

Effective Medical Writing

Pointers to getting your article published

Ng K H, Peh W C G

Preparing effective tables

ABSTRACT

Tables are used in scientific papers to present information in a concise and efficient manner. Tables are able to provide information at any desired level of detail and precision. Presenting data in a table rather than as part of the text is also an effective way to reduce the length of the text. This article provides some basic guidelines to assist authors in preparing clear and effective tables for their papers.

Keywords: medical writing, results, scientific paper, tables

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INTRODUCTION

Tables and illustrations (graphs, images and photographs) are a means of presenting data or research results in a concise and organised way. They are useful to report data that is too numerous or complicated to be described adequately in the text, and/or to reveal trends or patterns in the data. If readers go beyond the abstract, they are likely to examine the tables and illustrations next.

Tables are used to make an article more readable by summarising numerical data and statistical results from the research. Tables can also be used to synthesise the main findings from existing literature, and to present textual information. Tables must be relevant and provide the reader with a good summary of the study. They should not simply repeat the raw data obtained by researchers during the execution of the study.

GENERAL GUIDELINES FOR PREPARING TABLES

Before writing the first draft of the manuscript, it is important to organise the data to be presented in the manuscript. It is important to first plan which results answer the questions that have been posed in the research and which results may be left out. By preparing the

tables (and illustrations), their titles and legends, and the appropriate statistical analyses, the author will be certain of his or her results before interpretation. At this time, the author will also be able to determine if all the data needed is available.

Organise the tables (and illustrations) in such an order that they tell a story. Be sure that all tables (and illustrations) are cited in the text of the article. Limit the number of tables (and illustrations) to those that provide essential information that could not adequately be presented in the text.

Typically, when submitting the manuscript, the tables (and illustrations) are located on separate pages that follow the reference section. The author should confirm this by checking the instructions to authors of the target journal. Generally, most journals require all the table titles to be located on the same page, with each table presented on a separate page in chronological order.

Box 1. When to present data in tables:

- Precise numerical data rather than proportions or trends.
- Large numbers of related data.
- Summarise information that will be clearer in a tabular form rather than in a running text.
- Complex information that will be clearer in a table than in a text form or a graph.

DESIGNING TABLES

A table consists of a title, a matrix of column headings (subheadings) and side (row) headings, the field (the rows and columns containing the data), and usually, explanatory notes. Do not use internal horizontal and vertical rules, unless the presentation of data is not clear.

Many tables in scientific papers follow the pattern shown in Table I. Always refer to the tables published in your target journal as models for your draft tables.

Each table should be designed to stand alone, i.e.

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Table I. Title of table

Side heading	Column heading	
	Column subheading* (unit)	Column subheading† (unit)
Row 1 entry	9.12 (2.10)	9.85 (2.45)
Row 2 entry	17.23 (2.50)	17.15 (2.35)
Row 3 entry	16.73 (3.23)	19.12 (3.25)
Row 4 entry	15.68 (2.54)	18.15 (3.15)

Standard errors of the mean are given in parentheses.

* Footnote a.

† Footnote b.

readers should be able to understand it without having to make reference to the text. Number tables consecutively, in the order of their first citation in the text.

ARRANGING DATA IN A TABLE

The data can be presented either horizontally or vertically. The data should be organised so that the like elements are read down, not across. It is easier for readers to compare a series of numbers going down a column than a series of numbers going across a row. Words in the column should be lined up on the left (left-justified). Numbers should be lined up on the right (right-justified).

PROVIDING TABLE TITLES

Provide a clear, descriptive title (also called a caption or legend) for each table. The title should be placed at the top of each table. Like the title of the paper itself, each title should convey as much information as possible about what the table (or illustration) tells the reader. However, do not provide a summary or interpretation of the results in the title.

Examples of table titles that appeared in the January 2009 issue of the Singapore Medical Journal are:

1. Systolic and diastolic arterial pressure before and after the completion of measurements in the melatonin and control groups.
2. Non-adherence rates of the standard steps of medication administration by nurses before and after a re-education programme.

LABELLING TABLES

Provide a short or abbreviated heading for each column heading. In most cases, the meaning of each column should be apparent without reference to the text. Table footnotes and explanations are used to simplify and clarify the table. For footnotes, use the following symbols: *, †, ‡, §, ¶, **, ††, etc. Explain all non-standard abbreviations that are used in the footnotes. Ensure that names of authors or the institution/s do not appear in the

Table II. Symptoms of headache in 20 adult patients.

Symptoms	No. of patients
Neck pain	10
Pressure on the head	6
Blurred vision	2
Sensitive to light	1
None	1

tables. Double-check all arithmetic (percentages, totals, differences) for accuracy, and make sure that the tabular data agree with the data given in the text.

