

Opinion  
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# Using Guidelines to Improve Scientific Writing: Tips on Use of Correct Verb Tenses for Non-Native English-Speaking Researchers

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Writing a medical English paper is an arduous and time-consuming task, especially for non-native English-speaking researchers. No matter how good the research may be, it is difficult for manuscripts to become accepted unless the criteria of a 'readable' manuscript are met and reviewers can clearly understand the content and importance of the research.

Following the guidelines of the journal to which a researcher will submit his/her paper, is the norm in clinical research, but it is important to know that there are also so-called 'international standards' not just for conducting research, but for preparing medical manuscripts. These 'standards' refer to the grammar style, which includes verb tenses, and the writing style, such as the use of appropriate words and phrases. Familiarizing oneself with such guidelines and standards will help non-native English-speaking researchers in preparing manuscripts.

The purpose of this paper focuses is to provide basic information on manuals and guidelines that are regarded as 'international standards' for medical writing, and how these can be used to assist researchers on the correct use of tenses; and to introduce common mistakes made by non-native English-speaking researchers related to the use of verb tenses through our experience as medical editors in Japan.

## What Is a Readable Manuscript?

A 'readable' manuscript is one that is written in a manner that is clear to understand, accurate, and concise, to all readers. Manuscripts need to be understood effortlessly by editors and reviewers, in addition to the general readership who may have no expert knowledge about the topic. This means that authors will need to pay attention to 1) correct grammar (which includes verb tenses), punctuation, and spelling, 2) correct word use and appropriate expressions, 3) correct sentence structure, and 4) correct editorial style, meaning conforming to the editorial style of the journal to which it is submitted. Only when all 4 of these factors are in place, will the paper give the impression of a well-written or 'readable' paper. The scientific content is of utmost importance, but the style in which the research is presented is also significant and must also be taken into consideration. If a manuscript is poorly written, such as with numerous grammatical mistakes, it can give a bad impression, which may affect the overall evaluation of the manuscript, even if the science may be of high quality.

## How Guidelines and Manuals Can Assist Researchers

For non-native English-speaking researchers, however, creating such ‘readable’ manuscripts is obviously difficult due to insufficient level of English proficiency and differences in linguistic styles among languages.<sup>1</sup>

Journal guidelines and style manuals can provide authors with fundamental knowledge on various topics, so that authors have a basic idea of what journals are looking for. Although many guidelines and manuals are available, familiarizing oneself with the main ones that have been created by leading associations and organizations will enable authors to understand the global standard in medical writing, and to prepare manuscripts targeting global readership.<sup>2</sup> Guidelines, such as the AMA Manual of Style<sup>3</sup> published by the American Medical Association, the Publication Manual of the American Psychological Association,<sup>4</sup> and the Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals (known as the ICMJE Recommendations) created by the International Committee of Medical Journal Editors<sup>5</sup> provide detailed explanations on manuscript preparation. Whereas the ICMJE Recommendations give instructions on how to correctly format or create the framework for a manuscript, the AMA Manual of Style gives specific information on the correct use of words and phrases, which may be highly useful for non-native English-speaking researchers to further improve writing style. The AMA Manual of Style, with its first edition published in 1962, was originally intended for use by in-house editors for the Journal of the American Medical Association (JAMA) and its network journals. However, during the subsequent years, recognition of this manual has grown substantially among editors and publishers in scientific publishing.<sup>6</sup> The contents have been reviewed and revised by experts to reflect the changes associated with advances in technology, the internet, and the electronic evolution of writing, editing, and publishing, both in the US and internationally.<sup>6</sup> In particular, we recommend Chapter 7, entitled “Grammar”,<sup>7</sup> and Chapter 11, entitled “Correct and Preferred Usage of Common Words and Phrases”,<sup>8</sup> which many medical editors refer to as the standard when editing manuscripts.

For example, regarding verb tenses, the AMA Manual of Style states that it is important to choose the correct verb tense that expresses the time that is intended, while also emphasizing the importance of maintaining consistency of tenses in a sentence.<sup>7</sup>

e.g., There *were* no adverse events reported in the control group, but there *were* 3 in the intervention group.<sup>7</sup>

However, it also provides an example of when it may be necessary to use different tenses within a single sentence to place 2 things in temporal context.

e.g., Although the previous report *demonstrated* a significant response, the follow-up study *does not*.<sup>7</sup>

Using different verb tenses in a sentence as above may be particularly difficult for non-native English-speaking researchers when writing a manuscript, as they are often taught to maintain a single verb tense in a sentence. However, different verb tenses in a sentence may be useful, or even necessary for accurately explaining a study and the results, and hence non-native English-speaking researchers are advised to refer to various guidelines to understand these rules.

