



Research4Life Publishing and Research Communications Short Course:
From idea to article: manuscript writing, journal selection, publishing in high impact journals

Webinar Two: Strategies for writing successful research articles

6th June 2023

Research4Life is a public-private partnership of five programmes



Discussion Forum & Supplementary study materials



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Webinar 2 Discussion Forum

Mark as done

Welcome to the Discussion Forum for Webinar 2. This platform is designed for you to engage with other participants, share your thoughts and ideas, and ask questions related to the topics covered in the webinar.

You can join any ongoing discussion by clicking on the topic title to read the initial post and subsequent replies. If you wish to contribute to the discussion, simply click on the "Reply" button and type your response in the box provided.

If you do not find a discussion related to your query or topic of interest, feel free to start a new topic by clicking on the "Add discussion topic" button. When creating a new topic, please provide a clear and concise title and a detailed introduction that clearly outlines the topic and your objectives for the discussion.

Please note that this forum is for respectful and constructive discussions. Therefore, all participants are encouraged to adhere to the ITOCACode of Conduct when engaging with others.

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Writing and publishing ethics

- Duke University Libraries, 2023. Avoiding plagiarism. [Internet]. Available from: <https://library.duke.edu/research/plagiarism>
- Monash University Library, 2022. Citing and referencing tutorial. [Internet]. Available from: <https://www.monash.edu/library/help/citing-and-referencing/citing-and-referencing-tutorial>
- Research4Life, 2019. Intellectual property: copyright. In Research4Life Authors Hub. [Internet]. Available from: https://www.research4life.org/wp-content/uploads/2019/02/Part_C_Intellectual_Property_Section_1_Copyright_2018_12.ppt
- Research4Life, 2019. Intellectual property: plagiarism. In Research4Life Authors Hub. [Internet]. Available from https://www.research4life.org/wp-content/uploads/2019/05/Part_C_Intellectual_Property_Section_2_Plagiarism_2018_12.ppt
- University of North Carolina at Chapel Hill, Writing Center, 2023. Plagiarism. [Internet]. Available from: <https://writingcenter.unc.edu/tips-and-tools/plagiarism/>

Writing and publishing ethics – related tools

- Bloomfield, L., 2106. WCopyfind. [Internet]. Available from: <https://plagiarism.bloomfieldmedia.com/software/wcopyfind/>

"WCopyfind is an open source windows-based program that compares documents and reports similarities in their words and phrases."

- DigitalGYD, 2023. Top 20 best free plagiarism checker tools compared (2023). [Internet]. Available from: <https://www.digitalgyd.com/top-20-best-online-plagiarism-checker-tools-free/>
- For reference - the following tool is used extensively by publishers to identify potential plagiarism.
- Crossref, 2023. Similarity Check. [Internet] Available from: <https://www.crossref.org/documentation/similarity-check/>

"Our Similarity Check service helps Crossref members prevent scholarly and professional plagiarism by providing immediate feedback regarding a manuscript's similarity to other published academic and general web content, through reduced-rate access to the iThenticate text comparison software from Turnitin."

Writing research articles

- Bayley, L., Eldredge, JD, 2003. The structured abstract: an essential tool for researchers. [Internet] Available from: <https://www.mlanet.org/p/cm/ld/fid=517>
- Branson, RD, 2004. Anatomy of a research paper. Respiratory care. 49 (10): 1222-28. Available from: <https://www.accp1.org/pdfs/documents/AnatomyofaresearchpaperBranson.pdf>
- European Association of Science Editors, 2023. EASE guidelines for authors and translators of scientific articles to be published in English. [Internet] Available from: <https://ease.org.uk/publications/author-guidelines-authors-and-translators/>

- ☆ Open Access Licensing/Creative Commons
- ☆ Responses to questions posted in Webinar 1, on predatory journals and DOAJ
- ☆ Choosing the right journal
- ☆ The Tools for Journal Selection

Sample discussions, Webinar 1 Forum

Discussion

- ☆ AI and research manuscript writing
- ☆ Research communication
- ☆ Webinar 2

Sample discussions, Webinar 2 Forum



This course is a part of Research4Life's effort to contribute to the Sustainable Development Goals (SDGs) established by the United Nations. The course is aligned with SDG 4; "Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all".

Outline



- Dissecting the anatomy of a research paper
- Identifying the key elements of each section of a paper
- Examining a paper through the eyes of a peer reviewer
- The dos and don'ts of article, including avert plagiarism

Writing a research paper: structure and content

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Contents



- The anatomy and physiology of a research paper
- IMRaD: key elements
- The 'main point'

Let's start with a poll (Menti.com)



Why do you (want to) write
academic papers?

