

Effective Medical Writing

Pointers to getting your article published

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Writing the Introduction

ABSTRACT

The introduction section of a scientific paper aims to introduce a specific topic and to stimulate the reader's interest. It provides background information about what has already been done by others, supported by a limited number of relevant references. The reader should be informed about the purpose of the paper, what it will address, and how it relates to previous work.

Keywords: introduction, medical writing, research objectives, scientific paper structure

Singapore Med J 2008; 49(10): 756-758

INTRODUCTION

The introduction section of a scientific paper is normally placed at the beginning of the text proper, and follows the abstract. It is the first component of the conventional IMRAD (Introduction, Materials and methods, Results And Discussion) structure of an original article. Almost all papers have an introduction section, except perhaps for some types of short papers found in certain journals, such as case reports, commentaries and other paper categories. Authors should always check the individual journal's "Instructions to Authors" or "Author Guidelines" for the in-house style requirements.

Besides introducing a specific topic, the purpose of the introduction section is to stimulate the reader's interest, with the aim of leaving a positive initial impression of what is to come, so that he or she will be motivated to read the rest of the paper.⁽¹⁾ Inexperienced authors often have problems with this section. A very common problem is being unable to clearly state the objectives for writing the paper. The introduction can be divided into two components, namely: background information and purpose.

BACKGROUND INFORMATION

The first component of the introduction section aims to provide the reader with sufficient background information about the topic to be investigated or discussed, i.e. introduces the topic to the reader. This background information should include a brief summary of what has already been done in the particular area of interest.

The nature of a problem and its potential significance should be highlighted. References quoting relevant work by others should be provided, with particular care taken not to miss out important previous work. Editors and reviewers like to see that authors have made a systematic and comprehensive review of the literature. However, listing all the references found from an extensive literature search is not appropriate in the introduction section. Authors should also resist the temptation to provide an extensive critique of others' work in this section. Authors should instead confine themselves to providing a limited number of relevant references.

The length of the introduction section and depth of background information contained depend on the target audience and type of paper. The introduction section is usually longest for original articles, particularly those dealing with a complex subject, and shortest for case reports. If a certain topic is aimed at a general medical audience, the introduction may need to be more descriptive and have greater explanatory details in order to better introduce the topic; while for the same topic written for a subspecialty audience, the authors can assume that the reader would be familiar with the topic and all that is required is a brief background to show why the study was conducted and why the topic is important. The background information usually starts with more general and broad-based facts, and then moves on to specifics. As a rule, the introduction should be as succinct and focused as possible.

PURPOSE

The second component of the introduction section aims to inform the reader about the purpose of the article and how it relates to previous work. The author should be able to provide information about how the hypothesis for a study, clinical or investigative observation, or idea for a procedure or its modification came about, either from his personal thoughts and experience, or from referenced work by others. Authors should highlight any new, different or special aspects of what he or she aims to undertake in the study. Editors will not be interested in publishing, and the reader will not be interested in reading, studies that are merely a repetition of what had already been done by others.

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The reader should be able to understand why the authors chose to undertake the study, and the rationale for the authors' research. The reviewers, and later on the reader, need to be convinced of the importance of the research question, and feel stimulated enough to read the rest of the paper. The identification and definition of a particular clinical or research problem is therefore vital. The reader should be informed about how the problem will be addressed. The purpose for writing the paper should be precisely stated at the end of the introduction section. The main and secondary objectives should be clear, and ideally comprise no more than two sentences. The author should not include data or conclusions from the work being reported.

Box 1. Components of the Introduction:

1. Background information
 - a. What have others done?
 - b. Provide evidence: supported by limited number of relevant references.
2. Purpose of study
 - a. Why undertake this research?
 - b. How does it relate to what has already been written?
 - c. What is so different or special about your research?

Box 2. Common errors:

- Overlong and rambling introduction section
- Extensive listing of references
- Extensive critique of others' work
- Important previous work missing
- Objectives not clearly stated
- Inclusion of data or conclusions from the work being reported

SUMMARY

The introduction section of a scientific paper should be concise and yet informative. The reader should be able to understand why the author's work is important in the context of what is already known, and be stimulated enough to read the rest of the article.