Other guidelines also offer recommendations on verb tense. The European Association of Science Editors (EASE) Guidelines for Authors and Translators of Scientific Articles to be Published in English is currently freely available online in 30 different languages.<sup>9</sup> In the section on “Language Matters”, the guidelines state that in general, the past tense should be used when describing how the study was performed, and hence the Materials and Methods section should be in the past tense. Furthermore, they recommend the use of past tense when giving general statements and interpretations, such as statistical significance and conclusions.<sup>9</sup> Additionally, the American Chemical Society Style Guide says using the appropriate verb tense is essential in orienting the reader as to the nature of the information and states that the past tense should be used to present what was done, and the present tense to present statements of fact. It also states that present or past tense may be used for the results, discussion and conclusions sections but that consistency is important within the paper.<sup>10</sup>

## Correct Verb Tense Use In a Manuscript

Although information on the correct use of verb tenses for medical writing can be acquired from various manuals as well as from the internet, it is often easier to understand these verb tense rules by seeing actual mistakes that other non-native researchers have made. We will hence introduce a few examples below, from actual manuscripts that we have edited (with modifications as appropriate).

When explaining the experiments that were performed in the research, the past tense is generally used, regardless of the section of the manuscript in which the information appears (i.e., Introduction, Materials and Methods, Results, etc.). Therefore,

Incorrect: The XX software *has been* used to analyze the surgical techniques of novel surgeons.  
Correct: The XX software *was* used to analyze the surgical techniques of novel surgeons.

Incorrect: Hearing classes B, C, and D *are* defined as having preoperative hearing loss.  
Correct: Hearing classes B, C, and D *were* defined as having preoperative hearing loss.

Similarly, when explaining the results obtained from the research, the past tense is used regardless of the section of the manuscript. Therefore,

Incorrect: Cerebrospinal fluid analysis *demonstrate* that the patient was positive for XX.  
Correct: Cerebrospinal fluid analysis *demonstrated* that the patient was positive for XX.

When referring to a specific figure or table within the manuscript, the present tense should be used. Therefore,

Incorrect: **Table 1** *showed* the demographic characteristics of the patients.  
Correct: **Table 1** *shows* the demographic characteristics of the patients.

When introducing previous studies with results that are still considered to be true, the present perfect tense is generally used. Therefore,

Incorrect: It *is* suggested that XX comprising more than 80% necrotic tissue on endoscopic ultrasonography is suitable for these techniques.

Correct: It *has been* suggested that XX comprising more than 80% necrotic tissue on endoscopic ultrasonography is suitable for these techniques.

Conclusions of a study are generally written in the past tense. Therefore,

Incorrect: In conclusion, we *report* a case of a patient with XX, whose direct Coombs test was transiently positive.

Correct: In conclusion, we *reported* a case of a patient with XX, whose direct Coombs test was transiently positive.

These are just a few examples to provide the reader with an idea of the correct use of verb tenses in medical research manuscripts written in English. Ideally, if a non-native English speaker writing a research manuscript can have their manuscript edited by a native English-speaking editor or an editing service, it is recommended that they go through the edited manuscript to go over the corrections made in verb tenses, while referring to guidelines and manuals on the rules of verb tenses (such as the ones introduced above), to acquire a better understanding of verb tense use in medical research manuscripts.

## Guidelines and the Significance of Revisions

As the international language of medical and scientific research is English, researchers are required to publish their research in English, regardless of their native language. Furthermore, regardless of the journal rank or type of journal, the common goal of journals should be to publish high-quality manuscripts, thus improving the general level of the journal.<sup>11</sup> Authors may be aware of the significance of adhering to guidelines for performing their research, but they may not necessarily be aware of how guidelines may help to educate themselves about what is the acceptable standard for scientific writing. For instance, up until the recently revised AMA Manual of Style 11<sup>th</sup> edition, certain phrases and writing styles that were considered incorrect, are now acceptable. One significant example is that in the 10<sup>th</sup> edition, it was incorrect to say, “the patient was diagnosed with lung cancer”, because only a *disease* could be diagnosed, and not a *patient*. However, the 11<sup>th</sup> edition clearly states that this expression is now acceptable.<sup>8</sup> In addition, before the recent revision, authors needed to include a space between numbers and units, e.g., 2 cm, and the only exception was the percentage (%) and degrees Celsius (°C) symbols. However, authors are now required to include a space when using the % and °C symbols as well.<sup>3</sup>

As Gasparyan et al.<sup>11</sup> suggest, regular revisions and issuing of guidelines for medical writing by professional associations and making teaching materials and educational meetings accessible to researchers worldwide, especially to those who are non-native English speakers, are valuable ways to support not only researchers but the entire scientific publishing community. Despite the fact that there are many manuscripts that do not adhere to guidelines but are still published, this does not mean that it is acceptable to be ignorant of such standards and rules. We, as authors, researchers, and educators must try to collaborate to overcome such differences in standards in scientific publishing, which is expected to lead to improvements in the general quality of scientific and medical literature, and to support non-native English-speaking researchers in preparing high-quality manuscripts that meet the ‘international standard.’

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