Ten Points to Address When Publishing a Manuscript

Angelia Garner, MS, RDH¹
Angela Morey, MSM, RHIA²
Gongchao Yang, MD, MLS³
Fazlay Faruque, PhD⁴

1. Instructor, Dental Hygiene School of Health Related Professions, University of Mississippi Medical Center, Jackson, Mississippi
2. Assistant Professor, Health Information Management School of Health Related Professions, University of Mississippi Medical Center, Jackson, Mississippi
3. Associate Professor, Academic Information Services, University of Mississippi Medical Center, Jackson, Mississippi
4. Professor, Clinical Health Sciences, School of Health Related Professions, University of Mississippi Medical Center, Jackson, Mississippi United States


ABSTRACT
The completion of a carefully planned and time consuming research project is a milestone for many researchers; however, the journey does not end there. The next phase involves sharing that knowledge with the scientific community at large. A published manuscript describing the research findings allows others to learn from and expound on that information so that society ultimately benefits. The preparation of a manuscript requires much time and careful consideration. There are many principles to apply in order to make sure that a manuscript is accepted for publication. Authors must maintain their sense of purpose throughout the publication process in order to fulfill their mission to add value and knowledge to the scientific community. This article aims to provide potential authors with ten important points to remember when writing and submitting manuscripts. Common mistakes made, recommended guidelines, and related research to each topic will be discussed in the hope that this article may prevent future manuscript rejections and minimize revisions of many manuscripts.

INTRODUCTION
The completion of a carefully planned and time intensive research project is a milestone for researchers; however, the journey does not end there. The next phase involves sharing newly found knowledge with the scientific community at large. A published manuscript describing research findings allows others to learn from and expound on the information so that society ultimately benefits. Preparation of a manuscript for publication requires much time and careful consideration. Apart from sound research methodology, utilizing some guiding principles of strategy will increase the likelihood that a manuscript is accepted for publication. Without a well-thought strategy of manuscript preparation and submission, even sound research may not be able to pass the gate guarded by reviewers to achieve a place in a journal. This article aims to provide potential authors with ten important points to remember when preparing and submitting manuscripts to increase the possibility of publication. This article does not intend to delve into research methodology, but guide the author in implementing a successful strategy. Table 1 provides a listing of pertinent information of the top 20 peer-reviewed journals in the categories of general and internal medicine that a new author desiring to publish should carefully consider. The journals are ranked by their 5-year impact factor based on the 2010
Ten Points to Address When Publishing a Manuscript

Common mistakes made, recommended guidelines, and related research pertaining to each topic will be discussed in the hope that this article may prevent future manuscript rejections and minimize revisions.

