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Reviewing Journal Manuscripts

An easy to follow guide for any nurse reviewing journal manuscripts for publication

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INTRODUCTION

Wiley Blackwell is pleased to provide this complimentary booklet focused on reviewing for scholarly publications, written by Charon A. Pierson, PhD, GNP, FAAN, FAANP, Editor-in-Chief of the *Journal of the American Association of Nurse Practitioners.* Inside, you will find useful information and helpful suggestions for nurses and healthcare professionals who are reviewing journal manuscripts. Wiley Blackwell has an extremely broad range of nursing and healthcare journals, and there is likely to be a journal which you are interested in and/or for which you have been asked to review a manuscript. However, the guidelines in this booklet are relevant to almost all scholarly disciplines.

We hope that you will see the booklet as a useful resource to keep and consult in the future as you review journal manuscripts, and we wish you success in your work.

Griselda Campbell, Nursing and Healthcare Journals

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Reviewing Journal Manuscripts

What is peer review?

Peer review, an important element in the production of scholarly work, is a formal system of examining scientific work prior to its publication in the literature. Refereed literature defines the boundaries of scientific knowledge and serves as the mechanism for advancing a profession. Thus, peer reviewers are essential partners with authors and journal editors in the effort to create and maintain the official record of a discipline (Dipboye, 2006).

Despite this important role, reviewers might not be recognized for the work they do or the contributions they make to the production of knowledge in our respective disciplines. Even when reviewers do not agree on their recommendations to authors (a very common occurrence), high quality reviews do aid journal editors in deciding if a manuscript has potential for publication. Most authors agree that peer reviews provide useful guidance for manuscript revisions (Christenbery, 2011; Shattell et al., 2010). Well-written manuscripts are both more interesting to read and may have a greater impact on the discipline.

Why become a reviewer?

Authors who have incorporated the suggestions of reviewers into their own manuscripts have greatly benefited from this service provided by other colleagues. Any author whose work has undergone peer review has an obligation to volunteer as a reviewer; to do otherwise may be seen as shirking a professional duty (Priem & Rasheed, 2006). Although reviewers may not be recognized for their work, there are many benefits to serving as a reviewer for journals, books, conferences, and grants. Reviewers can be recognized in a year-end thank you editorial or advertisement, or on the journal homepage. Top reviewers can be given special recognition and, in some cases, be invited to sit on the journal's editorial board. Academics and professional researchers may actually receive formal "credit" within their own institutions for serving as reviewers; often this is counted as "service to the profession" in performance evaluations.

There are also less tangible rewards. Good reviewers are often seen as experts in their fields and a valuable resource to journal editors, publishers, professional organizations, and grants programs. Opportunities for other types of recognition may come from good, reliable work as a reviewer.

Who can be a peer reviewer?

Peers are colleagues or equals within one's profession. This does not mean that only nurses can review nursing literature or that nurses cannot review health sciences research. Although all disciplines have a core body of knowledge specific to that discipline, there is often crossover in research, education, and practice arenas. Reviewers are selected based on their expertise relative to the content of the manuscript. Those who have expertise in research methodology and statistics are often called on to review in a variety of disciplines, and topic experts may review in multiple disciplines.

What types of reviews are most common?

Most reviewing processes are formalized in some way. Informal reviews are more likely to occur prior to submission, although the same principles discussed in this guidebook apply to crafting a constructive informal review. Journals and other types of published works use different types of reviewing systems. Some journals use only an editorial board to review manuscripts and make decisions about publication. Publishers frequently maintain a list of reliable and expert reviewers for book and media projects. Agencies that grant money based on proposals solicit reviewers based on the particular request for proposals and the expected number of submissions. Open reviews are where the reviewers know the identities of the authors and, in some cases, the authors may know the identities of the reviewers. There are also commercial pre-submission professional reviewing services for which authors pay.

Blind reviews are of two types: neither author nor reviewer knows the identity of the other (double blind) or the reviewer knows the identity of the author but the author never knows the identity of the reviewer (single blind). Nearly all (95%) nursing journals follow the double blind process (Kearney & Freda, 2005). It is important to know whether or not the process is a blind review. If a reviewer can identify the author of the paper and the process is supposed to be double blind, the reviewer should notify the journal editor and await instructions. In some cases, the paper will be reassigned; in other cases there will be no change. There are advantages to each type of review. When reviews are double blinded, reviewers may provide a more objective critique of the manuscript knowing that the authors will not know the identity of the reviewer. Open peer review has the advantage that reviewers are held publicly accountable for their comments and decisions. Reviewers may be asked to post their signed comments on a website or their comments might be published in the journal when the article is published (Wager et al., 2002). Exposure of reviewers' comments provides an opportunity for the scholarly community to recognize the quantity and quality of work that goes into performing this valuable service and for new reviewers to examine the process of reviewing and revising manuscripts for publication. For example, *Nursing Research* posts selected manuscripts, reviews, and correspondence with authors on its website (http://www.nursing-research-editor.com). This is an excellent site to use for teaching or self-learning to improve the quality of one's reviews.

