

RESEARCH PAPER



دانشگاه علوم پزشکی مشهد

Scientific Writing

How To Write and Publish a Scientific Paper



دانشگاه علوم پزشکی و خدمات
بهداشتی درمانی خراسان شمالی

Outlines

- Ethical Issues
- Style and language
- Structure of paper
- Components of paper
- Article submission/journal selection
- Publisher's process/peer review

Ethical Issues

- ☐ Disclosure of Conflict of Interest
- ☐ Acknowledgment of funding sources
- ☐ The image manipulation guidelines
- ☐ Online submission - supplemental information (datasets, videos)
- ☐ For Health Sciences
 - Submission of a Clinical Trials to a Central Registry
 - Institutional Review Board approval

Style and Language

- ❑ **Refer to the journal's author guide for notes on style**
 - Some authors write their paper with a specific journal in mind
 - Others write the paper and then adapt it to fit the style of a journal they subsequently choose
- ❑ Objective is to report your findings and conclusions clearly and concisely as possible
- ❑ If English is not your first language, find a native English speaker (if possible) to review the content and language of the paper before submitting it

Structure of a Paper

- ❑ Scientific writing follows a rigid structure
- ❑ Consequently, a paper can be read at several levels:
 - Some people just will refer to the title
 - Others may read only the title and abstract
 - Others will read the paper for a deeper understanding

Components of a Paper

Section	Purpose
Title	Clearly describes contents
Authors	Ensures recognition for the writer(s)
Abstract	Describes what was done
Key Words (some journals)	Ensures the article is correctly identified in abstracting and indexing services
Introduction	Explains the problem
Methods	Explains how the data were collected
Results	Describes what was discovered
Discussion	Discusses the implications of the findings
Acknowledgements	Ensures those who helped in the research are recognised
References	Ensures previously published work is recognised
Appendices (some journals)	Provides supplemental data for the expert reader

Authors Listing

- ❑ ONLY include those who have made an intellectual contribution to the research
 - Conception or design of the work
 - Data collection
 - Data analysis and interpretation
 - Drafting the article
 - Critical revision of the article
 - Final approval of the version to be published

- ❑ Order of the names of the authors can vary from discipline to discipline

Title

- ☐ Describes the paper's content clearly and precisely including keywords
- ☐ Is the advertisement for the article
- ☐ Do not use abbreviations and jargon
- ☐ Search engines/indexing databases depend on the accuracy of the title - since they use the keywords to identify relevant articles

Abstract

- ❑ Briefly summarize (often 250 words) the problem, method, results, and the conclusions so that:
 - The reader can decide whether or not to read the whole article
- ❑ Together, the title and the abstract should stand on their own
- ❑ Many authors write the abstract last so that it accurately reflects the content of the paper

Introduction

- ❑ Clearly state the:
 - Problem being investigated
 - Background that explains the problem
 - Reasons for conducting the research
- ❑ Summarize relevant research to provide context
- ❑ State how your work differs from published work
- ❑ Identify the questions you are answering
- ❑ Explain what other findings, if any, you are challenging or extending
- ❑ Briefly describe the experiment, hypothesis(es), research question(s); general experimental design or method

Method

- ☐ Provide the reader enough details so they can understand and replicate your research
- ☐ Explain how you studied the problem, identify the procedures you followed, and order these chronologically where possible
- ☐ Explain new methodology in detail; otherwise name the method and cite the previously published work
- ☐ Include the frequency of observations, what types of data were recorded, etc.
- ☐ Be precise in describing measurements and include errors of measurement or research design limits

Results

- ❑ Objectively present your findings, and explain what was found
- ❑ Show that your new results are contributing to the body of scientific knowledge
- ❑ Follow a logical sequence based on the tables and figures presenting the findings to answer the question or hypothesis
- ❑ Figures should have a brief description (a legend), providing the reader sufficient information to know how the data were produced

Discussion

- ☐ Describe what your results mean in context of what was already known about the subject
- ☐ Indicate how the results relate to expectations and to the literature previously cited
- ☐ Explain how the research has moved the body of scientific knowledge forward
- ☐ Do not extend your conclusions beyond what is directly supported by your results - avoid undue speculation
- ☐ Outline the next steps for further study

References

- ☐ Whenever you draw upon previously published work, you must acknowledge the source
- ☐ Any information not from your experiment and not 'common knowledge' should be recognized by a citation
- ☐ How references are presented varies considerably
- ☐ Avoid references that are difficult to find
- ☐ Avoid listing related references that were not important to the study

