

Peer Review and Writing Journal Articles and Book Chapters

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Presentation Format

- Introduction and Definitions
- Format for writing journal articles
- Format for writing Book chapters
- The Peer Review Process
- The Case of the African Journal of Reproductive Health
- New Textbook in Sexual and Reproductive Health
- Conclusions

Writing a Scientific Article

- “A theory is something nobody believes, except the person who made it. An experiment is something everybody believes, except the person who made it”
Albert Einstein

Reasons for Writing

- To disseminate new knowledge
- A scientific experiment is not complete until the results have been **published** and understood.
- A scientific paper is a written and published report describing *original research results*.
- New scientific ideas can be openly discussed, criticised, tested, accepted or rejected
- Until you publish, you are not doing science

A Perfect Research Article

- Brings together the two key scientific elements of THEORY and EXPERIMENT
- Shows how a variety of disparate data/results/observations can be understood through a single, elegant, hypothesis.

What is a scientific paper?

- A scientific paper is a written and published report describing original research results.
 1. It must be the first publication of original research results,
 2. In a form whereby peers of the author can repeat the experiments and test the conclusions, and
 3. In a journal or other source document readily available within the scientific community

Definition of a Scientific Paper

- An accepted original scientific publication containing scientific information to enable peers:
 1. To assess observations
 2. To repeat experiments
 3. To evaluate intellectual processes
 4. Must have an impact
 5. Available to scientific community without restriction
 6. Available for regular screening by one or more of the major recognized secondary services (Biological abstracts, Index Medicus, Pub Med etc...)

Writing the Research Paper

- It's your work – the more it flows well, the better the reviewer will be convinced of your authorship!
- You need to develop your own style
- But...there are some useful guidelines...
- (...once you know them, you can decide when to break them...)

Some Important Writing Points

- Poor experimentation cannot be masked by brilliant writing; however, **poor writing can mask brilliant experimentation**
- Avoid complex sentence structure
- Use simple and clear English
- Always keep in mind that **the paragraph** is the essential unit of thought

Before Starting to Write

- Record your readings (results)
- Make tables
- Draw graphs
- Keep file to record summaries of results and any observation however insignificant
- Revise your readings, you may need to repeat an experiment while you still have the materials.
- Write ideas when ever they come to you

IMRAD Story

(Introduction, Methods, Results and Discussion)

- Early journals published **descriptive** papers
- By the second half of the 19th century, **reproducibility of experiments** became a principle of the philosophy of science.
- The **methods section** became all important since Louis Pasteur confirmed the germ theory of disease
- IMRAD organization of a scientific paper started to develop
- IMRAD format slowly progressed in the latter half of the 19th century

IMRAD Format

I = Introduction, what question (problem) was studied?

M = Methods, how was the problem studied?

R = Results, what are the findings?

A = and

D = Discussion, what do these findings mean?

Organization of a scientific paper

- The most common is the IMRAD
- If a number of methods were used to achieve directly related results:
M + R = Experimental section
- The results are so complex that they need to be immediately discussed:
R + D = Results and Discussion section

Essential Parts of a Scientific paper

Title: Describe concisely the contents of the paper

Abstract: Summarize the major elements of the paper

Introduction: provide context and rationale for the study

Materials: Describe the experimental design

Methods: Describe the experimental procedures

Results: Summarize the findings without interpretation

Discussion: Interpret the findings of the study

Summary: Summarize the findings

Acknowledgement: Give credit to those who helped you

References: List all scientific papers, books and websites that you cited

The Title

- A good title is defined as the fewest possible words that **adequately describe** the contents of the paper.
- The title is extremely important and must be chosen with great care as it will be read by thousands, whereas few will read the entire paper
- Indexing and abstracting of the paper depends on the accuracy of the title. An improperly titled paper will get lost and will never be read.

The Title...

- Titles should neither be too short nor too long as to be meaningless
- Waste words (studies on, investigations on, a, an, the etc.) should not be used.
- It should contain the keywords that reflect the contents of the paper.
- It should be meaningful and not general
- It should be concise, specific and informative
- It should capture the fundamental nature of the experiments and **findings**

Examples--

1. Action of Antibiotics on Bacteria
 - Action: should be defined
 - Antibiotics: should be listed
 - Bacteria: should be listed
2. Mechanism of Suppression of Non-transmissible Pneumonia in Mice Induced by Newcastle Disease Virus
3. Evaluation of the methylation status of the promoter of prostate apoptosis par-4 gene and its protein expression in Egyptian cancer patients
4. Effect of sunlight on leaf morphology

How to Prepare the Title

- Make a list of the most important keywords
- Think of a title that contains these words
- The title could state the conclusion of the paper
- The title **NEVER** contains abbreviations, chemical formulas, proprietary names or jargon
- Think, rethink of the title before submitting the paper
- Be very careful of the grammatical errors due to faulty word order
- Avoid the use of the word “using”