Box 3. Take home points:

1. The introduction should be succinct and focused.
2. Provide sufficient background information supported by relevant references.
3. Clearly state the purpose for writing the paper and how it relates to previous work.

REFERENCE

1. Day RA, Gastel B. How to Write and Publish a Scientific Paper. 6th ed. Burnham: Greenwood Press, 2006.

SINGAPORE MEDICAL COUNCIL CATEGORY 3B CME PROGRAMME
Multiple Choice Questions (Code SMJ 200810A)

- | | True | False |
|--|--------------------------|--------------------------|
| Question 1. The introduction section: | | |
| (a) Should be made as long as possible. | <input type="checkbox"/> | <input type="checkbox"/> |
| (b) Should contain at least 100 references. | <input type="checkbox"/> | <input type="checkbox"/> |
| (c) Should always be structured. | <input type="checkbox"/> | <input type="checkbox"/> |
| (d) Aims to stimulate the reader's interest. | <input type="checkbox"/> | <input type="checkbox"/> |
|
Question 2. The following are components of the introduction section: | | |
| (a) Background information. | <input type="checkbox"/> | <input type="checkbox"/> |
| (b) Detailed statistical analysis. | <input type="checkbox"/> | <input type="checkbox"/> |
| (c) Results. | <input type="checkbox"/> | <input type="checkbox"/> |
| (d) Purpose of study. | <input type="checkbox"/> | <input type="checkbox"/> |
|
Question 3. The following statements regarding the introduction section are true: | | |
| (a) It provides sufficient background for understanding the rest of the paper. | <input type="checkbox"/> | <input type="checkbox"/> |
| (b) Extensive critique of others' work is required. | <input type="checkbox"/> | <input type="checkbox"/> |
| (c) If the authors disagree with certain pieces of work, reference to these may be omitted. | <input type="checkbox"/> | <input type="checkbox"/> |
| (d) Its length and depth should be tailored to the target audience. | <input type="checkbox"/> | <input type="checkbox"/> |
|
Question 4. In the introduction section, the purpose should address the following: | | |
| (a) Why undertake this research? | <input type="checkbox"/> | <input type="checkbox"/> |
| (b) How does it relate to what has already been written? | <input type="checkbox"/> | <input type="checkbox"/> |
| (c) What is so different or special about the undertaken research? | <input type="checkbox"/> | <input type="checkbox"/> |
| (d) What new data was found? | <input type="checkbox"/> | <input type="checkbox"/> |
|
Question 5. When writing the introduction section, the following rules apply: | | |
| (a) Always read the particular journal's author guidelines. | <input type="checkbox"/> | <input type="checkbox"/> |
| (b) The purpose for writing the paper should be concise. | <input type="checkbox"/> | <input type="checkbox"/> |
| (c) The purpose for writing the paper is almost always contained within the opening two sentences of the introduction section. | <input type="checkbox"/> | <input type="checkbox"/> |
| (d) A particular clinical or research problem should be identified. | <input type="checkbox"/> | <input type="checkbox"/> |

Doctor's particulars:

Name in full: _____

MCR number: _____ Specialty: _____

Email address: _____

SUBMISSION INSTRUCTIONS:

(1) Log on at the SMC website: <http://www.sma.org.sg/cme/smj> and select the appropriate set of questions. (2) Select your answers and provide your name, email address and MCR number. Click on "Submit answers" to submit.

RESULTS:

(1) Answers will be published in the SMJ December 2008 issue. (2) The MCR numbers of successful candidates will be posted online at www.sma.org.sg/cme/smj by 15 December 2008. (3) All online submissions will receive an automatic email acknowledgment. (4) Passing mark is 60%. No mark will be deducted for incorrect answers. (5) The SMJ editorial office will submit the list of successful candidates to the Singapore Medical Council.

Deadline for submission: (October 2008 SMJ3B CME programme): 12 noon, 25 November 2008.