Table 1. Top 20 Journals of 2010

<table>
<thead>
<tr>
<th>Rank</th>
<th>Journal Title</th>
<th>ISSN</th>
<th>Abstract Word Limit</th>
<th>Text Limit</th>
<th>Article /Year 2010</th>
<th>5-year Impact Factor</th>
<th>Publication Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>NEW ENGL J MED</td>
<td>0028-4793</td>
<td>250</td>
<td>2,700</td>
<td>1403</td>
<td>52.362</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>LANCET</td>
<td>0140-6736</td>
<td>300</td>
<td>3,000</td>
<td>1542</td>
<td>32.498</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>JAMA</td>
<td>0098-7484</td>
<td>300</td>
<td>3,000</td>
<td>1043</td>
<td>29.309</td>
<td>None</td>
</tr>
<tr>
<td>4</td>
<td>ANN INTERN MED</td>
<td>0003-4819</td>
<td>275</td>
<td>3,200</td>
<td>648</td>
<td>16.760</td>
<td>None</td>
</tr>
<tr>
<td>5</td>
<td>PLOS MED</td>
<td>1549-1277</td>
<td>*NA</td>
<td>*NA</td>
<td>193</td>
<td>14.974</td>
<td>$2,900</td>
</tr>
<tr>
<td>6</td>
<td>BRIT MED J</td>
<td>0959-535X</td>
<td>400</td>
<td>*NA</td>
<td>2088</td>
<td>11.935</td>
<td>£2,500</td>
</tr>
<tr>
<td>7</td>
<td>ANNU REV MED</td>
<td>0066-4219</td>
<td>*NA</td>
<td>*NA</td>
<td>31</td>
<td>10.887</td>
<td>None</td>
</tr>
<tr>
<td>8</td>
<td>ARCH INTERN MED</td>
<td>0003-9926</td>
<td>250</td>
<td>3,500</td>
<td>428</td>
<td>10.392</td>
<td>None</td>
</tr>
<tr>
<td>9</td>
<td>CAN MED ASSOC J</td>
<td>0820-3946</td>
<td>*NA</td>
<td>2,500</td>
<td>768</td>
<td>8.069</td>
<td>None</td>
</tr>
<tr>
<td>10</td>
<td>COCHRANE DB SYST REV</td>
<td>1469-493X</td>
<td>*NA</td>
<td>*NA</td>
<td>736</td>
<td>6.346</td>
<td>None</td>
</tr>
<tr>
<td>11</td>
<td>MEDICINE</td>
<td>0025-7974</td>
<td>250</td>
<td>3,000</td>
<td>41</td>
<td>5.913</td>
<td>None</td>
</tr>
<tr>
<td>12</td>
<td>J INTERN MED</td>
<td>0954-6820</td>
<td>250</td>
<td>1,500</td>
<td>162</td>
<td>5.609</td>
<td>Fee may apply</td>
</tr>
<tr>
<td>13</td>
<td>AM J MED</td>
<td>0002-9343</td>
<td>250</td>
<td>3,000</td>
<td>385</td>
<td>5.114</td>
<td>None</td>
</tr>
<tr>
<td>14</td>
<td>MAYO CLIN PROC</td>
<td>0025-6196</td>
<td>250</td>
<td>4,000</td>
<td>199</td>
<td>5.034</td>
<td>None</td>
</tr>
<tr>
<td>15</td>
<td>AM J PREV MED</td>
<td>0749-3797</td>
<td>250</td>
<td>3,000</td>
<td>279</td>
<td>4.987</td>
<td>Fee may apply</td>
</tr>
<tr>
<td>16</td>
<td>ANN FAM MED</td>
<td>1544-1709</td>
<td>250</td>
<td>2,800</td>
<td>112</td>
<td>4.969</td>
<td>None</td>
</tr>
<tr>
<td>17</td>
<td>ANN MED</td>
<td>0785-3890</td>
<td>200</td>
<td>30 pages</td>
<td>86</td>
<td>4.673</td>
<td>None</td>
</tr>
<tr>
<td>18</td>
<td>J GEN INTERN MED</td>
<td>0884-8734</td>
<td>300</td>
<td>3,000</td>
<td>405</td>
<td>3.623</td>
<td>None</td>
</tr>
<tr>
<td>19</td>
<td>PREV MED</td>
<td>0091-7435</td>
<td>200</td>
<td>3,500</td>
<td>243</td>
<td>3.520</td>
<td>$3,000</td>
</tr>
<tr>
<td>20</td>
<td>BRIT MED BULL</td>
<td>0007-1420</td>
<td>150</td>
<td>4,000</td>
<td>51</td>
<td>3.371</td>
<td>None</td>
</tr>
</tbody>
</table>

*NA indicates information not available

Point 1: “Court” the Right Journal

Articles of scientific merit are often rejected because they are submitted to an ill-suited journal. Regardless of the scientific validity or how well the article is written, it may be rejected because the manuscript deals with issues outside the scope of interest for an individual journal. This cause for rejection could be prevented if the author reviewed previous issues of the journal prior to submitting a manuscript.²

© The Internet Journal of Allied Health Sciences and Practice, 2012
Authors should strive to get a manuscript published in the best possible journal in the shortest possible time. Experienced authors will have an idea of what will or will not be accepted in a particular journal. Less experienced authors should seek the guidance of a mentor to aid in making a journal selection decision. The authors could benefit from reading current publications in their respective fields and pay close attention to the philosophy and objectives of each journal they are considering when determining in which journals to potentially publish their manuscript. A study published in the Journal of American Board Family Medicine in 2006 reviewed a cross sectional comparison of family medicine originated papers from the United States between 1979 and 1989. The study found that only 50% of the publications were submitted to family medicine journals. Investigators determined that perceptions of journal prestige which would influence institutional promotion and tenure was the most given justification for the submissions of generalized family medicine manuscripts to non-family medicine journals. Take Away: Authors should put an adequate amount of time and effort into researching which journal to approach for publication in order to ensure the right match.

Point 2: Follow the Rules
After deciding on the appropriate journal for the manuscript, authors need to obtain a copy of the journals' most recent published guidelines for authors. A vast majority of journals base their guidelines on the instructions from the “Uniform Requirements for Manuscripts Submitted to Biomedical Journals.” These guidelines cover journal requirements on abstract and text limits, tables and graphs instructions, and reference styles. Guidelines are subject to change without notice; it is imperative for authors to be certain they have the most recent version from the journal to which they plan to submit their paper. Authors should never assume that all guidelines or journal submission instructions are the same.

