INTRODUCTION

English is regarded as the uncrowned language of communication worldwide, and scientific publication is not untouched by its dominance and high level of acceptance. Scientific journals worldwide are now publishing articles predominantly in English rather than in their local languages.[1] Therefore, having a good command of the English language is the need of the hour, especially for medical writers and science professionals. The primary objective of medical writing is to communicate the findings of research studies, to document them, and to share them with the professionals in the industry. In addition, with the ever-increasing number of scientific journals, the data presented needs to be organized and succinct. Thus, language accuracy plays a pivotal role for academicians, regardless of whether they are native English speakers or not for getting their work published as a lot of readers might not be native English speakers, and they should be able to comprehend the provided information and infer the same meaning.[2]

Avoiding wordy text, getting rid of redundancies, and using clear and concise language helps convey the information in the best possible way.

Although science education in urban India is in English, our writing skills in the language are largely inadequate. Predominately, we use flowery language and lengthy sentences and ignore the required emphasis on grammar and punctuation. Often, this results in ambiguous text, making the documents too long and confusing to the reader. Furthermore, we are at times unable to present scientific data and arguments in a logical manner, resulting in documents simply becoming “data dumps.” This situation can be partly attributed to our “rote” system of education. In addition, non-native English speakers tend to formulate thoughts in their native language; their biggest challenge is to put those thoughts in a language they might not be entirely comfortable with. Another possible explanation for lack of English skills is probably an underdeveloped English vocabulary, as a result of which the...
authors cannot accurately convey the thoughts they have formulated. In the light of this evidence, medical writers in India need to make conscious efforts to develop better language and data presentation skills.\[^{[3]}\]

**NEGATIVE IMPACT OF DOCUMENTS WITH LANGUAGE-RELATED ERRORS**

Most of the scientific and medical writers are of the opinion that their responsibility is to present scientific data to the audiences. However, they fail to understand that the content they create may not be conveyed accurately; without a command over the language, scientific data often feel like gibberish to the readers.

Most journals have strict criteria for manuscripts to meet its language requirements. The inability of the manuscript to meet these requirements results in rejection, even without a review of the scientific content. In other words, despite the document reporting ground-breaking research, lack of good language and writing skills will lead to rejection from journals, thereby not reaching the target audience.\[^{[4]}\]

In certain scenarios, journals may not reject the documents, but may ask the authors to rewrite them. This eventually affects the timelines of submission, possibly requiring the scientists to reinvest time and efforts in a task they had previously completed.

**CHALLENGES FACED BY NON-NATIVE ENGLISH SPEAKERS**

**Confusion with certain words**

Any writer you know will tell you that there are certain English words they just cannot master. There are many such confusing words in the English language that sound alike, but have different spellings or have slight spelling variations; a small change in spelling can totally alter the meaning.

Below are some of the most often confused and interchangeably used words:

- **Advise and advice:** These are the same word but in different forms. “Advice” is a noun; for example, when you ask someone for their advice. On the other hand, “advise” is a verb; for example, when you advise someone on the course of action
- **All ready and already:** “All ready” means being completely prepared or that all the people (or things) in the group are ready, whereas “already” implies something happening too soon or by a specified time. The terms “all together/altogether” and “all right/alright” also follow the same principle
- **Breath and breathe:** Again, these are the same word but in different forms. “Breath” is a noun; for example, the patient’s breath was analyzed. “Breathe,” however, is a verb; for example, the patient was asked to breathe freely
- **Complement and compliment:** “Complement” is used to describe things that go well together; for example, laparoscopy should be complemented by a microbiological assay. In contrast, “compliment” means a nice thing to say. For example, I complimented the professor on a great lecture
- **Effect and affect:** “Effect” and “affect” is a sound-alike pair that causes confusion because of similar pronunciation, but there is a difference: “Affect” is a verb that denotes influence, whereas “Effect” is a noun that is used to denote the result of the influence. In other words, if A affects B, B experiences the effects of A
- **Farther and further:** “Farther” is used to denote the physical distance, and “further” denotes the metaphorical distance. For example, I further told my friend that there was a beautiful house farther down the road
- **Its and it’s:** If you want to write about something that belongs to it, use “its.” For example, the patient was asked to take paracetamol and continue its use. “It’s” is actually a contraction of “it is.” For example, it’s (is it) nice to go shopping alone
- **Principle and principal:** The term “principle” is more commonly encountered in scientific documents than “principal.” The term “principal” means the head or person in charge of a school or institution. However, “principle” means a fundamental law, fact, or assumption; for example, we have to abide by the principles of medical writing
- **Revert and reply:** These are probably the most incorrectly used words. Most writers tend to use “revert” when, in fact, they mean “reply.” “Revert” means to go back to an earlier state. To simplify, revert means rejecting the changes in version 3 of a document and going back to version 2; in other words, reverting to version 2. “Reply” is used when you want the other person to get back to you, maybe with a response or some information. For example, you will reply to the E-mail with the required information.

**Redundancies and repetition**

Redundancy refers the use of unnecessary words or phrases, often repeating information in whole. However, there is a fine difference between these terms. Let’s take the help of the examples below to better elucidate this difference.
Redundant: the samples were analyzed using the chromatography technique.

Here, the term “technique” is redundant because “chromatography” is the name of the technique itself. Using both the terms is not required.

Repetitive: The patients included in the study were patients who were older than 25 years old.

