WRITING FOR MEDICINE – A CORPUS-BASED RESEARCH

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Abstract: Writing and editing biomedical scientific articles imposes certain rules depending on journal requirements. However, general guidelines set forth certain rules applicable to research articles in medical fields. The corpus of medical texts included in this research comprises articles selected from both Romanian and international journals. The paper aims to investigate article structures and types, highlighting differences and similarities, while also offering a guide for translators in order to correctly edit their medical translations.

Keywords: corpus-based research, biomedical articles, translation of medical texts, guide for translators, editing translation manuscripts.

Introduction

The medical genre covers various types of medical texts, the most common of which are: biomedical articles, case reports, package inserts, textbooks, manuals for medical equipments, official regulations, World Health Organisation guidelines, different classification systems, etc. Other types can also be mentioned, such as letters to the editors, reviews, clinician-patient encounter notes, or patient information leaflets, letters of referral, etc. All these types vary greatly in style, from overly informative and detail-abundant, such as textbooks, to particularly narrow-topic ones, like research articles.

Probably the most widespread and currently popular type of medical text is the biomedical research article. Its popularity is due to the advancement in the various subfields of medical sciences, and due to the necessity of popularising and disseminating knowledge.

The structure of the biomedical article

There are different structures of biomedical articles, all of them, however, following a more or less chronological arrangement of the information. With certain variations, the most prevalent type is the so-called IMRAD structure, namely, the acronym of the parts of the article: Introduction, Materials and methods, Results, and Discussion. By variations I mean that some journals may have a preference of including the conclusion part under a distinct heading rather than having it as the final paragraph of the Discussion section. These are preceded by the abstract and a list of keywords.

All original biomedical research articles are accompanied by abstracts. As any other abstract, the main purpose is summarising the main ideas of the paper. Just as the title is the summary of the abstract, the abstract is the summary of the paper.

This section clearly reflects the entire research described in the article. Although sometimes there are word limits set by journals, ideally an abstract should not exceed 200 words (Stuart 2007: 65). If it does, it simply includes irrelevant scientific details which may distract the reader's attention.

Writing a clear and comprehensive abstract is important because this section is included in online databases (Ferguson 2013: 250), access to abstracts usually being free. A

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well-written abstract will arouse readers' interest and will encourage them to read on. While many articles may be important and describe significant research results, they may simply pass unnoticed because of a less suitable title or a poorly written abstract. As such, a comprehensive title and a clear and descriptive abstract are the successful features which ensure a wider readership.

The abstract is typically followed by a list of key words, the choice of which should again be wise because key words are used by electronic databases, as one of the means of identifying the paper when online searches are performed in order to facilitate their retrieval (Eaton 2012: 88). Journals may have different requirements regarding the number of key words, however, typically, at least three-five such key words are added. Ideally, such key words should be chosen which appear in the National Library of Medicine's controlled vocabulary thesaurus (ibid., Enache 2007:55, Matthews & Matthews 2008: 48).

The first main part of the research article is the Introduction, whose aim is to describe the broad area in which the research was conducted. In order to clarify the necessity of the study it should answer the question "why was this work done?" (Mathews & Matthews 2008: 42). Introductions sometimes cover three areas: the general field of interest, the background and previous advances in the area, and the novelty the research brings.

Important papers about previous studies are cited, such articles which may have prompted to the research. Nevertheless, too few or too many citations included in the Introduction part may lead the readers down the wrong path, giving them the impression that either the researchers had not investigated the literature sufficiently or that they themselves had been confused. A solid review of the literature to date is at the basis of a good introductory part, but comments on previous studies should be saved for the Discussion part. The final paragraph of the Introduction should broadly present the most significant findings as opposed to previous studies, and the importance of the research described in the article indicating the experimental approach.

The Materials and Methods part of the medical article will give full details about the methodology used in the research. This section should answer the question "how was the evidence obtained?" (Matthews & Matthews 2008: 42). Precise details of the procedures and accompanying explanations are necessary so that if another team decides to repeat the study, they should obtain the same results.