After acquiring the journals' guidelines, authors must thoroughly edit their manuscript to ensure compliance. Often checklists are available via the journals’ websites and in the printed publication themselves. These checklists describe the format and style to use for the title page, length limitations for the abstract, preferred style for references, and submission options for tables, figures, and other attachments. Also, share any requirements or guidelines with all individuals involved in the manuscript preparation process.

A study published in 2007 analyzed manuscripts that were rejected by the Hospitality and Tourism Journal. A total of 373 manuscripts were submitted and either received a recommendation for major revisions or rejected. The analysis concluded that one in seven manuscripts (14.29%) failed to follow the journals' guidelines which contributed to the rejection of the manuscript. Take Away: Authors must be careful to fulfill all journal requirements to reduce the chance of their manuscripts being rejected for technical reasons.

Point 3: Play the Name Game
While often underestimated, the title is the single most important phrase in the entire manuscript. A reader that cannot determine the significance of a paper based on the title is unlikely to read further. Titles of articles should be simple, concise, and uncomplicated. However, a title that is too abbreviated may lack vital information. The title of an article should include specific and often used “tag words” that will help it to be recognized in popular search engines. General guidelines suggest that titles should be limited to 15 words and phrased without the use of jargon. This will help the reader to understand the subject of the manuscript while also promoting the unique attributes of the content. Another good piece of advice is to avoid excessive use of punctuations such as colons, commas, and quoted terms. Identifying the subject matter studied in the title allows the reader to instantly place the work in its appropriate context. If the purpose of the article is the utilization of a specific instrument, technique, or treatment, it should also be included in the title.

A recent study was conducted to test the significance of journal article titles and how much information they provide about the articles. The authors obtained articles from 24 journals over six decades related to the following disciplines: sciences, social sciences, and humanities. The journal articles reviewed were all original research from each of the six decades surveyed. The results concluded that the science journals showed the greatest moderate to positive correlation and statistical significance (p<0.1) for “significance” of article titles. A significant (p<0.1) positive correlation was only found in 25% of the social sciences articles reviewed. The humanities articles showed a significant (p<0.1) positive correlation in 12% of the articles reviewed. The study concluded that the significance of an article’s title aides in serving the function of providing insight into the purpose of the article. Take Away: Authors must be extremely diligent and thoughtful in choosing a title that will provide appropriate clues to the subject matter as well as provoking language to solicit interest.

Point 4: Avoid Making the Abstract too abstract
The abstract is usually the first exposure that readers have to the research being discussed. It is often the most read portion of the manuscript. The Abstract should be a concise summary of the manuscript providing insight into the manuscripts’ key components. One source stated that the abstract is often written after the manuscript; however if written first, it can serve as a guide. Journals typically require that abstracts be limited to 300 words divided into four paragraphs: the introduction, materials and methods, results, and the conclusion. The introduction declares the hypothesis or purpose of the study. The materials and methods section describes the study design including an outline of procedures and variables. The results section reports the main data along with any statistical significance and the principle findings of the study. The conclusion states the verification of the hypothesis and is usually limited to two sentences. Following the abstract, the author should list three to six key terms to be used in a subject index to refer to the article. Readers should be able to understand the abstract without reading the manuscript; it should be able to stand alone without the manuscript.

A 2008 study sought to assess the reasons for defective abstracts. Of the 55 abstracts reviewed, 51% had inconsistencies, 29% contained data not present in the manuscript, and 5% had unjustified conclusions. In another study conducted in the early 1990’s, authors evaluated the quality of 33 original research abstracts. It was determined that 56% did not include specific technical descriptors of study design such as the use of a randomized controlled trial or case control study, 52% did not describe study variables which led to data having to be inferred from the abstracts, 79% failed to use technical terminology such as the use of a random sample or convenience sample, and 93% made no recommendations for future study. Take Away: Authors must make certain that the abstract is truly reflective of the material contained within the article.

Point 5: Allow Others to Follow in Your Footsteps
Authors outline the procedures of their study in the materials and methods section. Studies should be reproducible, which would allow others to perform the same procedures as the original investigators. This is only achievable if this section is written in a clear, step-by-step manner. Reproducibility of scientific research provides the best assurance that a scientific finding is valid.

The study design, interventions, and procedures must be distinctively transparent. Authors should justify choices of utilized techniques if other methods were available but not performed. The methods section is the appropriate section of an article to explain other study designs used to address common areas of interests.

This section of a manuscript has been credited as the most common reason for rejection due to lack of clarity and failure to include enough procedural details. In addition, the inability to implement methods that adequately test a hypothesis is a major methodology flaw. In a recent systematic review of 22 studies, it was concluded that 50% were flawed due to poor methodology. Take Away: Authors must affirm that their methods are clearly documented so that reviewers can verify their work and validate their findings.

