manu-

script. Most often, no one reviewer will have a high degree of background familiarity with every method and subject covered by a manuscript. It is therefore important for reviewers to note in their comments to both the editors and the author what their areas of expertise are, and equally importantly, in what areas relevant to the article they are not as knowledgeable.² Reviewers should set aside any biases they may have on contentious issues covered by a manuscript, and if they feel they have a strong bias or conflict of interest, excuse themselves from the task.

Directing feedback

The review form will include separate comments to the editors and comments to the author. It is part of the reviewer's task to make a recommendation to the editors on whether the manuscript should be accepted, rejected, or revised. Aside from the overall merit of the research and writing, key issues to consider in deciding on a recommendation are whether the subject of the research is appropriate to the specific focus of the journal, and whether the research presents findings which are both novel and significant. Reviewers generally should not state their recommendation in comments to the author, nor should they ever assume or predict that the submission will be rejected or accepted in these comments.¹ On the other hand, it is a mistake to assume, as some reviewers do, that the majority of comments on the various points where the manuscript is strong or weak should be directed to the editors only. In the event that a submission requires revision, and even if it does not, for the sake of improving future writing, specific feedback is valuable to authors and should be made available to them. Typically the only comment which should be stated exclusively to the editor is the action recommendation.

Constructive criticism

When crafting reviews it is important for reviewers to formulate their comments, both to editors and authors, in a constructive and positive way. This is not to say that reviewers should ever shy away from being critical of or finding fault with manuscripts, but rather, that criticisms and pointing out of potential faults should be worded in a way that is direct and helpful to the author in attempting to produce an improved revision. Sarcastic, negatively or dismissively worded comments are not only potentially discouraging to authors, but may encourage authors to undervalue the significance and merit of what may be valid criticisms.

Whenever possible, reviewers feeling a submission is lacking should attempt to give actionable advice,³

rather than merely assessment. It is better to write, "I feel this description would be improved by explaining why this test is believed to accurately assess activity" than simply to write, "I didn't understand the purpose of the test described" or, worse still, merely, "The description was hard to follow."

Reading submissions

The best way to review an article is to first read the entire article, to gain an overall impression and understanding of the research. These overall impressions are themselves frequently useful parts of the review, and afterwards a reviewer may go back and address specific sections of the paper. Comments written on a paper as one is reading it through for the first (or worse still, only) time tend to be less helpful and even potentially confusing. For example, a reviewer may feel that a given concept is not adequately explained, not relevant, or suggestive of a contradiction, when in fact these concerns may not be valid taken in the context of the full article.

Skepticism and author advocacy

Any hypothesis or experiment will inevitably include certain assumptions which have not been explicitly proven true. These assumptions are frequently the easiest elements of a study to criticize from a scientific perspective. However, aside from merely focusing on questioning assumptions, a reviewer should also make comments on the method and results of the research. For this reason, it is often quite useful for reviewers to consider a paper both from a skeptical perspective and also from a perspective which supposes that all of the authors' assumptions are in fact true, and examines, from that perspective, the authors' methods, results, interpretation, and discussion.³

When making critical notes on particular sections of a paper, reviewers should give the location of the section in question as specifically as possible. Stating "the second paragraph on page 2" lets the author know exactly where to direct their attention, while a phrase like "the discussion of the toxicology assay" might be ambiguous.

Additionally, reviewers should set their own interests and passions aside and avoid requesting authors to address tangential issues which may be of importance to the reviewer's field of work but not actually key to the authors' study.²

Strengths and weaknesses

Reviewers should be sure to point out both an article's strengths and weaknesses and not focus heavily on

only positive or only critical comments. A heavy focus on the strengths of a paper may spare an author's feelings, but also does a disservice in failing to point out areas in which an article might be improved, defeating the purpose of the review process. Neglecting to mention strengths, on the other hand, similarly disservices authors because they can only assume that they should focus on the portions of their article where criticisms were pointed out. The authors will lack feedback on what points are important to keep as they are, and what portions of the manuscript should not be diminished in the process of revising other points. Additionally, although all good reviewers will try to be objective, there is inescapably a subjective component to the review process which may lead to the same point being seen quite differently by different reviewers. It is thus important for reviewers to point out what they consider strengths so that authors will have feedback from this full range of perspectives with which to work.