Revision: The study included patients aged >25 years.

In scientific documents, redundancy primarily increases the word count, which could have otherwise been utilized elsewhere. Furthermore, it implies the author’s inadequate knowledge and incomplete understanding of scientific concepts, which hamper the scientific content from getting across.

Table 1 includes examples of the common redundant phrases and the preferred statements to be used instead.[9]

### Scientific jargon

The primary goal of medical writers is to communicate new research information to both experts in the industry and nonexperts such as the public. To a certain extent, the use of highly scientific text is warranted, depending on the target audience and topic in question; however, medical writers are advised to avoid the use of scientific and highly specialized language, so that their documents do not become too technical and too difficult to understand for its readers. Moreover, the use of jargon has its own advantages and disadvantages.[6]

- It makes the report seems untrustworthy, primarily because the author is unable to explain the content in simpler terms
- It may alienate the readers and perhaps discourage them from reading the report.

Tip: Because there is no standard rule on the permissible amount of technical vocabulary in documents, medical writers are often at crossroads, and not knowing how much will be too much. Incidentally, they can use tools, such as the “De-Jargonizer,” an automated jargon identifying program, which helps medical writers improve their documents and keep scientific jargon to a bare minimum. This program classifies the text into the following three categories: high-frequency words, mid-frequency words, and jargon-rare technical terms. The authors can subsequently revise their documents to make it more acceptable to the reader, in general.[6]

### Indianisms

As the name suggests, Indianisms are English words or phrases that have a very characteristic Indian influence. The primary reason for Indianisms is that Indian medical writers tend to literally translate phrases in English, which leads to an incorrect meaning or redundant phrase.

Table 2 lists a few phrases with Indianisms along with their suggested revisions.[7,8]

The negative impact of Indianisms in scientific reports is that the readers might not understand the meaning the author is trying to convey as they might not be aware of the words and phrases commonly used in India or any other part of the world. In turn, this may lead to misinterpretation or poor perception of the author’s writing ability.

### A few helpful pointers

**Use concise and simple language**

Although using flowery language is acceptable in literary writing, scientific writing requires the use of simple, clear sentences. The remedy for the challenges of redundancies and repetition mentioned above is using concise sentences; it aids readability and comprehension.

Original: The measurement of blood glucose levels was made to make the diagnosis of diabetes mellitus (15 words).

Revision: Diabetes mellitus was diagnosed by measuring the blood glucose levels (10 words).

| Redundant phrase                                                                 | Concise alternatives                      |
|---------------------------------------------------------------------------------|-------------------------------------------|
| Due to the fact that...                                                         | Because...                                |
| In order to                                                                     | To                                        |
| It should be noted that paracetamol caused hypersensitivity                      | Paracetamol caused hypersensitivity        |
| Measurement of body temperature was performed                                  | Body temperature was measured              |
| It is not unusual for scientists to repeatedly conduct experiments             | Scientists tend to conduct repeated experiments |
| Diabetes is not uncommon among patients with hypertension                       | Diabetes is common among hypertensive patients |
| As a result of this finding...                                                  | Because of this finding...                |
| In the event that                                                               | If                                        |
| Based on the fact that                                                          | Because                                  |
| Despite the fact that                                                           | Although                                  |
| The authors are of the same opinion that                                        | The authors agree that                    |
Hedging is permitted

In academic writing, the use of a noncommittal or vague statement is called hedging.\(^9\) Hedging is encouraged in scientific writing to clear the stance of the author to distinguish between facts and claims; it expresses uncertainty and hesitation as well as a polite negative strategy, which has become a convention in academic text. By hedging, the authors can tone down their statements to avoid opposition from the readers: A way to avoid personal accountability for possible false claims.\(^10\)

A few helpful terms that can be used in hedging are listed below:

- Introductory verbs: seem and appear
- Certain lexical verbs: believe and assume
- Phrases: The authors believe that…
- It might be suggested that…

Useful tools

Due to the highly demanding and competitive industry, medical writers are expected to be on top of their game with regard to scientific knowledge, current English trends, and publishing guidelines. Several tools are now available to help writers achieve the best possible outcome without the stress involved.

Below are a few tools that help in writing, referencing, formatting, and publishing scientific documents.

1. Grammarly\(^11\): Perhaps, the best and easiest tool for writers, Grammarly can be either downloaded as a desktop software or browser extension. It checks the text for grammar, word choice, and plagiarism
2. Ref-n-write\(^12\): This specialized academic writing tools help writers search perform literature search full text in addition to having 20,000 frequently used phrases, which is extremely useful for writers who are non-native English speakers
3. SciFlow\(^13\): SciFlow is an online platform to aid writing, referencing, and publishing of scholarly content with the following features:
   - A range of templates from several journals that can be used as a base
   - Multiple format options for citation style, manuscript layout, table of contents, bibliography, etc
   - The final file can be downloaded in different formats, as required.

CONCLUSION

Medical writing, in India, is a fast-paced, booming industry, with numerous growth opportunities. The only way budding and aspiring medical writers can leverage these opportunities is by honing their writing skills, of which the knowledge of language is a very important part. With the increasing number of available tools and tutorials on the internet, mastering the English language is not very far from reach. Writers should make a conscious effort to eliminate language-related errors in the documents as this not only improves document quality but also increases readership. A small step taken by our writers in this direction will go a long way in increasing the quality of the documents.

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