How to become a reviewer

Most journal editors and publishers welcome volunteers as reviewers; however, few graduates of nursing programs receive any formal education in how to review manuscripts (Christenbery, 2011). Thus, editors may be very cautious about using new reviewers until they see evidence that the reviewer can do an adequate review. Be sure to communicate with the editor about what you are comfortable reviewing, such as content areas, types of manuscripts or projects, and open or blind reviews. Whether or not a reviewer is asked to review repeatedly will depend on the quality of the first few reviews, so ask for feedback on these reviews to gauge if you are providing the kind of feedback the authors and journal editors expect. Clarify with the journal editor exactly what is expected of a reviewer. In most cases, this should be available through reviewer guidelines, author guidelines, or explicit written instructions with the invitation to review. You can also find generic checklists for reviewing some types of articles (see for example Tables 1 and 2 in Christenbery, 2011). There is also a suggested checklist for reviewers later in this guide. If your assignment is not clear, ask for more specific instructions or decline the request. Be sure to do the review in the time requested by the journal editor, because authors are eager to receive the results of their manuscript review and decision by the journal editor.

1. General guidelines for performing a review

Read for content

It is a good idea to read, or at least skim, the manuscript as soon as possible after receiving the request to review. If you have any concerns about your ability to do the review in a timely manner, notify the journal editor at once and provide a timeline within which you can accomplish the task. If you have concerns about your expertise for reviewing the content, advise the journal editor also as soon as you recognize this. It is only by reading the manuscript through once that you will be able to determine whether or not you can fulfill the obligation.

It is often easier to read the manuscript in its entirety for an overall, or holistic, impression before focusing on specific areas for the review. You might find the need to review some background articles to refresh your memory on the topic; do your own preparation if necessary before providing feedback to the author on the specific details of the manuscript.

Read for specifics

Depending on the type of material under review, a reviewer may need to focus on one or more of the following in greater detail.

Appropriate citation of material. A scholarly article should be based on the peer reviewed literature of a discipline; therefore, the ideas and research already published on the topic should be appropriately cited and integrated into the text of the new work. In order to develop the work, the author must relate his or her discovery, concept, or argument to what has been presented previously. This is an area of some difficulty for many authors. Look for omissions of major pieces of relevant work and particularly for the use of primary sources. As content experts, reviewers are most familiar with major authors and researchers in the field and can usually spot these gaps.

The most common errors are use of a citation or quoting an expert for every statement (Hall Johnson, 1991), making controversial or obscure comments without any reference, and inappropriate use of secondary sources. The most significant problem, however, may be errors in citations and references. Style guides (such as the American Psychological Association [APA]) and author guidelines provide specific rules for appropriately citing electronic sources.

Clarity of writing. The importance of clarity of writing cannot be overstated. In one study of nursing journals, 79% of recommendations by reviewers (N= 528) were influenced by grammar and writing style (Shattel,et al., 2010).

A clear, well-written manuscript flows logically from one thought to the next, includes transitions and linkages that lead the reader along a well-defined path from beginning to end, and anticipates the concerns or questions a reader might have. The purpose of the manuscript is clear and the arguments are developed in an orderly fashion. The manuscript begins at the correct starting point and everything the reader needs to know to understand the development of the arguments is clearly presented or cited.

Resist the temptation to re-write the manuscript in the way you wish it had been written. This is unnecessary work on your part as a reviewer and is unfair to the author of the work. If there are parts of the manuscript that need to be rearranged in order to make sense, then that is a legitimate point to make in the review; however, if you just prefer another approach to the research or the topic, then that is opinion and must be recognized as such. For example, a reviewer might comment on the use of third person versus first person as a hallmark of "academic" writing. In fact, most contemporary journals prefer a clear simple writing style, including the use of first person (I or we) and active rather than passive voice.

Logical progression of content. Authors who are experts in their fields may make unwarranted assumptions about the knowledge base of a journal's readership. This is easily corrected in revisions, but reviewers need to point out the problem. Helpful comments for authors are those that are "developmental" and not just evaluative (Priem & Rasheed, 2006).

A question to ask as you do the review is "Did the author tell me everything I need to know to understand this section?" As a reviewer who is also likely a content expert, this may be a difficult question to answer. Organization and logical progression of the content is one area where many manuscripts need revision (see subsequent sections for specific suggestions for logical progression and essential elements).

Synthesis of sources. The ability to synthesize rather than just summarize information distinguishes a good manuscript from a poor one (Christenbery, 2011). A common problem with many manuscripts, regardless of the type, is the supporting literature review is too lengthy, contains too many quotations, and does not lead the reader to the next step (i.e., the research question, the need for a new clinical technique, or the solution to a clinical problem).

It may be helpful to think of the literature review as the framework of a house. When you walk into a house you do not see the foundation, the frame, the insulation, the wiring, or any of the other supporting structures. What you see is a house that stands solidly, connected to the earth, with doors that open and lead into fully functioning rooms. A well synthesized literature review is like that house; it is not a separate room. If the author has not synthesized the literature, the reader is left confused and wondering about the point of the manuscript and how the author's research or theory fits with the body of literature on the subject. *Spotting plagiarism.* Anyone who writes or publishes something deserves to be properly credited for their work. The intentional or unintentional omission of such credit constitutes plagiarism. Spotting plagiarism of ideas may be the most important role of a reviewer. In my experience, expert reviewers who are familiar with the literature in their field easily spot plagiarism. Once a reviewer suspects plagiarism, it is important to follow through with a search for the location of the original material and an appropriate note to the journal editor. Most journals today use some type of electronic plagiarism detection software to screen manuscripts, on submission, as a random check, or at the suggestion of the reviewer. Unintentional plagiarism may be more common in novice authors and a key indicator is an uneven quality to the prose style. For example, some sections are well-written while others are choppy, have misspellings and grammatical errors. Tables and figures taken from previously published sources must be appropriately cited and permission obtained for reprinting. Sources in the public domain or published under a Creative Commons license must be cited properly.