COMMON MISTAKES TO AVOID

One very common mistake made by many authors is creating irrelevant tables, such as a word list as shown in Table II. It is obvious that the information in the table could easily be presented in the text itself.

Authors should not repeat data that has been presented in a table (or graph) in the text and vice versa, unless they wish to emphasise, summarise or discuss a particular value, finding or observation.

Box 2. Common errors:

- Tables in the manuscript are not cited in the text.
- Tabular data do not agree with the data given in the text.
- Inaccurate arithmetic for columns (e.g. numbers do not add up).
- Information in the text is duplicated in the tables.
- Information in the tables is duplicated in graphs.

SUMMARY

Tables are used to make a scientific paper more readable by summarising numeric data from the text. Tables can also be used to synthesise main findings from existing literature and to present textual information. Tables are self-explanatory and do not duplicate data given in the text or graphs. Decide which tables are most suitable for publication and then design clear and effective tables following the guidelines as suggested.

Box 3. Take home points:

1. Tables are used to present complex data in a concise and organised manner.
2. Prepare the results and data of the study before drafting the tables.
3. The flow of the tables should tell a logical story.
4. Design, title and label the tables carefully so that they are easy to understand.

SINGAPORE MEDICAL COUNCIL CATEGORY 3B CME PROGRAMME
Multiple Choice Questions (Code SMJ 200902A)

- Question 1.** The purpose of tables are:
- | | True | False |
|---|--------------------------|--------------------------|
| (a) To make an article more readable by summarising numeric data from the text. | <input type="checkbox"/> | <input type="checkbox"/> |
| (b) To synthesise main findings from existing literature. | <input type="checkbox"/> | <input type="checkbox"/> |
| (c) To make an article more attractive. | <input type="checkbox"/> | <input type="checkbox"/> |
| (d) To reveal trends or patterns in the data. | <input type="checkbox"/> | <input type="checkbox"/> |

- Question 2.** When do we use tables?
- | | | |
|--|--------------------------|--------------------------|
| (a) To present precise numerical data rather than just proportions or trends. | <input type="checkbox"/> | <input type="checkbox"/> |
| (b) To present large numbers of related data. | <input type="checkbox"/> | <input type="checkbox"/> |
| (c) To summarise information that is clearer in a tabular form rather than in the main body of the text. | <input type="checkbox"/> | <input type="checkbox"/> |
| (d) To present complex information that is more clearly presented in a table than in text form. | <input type="checkbox"/> | <input type="checkbox"/> |

- Question 3.** Table titles:
- | | | |
|--|--------------------------|--------------------------|
| (a) Should be clear and concise. | <input type="checkbox"/> | <input type="checkbox"/> |
| (b) Are placed above the tables. | <input type="checkbox"/> | <input type="checkbox"/> |
| (c) Should provide summaries of the results. | <input type="checkbox"/> | <input type="checkbox"/> |
| (d) Should be limited to 30 words. | <input type="checkbox"/> | <input type="checkbox"/> |

Question 4. Based on this table, answer the following questions:

Disease	Species	Region
X	A	Asia
Y	B	Europe
Y	C	North America

- | | | |
|--|--------------------------|--------------------------|
| (a) This table is most appropriate for inclusion in the text. | <input type="checkbox"/> | <input type="checkbox"/> |
| (b) A pie chart is a better tool to present the information. | <input type="checkbox"/> | <input type="checkbox"/> |
| (c) This table could be presented as text: "Species A in Asia was affected by disease X, species B in Europe by disease Y, and species C in North America by disease Y." | <input type="checkbox"/> | <input type="checkbox"/> |
| (d) Internal horizontal and vertical rules should be deleted. | <input type="checkbox"/> | <input type="checkbox"/> |

- Question 5.** The following statements are true:
- | | | |
|---|--------------------------|--------------------------|
| (a) Units are specified in column headings wherever appropriate. | <input type="checkbox"/> | <input type="checkbox"/> |
| (b) Footnotes are used to clarify points in a table. | <input type="checkbox"/> | <input type="checkbox"/> |
| (c) Footnotes may also be used to denote statistical differences among groups. | <input type="checkbox"/> | <input type="checkbox"/> |
| (d) Table titles can simply be restated from the results of statistical analysis. | <input type="checkbox"/> | <input type="checkbox"/> |

Doctor's particulars:

Name in full: _____

MCR number: _____ Specialty: _____

Email address: _____

SUBMISSION INSTRUCTIONS:

(1) Log on at the SMJ 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 April 2009 issue. (2) The MCR numbers of successful candidates will be posted online at www.sma.org.sg/cme/smj by 15 April 2009. (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: (February 2009 SMJ 3B CME programme): 12 noon, 8 April 2009.