Confidentiality

Peer reviewers are responsible for maintaining confidentiality concerning the existence and contents of unpublished manuscripts. Reviewers should not discuss unpublished work with colleagues, and most certainly must never take concepts or data from a submission for use in their own work, as this is plagiarism and a serious ethical violation.²

REVIEWING ELEMENTS OF A RESEARCH PAPER

Title and abstract

The title should be appropriately succinct but also sufficiently clear and specific to indicate at a glance the subject of the research. Clever or witty titles are not generally appropriate. The abstract, similarly, should be of appropriate brevity and include in summarized form the purpose of the study, what was done, the results obtained, and the significance thereof.

Methods

Methods should be appropriate to the stated aim of the research and should be explained in the manuscript with sufficient clarity and detail so that a reader could hypothetically reproduce the study. There should be no ambiguity or omissions regarding materials, procedures, durations, sample sizes and selection method, any quantitative or qualitative analysis used, or any other relevant conditions. In addition to assessing the clarity and completeness with which the experimental design

is presented, a reviewer should assess the appropriateness of that design, being mindful of factors such as confounding influences, lack of appropriate controls, or small sample sizes which may reduce the validity of results obtained.

Statistical tests should be appropriate to the type of data being analyzed, and all thresholds of significance and confidence intervals stated explicitly. As part of disclosing their expertise, reviewers should note if they are unfamiliar with any statistical methods in a paper or their interpretation.

Reviewers must also assess whether the methods of a study contain any ethical violations, such as fraud, plagiarism, or the use of human or animal studies without approval of the appropriate Institutional Review Board.

Conclusions

One of the more common mistakes with initial submissions is for authors to overextend the interpretation of their results, speculate their potential significance in light of ungrounded additional assumptions, or draw conclusions of applicability and significance which do not necessarily follow. As scientists, it is easy to be excited about one's own work and its potential value; however, submissions to a journal should interpret their data conservatively and draw only the conclusions which clearly and logically follow. Reviewers should point out any speculative or unsupported comments.⁴

Tables and figures

As with the text, tables and figures should be clear, legible, labeled appropriately, and easy for the reader to interpret. Reviewers should note any potential concerns with readability; for example, inappropriate font sizes on labels or inability to distinguish colors. These issues should be noted and explained precisely in comments to the authors as differences in software may create unintended differences in electronically produced images. Tables and figures should have accompanying legends, ideally which explain any details being highlighted and make clear the purpose of the figure at a glance.

REVIEWING CASE REPORTS

In many ways case reports are similar to research papers. Guidelines regarding the abstract, specificity of method or treatment, use of tables and figures, and conclusions apply equally to both. However, there are also review criteria which are specific to case reports.⁵

Ethics

Because they report on a single patient, case reports must take extra care to make sure that the privacy and rights of the patient are properly maintained. In accordance with the Health Insurance Portability and Accountability Act (HIPAA), information identifying the patient must not appear in the report. *JOI's* editorial staff submits for peer review only reports for which they have already received a form of consent to publish signed by the patient. For patient privacy reasons, reviewers do not receive a copy of this form.

Title

JOI does not mandate strict guidelines regarding case report titles, but ideally, case report titles should follow a more specific standard than research papers. The case report title should, in brief, mention the condition, treatment, outcome thereof, and a brief, not highly specific descriptor of the patient, ideally including the singular article "a" or "an".⁶ This last element is important so that the title does not suggest a larger trial. For example, "Analgesic treatment shows reduced pain in a female post-dental implant surgery" includes all necessary elements and is preferable to "Analgesic treatment shows reduction in pain associated with dental implant surgery." Titles which do not meet these guidelines are typically still acceptable, so long as they are both succinct and descriptive.