The Abstract

- An abstract can be defined as a summary of the paper
- It is important that the abstract be written clearly and simply.
- It should provide a brief summary of each of the main sections (IMRAD) of the paper:
 1. State the principal objective and scope of the investigation
 2. Describe the methods used
 3. Summarize the results, and
 4. State the principal conclusions
- It is easier to write the abstract after completion of the paper

Criteria for Writing Abstracts

- It should not exceed 250 words
- It should be written in one paragraph.
- It should be written in the past tense as it refers to work done.
- Long words should be followed by its abbreviation which would be used through out the abstract and paper.
- It should not cite any references (except in rare cases)
- It should never give any information or conclusion that is not stated in the paper
- Must be accurate with respect to figures quoted in the main text.

The Introduction

- The introduction should answer the following questions:
 1. What was I studying?
 2. Why was this an important question?
 3. What did I know about this topic before I did this study?
 4. What model was I testing? and
 5. What approach did I take in this study?

Suggested rules for a good introduction:

- It should present the nature and scope of the problem investigated
- Review the pertinent literature
- The end of the introduction is a good place to state the hypothesis, goals and objectives of the study

General Rules

- Use the present tense when referring to work that has already been published, but past tense when referring to your own study.
- Use the active voice as much as possible
- Avoid lengthy or unfocused reviews of previous research.
- Cite peer-reviewed scientific literature or scholarly reviews. Avoid general reference works such as textbooks.
- Define any specialized terms or abbreviations

How to write the Materials and Methods section

- Provide full details so that the experiments are reproducible
- If the peer reviewer has doubts that the experiments could be repeated, the manuscript will be rejected.
- Organize the methods under subheadings, with related methods described together (e.g. subjects, experimental design, Measurement of..., Hormonal assays etc...).
- Describe the experimental design in detail
- Do *not* mix some of the Results in this section
- Write in the past tense

Materials

- Must identify accurately experimental animals, plants, and microorganisms used by genus, species and strain
- The source of subjects studied, number of individuals in each group used, their sex, age, and weight must be clearly stated
- If human subjects are used, the criteria for selection should be described, and consent
- For chemicals used, include exact technical specifications and source or method of preparation.
- Avoid the use of trade names of chemicals, generic or chemical names are preferred.

Methods

- This part of the manuscript must be clear, precise and concise so that it can be reproducible
- If the method is new, all details must be provided
- If the method has been previously published in a scientific journal, only the reference should be given with some identification:
e.g. “cells were broken by ultrasonic treatment as previously described by ...”. Preferable than “cells were broken as previously described by “
- Questions such as “how” or “how much” must be answered and not left to be puzzled over
- Methods used for statistical analyses must be mentioned; ordinary ones without comments, but advanced or unusual ones require literature citation

How to write the Results

- Results section is written in the past tense
- It is the core or heart of the paper
- It needs to be clearly and simply stated since it constitutes the new knowledge in the paper
- The purpose of this section is to summarize and illustrate the findings in an orderly and logical sequence, without interpretation
- The text should guide the reader through the findings, stressing the major points
- Do not describe methods that have already been described in the M&M section or that have been inadvertently omitted

Methods of presenting the data

1. Directly in the text
 2. In a table
 3. In a figure
- All figures and tables *must* be accompanied by a textual presentation of the key findings
 - Never have a table or figure that is not mentioned in the text

Tables and figures

- Tables are appropriate for large or complicated data sets that would be difficult to explain clearly in text.
- Figures are good for data sets that exhibit trends, patterns, or relationships that are best conveyed visually.
- Any table or figure must be sufficiently described by its title and caption or legend, to be understandable without reading the main text of the results section.
- Do not include both a table and a figure showing the same information

How to write the Discussion

- It is the hardest section to write.
- Its primary purpose is to show the relationships among observed facts
- It should end with a short summary or conclusion regarding the significance of the work.

Components of the discussion

- Try to present the principles, relationships, and generalizations shown by the Results
- Point out any exceptions or any lack of correlation and define unsettled points
- Show how your results and interpretations agree or contrast with previously published work
- Discuss the theoretical implications of your work, and any possible practical applications.
- State your conclusions as clearly as possible
- Summarize your evidence for each conclusion

How to State the Acknowledgments

- You should acknowledge:
 1. Any significant technical help that you have received from any individual in your lab or elsewhere
 2. The source of special equipment, cultures, or any other material
 3. Any outside financial assistance, such as grants, contracts or fellowships
- Do not use the word “wish”, simply write “I thank
- and not “I wish to thank...”
- Show the proposed wording of the Acknowledgement to the person whose help you are acknowledging

Reference List

- Any papers not cited in the text should not be included.
- Reference lists allow readers to investigate the subject in greater depth.
- A reference list contains only the books, articles, and web pages etc that are cited in the text of the document. A bibliography includes all sources consulted for background or further reading.

