Proper Scholarly Writing for Non-Native English-Speaking Authors: Choosing Active and Passive Voice, Rewording, and Refining Texts

Takako Kojima and Helena A. Popiel

Center for International Education and Research, Tokyo Medical University, Tokyo, Japan

The process of writing, revising, and submitting manuscripts to journals until they are accepted and published is a task that can often be demanding, especially for non-native English-speaking researchers. In order to improve the quality of writing, it is important for researchers to have a good understanding of scientific/medical terminology and grammar, as well as the organization and structure of research articles.

Furthermore, it is helpful for non-native English speakers to become familiar with common problems or difficulties faced by researchers when writing in a non-native language.

Here, we focus on ways to refine a manuscript by introducing four items; choosing the active voice over passive voice, rewording and rephrasing sentences, creating an attractive Discussion, and revising titles. This paper is unique in that we present actual examples from our experience as editors in medical writing in Japan, thereby enabling readers to clearly understand each item and to put it into context.

Choosing the Active and Passive Voice

The question of whether to use the active voice or passive voice has been debated by researchers for many years. For example, in the 1990s some journals actually recommended using the passive voice as it enables researchers to stand at a distance from their work, making it possible to reach an unbiased viewpoint.

However, over the years, there has been a shift in viewpoint and journals now usually recommend using the active voice.

As authors of scientific manuscripts may be aware it is important to follow internationally recognized standards or guidelines when preparing manuscripts. The American Medical Association (AMA) Manual of Style, which are guidelines published by the American Medical Association state that in general, authors should use the active voice as it enables researchers to stand at a distance from their work, making it possible to reach an unbiased viewpoint.

However, over the years, there has been a shift in viewpoint and journals now usually recommend using the active voice.

As authors of scientific manuscripts may be aware it is important to follow internationally recognized standards or guidelines when preparing manuscripts. The American Medical Association (AMA) Manual of Style, which are guidelines published by the American Medical Association state that in general, authors should use the active voice, except in instances where the subject performing the action (actor) is unknown or the interest focuses on what is acted on. It also mentions that in sentences in which the actor is already mentioned, the active voice is preferred over the passive voice. To explain this in more detail, here are some examples that are shown in the latest edition of the AMA Manual of Style.

Passive: “Data were collected from 5,000 patients by physicians.”

Passive: “Maintenance therapy and the clinical status of patients were evaluated every 6 months.”
In the first example, the interest focuses on the fact that data was collected. In the second example, the actor, or who evaluated the patients, is unknown so the passive voice is used.

*Active*: “Physicians collected data from 5,000 patients.”

*Active*: “We evaluated maintenance therapy and the clinical status of patients every 6 months.”

For these two examples using the active voice, both sentences mention the actor, and therefore the active voice is used. It can be noted that many journals favor researchers to use the active voice, and some directly recommend its use by mentioning this in the Instructions to Authors. The *British Medical Journal* states, “write in the active and use the first person where necessary”7 and the author guidelines for *Ophthalmology* requests authors to use the active voice whenever possible.8 By using the active voice, sentences become shorter and clearer and also give a stronger and livelier impression. This can be seen in an actual example from our editing, shown below.

**Example 1**

*Passive voice*:
The diagnosis of Kawasaki disease was made, and treatment with aspirin was started. (13 words)

↓

*Active voice*:
We diagnosed Kawasaki disease and started treatment with aspirin. (9 words)

Although there is no strict rule for choosing the active or passive voice, it can be understood by looking at the above example that it depends mainly on how much emphasis should be made, and to what. The sentence using the active voice emphasizes the person or object (‘we’) performing the action, whereas the sentence using the passive voice places emphasis on what was done (the disease was diagnosed) rather than on who did the action. With this in mind, it can be said that the passive voice is more applicable to the Methods and Results sections, but a good balance of the two voices is important to create a readable manuscript.

**Rewording and Rephrasing**

Another way to improve the quality of the manuscript can be through rewording and rephrasing. Many non-native English-speaking researchers have difficulty with linguistic issues, such as choice of words and phrases, and sentence structure, in addition to medical (academic) terminology.9 Although it is possible to find examples of writing techniques from various manuals and the internet, we will introduce a few examples taken from actual manuscripts written by non-native English-speaking researchers that we have edited (with modifications as appropriate) as medical editors to point out why certain changes were made and how they improve the quality of writing.
Example 1

Before revision:
In this study, we retrospectively revealed whether XX findings just before the YY procedure can affect the success rate of intravariceal injection, the recurrence rate of EVs, and the overall survival rate (OS).

After revision:
In this study, we retrospectively analyzed whether XX findings obtained just before the YY procedure are associated with the success rate of intravariceal injection, recurrence rate of EVs, and overall survival rate (OS) of patients.