Authors

It is not uncommon for case reports to have excessive author lists.^{7,8} An individual should be listed as an author only if they meet *all* of the following criteria established by the International Committee of Medical Journal Editors: The individual (1) has contributed substantially to the treatment design, subsequent study, or analysis, (2) has been involved substantially in writing or editing the report; and (3) has approved the final version submitted for publication.⁵ Individuals contributing to the report who do not meet all 3 criteria should be thanked in the acknowledgements rather than listed as authors.

Introduction

The introduction should contain sufficient background information to give readers some baseline of familiarity with the condition described, and may include information speaking to relevance, novelty, or context, such as general incidence rate or number of previously reported cases. However, the introduction should be limited to what is necessary to familiarize readers with

the topic, and not be similar in scope to an actual literature review.

Case report

JOI, like most journals, uses the Case Report heading for the section of a case report which is equivalent to the Materials and Methods section of a scientific manuscript. The Case Report section should include all necessary details for readers to follow the diagnosis, treatment, and results. The course of the case should be presented clearly and in chronological order.⁹ Quantitative evaluation using accepted, standardized scales or indexes is preferable to subjective description when possible; however, no relevant details should be omitted, including those which are necessarily subjective. Tests which informed the diagnosis or treatment course, even because they were negative, should be included, while routine tests which were not of any clear relevance to the case should not be included.

Discussion

The discussion is the only section of a case where the clinician's personal opinion on the case is appropriate. In the discussion, the clinician should briefly compare the specific case reported with the published literature on the condition or treatment, and suggest how the case report is relevant to the field of Implantology in general. Important differences between the case and previously documented cases should be highlighted here, rather than in the Case Report section. Rationale for the use of any unusual tests or treatments should also be provided here and should be understandable and logical.

Due to their anecdotal nature, case reports should be especially careful not to state or imply in their language that any observed correlation is necessarily indicative of causation, or can be generalized across patients.^{10,11} It is appropriate, however, for the authors to offer hypothesis concerning why a given procedure was or was not effective, and to suggest specifically

what type of studies could provide further information on the hypothesis suggested by the case.¹²

SUMMARY

Not all peer reviews will include all of the aspects described, however these instructions should serve as a useful guide both to the overall method of reviewing and some of the specifics that may be easy to overlook. Ultimately, however, the single most important rule of writing peer reviews is also the most intuitive; one should review any manuscript which crosses one's desk in the same fashion one would want one's own submission to a journal to be reviewed, with all due attention to detail, fairness, honesty, courtesy, and punctuality.

REFERENCES

1. Roberts LW, Coverdale J, Edenharder K, Louie A. How to review a manuscript: a "down-to-earth" approach. *Acad Psychiatry*. 2004;28:81-87.
2. Benos DJ, Kirk KL, Hall JE. How to review a paper. *Adv Physiol Educ*. 2003;27:47-52.
3. Lee AS. Reviewing a manuscript for publication. *J Oper Manag*. 1995;13:87-92.
4. Bordage G. Reasons reviewers reject and accept manuscripts: the strengths and weaknesses in medical education reports. *Acad Med*. 2001;76:889-896.
5. Green BN, Johnson CD. How to write a case report for publication. *J Chiropr Med*. 2006;5(2):72-82.
6. Janicek M. *Clinical Case Reporting in Evidence-based Medicine*. Oxford: Butterworth-Heinemann; 1999.
7. Fenton JE, Khoo SG, Ahmed I, Ullah I, Shaikh M. Tackling the case report. *Auris Nasus Larynx*. 2004;31:205-207.
8. Har-El G. Does it take a village to write a case report? *Otolaryngol Head Neck Surg*. 1999;120:787-788.
9. Cohen H. How to write a patient case report. *Am J Health Syst Pharm*. 2006;63:1888-1892.
10. Martyn C. Case reports, case series and systematic reviews. *Q J Med*. 2002;95:197-198.
11. Godlee F. Applying research evidence to individual patients. *BMJ*. 1998;316:1621-1622.
12. DeBakey L, DeBakey S. The case report. I. Guidelines for preparation. *Int J Cardiol*. 1983;4(3):357-364.