



# Brazilian Journal of OTORHINOLARYNGOLOGY

www.bjorl.org



## EDITORIAL

### The writing of scientific articles<sup>☆</sup>



### Redação de artigos científicos

The American writer Ernest Hemingway, 1898–1961, said the following about the art of writing: “We are all apprentices in a craft where no one ever becomes a master”. This phrase also applies to writers of scientific texts. We are apprentices and self-taught writers in this difficult task of producing quality scientific writing.

Creating a good text is the result of the hard work of writing. This is the opinion of experienced writers that consider other influences, such as inspiration, as being less important. Mark Twain, 1835–1910, also an American writer, proclaimed that conviction by promoting his three rules for writing well: “the first is to review; the second is to review and the third is to review”.

What does the editor of a scientific journal expect from a manuscript submitted for publication? Firstly, that it originates from methodologically correct research, performed on a relevant and appropriate theme for the journal. He will be even more pleased if the text is in agreement with the learned rules of the language in which it was written and if it contains characteristics that demonstrate its high – quality production. Among these characteristics are *clarity*, for the reader to understand what he reads; *brevity*, not to waste the reader’s time and space in the journal; *accuracy*, not to cheat or embarrass the reader; *elegance*, to attract and keep the reader’s attention and even delight him; and *the logical sequence* in the presentation of facts and arguments, to ensure continuity of reading.<sup>1</sup>

The presentation of the results sequence of an investigation is currently standardized in the major scientific journals in the health area. Four sections constitute the original scientific paper: introduction, methods, results, and discussion. This structure, called IMRD or IMReD, originated in the 1940s and was gradually adopted, being the only format used from the 1980s onwards.<sup>2</sup>

Each section of the article has its specificity, which must be respected. In the introduction, the author explains the investigation and informs the study’s goal. In the methods’ section, the author explains how the study was designed. The results’ section discloses the investigation findings and, if the investigation is a quantitative one, the statistical analysis is also presented. In the discussion’s section, the author supports the conclusion of the investigation, comments the results and compares them with relevant findings from other studies.

The IMRD structure is not simply a stylistic issue. It expresses the logic of scientific rationale. The writer must master this reasoning and use guidelines to report research results. There are general guidelines, such as the Vancouver guidelines and the instructions for authors of scientific journals. There are also specific ones available for virtually all types of study. The first specific guideline to attain broad consensus was the CONSORT, published in 1996, for the reporting of clinical trials. It was the stimulus and model for the creation of several others, including the STROBE guideline for observational studies, and the PRISMA, for systematic reviews. These guidelines can be found in a single electronic address.<sup>3</sup>

The use of guidelines, as the aforementioned ones, will help authors to avoid the omission of relevant information on their investigations. By following these instructions, reports tend to become more transparent. As a result, everyone will benefit – editors, reviewers, readers, and especially authors themselves, as it will increase the chances of the article being published in the scientific journals.

### Conflicts of interest

The author declares no conflicts of interest.

### References

1. Pereira MG. Artigos científicos: como redigir, avaliar e publicar. Rio de Janeiro: Editora Guanabara-Koogan; 2011. p. 22.

<sup>☆</sup> Please cite this article as: Pereira MG. The writing of scientific articles. Braz J Otorhinolaryngol. 2014;80:371–2.

2. Sollaci L, Pereira MG. The introduction, methods, results and discussion (IMRAD) structure: a fifty-year survey. *J Med Libr Assoc.* 2004;92:364-7.
3. The EQUATOR – Enhancing the Quality and Transparency of Health Research – Network; 2014. Available at: [www.equator-network.org/](http://www.equator-network.org/) [accessed 26.7.14].

Mauricio Gomes Pereira  
*Faculdade de Medicina, Universidade de Brasília (UnB),  
Brasília, DF, Brazil*  
E-mail: [mauriciogpereira@gmail.com](mailto:mauriciogpereira@gmail.com) (M.G. Pereira).