Introduction: academic publishing



**Scientific knowledge is
“constructed... not just in labs or
field sites, but in arguments that
scientists conduct through the
medium of scientific papers.”
- Winsor 1993.**

Keep the goal in mind



- **Primary aim of writing academic papers is to communicate**

“Academic writing is no one’s first language, and learning to get it right is difficult for everyone who has to use it”
—English & Van Toder (2010)

Ref: V. McMillan (2011);
Penrose & Katz (2010)

Types of research papers



- Original Research
- Hypothesis – Intervention
- Descriptive, Surveillance
- Methods or Procedures
- Case Series/Meta-Analyses
- Case Reports
- Literature Reviews

Basic logical structure of a research paper



- **IMRaD**
 - Introduction
 - Methods/Materials
 - Results; and
 - Discussion/Conclusion

There are 4 key questions on the reader's mind



Anatomy and physiology of academic papers



Part

Funtion:
to answer

Goal

Introduction

**Why did you
do it?**

Motivate reader

Methods

How?

Enable replication

Results

**What did you
find out?**

Share data

Discussion

Significance?

Suggest interpretation

Acknowledgments

Who helped?

Give thanks

References

Sources cited?

Give credit

Introduction: function elaborated



- What's the problem or issue?
- How does it compare to what is currently accepted?
- What is the importance of the problem or issue?
- What questions/hypotheses did you focus on?

Why did you do this study?



- **Are you testing a hypothesis?**
 - Do people who have had hepatitis B virus have a higher incidence of hepatitis C virus compared with people who have not had a HBV infection?

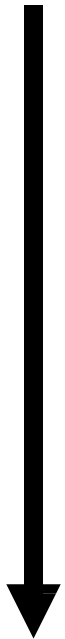
- **Are you improving a method?**
 - Faster, cheaper, more sensitive

- **Are you performing a descriptive study?**
 - Characterizing the distribution of dengue viral infection by geographic region

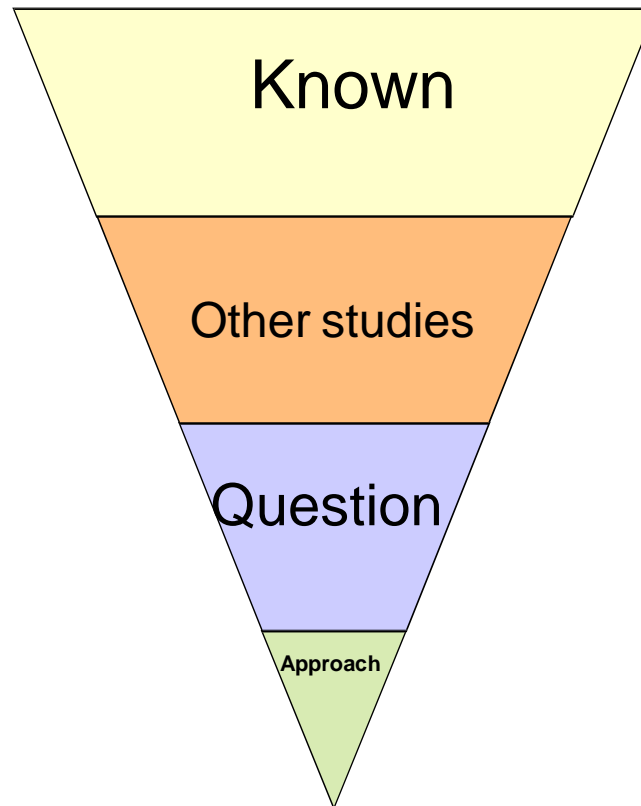
Introduction: Flow



General



Specific



- Introduce the topic: broadly and generally
- Orients reader to the importance of topic

- Summarize what's known about the topic
- Prepare the scene for your work: reveals gaps and holes; raise a question