Self-plagiarism, also referred to as duplicate or overlapping publications, is a growing problem as researchers, faced with ever increasing pressure to publish more articles, try to get more than one article out of a single project (also called salami slicing; Pierson, 2015). Self-plagiarism may be unintentional, particularly when authors are not aware of copyright laws; however, ignorance of the law does not protect the author should charges be made. A useful website for more in-depth information on this topic is maintained by the International Committee of Medical Journal Editors (ICMJE) (http://www.icmje.org).

Journal style and reference format. Each journal will have a reference style which will be detailed in the Author Guidelines. There is also a "universal" reference style that many journals accept as an alternative or supplement to their own in-house style (see "Uniform Requirements for Manuscripts Submitted to Biomedical Journals: Writing and Editing for Biomedical Publication" at http://www.icmje.org). Not all reviewers are experts in journal styles. In most cases, style and reference formats will be corrected by copy editors, but significant problems with citation and reference formatting may result in confusion in the manuscript itself and improper attribution of important ideas.

For example, it is helpful to check citations for several works by the same author published at different dates. Electronic references are another potential source of confusion. Regardless of the journal's instructions to reviewers, it is always helpful to spot-check references for misspelled names, non-matching dates or names, or incomplete references. If the manuscript eventually goes to publication, a more thorough check will be done by copy editors, unless the editor specifically advises reviewers it is their responsibility to carefully check references.

Constructive Feedback

Most journal editors "desk reject" the worst submissions they receive; sending manuscripts on for review that are clearly fatally flawed or inappropriate for the journal is a waste of a good reviewer's time and effort. Editors do expect reviewers to provide constructive feedback to the authors to assist them in improving the manuscript.

Constructive comments are more likely to assist the author to develop a stronger manuscript (see Table 1).

Table 1: Examples of Constructive Feedback

Examples are from several different reviews and reviewers and do not illustrate a complete review of a single manuscript.

Suggested Areas for Feedback	Unhelpful Comments	Constructive Comments
Acknowledge your understanding of the authors' work in a 2-3 sentence summary	• This article does not relate to the title • This article is confusing	This article is a "synthesized literature review" of the use of text messaging to motivate patients with diabetes. The use of innovative technologies in managing these complex diseases is often unclear and varies depending on the setting and I commend the authors for attempting this project. Thank you for the opportunity to review this manuscript.
Give positive feedback first	• Nice job • Nice article but needs some editing	This article is well-written and the topic is of great significance given the recent controversies and debates on this topic in the literature. The figures and charts add greatly to the manuscript. Please remember that the readership of the journal is international so please clarify terminology so readers everywhere will understand your message.
Provide general suggestions about content, organization, and fit with the project	• Needs better organization • I think the author needs to start over • Author needs to consult an expert on this topic – many errors in content throughout	This is a very well-written manuscript with a nice flow, interesting and relevant information and great applicability to health care today. I have some suggestions for you to consider to make this more appealing to our readers. 1) I would like to see a more in-depth discussion of the genetic implications of this condition. You mention genetic testing but it's hard to see how and when that would occur in practice. 2) You can strengthen your conclusions because you have shown the importance of genetics on the development of the condition, but your conclusions say basically more research is needed. While that may be true, you can state what is known for sure and how to use that information with patients today. Remember this condition is found in many populations around the world so be sure to consider the international impact in your discussion and conclusions.
Provide specific comments about need for clarification of terms, sentences, sections, and tables	• Too much use of jargon • Tables are redundant • What are you trying to say here?	A little more in-depth explanation related to the Management section would be helpful. Specifically, I suggest the following: 1)I was confused about when and how to initiate a referral for specialized testing? How available is that testing? 2)Regarding the treatments, who would offer this type of treatment? 3)Are there any special precautions to observe when caring for someone with this condition?

Provide appropriate and helpful feedback

Usually a reviewer will be asked to follow a specific format or answer specific questions in the completion of a review. There are many guidelines for how to provide feedback and typically reviewers should follow the format or guidelines for the journal to which the manuscript was submitted. The following general suggestions are a reasonable way to organize and present the review. See also Table 1 for specific suggestions for wording comments.

Acknowledge the work. This is first in the narrative to show the author and the journal editor that you have read and understood the manuscript.

Give positive feedback first. Authors are more receptive to making revisions when the review process is fair; one element of fairness is a balance of negative and positive comments (Shapiro & Sitkin, 2006). Besides the effect on the author, providing comments on the positive elements first could help the reviewer find that balance.

Provide general suggestions about content, organization, and fit with the project. General suggestions for improvement help to organize the review and provide a framework for the more specific suggestions to follow. Comment also on the appropriateness of the references (recent, primary, and comprehensive).

Provide specific comments about need for clarification of terms, sentences, sections, tables, etc.,directly on the manuscript, if allowed, or in a written review. If specific suggestions must be written in a table or narrative form, number each suggestion so that the author can respond specifically in the revisions.

Publication Ethics

Conflict of interest disclosures

Authors must disclose any conflicts of interest (COI), and such disclosures should be included in the manuscript sent to the reviewers.

A COI could arise if an author is paid by a commercial entity to write the article, do the research, or compile the review. If a third party, such as a healthcare communications company, writes an article that is submitted by another individual (sometimes referred to as "ghostwriting"), this must also be disclosed as a potential COI. A true conflict may not in fact exist, but journal editors, reviewers, and potential readers must be given all the disclosure information to decide for themselves if any sponsorship has influenced the outcome of the work. The Council of Science Editors has additional information on COI available on their website (http://www.councilscienceeditors.org. The International Committee of Medical Journal Editors (ICMJE) has a standard COI form that authors can complete and submit along with their manuscripts (http://www.icmje.org/conflicts-of-interest/).