Regardless of the terminology or processes involved in the study, this section should be clear enough to understand even if the reader is not a specialist in the field. This is the part which fully details the subjects (patient cohorts, selection of patients, inclusion/ exclusion criteria), materials, chemicals, sampling methods, data collection and comparison, statistical tests and analyses, equipment. Authors may subdivide this section into different parts which may bear such headings as: Clinical material, , Light microscopy, Tissue and cell samples, Antibodies, etc.

Tables may also be included in this part of the article. Typically, they should never duplicate the text and they are introduced by phrases which contain one of the following verbs: *depict*, *detail*, *list*, *present*, *show*, or *summarise*. Such non-verbal elements as tables, figures, illustrations, graphs are visual patterns that represent, symbolise, and condense information in medical articles. While graphical illustrations may enhance the readability of the text (Busch-Lauer 1998: 110) they should not be overloaded with details in order that they can be easily understood by the readers. Figures or tables should be commented on in the description that associates them and not in the main part of the text because, for editing purposes, such visual elements may be placed farther from the text section that refers to them.

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Hence, the text should only make reference to them, reference which is often given between parentheses.

Most frequently, this section arranges information chronologically so that the reader can fully understand the logical development of the experiments (Enache 2007: 55, Matthews & Matthews 2008: 43). If chemicals, substances, antibodies, devices, software were used to perform the research, the origin, the manufacturer, or the software version is indicated in parentheses.

According to Eaton (2012: 89), the Results section is expected to present data and statistical results objectively in an unambiguous and clear manner, omitting any comments, analysis or conclusions drawn from the results. In case percentages are included, raw data should also be mentioned: *our study group included 69 (70%) male and 30 (30%) female patients*, *a total of 485 from 1800 tissue samples (26.9%) were non-informative*, etc. Statistical result should not have many decimals as it may be too confusing and irrelevant. Oftentimes, the Results section is also subdivided, the divisions carrying different headings: *Clinical findings*, *Pathologic features*, etc, depending on the aim of the article.

When results are presented in tables, the tables need to have clearly labelled rows and columns. Ideally, some space between rows and columns should be left in order for the cells not to be difficult to read. Tables can be accompanied by footnotes if further explanations are needed. Authors may also use graphs and charts to highlight and compare different results of the study. Nevertheless, such should be simple and not carry a complicated design which might distract the readers.

One of the most important parts of the biomedical research article is the Discussion section which is dedicated to a critical approach of the methodology used in the research and which interprets the findings of the study. Here, the authors are expected to state their consideration of the results, while also comparing the results of their study with those of other similar ones carried out previously, commenting on differences and similarities and explaining their occurrence.

The Discussion part ends with the conclusions of the whole article. The aim of the conclusion, whether under a distinct heading or embedded in the Discussion section, is to summaries the study and to list its key features. No additional results which were not mentioned in the Results section should be added here.

This widely used structure of the scientific research article has been adopted by Romanian journals as well, supposedly due to the clear organisation of the information, and because most Romanian medical journals in fact publish their articles in English.

Corpus study

In order to conduct the research for this paper, I chose medical articles from the following journals:

1. Jurnalul român de patologie
2. Revista română de medicină de laborator
3. Acta Medica Marisiensis
4. Romanian Journal of Morphology and Embryology
5. Cancer
6. The American Journal of Surgical Pathology
7. The Journal of Urology
8. Virchows Archiv

The first four journals in the list above are published in Romania, while the other four are international ones. Jurnalul român de patologie has practically ceased existing, Revista

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română de medicină de laborator publishes articles in Romanian and English too, while Acta Medica Marisiensis and the Romanian Journal of Morphology and Embryology now exclusively publish articles written in English.