Point 6: Conquer Your Statistical Demons
Statistical content and complexity of medical research has increased steadily over recent decades. However, statistics has been stigmatized as a topic that is difficult to master, and there is significant evidence to support the notion that its application is often faulty in medicine as well as other scientific disciplines.

Despite considerable efforts to improve and standardize statistical reporting in medical research, common errors among manuscripts include aspects of design, analysis, reporting, and interpretation. A 2006 study tested the congruence of statistical results and the distribution of test statistics of 63 random samples of journal articles. Results of the study indicated that 11.6% of the statistical results were contrasting and at least one error was identified in 38% of the papers. Another prospective cohort study of manuscripts reporting original research submitted to three major biomedical journals indicated that manuscripts are more likely to be published if they have higher methodology quality, a randomized controlled trial study design, and descriptive or qualitative analytical methods. Take Away: Authors must be extremely diligent in reviewing all statistical analyses and ensure that sound scientific methods are utilized throughout the study.

Point 7: Figure out all Figures
The purpose of tables, figures, and graphs is to illustrate key features of the methods and results of the manuscript in a clean and concise manner. Tables, graphs, and figures summarize and clarify data and show comparisons between variables. It is imperative to provide legends for all figures that will allow the reader to understand the figure or graph without referring to the text. Tables, figures, and graphs should be designed to stand alone. Frequent errors made by novice writers include: leaving out figures that could best depict their findings and writing unclear figure legends. Many authors create irrelevant or duplicate tables. Graphs or figures should not repeat data that has been included in the text unless the author wishes to emphasize,
Ten Points to Address When Publishing a Manuscript

summarize, or discuss a particular finding or observation.22 Tables, graphs, and figures should also not be used to convey small amounts of data that could be better suited for text.23 The use of tables, graphs, and figures should ultimately enhance the readers’ knowledge and not confuse them.23

Generally, when a manuscript is submitted to a publication, the tables, graphs, and figures are located on separate pages that follow the references. According to Neill, authors should limit the figure legends to 250 words or less.24 Most journals require all table titles to be located on the same page, with each table on a separate page in chronological order. When designing a table, the author should review tables that have already been published in their targeted journal to determine what type of template would be appropriate. Authors should also become familiar with formats by investigating any instructions given to the authors by the target journal.22

In a study conducted in 2006 characterizing the quantity and quality of tables and figures from 62 randomized control trial manuscripts published in the British Medical Journal, it was concluded that 56% of the manuscripts had no data figures, 88% of published tables were simple lists, and less than 50% of the figures met their presentation potential.25 Another study conducted in 2002 that aimed to characterize the quantity and quality of graphs in the Journal of American Medicine assessed 12 randomly chosen articles and determined that 68% utilized simple bar or point charts, 8% included internal errors, and 31% were not self-explanatory.26 Take Away: Authors must include tables and/or figures in their articles that provide a substantial format for reflection of associated data and significant statistics.

Point 8: Respect your References
Although considered to be one of the least noticed sections of a publication, references are of critical importance. Correct usage of references brings authority, credibility, and precision to scientific manuscripts. This section of a manuscript is important because references acknowledge the work of other researches which influenced the current research study and enables readers to locate works of science if required.27

It is standard that the references are placed immediately after the appropriately inspired phrase, which often means that references may be embedded in the middle of a sentence instead of at the end. References should be cited exactly as they were given by the original authors of the manuscript, even if the language or style may be considered a stylistic error. Authors should not depend on the accuracy of reference citations in other published articles.27 The use of too many or too few references may become equally problematic. The use of too many references may reflect a broad search of citations with flawed selection and or imply that the author is attempting to impress the reviewer with broad knowledge and thorough preparation. If the reference list is too few, it may be the result of poor search criteria, and it also may imply laziness on the part of the author. Authors may choose self-citation for various reasons. Self-citation may be justified when the author’s contribution to a particular field is innovative or unique. However, it may be implied as an attempt to boast about one’s work. The frequency of self-citation ranges from about 7% to 20% on average.28

One study’s objective was to randomly verify 150 references compiled from three public health journals. It was found that 30% of the references differed from the author’s use of them. Ten of the 150 references were not locatable, and half of the citations were not pertinent to the article in which they were cited.29

In another study where the purpose was to verify references, 348 references were analyzed. The results revealed that 50.3% contained at least one error such as article title, author, page numbers, and year of publication.30 In a 2000 study, R. Siebers reviewed three monthly publications from three journals. Siebers found that between 17.7% and 28.2% of the references contained multiple errors. Errors pertaining to authors’ names were the most common accounting for more than half of the errors in the references. The second most common errors were title errors, which was then followed by page errors, journal errors, volume errors, and then year errors.31 The quality of references usually reflects the quality of the manuscript as a whole. Reference sections plagued with errors indicating lack of citation accuracy, incorrectness of abbreviations, and punctuations may be reflective of a poorly written manuscript. Take Away: Authors must be sure to correctly identify sources according to journal instructions in order to meet professional standards.

