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 scholarly publications, written by Charon A. Pierson, PhD, APRN, FAANP, Editor-in-Chief of the *Journal of the American Academy 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 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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1   Overview of Peer Review

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 (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. 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. Conflicts of interest may be an issue when strongly held opinions clash; reviewers should be aware of this possibility and inform the journal editor of any potential competing interests. Reviewers are expected to treat the review process as confidential and not use any manuscript content to further their own interests.

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. Publishing houses 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. These processes are considered open reviews; that is, the reviewers know the identities of the authors and, in some cases, the authors may know the identities of the reviewers.

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, 2010). 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/authors/ open.php). This is an excellent site to use for teaching or self-learning to improve the quality of reviews.

How to become a reviewer

Most journal editors and publishers welcome volunteers as reviewers. Be clear 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 it is always wise to 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. If this 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 always anxious for the results of their manuscript review and decision by the journal editor.

2   General Guidelines for Organizing a Review

Read for content

It is a good idea to read, or at least skim, the article 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. 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 using a citation or quoting an expert for every statement (Hall Johnson, 1991), making controversial or obscure comments without any reference, and the 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 (Webb, 2009).

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. Most journal editors do not send out the worst submissions they receive; to do so is a waste of a good reviewer's time and effort. Helpful comments for authors are those that are "developmental" and not just evaluative (Priem & Rasheed, 2006).

Constructive comments are more likely to assist the author to develop a stronger manuscript (see Table 1). 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, 2010). 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 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 appropriate note to the journal editor.

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. Journal editors may check a few online articles or sources, because authors occasionally "borrow" material from websites, perhaps under the mistaken impression that such material is in the public domain. Most editors and publishers have the ability to submit manuscripts to online plagiarism detection services but they may rely on reviewers to raise the suspicion.

Self-plagiarism, also referred to as duplicate publication 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 (Hegyvary, 2005). 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 (http://www.icmje.org/#over).

Journal style and reference format. Each journal or project should have its own reference style. 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 copyeditors, but significant problems with citation and reference formatting may result in confusion in the manuscript itself.

Table 1: Examples of Constructive Feedback

The following 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
Receive/acknowledge the work	• This article does not relate to the title • This article is confusing	This article is a "synthesized literature review" of Creutzfeld-Jacob Disease and the role of the advanced practice nurse (APN). I recognize that the APN role 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 release of the new human papilloma virus (HPV) vaccine. The explanation of the normal progression of HPV is particularly well done. The figures and charts add greatly to the manuscript.
Provide general suggestions about content, organization, and fit with the project	• Needs better organization • I think the author needs to start all 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 practice. I have only one suggestion – I think the link back to the Kleinman model could be stronger at the end. In my experience, health care providers so privilege the medical discourse that they miss many opportunities to use the patients' explanatory models to best advantage. As long as you raise Kleinman early on, I think the manuscript would be strengthened by linking back to that model with a little more emphasis in your discussion.
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 to those of us who practice in more rural or underserved areas. Specifically, I suggest the following: 1). I was confused about when and how to initiate a referral. As a nurse practitioner (NP) who is capable of ruling out the other causes of edema, should I be referring anyone with lymphedema no matter how extensive for the specialized testing? How available is that testing? I've not seen anyone in my area do this. 2). Regarding the treatments, is it possible to be certified in this technique, and who would qualify (e.g., an NP)? Is this something physical therapists do, because this is usually where I refer these patients? Is this treatment reimbursed by insurance, Medicare, Medicaid, and are there any special billing codes that should be used?

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.

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 (see Baruch, et al., 2006; Kralik, 2006; Wager, et al., 2002; Westergren, 2006). The following general suggestions are a reasonable way to organize and present the review. See also Table 1 for specific suggestions for wording comments.

Receive and 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.

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.

Conflict of interest disclosures

Authors must disclose any conflicts of interest, and such disclosures should be included in the manuscript sent to the reviewers. A conflict of interest 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 (referred to as "ghost writing"), this must also be disclosed as a potential conflict of interest. A conflict of interest 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 conflict of interest available on their website (http://www.councilscienceeditors. org/ services/draft_approved.cfm#Paragraphfour).

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) 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, such as that of the Navajo Nation (http://www.nnhrrb.navajo.org). An additional resource is the *Best Practices Guidelines on Publication Ethics: A Publisher's Perspective* (Graf, et al., 2007).