Protection of human participants

All research, regardless of methodology, must conform to the ethical standards of the responsible committee for the protection of human participants in the conduct of experiments. This protection also extends to the conditions of care for experimental animals. All settings where research is conducted should have procedures in place to assure participants are protected.

A statement to that effect must be included in the manuscript, even when the institutional decision was to exempt the research from informed consent procedures. Many journals have a policy of not accepting any research that does not contain a statement related to such institutional review prior to the start of the project. Reported research must conform to all applicable procedures to assure ethical conduct and preclude the exploitation of vulnerable people. More information on the ethical conduct of research can be found by searching on the terms "institutional review board" or "IRB" on the website for the National Institutes of Health (http://www.nih.gov), the Office of Research Integrity (http://ori.hhs.gov), or accessing the National Research Ethics Service of the National Health Service in the United Kingdom (http//:www.nres.npsa.nhs.uk). There

are also specialty IRBs that may have jurisdiction over any research or publication of clinical information; it is important to follow all relevant ethical guidelines for the country in which the research is conducted. An additional resource for ethics in publishing is the *Best Practice Guidelines on Publication Ethics: A Publisher's Perspective,* (Graf et al., 2014).

2. Basic principles to which peer reviewers should adhere

The Committee on Publication Ethics (COPE) has published Ethical Guidelines for Peer Reviewers (Hames, 2013). These guidelines provide a basic standard for the ethical handling of the peer review process.

Peer reviewers should:

- only agree to review manuscripts for which they have the subject expertise required to carry out a proper assessment and which they can assess in a timely manner
- respect the confidentiality of peer review and not reveal any details of a manuscript or its review, during or after the peer review process, beyond those that are released by the journal
- not use information obtained during the peer review process for their own or any other person's or organization's advantage, or to disadvantage or discredit others
- declare all potential conflicting interests, seeking advice from the journal if they are unsure whether something constitutes a relevant interest
- not allow their reviews to be influenced by the origins of a manuscript, by the nationality, religious or political beliefs, gender or other characteristics of the authors, or by commercial considerations
- be objective and constructive in their reviews, refraining from being hostile or inflammatory and from making libellous or derogatory personal comments
- acknowledge that peer review is largely a reciprocal endeavour and undertake to carry out their fair share of reviewing and in a timely manner
- provide journals with personal and professional information that is accurate and a true representation of their expertise
- recognize that impersonation of another individual during the review process is considered serious misconduct

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3. Organizing comments for your review

Table 2 can be used to structure a review for those desiring a more structured way to present information. The Essential Items and Parameters for Decision provide some specific guidance for comments related to a manuscript. For reviews submitted via online systems, it might be necessary to copy your comments directly into the response box provided in the program; however, it may be possible to upload a separate file with your comments. Reviewers must work within the system provided.

4. Reviewing Clinical Manuscripts

In addition to the general reviewing guidelines in Table 2, the following information is useful to remember when reviewing a clinical article.

- *Fit with the journal's mission and target audience.* A clinically focused manuscript is an appropriate way to illustrate the application of research-based evidence. The target audience for a clinical article is a professional who needs the latest research to make sound decisions for practice. The manuscript should reflect that focus by carefully citing selected, recent, relevant studies; organize the content around a clinical problem rather than a research question; provide diagrams or tables useful for clinical situations; and speak directly to the clinician in a straightforward style. Discussion should reflect a synthesis of the findings and lead to new understanding of clinical problems and therapies (Christenbery, 2011).
- *Timeliness and uniqueness of the manuscript.* Clinical practitioners have a need for current information delivered in a way that is appealing to read. The writing style must be easy to understand and well organized with headings so that a busy clinician can skim over areas of less importance or interest.
- *Application to professional practice.* The section on implications for practice should be a strong focus of the manuscript. Details about how the research or intervention could be implemented must be clear. The inclusion of clinically applicable screening tools and of patient education or consumer-friendly internet sources where patients can find valid and useful information are valuable elements that reviewers frequently find lacking.
- *Elements of case study (if included) are relevant.* Case studies can be a useful way to introduce material that is directly related to clinical issues. A busy clinician does not have time to read an exhaustive case study; therefore, only essential elements should be presented. Anything that can be presented in figure or table format (i.e., laboratory values, chronology of key events, photographs of a lesion, etc.) will help fill in detail without creating extra verbiage. The most important point to clarify in a review is whether or not this is a real patient and if so, that the patient or family is not identifiable. If this is not clearly stated in the manuscript, it should be queried by the reviewer or the journal editor.

5. Reviewing Research Manuscripts

In addition to the general guidelines on reviewing a manuscript, a useful resource for specific elements of research manuscripts can be found at the Equator Network (http://www.equator-network.org/reporting-guidelines/). Equator is the acronym for Enhancing the QUAlity and Transparency Of health Research. Reviewers can search for appropriate checklists for various types of research, such as randomized trials (CONSORT), observational studies (STROBE), qualitative research (SRQR), diagnostic/prognostic studies (STARD), quality improvement studies (SQUIRE), economic evaluations (CHEERS), and study protocols (SPIRIT). There are many other variations on each of these categories, and most provide a checklist of key elements for inclusion in a study. These are useful for authors during the manuscript preparation stage, but equally useful for reviewers who need a reminder of what must be included in a good report of research.

Theoretical grounding of the research question and the methodology. Justification for conducting a study derives from historical context (Schroter et al., 2008). Research that is not grounded in the theory base of the discipline does little to advance the profession. It is not enough to describe precisely what was found in the research; it is essential to describe why it was found and how the findings relate to other research in the field (Baugh et al., 2006; Schroter et al., 2008).