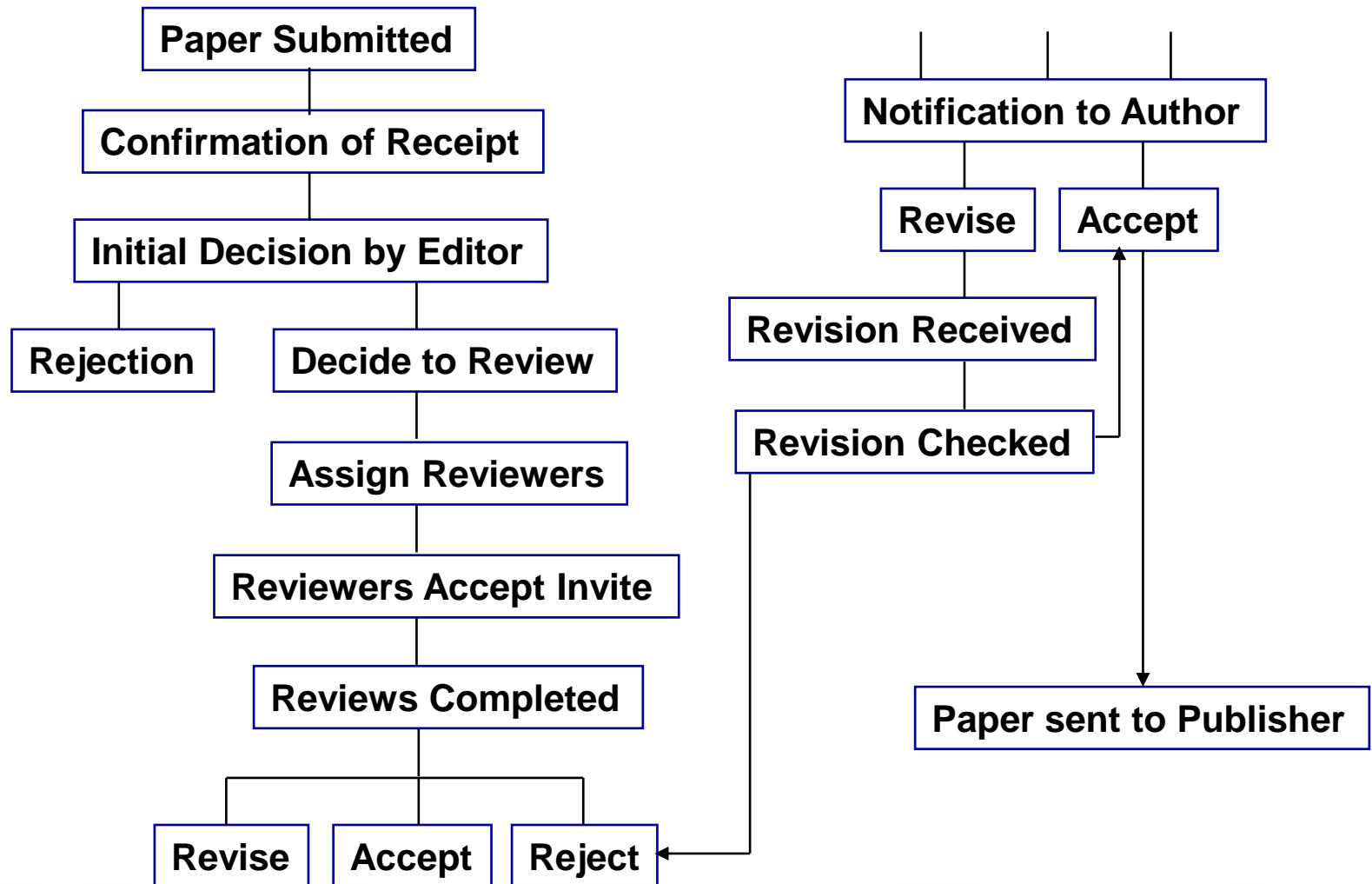
Article Submission

- ☐ Select your journal carefully
- ☐ Read the aims and scope
- ☐ Think about your target audience and the level of your work – do you have a realistic chance of being accepted?
- ☐ Follow the guidelines in the notes for authors and include everything they ask – it makes the editor's job easier...
- ☐ Articles should not be submitted to more than one journal at a time

Journal Selection

- ☐ Impact Factor
- ☐ Reputation or quality/prestige
- ☐ Access to the target audience or specialization
- ☐ Overall editorial standard
- ☐ Publication speed
- ☐ International coverage
- ☐ Habit/previous publication
- ☐ Open Access or HINARI/AGORA/OARE participating publisher
- ☐ Other

Overview of Peer Review Process



Any Questions?