3 Reviewing a Clinical Article

In addition to general reviewing guidelines, 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; organizing the content around a clinical problem rather than

a research question; providing diagrams or tables useful for clinical situations; and speaking directly to the clinician in a straightforward style.

• *Current and primary source material.* Primary, recent references should form the evidence base

for clinical practice. Discussion should reflect a synthesis of the findings and lead to new understanding of clinical problems and therapies (Cristenbery, 2010).

Table 2: Guidelines for Structuring a Paper *

INTRODUCTION
Provide the rationale and context.

BACKGROUND
Provide a substantial, critical literature review, ending with conclusions drawn from the review for the study.

THE STUDY
Aims: Include research objectives, questions, and hypotheses as appropriate.

Design/Methodology: Describe what was used. Quantitative studies could be survey, randomized controlled trial, quasi-experimental, descriptive, cross-sectional, etc. Qualitative studies could be grounded theory, phenomenology, ethnography, etc.

Sample/Participants: Explain what was used. Types could be random, stratified, convenience, purposive, etc. Also include the size, a description, a justification for the choices, if a power calculation was done and why/why not, and the response rate.

Data Collection: Use subheadings for different types as appropriate, such as questionnaires, interviews, observation, etc. Explain if a pilot was conducted and what, if any, changes were made for the main study.

Validity and Reliability/Rigor: State the criteria used based on the design and methodology. Explain what steps, such as an audit trail, research journal, peer assessment, etc., were taken to ensure this and the results.

Ethical Considerations: State the ethics committee's approval and describe information and guarantees given to participants, any special considerations, etc.

Data Analysis: Include software used, as appropriate.

RESULTS/FINDINGS
Start with a description of the actual sample studied. Use subheadings as appropriate.

DISCUSSION
Start with the study limitations, and link results to the literature. Integrate results/findings with discussions in qualitative research studies.

CONCLUSIONS
Offer real conclusions, not just a summary of the findings. Provide recommendations for practice, research, education, management, etc., as appropriate and consistent with the limitations.

ACKNOWLEDGEMENTS
Detail any grant funding, including agency names and grant numbers. Provide the names of research assistants and others who did not contribute to the design of the study or the writing of the manuscript, but whose contributions were essential to success of the project. Provide the names of mentors or advisors in academic programs who provided guidance but do not qualify as authors of the work.

CONFLICT OF INTEREST DISCLOSURES
Detail any funding from the pharmaceutical industry, such as editorial or writing assistance, supply of medications or other products for a clinical study, or provision of incentives to patients in a clinical study, etc. Disclose if an author has been on a company's speakers bureau and has received funding in the past, even if no funding has been provided for the current study or the article.

* Adapted from Webb, C. (2009). *Writing for Publication.* Oxford: Blackwell Publishing, Ltd. Used with permission.

Table 3: Characteristics of Qualitative Methods

Method	General Approach or Framework	Major Theorists in Health and Social Science Research
Content analysis, manifest or latent, conceptual or relational	Categorizes, counts and examines the frequency and meaning of textual materials	Berelson, Carley, Krippendorf, Weber
Discourse analysis, conversation analysis, semiotics	Examines taken-for-granted ways that people make sense of their world by observing verbal and nonverbal interactions	Atkinson, Denzin, Garfinkel, Goodwin, Heath, Heritage, Maynard, Sacks, Shegeloff, tenHave
Ethnography	Examines all aspects of cultural settings and patterns to explain behavior and interactions	Blummer, Geertz, Goodall, Hammersley & Atkinson, Leininger, Lofland & Lofland
Grounded Theory	Examines experiences over time to explain process, based on symbolic interactionism	Blummer, Charmez, Corbin, Glaser & Strauss
Phenomenology, Hermeneutics	Philosophical and methodological approach to interpret the structure of experience or consciousness	Dilthey, Gadamer, Heidegger, Husserl, Ricouer

- *Timeliness and uniqueness of the article.* 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.

4 Reviewing a Quantitative Research Article

In addition to the general guidelines on reviewing a manuscript, the following are common areas where reviewer input is very useful. See also Table 2 for specific suggestions on the structure of a research manuscript.