Appropriateness of the methodology and data analysis. Anyone reviewing a quantitative research manuscript should have a basic knowledge of research methods and statistics in order to interpret the authors' findings and discussion. Some journals, however, will request specific expertise in data analysis to review research manuscripts. In

Table 2: Sample Review Checklist

Essential Item	Parameters for Decision	Reviewer Comments
Is the content (research or review) original and of sufficient importance to advance practice in a meaningful way?	*If the question has already been answered and widely accepted and the manuscript offers no new insights or challenges to accepted practice, the manuscript does not need to be published in a scholarly journal. Recommend Reject.*	
Is this manuscript appropriate for this journal?	*Consider the scope of practice of the target audience and the content of the manuscript to determine if there is a match. Make suggestions if you think the manuscript would be more appropriate for a different type of journal audience.*	
Is the current state of knowledge about the topic accurately represented? If not, what specific areas are missing?	*The introduction and background should clearly state what is known about the topic to justify the value of the research/review. Both what is known and what is not known are important and help to place the current work in perspective. This can often be remedied by revisions. Please comment on areas the author may have missed.*	
What specific question or gap in knowledge does this research/review address?	*The authors should clearly state the question or purpose of the study/review based on what is known and not known at the current time. This can often be remedied by revisions if the topic is otherwise suitable.*	
Were the methods adequately described and was the method appropriate to answer the question posed?	*For reviews, was the method for article retrieval systematic and was the evidence rated in a standard manner? Systematic reviews are preferred as the most unbiased way to answer clinical questions so that negative or conflicting results are not dismissed. The preferred method for reporting systematic reviews are the PRISMA guidelines (http://www.prisma-statement.org). Another appropriate format is that used by the Joanna Briggs Institute (http://www.joannabriggs.org). If the review is biased, this is a fatal flaw and the manuscript should be rejected.*	
	For research, were the design, sample selection, methods, and analysis plan appropriate to answer the research question? A basic understanding of methods and analysis is helpful here, but common sense can go a long way. Sometimes the research is well designed but not well written; using appropriate reporting guidelines such as those found at the Equator Network (http://www.equator-network.org/) can support the writing process. If the research does not report an appropriate design, methodology, sample selection, or analysis, this is a fatal flaw and the manuscript should be rejected.	
	For quality improvement reports (or practice improvement projects), is the methodology clearly differentiated from research? The project should be novel enough to disseminate and the conclusions must not exceed the scope of the project or the findings. If the author confused research and quality improvement methods, this is a fatal flaw and the manuscript should be rejected.	
Were ethical procedures followed?	*Research must be approved by the appropriate research oversight committee of the country in which the research was conducted. Human and animal subjects must always be protected from harm. The use of protected data, even if de-identified, requires permission of the appropriate responsible parties. A statement must be included in the methods section about research approval, even if the research was considered exempt. Any use of cadavers in research or education projects requires a statement that the cadaver lab is certified and follows ethical guidelines for the handling of human remains.*	

Essential Item	Parameters for Decision	Reviewer Comments
Were the statistical analyses appropriate to the data collected? If the manuscript reports a meta-analysis, were the subjects appropriately pooled to do the analysis?	*Is there a reasonable data analysis plan specified in the methods? Usually when advanced statistics are reported, the editor will find a reviewer who is an expert in methodology and statistics. If you are not knowledgeable about the analysis used and cannot offer any opinion, state this in your review. If the analysis is not appropriate to the methodology and the data collected, this is a fatal flaw and the manuscript should be rejected.*	
Are the results reasonable given the design and are they correctly interpreted by the author?	*Do the results follow logically from the background, purpose, methods, and analysis? Overall, you should have developed a sense of the research or review given your expertise and your knowledge of how science is produced. The authors may not have described the methods clearly for the reader to make sense of the manuscript; this can sometimes be corrected with revisions but often the author will require mentoring in writing, which is a helpful suggestion. Sometimes authors go beyond their findings in their enthusiasm and interpretation of their results; this is not acceptable for a scholarly article. This can often be remedied by revisions*	
Do figures and tables contribute to the manuscript? Is there anything that is potentially misleading to readers?	*Tables and figures are a convenient way to display data; however, they can mislead readers into thinking something is more important than it is. Careful reporting of sample size, error margins, and confidence intervals in all graphics ensure that results will not be misrepresented. Sample size must be consistently reported in tables and figures and this must agree with the text. Tables and figures should not repeat everything in the text; data in text does not always need to go into a table or figure. This can easily be remedied by revisions*	
Are the interpretations of the findings backed by the data?	*Authors must not go beyond the data in their interpretations of the findings or the significance of any findings, either positive or negative. One study rarely proves a theory. This can often be remedied by revisions*	
Have the authors correctly placed the results in the context of current knowledge?	*The discussion section must relate the authors' work to the extant literature showing how their findings concur or deviate from the current state of knowledge. This cannot be adequately done in a summary sentence (or conclusion). There should also be a summary of what remains to be discovered (future research) on the topic. This can often be remedied by revisions*	
Have the authors included and correctly interpreted the findings in relation to practice?	*In a practice-driven discipline, scholarly journals strive to present useful information to drive evidence-based practice. When implications for practice are missing, authors need to be reminded that good research and reviews drive and support best practices. This can often be remedied by revisions*	
Is the manuscript written in a scholarly manner, including attention to details such as good grammar, spelling, syntax and punctuation?	*It is not necessary to edit the manuscript as a reviewer. If there are many issues with the writing, make some general comments about the most significant problems and suggest the author seek the services of an editor if the rest of the manuscript is worthy of revision.*	
Are the references cited appropriate, recent, primary (not secondary sources), and from peer reviewed sources? Are any of the references to retracted literature?	*References must be appropriate to the type of manuscript. Certain sources are never appropriate: retracted literature should not be cited unless in the context of the retraction; online, non-peer reviewed sources should not be used; textbooks are rarely appropriate; personal correspondence may be appropriate but should be used sparingly; span of time of sources should be mostly within the previous 5 years except for classic works and some systematic reviews. This can sometimes be corrected with revisions.*	
Is there any evidence of a conflict of interest on the part of the author?	*Competing interests, whether financial, commercial, ideological, or personal must be declared. If you have any suspicion of competing interests on the part of the authors, sponsors, or materials included in the manuscript, please make a confidential comment to the editor.*	