Important points of revision
- “Revealed” is often used when physically showing something that was hidden, and researchers perform retrospective “analyses”, and hence this was changed to “analyzed”.
- “Findings just before endoscopic injection sclerotherapy” is missing a verb, and hence the verb “obtained” was inserted.
- “can affect” was changed to “are associated with”, as it is best to avoid using “can” in scientific texts, and here, as the relationship is not clear, “are associated with” was thought to be more appropriate.
- The two “the” were removed towards the end of the sentence, because although this is not incorrect, it becomes repetitive and difficult to read when there are multiple articles when listing many points.
- “of patients” was added to the end to make the object of the sentence clear.

Example 2

Before revision:
The participants comprised of 1,773 males and 1,350 females and mean age was 37.3 ± 10.9 years.

After revision:
Participants comprised 1,773 men and 1,350 women (mean age: 37.3 ± 10.9 years).

Important points of revision
- “The” was removed as an article is often not required for plural nouns, if it is clear what the author is referring to.
- “Comprised of” was changed to “comprised”, which is the correct phrase, or alternatively, “composed of” can also be used.
- “Male” and “female” are recommended not to be used as nouns, but as adjectives, i.e., “male patients”, “female patients”, and hence were changed to “men” and “women”.
- As it is best to avoid the use of symbols in a sentence other than within parentheses, and for readability, the information of mean age was put within parentheses.

We also recommend referring to examples of correct usage of words and phrases in the AMA Manual of Style as this is a manual that is used widely by many researchers and medical editors.\(^4\)
How to Refine the Discussion Section

In order to create a well-written Discussion, it is important to be aware of some common criticisms from reviewers regarding the linguistic aspect, in addition to the results of the actual research, such as presenting sufficient evidence and data to support the results, etc. The main criticisms in terms of linguistics include, a section being too long, and the value of the study being unclearly stated. The following examples demonstrate how these problems can be overcome by the changes made.

Example 1

Before revision:
XX and YY are considered to have the same pathological condition, and XX may be seen during the recovery period of YY. XX and YY are considered to have the same pathological condition, and XX may be seen during the recovery period of YY. In this case, only XX could be observed during the course. (55 words)

After revision:
XX and YY are considered to be caused by the same pathological conditions, and XX may be seen during the recovery period of YY. In the present patient, only XX was observed during the disease course. (36 words)

Important points of revision
- This paragraph had a repeating sentence, which often occurs when authors write and rewrite their manuscripts, and hence this was removed.
- “have” was changed to “be caused by” because OF and OC are diseases and not patients, and hence they are “caused by” the same pathological conditions.
- “Conditions” was made plural, as this was not just one condition but many, and in English writing things are generally written in the plural form, unless they are referring specifically to one of something.
- “This case” was changed to “the present patient” as this was referring to the patient having a disease. It is interesting to note that in Japanese, the rough equivalent of “case” can be used more flexibly to mean both “case” and “patient” in English, and hence this is a mistake that many Japanese writers make.

Example 2

Before revision:
About the significant factors obtained by the univariate analysis, we have plotted ROC curve for predicting more than 5 × 10⁴ /µL of the increase amount in XX count after YY intakes (Fig. 2). The significant ROC curve was obtained in the age, the eGFR, and the SI.

After revision:
Regarding the significant factors obtained by univariate analysis, we plotted ROC curves for predicting patients who will achieve a more than 5 × 10⁴ /µL increase in XX count after YY intake (Fig. 2). A statistically significant ROC curve was obtained for age, eGFR, and SI.
Important points of revision

- “About the”, which is more colloquial, was changed to “Regarding”, which is more appropriate for scientific papers.
- “patients who will achieve a” was inserted into this sentence to clarify what the numbers are referring to.
- “amount” was removed as “count” is a similar word referring to the same point, and hence it is redundant.
- “curve” was changed to “curves” as the data was plural.
- “The significant” was changed to “A statistically significant” for clarity.
- “obtained in” was changed to “obtained for”, which is grammatically correct, and “for” was not added before each of the factors, because similar to “the”, this would be repetitive and difficult to read if there are multiple prepositions when listing many points.

Revising Titles

It is crucial to create an attractive title, which means that it should be concise and state the main point of the research/manuscript, to attract readers. Hong states that this is important as researchers need to retrieve articles from databases using keywords, and as readers will first come across the title of a manuscript, the title will determine whether they will read the article or not.

Example 1

Before revision:
Effect of anti-XX antibody on the YY soft tissue

After revision:
Effects of the anti-XX antibody on YY soft tissue

Important points of revision

- “Effects” was made plural, as this was not just one effect but many, and in English writing the plural form if generally used, unless referring specifically to one thing.
- The position of the article “the” was moved, as this study is referring to a specific antibody (which hence should have an article) and a type of tissue in general (which hence does not require an article).