Point 9: “Utilizes” Correct Grammar
Grammar and punctuation are very important to the clear communication of scientific ideas.32 In scientific manuscripts, tools of communication are words rather than numbers and formulas. It is essential for inexperienced writers to be aware of common grammar mistakes such as using too many words or too few words, using the wrong words, and using the right words in the wrong place. The use of too many words produces redundancies. The use of words such as “subsequent studies show...”, “however”, and “essentially” multiple times in a manuscript bores the reader. Often ideas or even whole passages are repeated.

© The Internet Journal of Allied Health Sciences and Practice, 2012
in manuscripts; this can be a sign of the author's fatigue during the writing process or disinterest in the final draft.33 Being brief in scientific communications allows the reader to take in more information at a given time; however, using too few words may misrepresent the idea being stated. When writing, authors should write concise, short sentences because they are usually easier to understand. Paragraphs are logically structured passages organized around a single major idea. Writers should use past tense when describing previous research or writings. Keeping the vocabulary simple will aid in the understanding of the manuscript. Many abbreviations, acronyms, and initials are strongly discouraged in scientific writing. Writers are supposed to only use abbreviations that are commonly known and accepted.15

In 2006, Provensale and Stanley reported that the second most common reason for acceptance of a manuscript is if it was considered well written.12 There are clear indications that carelessly written articles could often have either a direct or subliminal influence on whether a paper is accepted or rejected. Despite scientific merit, a badly written article will have less of a chance of being accepted.34 Take Away: Authors must pay special attention to the grammatical details of their manuscripts to ensure that they are reviewed for technical merit as well as scientific merit.

**Point 10: Revise Without Fear of Rejection**

Little to none unsolicited manuscripts are published without revision. Peer review not only insures against dissemination of unethical, erroneous, and dangerous materials. It also plays an important role in ensuring published articles convey their messages as accurately, unambiguously, and convincingly as possible. Reviewers provide their time and expertise in reviewing works and offering comments to enhance publications. While the practice of peer review may present with controversy, it will remain a fixture in the publishing process.35 The majority of peer reviewed publications have been substantively improved because of reviewer's comments and suggestions. The indication of an editors’ willingness to evaluate a revision means the manuscript is publishable after the author has satisfactorily addressed the reviewer's concerns.2 According to a recent study, 90% of authors believe peer review improved the quality of their published papers.36 Therefore, requests for revisions should be viewed positively.

Minor faults in methodology, minor inaccuracies in data, faulty deductions, inconsistencies among different sections of the paper and data, data that does not support conclusions, excessive data or text, poor or excessive illustrations, and poor but salvageable writing have all been cited as reasons for revision.37 Manuscripts should be revised according to reviewers’ or editors’ comments. Each provided point must be addressed systematically, and journals will often want those addresses separately on different pages. Changes should be clearly annotated in the revised text, using a common numbering system. The submission of a revised manuscript should be done within the editors’ suggested time frame.37

McDonald, Cloft, and Kallmes conducted a study with the objective of quantifying differences among initially rejected manuscripts. The study was comprised of 315 manuscripts that were located using MEDLINE searches. The study concluded that although all of the manuscripts were initially rejected, eventually 50% were published either by the rejecting publication or another similar publication.38 Take Away: Authors must maintain their motivation throughout the revision process in order to gain final approval for publication. Those who persevere will be rewarded.

**SUMMARY**

The completion of a research project is only the beginning of the publication process. Careful consideration needs to be given to the writing of a manuscript and submission of a manuscript for publication. Guidelines are readily available to aid authors in proper format and submission of manuscripts for journals. Common mistakes in writing, methodology, and references can be prevented with preparation and attention to details. Most manuscripts will require revision prior to publication. However, Revisions will only aid in making the manuscript ready for public review. Authors must maintain their sense of purpose throughout the publication process in order to fulfill their mission to add value and knowledge to the scientific community.

**REFERENCES**

5. Rogers LF. Follow the Yellow Brick Road: Preparing Manuscripts for Submission to a Scientific Journal. AJR. 1997;179:1099-1100.