general, most researchers use about 10 - 12 different types of statistical analysis, all of which can be found in a standard research textbook (Greenhalgh, 1997a). The analysis should make sense to the average reader and accurately depict who was sampled, what was measured, and how the measuring was done. Common errors (Schroter et al., 2008) include biased randomization procedures, failure to calculate a power analysis, insufficient information about instruments used (e.g., reliability and validity, translation procedures), invalid assumptions about the data (e.g., distribution of the variable across the population, attention to outliers, missing data). A reviewer who is not comfortable making these analyses should decline the invitation to review the research in this kind of manuscript.

Qualitative research methods are appropriate to answer questions related to understanding and interpreting phenomena. While a quantitative researcher would ask the question "How many undocumented immigrants use the emergency rooms in a particular city?" A qualitative researcher would ask the question "What is the experience of an undocumented immigrant who goes to an emergency room in that city?" Reviewers who are unfamiliar with or biased against qualitative methods should decline to review qualitative research. If the qualitative study is interesting and well-written, reviewers might ignore the appropriateness of the method and give the manuscript a positive review. A reviewer steeped in quantitative research might do just the opposite and reject a qualitative manuscript no matter how sound the method, the findings, or the writing. A potential hidden conflict of interest or bias occurs in the latter situation when an individual with content expertise asked to review a given manuscript allows his or her bias for quantitative methods to contaminate the review (Cooper & Burgoyne, 2006).

Limitations addressed. All research is flawed to some degree and all researchers should be aware of these limitations of their work. These limitations should be addressed in a systematic fashion so that readers can interpret the findings appropriately. A good summary of the limitations gives reviewers additional information about the validity and the reliability of the research reported.

Methodological rigor in qualitative analysis is clearly addressed. A well-described, systematic approach to the data analysis is as essential in qualitative as in quantitative studies. The analysis section may be lengthy and reviewers frequently suggest this section be shortened; however, reducing the verbiage should not be done at the expense of compromising details related to methodological rigor. Every qualitative method has its own systematic approach to asking the question; gathering, organizing, and sorting the data; and explaining the findings. There should be enough information about the method so the reader can understand how data were collected and analyzed and to make some determination about how well the findings fit with current knowledge. To verify methodological rigor, the manuscript must contain some of the data. Data in qualitative research are quotes from participants, documents, or other media. Quotes from interviews or focus groups may be grammatically incorrect, but they should be comprehensible and illustrative of the phenomenon under investigation. It is the quotes that make the manuscript interesting and provide support for the author's interpretations.

Discussion integrates the findings into the state of the discipline. Research does not occur in a vacuum. In order for the community of scholars to adequately understand the author's findings, those findings must be linked back to previous work. When this discussion is strong, the reader has a clear picture of the depth and breadth of the research as well as what further questions remain.

Analysis and discussion may be interwoven in qualitative research. The strict separation of analysis (what was found) and discussion (what it means) that characterizes quantitative studies is neither necessary nor always possible with qualitative research. Clarity of writing is essential to convey to the reader what was found and how the researcher used those findings to interpret meaning and significance. Clear thinking leads to clear writing; therefore, if authors do not have a clear understanding of their methods, data, and interpretations, the manuscript will suffer.

Implications for future research addressed. Good research will have implications for future studies and readers are interested in what questions still need to be answered. This section may be separate from or a part of the discussion, depending on the journal's guidelines.

6. Reviewing Systematic Literature Review Manuscripts

A manuscript that reports a systematic review of the literature answers a specific question. Such reviews often derive from the Cochrane Collaboration, The Joanna Briggs Institute, and other groups devoted to evidence-based practice and the publication of evidence-based guidelines for health care. (See Table 3 for websites where guidelines for developing such evidence can be found.) A well-written systematic review follows guidelines such as the PRISMA guidelines (Preferred Reporting Items for Systematic Reviews and Meta-Analyses, http://www.prisma-statement.org/statement.htm).

Meta-analysis is a particular type of systematic review that combines information from primary research in an attempt to calculate new results based on pooled data. There are specific criteria for conducting a good meta-analysis, and journals that publish this type of review recruit reviewers who are knowledgeable about this process and have a thorough grasp of statistics.

Finally, meta-synthesis is a corollary of meta-analysis for systematically reviewing qualitative research. Although a relatively new technique, there are currently several journals that publish meta-synthesis articles, and there is increased interest in this methodology. A thorough understanding of the philosophical perspectives of qualitative methodologies is essential to evaluate a meta-synthesis (Zimmer, 2006).