In order to highlight similarities, a summary of the parts that such articles contain is given in the table below:

Parts/ Sections	Romanian	English
Abstract	Yes, sometimes both in English and Romanian	Yes
Keywords	Yes	Yes
Introduction	Named as such	Yes, not always named
Materials and Methods	Yes, sometimes also called Materials, Methods and Patients	Yes
Results	Yes, sometimes together with Discussions	Yes
Discussion	Yes	Yes
Conclusion	Yes, but sometimes not present	One or two paragraphs not named as such
Acknowledgements	Sometimes	Sometimes
References	Yes	Yes

The Romanian Journal of Morphology and Embryology as well as Acta Medica Marisiensis instruct authors to include a Conclusions section. While the instructions for authors in the Revista română de medicină de laborator do not include a conclusion part, many of the articles published in the journal bear this section along with the heading.

Very frequently, unlike English articles, Romanian articles will have the abstract as the summary of the paper, with the subdivisions typical to articles (Background, Objective, Materials and Methods, Results, Conclusions). However, there are English journals, as well, which prefer the organisation of the Abstract in this way, as is the case of the American journal Cancer.

The translator's responsibility

In an ideal situation, any translation task should be accompanied by a translation brief, or assignment. The translation brief sets forth the purpose and the status of a translation (Fraser 2001: 53). This may be very useful for translators as they can carry out pre-translation work on text type, it tells the translators how the ST should be transferred (Nord 2005: 36) and the typical structure and characteristic vocabulary of the target language text. The assignment is both the starting point and the goal of any professional translation process (Montalt & Davies 2007: 28) because it also describes the expectations and requirements of the client.

According to Montalt & Davies (ibid.), the following key information should be included in the translation brief:

- the product or service the client needs;
- the profile of the target audience;
- the context and communicative situation in which the TT will be used;

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- the purpose of the TT;
- the profile of the organisation that will use the TT;
- legal requirements that may affect the production of the TT;
- the format of delivery;
- the deadline of delivery.

All these details are set forth by the commissioner of the translation but because commissioners are not experts in translation, they may be unable to formulate the translation brief. As such, the translation process will be operated by the intended function of the target text as determined by the initiator's needs (Nord 2005: 10). Thus, formulating a clear translation brief comes down to the translator in order to be able to complete the task and deliver the expected product.

Before proceeding to the translation proper, the translator may need to build a glossary of terms to use for their work. Sometimes, however, in order to facilitate this stage, the commissioner may provide the translator with such a glossary. This is especially the case when the commissioner is also the author of the source text.

However, regardless of the requirements of the intended journal of publication, physicians may not keep to the structural rule, and, as a result, information may be placed in the wrong section, unnecessary details may abound, etc. This is because sometimes researchers do not write their articles with the aim to have them published in one particular journal, and as a consequence, the source text the translator is given may significantly differ from the target text. In such cases, while performing the translation, it is the responsibility of the translator to arrange the text according to the format of the scientific paper. Translators should take greater responsibility and also do macroediting in order to ensure that the text is coherent and cohesive, which at times may mean ignoring the source text.

Nonetheless, another responsibility of the translator surfaces, one which is by far the most important of all, namely, accurate rendering of the scientific content. Editing measurement units wrongly, failing to correctly convert them, for instance angstroms into picometres, may question the reliability of the research article. On the other hand, such mistakes may cause the loss of lives and may also bring substantial harm to the reputation of the authors.

Conclusion

In conclusion, the translator of biomedical articles has different types of responsibilities: a responsibility to the commissioner of the translation, to the text itself, to the reader of the text, and to himself or herself as a translator (Ruuskanen 1995: 235). The translators' responsibility to faithfulness in their work derives from the readers' confidence because they normally believe that a translation gives them a correct idea of the original text (Stolze 2011: 32).

Editing the text according to the requirements of the journal, rearranging information in the suitable section, omitting redundancies, etc., also come down to the translator. However, the most important responsibility will always remain the correct rendering of the scientific content of the article.

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