How to Write a Thesis

- A PhD thesis in the sciences is supposed to present the candidate's original research i.e. it is a scientific paper
- Unlike the scientific paper, the thesis may describe more than one topic, and it may present more than one approach to some topics.
- The thesis may present all or most of the data obtained in the student's thesis related research.
- Thus it is more involved and longer than a scientific paper.
- Think of a thesis as a good thriller, and write in a logical way so that a reader will find it interesting and will not be bored.

Ethics, Rights and Permissions

- Beware of originality and copyrights of others.
- Do not copy anything without giving the credit to the owner by referencing it.
- In some cases permissions are needed
- Repetitive publication of the same data is considered plagiarism

Choosing A journal to Publish:

- Journals should be chosen before you begin the actual writing process
- Ensure that you follow the journal format
- Read a paper published in the journal, so you are familiar with the writing and editing style of the journal
- Do not ignore international journals – they may be faster in the review process

Other Points in Choosing a Journal

- How do you choose which journal to submit to?
 - Impact factors
 - Reviewers
 - Readership
 - Turnaround time

What Happens to Your Article?

- Submitted to Editor
- Editor's "assessment" (reject; revise)
- Sent to Reviewers
- Reviewers reply to Editor
- Editor's decision (accept; reject; revise)
- Back to you: revised version and letter
- Editor may revert to Reviewers

Note: It's always the Editor who decides

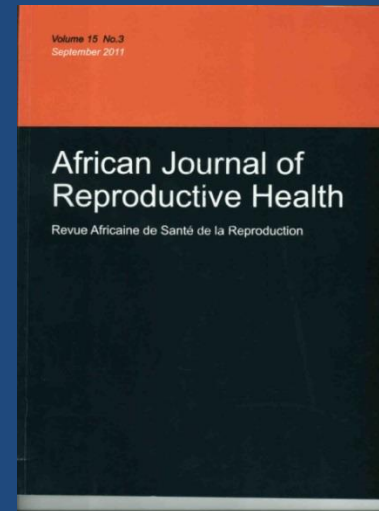
What Do I Look For as an Editor/Reviewer?

- Originality
 - What's new?
- Content
 - Is it enough?
- Scientific validity – internal and external
- Simplicity
 - Can it be clearer, shorter?

Feedback from Journals

- How to handle rejection!
 - Increasing rejection rates, editorial policy
- Revising your article: responding to reviewers' comments
 - Point by point
 - Explain what you changed
 - OR explain why you didn't

African Journal of Reproductive Health (AJRH)



AJRH – Some recent accomplishments

- Debuted in 1997, and has been published quarterly without a break since then.
- Have published 17 volumes and 62 issues since its onset
- 4 special editions – maternal mortality, unsafe abortion, family planning, and adolescent reproductive health
- Has open access in 3 websites, including PubMed Central
- Is published online in 9 websites
- Ranked by the National Universities Commission (NUC) as the best academic journal in Nigeria that meets international standards
- Widely acclaimed as the No 1 journal on SRHR in Africa
- To be published 5 times a year from 2013 by an International publisher – BrownWalker Press/Universal Publishers, Inc. USA

AJRH: Some indexing/Abstracting Sources

- Index Medicus/Medline (from the very first issue)
- INASP/African Journal online (AJOL)
- Bioline International (University of Toronto)
- Ulrich's periodicals
- Feminist Periodicals
- JSTOR
- HINARI (Hosted by WHO)
- African Books Publishing Records
- Sabinet (South Africa)

Who accessed African Journal of Reproductive Health in 2011?

African Journal of Reproductive Health / La Revue Africaine de la Santé Reproductive, usage breakdown by community

| Community | Content Access |
|--|----------------|
| Higher Education | 36,593 |
| Community College | 1509 |
| Secondary School | 849 |
| Museum | 8 |
| Public Library | 100 |
| Corporate & For-Profit: Higher Education | 3,731 |
| Gov/NP | 562 |
| Other | 1 |
| Secondary School | 10,147 |
| Museum | 10,076 |
| Public Library | 6,997 |
| Corporate & For-Profit: Higher Education | 3,731 |
| Gov/NP | 3,564 |
| Other | 134 |

African Journal of Reproductive Health JSTOR 2011 usage breakdown by country

| Country | Content Access |
|----------------|-----------------------|
| United States | 20,612 |
| Canada | 2,848 |
| United Kingdom | 2,562 |
| South Africa | 2,217 |
| India | 1,240 |
| Australia | 1,165 |
| Kenya | 785 |
| Nigeria | 691 |
| Ghana | 633 |
| Ethiopia | 547 |

