

# WRITING A SCIENTIFIC PAPER – Structure of Scientific Articles

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# Why does one write?

- A very interesting observation was made
- A useful advance was made
- To put a published information into a new context
- To synthesize information in a novel way that would be an interest to others



# Structure of scientific paper

Mostly format is 4 sections

 Introduction – continuous piece of text









 Methods }

 Results } - have subsections

 Discussion }



# Structure of a Scientific Paper

-  Title
-  Abstract
-  Key words
-  Introduction
-  Methods
-  Results
-  Discussion / Analysis
-  References



# Title

## ■ Principal function:

- to inform the readers about the study
- to catch the reader's attention

## ■ Specific

■ A concise statement of the topic

■ Related to the research question

■ Embodies either the aim or the conclusion

■ Explanatory by itself



# Abstract

- It allows the reader to have a view of the study in a nutshell
- Gives a concise summary of the research problem, the methodology used, the results of the study and the conclusion
- Must show validity, relevance and the usefulness of the study
- 200 – 250 words



# Parts of the Abstract

- Background – states why the study is important (2-3 sentences)
- Objectives – states what the study had tried to answer (1-2 sentences)
- Subjects and setting – (1-2 sentences)
- Design – states how the study was done (2-3 sentences)



# Parts of the Abstract

- Data Collection – how the results were measured (2-3 sentences)
- Results – what the findings are (5-9 sentences)
- Conclusion – states the key result and is related to the title(1-2 sentences)





# Key words

-  List of words used when searching for articles in literature indices



# Introduction

- Its purpose is to attract readers further and tell them what to expect
- It should include a brief review of the main literature in the subject area, citing and summarizing important earlier studies



# Parts of the Introduction

- Overall topic or background of the research question
- Previous research on the subject
- Problems with previous research (Be careful not to criticize past researches!)
- What was done by the present investigators to solve the problems in the study
- The objectives



# Methods

- This portion describes how the study was conducted
- Should contain enough detail so the reader can orient himself or perhaps replicate the study



# Contents of Method Section

 Study design

 Subjects and setting

- include subject selection, sample size, subject assignment

 Intervention

 Measurement

- include description of method of data collection and measurement of variables



# Contents of Method Section

## Analysis

- include analysis used to compare the baseline variables and main outcomes
- include who were analyzed including the dropouts and withdrawals
- name the software that was used and describe how the data was analyzed



# Results

- The major scientific contribution of the manuscript
- The results presented should focus on the objectives of the research
- Discuss the baseline characteristics and comparability of the population or subjects in the first paragraph
- Present the answers to the questions or hypothesis that were posed in the succeeding paragraphs



# Points to consider in writing the results

- Always go back to the objectives
- Write the tables and figures to answer the objectives and to describe the subjects
- Convey effect size first before confidence intervals and p values
- Write the text of the results and provide some comments on the results presented





# Discussion / Analysis

- This section will bring the key aspects of the study together
- This tells what the results mean, why they are important and how they fit in with existing knowledge



# Guide questions for the discussion

## What was found?

- Synthesize the principal findings of the research
- Summarize the major points without repeating the data in the result section

## What do the results mean?

- Implications to the investigator, the reader, to the patients or to medical practice



# Guide questions for the discussion

- How do the results compare with those of prior studies?
- What are the limitations of the study?



# Discussion


- Conclusions and recommendations
  - the last few sentences of the discussion
  - it should put the paper all together



# References

## Includes:

- recent references
- manuscript in preparation
- manuscript that were submitted for publication but is not yet accepted
- personal communications or letters

 Restrict listing to those references that have direct bearing on the research paper



# References

- Number references in the order that they appear in the text



“True ease in writing comes from art,  
not chance,  
as those move easiest who have  
learned to dance....”

Alexander Pope