The following list includes key points to aid reviewers in organizing any systematic literature review critique:

- *Question is clearly stated.* A key organizational element of a systematic review of the literature is asking an answerable question. The question should be concise, complete, and coherent, and it is usually most helpful if the question is directly stated somewhere in the first one or two paragraphs of the manuscript.
- *Types of reviews and appropriateness of methodology.* The type of review and methods for conducting the review must be clearly stated in the manuscript. Typically, a narrative review highlights primary research but without any systematic attempt to gather and screen all the relevant studies. Systematic reviews apply a rigorous, orderly methodology to find all relevant research, assess each study, synthesize the findings, and present the results in an unbiased and accessible manner (Hemingway, 2009; Joanna Briggs Institute for Evidence Based Nursing and Midwifery, 2000; Moher et al., 2009), and they are common in clinical and biomedical sciences where the explosion of research in recent years has made keeping current with new technologies nearly impossible for the average clinician. Meta-analysis is an important tool in the development of the best evidence for clinical practice in the face of conflicting results from large clinical trials. Because there can be many methodologies within meta-synthesis reviews (see Walsh & Downe, 2005 or Zimmer, 2006), reviewers should check that each methodology is clearly described and that there is a synthesis of the findings and not just a review and critique of the studies.
- *Critique of studies is comprehensive and unbiased.* One distinguishing feature of systematic reviews is the clear and unbiased selection of studies included in the review. Search terms, databases, inclusion and exclusion criteria must be clearly provided in the manuscript. Thoroughness in the search demands a search of foreign language literature, "grey literature" (i.e., theses, unpublished reports, etc.), reference lists in primary sources, and personal communication with experts in the field (Greenhalgh, 1997b). Publication bias, the tendency for leading journals to publish only studies with positive results, can only be avoided by this extensive search for unpublished manuscripts (Hemingway, 2009; Moher et al., 2009). A second characteristic of the systematic review is the rigorous appraisal of the evidence, including weighting of the studies based on a hierarchy of evidence. Whichever hierarchy is used, it must be clearly stated in the manuscript.
- *Findings add new information to the state of the discipline.* A good systematic review is not just a restatement of what is already known; rather, it should be a new look at a complex problem. The goal is always to make sense out of seemingly contradictory studies to solve a clinical problem. Systematic reviews should be perceived as research and conducted accordingly, with methodological rigor. The end result should be treated in the same manner as the findings of any research: conclusions must be grounded in the evidence.
- *Tables are appropriate for the type of review.* Evidence tables are often the easiest way to display key elements of the systematic review. If a meta-analysis is conducted, the results should be displayed in a table or figure of pooled odds ratios (Greenhalgh, 1997b). Effect estimates and confidence intervals provide additional clinical relevance (Moher et al., 2009).

7. Checking References

As many as one third of references in a typical journal may contain errors (De Jong, 2006). Every citation in the text should have a corresponding reference in the list accompanying the manuscript. Names, dates, page numbers, and internet sites should all be correctly spelled or numbered so that any reader will be able to find the citations listed. The use of DOIs (Digital Object Identifiers) to identify references is not only appropriate but preferred in most cases. Many journals now publish articles online ahead of compilation in an issue, so the DOI is the best way to cite such articles. The DOI is a permanent identifier to a published object and does not change once assigned to an article. Spot check a few references or as required by a journal's reviewer guidelines. The PubMed™ Single

Citation Matcher (http://www.ncbi.nlm.nih.gov/pubmed/citmatch) is a quick way to check reference accuracy. It is also possible to verify an approximate number of references from which the author has selected by using a keyword search. If there is a vast amount of literature on the topic and the author has selected very few, this might indicate inadequate coverage of the topic.

For internet references most journals require at least the full URL and sometimes require the date accessed; style manuals should be your guide in this matter. Be alert for incomplete links, such as a link to the homepage and not the specific location for the material. Online databases and search engines may be erroneously cited as a source. Because so much information is available online, it is important to scrutinize citations and check to verify that links are active and lead to the correct material. If the only way to get to the information is through a search engine link, there should be a more complete reference preceding the link. Other online sources frequently cited are commercial websites. Usually, this is inappropriate in a scholarly publication and needs to be drawn to the attention of the author. A controversial example of this is the use of Wikipedia (http://www.wikipedia.org) for definitions and background information, because the content contained in this free online encyclopedia is not peer reviewed and the general public is allowed to enter and edit items.

8. Style, Grammar, and Punctuation

In some journals, issues of style, grammar, and punctuation will be corrected by copy editors. If reviewers are not expected to make specific comments about grammar and spelling errors, it is acceptable to make a general comment on these problems, such as, “There are many grammatical errors that interfere with the flow of the manuscript and would potentially affect a reader’s understanding of your work.” In cases where the journal editor relies on the authors to correct such errors, it is important that reviewers be specific about corrections needed for grammar, syntax, and spelling.

Abbreviations and jargon are always potential causes of misunderstanding and should be mentioned. It is always best to assume the reader of the article will be a generalist and will not have intimate knowledge of the specialized vocabulary or procedures mentioned in the manuscript. Readers may also be located in another country, so be specific when defining terms and put them into a wider context as appropriate. When English is not the first language of the author, a reviewer might suggest submitting the manuscript to an outside service for copy editing. There are several reliable companies that specialize in copy editing health sciences research (see links at http:/www.wileyauthors.com). Authors may also find translation services useful to make their manuscript more readable. Note that authors are usually responsible for payment for these outside services.

A reader-friendly style is more likely to engage the audience. Even complex material can be presented in a manner that is engaging, but this requires very careful attention to word selection and organization.