Example 2

Before revision:
The clinical outcome of the patients with XX variants of YY vertigo

After revision:
Clinical outcomes of patients with XX variants of YY vertigo
Preparing scientific manuscripts requires much effort and time, especially for non-native English-speaking researchers. However, refining and revising the manuscript demands further attention to details and precision. This, however, can be accomplished through education and considerable practice. Many associations now offer online writing seminars and workshops in scientific writing,\(^1\) which can help researchers by providing a common space in which to learn as well as share common obstacles faced when preparing English language manuscripts. We hope that the examples shown here, of before and after revisions that we have come across as medical editors, and our summary of the main items (Table 1) will help non-native English-speaking researchers towards improving the quality of manuscripts before submission.

We believe that with time, considerable effort and ample practice, the help of tools, such as the AMA Manual of Style, and keeping in mind the four points introduced in this manuscript, i.e., choosing the active voice over passive voice, rewording and rephrasing sentences, creating an attractive Discussion, and revising titles, non-native English-speaking researchers will be able to write clear and effective manuscripts.

### REFERENCES

1. Yakhontova T. What nonnative authors should know when writing research articles in English. *J Korean Med Sci* 2021;36(35):e237. [PUBMED](https://pubmed.ncbi.nlm.nih.gov/34533761/) [CROSSREF](https://doi.org/10.3346/jkms.2021.36.e237)

2. Yakhontova T. Conventions of English research discourse and the writing of non-Anglophone authors. *J Korean Med Sci* 2020;35(40):e331. [PUBMED](https://pubmed.ncbi.nlm.nih.gov/33037172/) [CROSSREF](https://doi.org/10.3346/jkms.2020.35.e331)

---

**Table 1. Key items that non-native English-speaking authors should consider to effectively refine scientific manuscripts before submission**

| Key items                                      | Details                                                                                          |
|------------------------------------------------|--------------------------------------------------------------------------------------------------|
| 1) Choosing the active voice over the passive voice | Use the active voice in general, particularly when the focus is on the actor (person or object performing the action). Use the passive voice if the actor is unknown, or the focus is on what was done. If the actor is already mentioned in a sentence, the active voice is preferred. Materials and Methods section is generally written in the passive voice. |
| 2) Rewording and rephrasing                     | Choose words that precisely describe what is meant and that do not have other connotations. Make sure sentences have a subject, object, and verb. Try to avoid using “can”. When listing many points, avoid repeating articles, such as “the”. “Male/Female” should be used as adjectives rather than nouns. |
| 3) Refining the Discussion section              | Delete repetitive/redundant words and sentences, for clarity and to avoid unnecessarily long Discussion sections. Clearly state (restate) the value of the study. Use plural forms of nouns in general, unless specifically referring to a single object. Use literary language and avoid colloquial language. |
| 4) Revising titles                              | Titles often have a word count, so be concise (use the fewest number of words to make the statement). State the main point of the research/manuscript, to attract readers. Avoid articles at the beginning of a title (exception: A case of ....) |

**Important points of revision**

- “The” was removed from before “patients”, as an article is often not required for plural nouns, if it is clear what the author is referring to. Furthermore, an article is generally not inserted at the beginning of a title, with an exception being titles starting with “A case of XX”.
- “Clinical outcomes” was made plural, as this was not just one outcome but many, and in English writing the plural form is generally used, unless referring specifically to one thing.
Choosing Active and Passive Voice, Rewording, and Refining Texts in Scholarly Writing

3. Leather SR. The case for the passive voice. *Nature* 1996;381:467.
   [PUBMED | CROSSREF]

4. Kojima T, Popiel HA. Using guidelines to improve scientific writing: tips on use of correct verb tenses for non-native English-speaking researchers. *J Korean Med Sci* 2022;37(29):e226.
   [PUBMED | CROSSREF]

5. American Medical Association. *AMA Manual of Style: A Guide for Authors and Editors*. 11th ed. New York, NY, USA: Oxford University Press; 2020.

6. American Medical Association. *AMA Manual of Style: A Guide for Authors and Editors*. 11th ed. New York, NY, USA: Oxford University Press; 2020. Chapter 7, Grammar; p. 423.

7. British Medical Journal. Resource for authors. https://www.bmj.com/about-bmj/resources-authors/house-style. Accessed August 1, 2022.

8. Ophthalmology. Guide for authors. https://www.aaojournal.org/content/authorinfo. Accessed August 1, 2022.

9. Yakhontova T. English writing of non-Anglophone researchers. *J Korean Med Sci* 2020;35(26):e216.
   [PUBMED | CROSSREF]

10. Hong ST. Ten tips for authors of scientific articles. *J Korean Med Sci* 2014;29(8):1035-7.
    [PUBMED | CROSSREF]

11. Gasparyan AV, Kitas GD. Best peer reviewers and the quality of peer review in biomedical journals. *Croat Med J* 2012;53(4):386-9.
    [PUBMED | CROSSREF]