- *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

Table 4: Additional Resources

Wiley-Blackwell's Author Services website includes links to professional editing and translating services, as well as guidelines for optimizing articles for search engines, and more. http://authorservices.wiley.com/bauthor/author.asp

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 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

Good Publication Practices for communicating company sponsored medical research: the GPP2 guidelines encourage responsible and ethical publication of the results of clinical trials sponsored by pharmaceutical companies. http://www.gpp-guidelines.org

The International Academy of Nursing Editors (INANE) is an informal collaborative of nursing editors for the purpose of promoting best practices in publishing. http://www.nursingeditors-inane.org/

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

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 research article 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 general, most researchers use about 10 or 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.

- *Presentation of findings.* Pay careful attention to material presented in table and figure formats. The text should not repeat or conflict with information in tables; rather, it should draw the reader to important highlights and allow the tables to speak for themselves. The information presented should be enough to allow readers to draw their own conclusions. For example, statistically significant changes in laboratory values are not necessarily clinically significant; therefore the absolute laboratory values should be included along with the relevant statistic and probability values.

- *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 about the validity and the

reliability of the research reported in the manuscript.

- *Presentation of findings.* Pay careful attention to material presented in table and figure formats. The text should not repeat or conflict with information in tables; rather, it should draw the reader to important highlights and allow the tables to speak for themselves. The information presented should be enough to allow readers to draw their own conclusions. For example, statistically significant changes in laboratory values are not necessarily clinically

- *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.

- *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.

5   Reviewing a Qualitative Research Article

In addition to the general guidelines on reviewing a manuscript of quantitative research, the following are common areas where reviewer input is very useful in the review of qualitative research. Qualitative methods are very different from quantitative methods; therefore, articles must be more than opinion or essay for readers to have confidence in the research process. Reviewers should pay particular attention to methodology and remember that it may take more words to adequately describe qualitative methods and findings. As in all research manuscripts, the protection of human subjects must be adequately described.

Methodology is appropriate for the research question. Qualitative research methods are the best way 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).

There is probably less consensus as to which type of qualitative approach to use in specific situations, and various disciplines have preferences for each method. See Table 3 for the major characteristics of some of the more common qualitative research methods.

Methodological rigor 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.

Text is rich in descriptive elements. 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.

Analysis and discussion may be interwoven. 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.

6 Reviewing a Systematic Literature Review

There are a few types of literature reviews. 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 4 for websites where guidelines for developing such evidence can be found.)

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:

- *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 (Davies & Crombie, 2001; 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 (rejected) manuscripts (Davies & Crombie, 2001; 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. As experts in the content area, reviewers may be able to spot citation errors quickly. For most manuscripts only recent literature should be cited, particularly if the field is advancing quickly. The cited literature should be relevant to the topic and appropriate to the audience. Primary sources are always preferred. Reference and citation style is determined by the journal or publisher, and authors should follow the guidelines carefully. Spot check a few references or as required by journal reviewer guidelines.

The PubMed™ Single Citation Matcher (http:// www. ncbi.nlm.nih.gov/entrez/query/static/ citmatch.html) 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 along with the date accessed. Be alert for incomplete links, such as a link to the home page 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. For example, the academic search engine EBSCOhost provides links to articles in its database that contain coded instructions to the computer to locate the website. If this link is corrupted in any way, the result will be a dead link and readers will be unable to access the actual article without more information about the reference.

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 copyeditors. 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 cause for 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 copyediting. There are several reliable companies that specialize in copyediting health sciences research (see links at http://authorservices.wiley.com/bauthor/). 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 that 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 or three 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 of an informal grant review.

See also Table 3 for helpful resources on the Internet or look for open review sites such as the Nursing Research website.

10 Conclusion

Reviewing publications 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.

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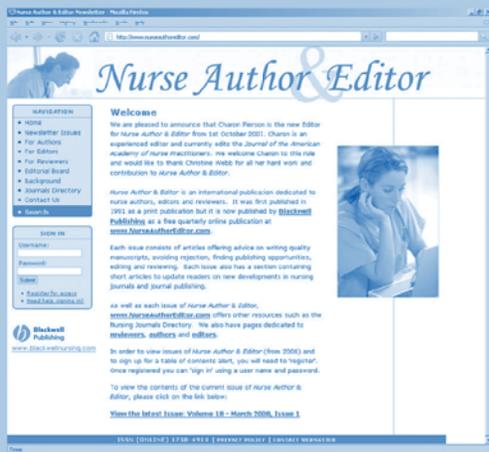
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