9. Make a Clear Recommendation and Support It

Use the reviewer guidelines for categories (i.e., accept with minor revisions, resubmit with major revisions, reject, submit elsewhere, has potential for publication, etc.). If there is no request to provide such a recommendation to the journal editor, be sure the review gives guidance about the strengths and weaknesses of the manuscript; summarize these comments clearly and respectfully. If you spot a “fatal flaw” in the manuscript, be sure to document this clearly, support statements with references or copies of papers to send to the journal editor, and explain clearly why you think the error cannot be corrected by the author’s revisions (Wager,et al., 2002). Depending on the situation, the journal editor might want to add an additional reviewer, or contact the author for additional information. *Assume the author will read what you write* unless invited by the journal editor to provide confidential feedback. There is no good reason to make disparaging remarks about the authors’ poor writing, lack of critical analysis, or flawed approach to the task. Take the job of reviewing seriously and approach the task in a professional manner. Even if the review is blinded, write the review as if the scholarly community will know your name and hold you partially accountable for the quality of the published work.

Complete the review in a timely manner. If you are unable to adhere to the projected timeline, inform the editorial office of the delay and provide a reasonable estimate of when you will be able to complete the review.

Ask the editor for feedback on your first reviews. Journal editors normally have a system for monitoring the quality of reviews and will not use reviewers who are always late in responding, provide poor quality reviews, or make biased judgments on manuscripts (Kearney & Freda, 2005; Schroter et al., 2008). Additionally, most manuscripts are reviewed by at least two individuals, or more if there is considerable variance in the recommendations. A journal editor should be able to report whether the review you provided was comparable to other reviews of the same manuscript. If you really want to improve your reviewing skills, seek out a mentor or participate in a group review, such as that of an informal grant review. See Table 3 for helpful resources on the internet or look for open review sites such as the Nursing Research website (http://nursing-research-editor.com).

10. Conclusion

Reviewing manuscripts is serious and sometimes difficult work but vital to the integrity of scientific research. Everyone who writes and publishes in the scholarly arena has a professional obligation to serve as a reviewer for their peers, and undertaking that responsibility requires a commitment to provide a thoughtful, fair, and prompt response. There are many resources to assist those who are willing to provide this service, and we hope you will consult this booklet as needed.

Table 3: Additional Resources

Wiley Reviewer Resources provides resources and guidance for reviewers. www.WileyPeerReview.com

The Centre for Evidence-Based Medicine (CEBM) promotes and teaches the principles of evidence-based health care. http://www.cebm.utoronto.ca

The Centre for Reviews and Dissemination (CRD) maintains a large database of research about the effect of health care interventions and provides training on the conduct of systematic reviews. http://www.york.ac.uk/inst/crd

The Committee on Publication Ethics (COPE; http://publicationethics.org) is a forum for editors and publishers to discuss all aspects of publication ethics. Reviewer guidelines are also available.

The Consolidated Standards of Reporting Trials (CONSORT) statement is an important research tool that takes an evidence-based approach to improve the quality of reports of randomized trials, enabling readers to understand a trial’s conduct and to assess the validity of its results. http://www.consort-statement.org

The Equator Network (http://www.equator-network.org/reporting-guidelines) provides a library of tools to aid authors and reviewers in writing and reviewing health research.

Good Publication Practices for communicating company-sponsored medical research: the GPP3 guidelines encourage ethical and transparent publication of the results of clinical trials sponsored by pharmaceutical companies. http://www.ismpp.org/gpp3

The International Academy of Nursing Editors (INANE) is an informal collaborative of nursing editors for the purpose of promoting best practices in publishing. The website hosts a directory of nursing journals and an informative blog. http://www.nursingeditors.com

Nurse Author & Editor, a free online newsletter from Wiley, contains articles for and by journal editors, reviewers, and contributors. http://www.nurseauthoreditor.com

Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement provides guidance to improve the reporting of systematic reviews and meta-analyses. http://www.prisma-statement.org

The Society for Scholarly Publishing (SSP) advances scholarly publishing and communications across disciplines through networking, education, and role development. http://www.sspnet.org

The World Association of Medical Editors (WAME) provides resources for medical journal editors and manuscript reviewers. http://www.wame.org

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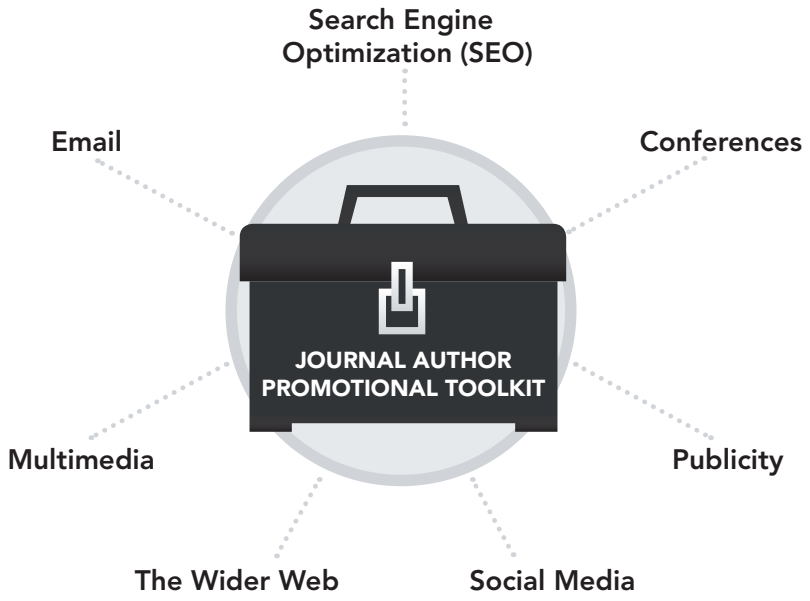

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