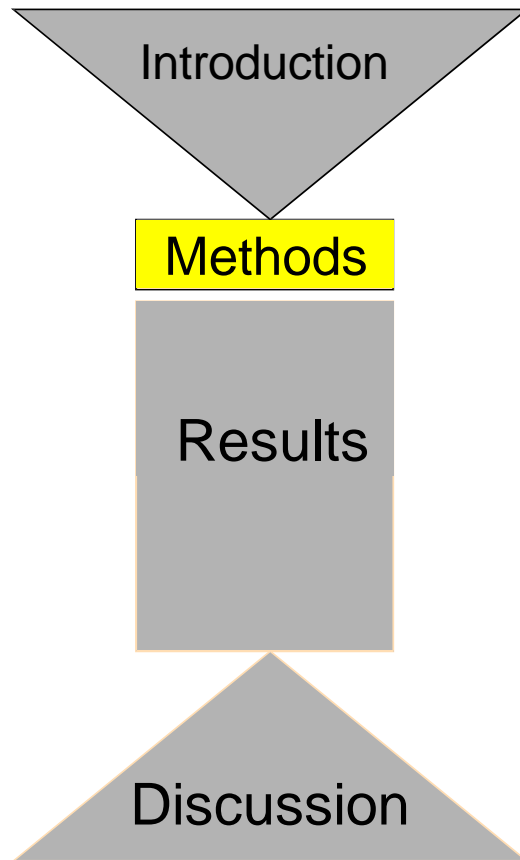
- What specific hypothesis are you testing?
- What exact process are you describing?
- What method are you trying to improve?

- How did you do study?
- BRIEFLY say this in 1 or 2 sentences.

Introduction: Length



- Keep it BRIEF
- Check papers published by your target journal for average length of introduction
- Try to limit the introduction to 3 - 5 paragraphs



HOW DID YOU DO IT?

- Describe your methods with enough detail so that someone else can repeat it or build on what you have done.
- Remember, the goal is to enable reproducibility!

Methods: Format



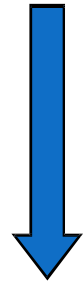
- Look at examples in the journal you are targeting
 - Use of subheadings; bold, italics varies greatly between different journals
 - Determine the level of detail and style
 - Be clear on acceptable abbreviations

Methods: format



General

(Subheading* or the 1st sentence of the paragraph)



Specific details
(rest of the paragraph)

Examples:

PCR reactions. A reaction mixture was prepared containing 50 mM KCl, 10 mM Tris, etc.

Sample collection. Serum samples were collected from 300 pregnant adolescents (<19 years old) and 306 pregnant adults (>19 years old).

*subheadings depend on the type of paper

Methods: organization



- In the same order that you present the results
 - Chronological order
 - Begin with what you did first...
 - End with what you did last!
 - Logical flow of the science (Thematic)
 - Possibly in the order that experiments or other data appear in the results

Methods: references



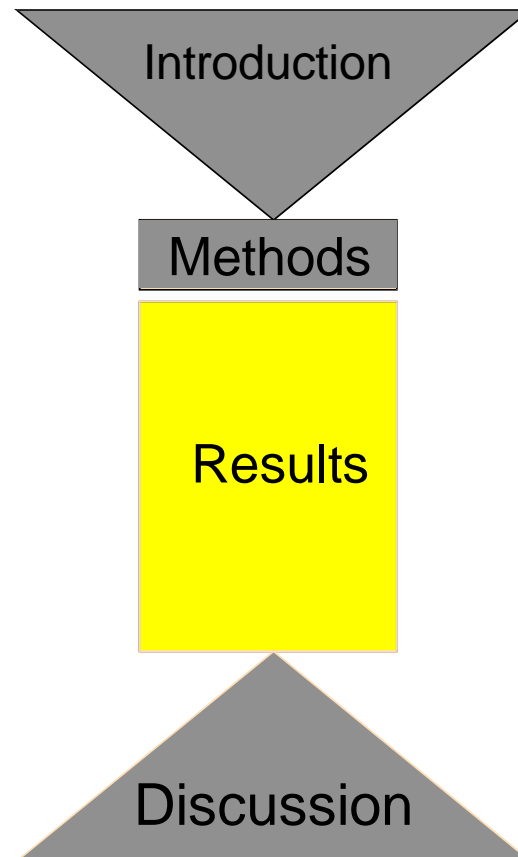
- You can refer to previous paper for methods you developed. But be specific.

EXAMPLE "cells were lysed as previously described (9)."