African Journal of Reproductive Health, top 10 institutions in 2011

| Institution | Content Access |
|------------------------------------|-----------------------|
| University of the Witwatersrand | 522 |
| University of Ghana | 489 |
| University of KwaZulu-Natal | 412 |
| Addis Ababa University | 335 |
| University of California, Berkeley | 330 |
| University of Pennsylvania | 279 |
| University of Botswana | 260 |
| Harvard University | 257 |
| University of Cape Town | 247 |
| Johns Hopkins University | 221 |

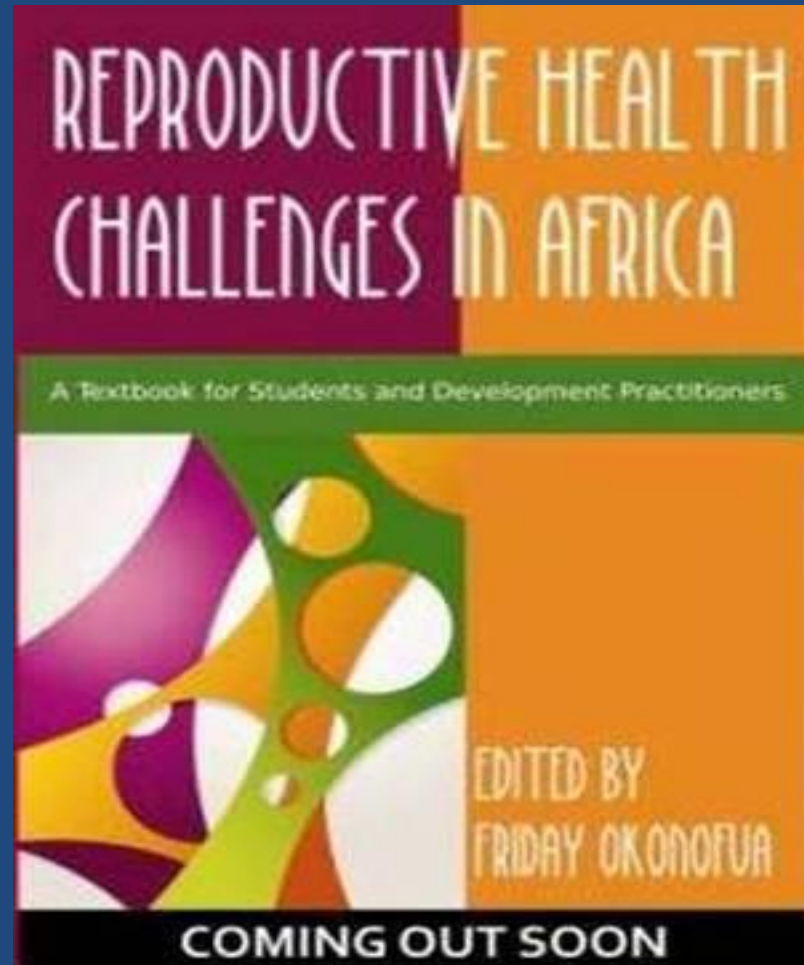
Guidelines for Writing Book Chapters

- Chapters are more difficult to write as it requires more knowledge of the discipline and more experience
- A detailed literature review is crucial
- Recent studies and reviews should be cited
- The chapter must synchronise with the aims and objectives of the entire book

Writing a Book Chapter

- First do a detailed literature review and reading of all recent materials.
- Develop the titles and sub-titles of the chapter with relevant sub-headings
- Develop a first draft – but all sections must link up with each other so that the chapter is easily readable
- Re-read the chapter after a couple of weeks and also give it to a peer to review before submitting for publication

“Confronting RH Challenges in Africa: Textbook for Students and Development Practitioners”



Textbook on Reproductive Health in Africa

- Was designed to answer the lack of current textbook for undergraduate and post-graduate students in Africa
- The multi-authored textbook – consisting of 20 chapters was commissioned by AJRH and WHARC and published by Universal Publishers, USA

Some Topics Covered

- Definition of sexual and reproductive health
- Research methods and evidence based decision-making
- Maternal health, including unsafe abortion
- STIs and HIV/AIDS
- Female genital cutting
- Infertility and fertility control
- Adolescent reproductive health
- Early marriage
- Gender-based violence
- Cervical Cancer, and prevention of genital prolapse
- Monitoring and Evaluation of RH programs, etc.

Book Launch: Abuja September 2014



Conclusions

- Writing and publishing for the creation of new knowledge can be exciting
- The first attempt is always the most difficult and can be challenging
- But once you publish the first article or paper, the impetus to do more increases and the enthusiasm to go further increases.
- Scientific writing is the only way to prove your status as a scholar