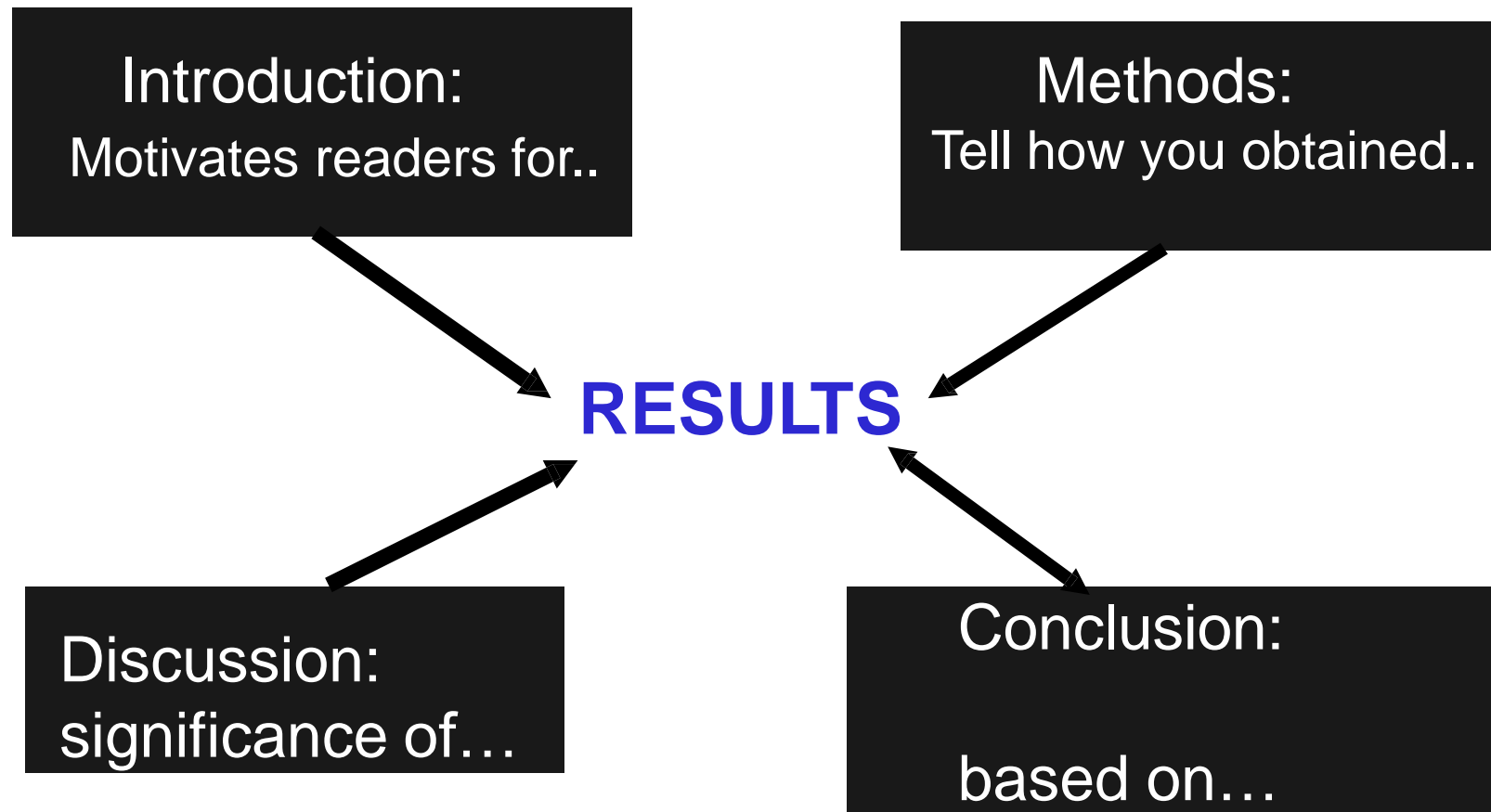
BETTER "cells were lysed by ultrasonic treatment as previously described (9)."

- Sometimes, it is good to **briefly review** the protocol.
"DNA was extracted as previously described (9). Briefly, cells were lysed by ultrasonic treatment and then..."

Results



Everything in your paper points towards the results



Results: purpose



1. Summarize the data

- Reduce the data to a manageable size.

2. Lead the readers through the figures.

- Point out important findings and interesting aspects of the data.

3. Point out trends

Summarizing your results

- **AVERAGES AND RANGES**

"The average number of cases per outbreak was 4.8 (range 2 to 25)."

- **PERCENTAGES**

"Of the 80 serum samples, 25% (20) had the presence of viral RNA."

Results: what to present?

- Data that supports your main point
 - Don't present every experiment!
 - More data is not always better
 - Summarize!
- How to present the data?
 - Use graphs, tables **or** figures
 - Try to limit it to 5!

Results: percentages



- **Always include the number of samples (N)**
 - **Incorrect:** A positive signal was detected in 75% of the blood samples.
 - **Correct 1:** Viral RNA was detected in 75% (75/100) of the blood samples.
 - **Correct 2:** Of the 100 blood samples, 75% had positive viral RNA.

- **Be careful while using percentages or statistics with small numbers of samples**
 - **Incorrect:** "Sixty percent (3/5) of the samples from Asuncion and 20% (1/5) from La Paz demonstrated drug resistance."
 - **Correct:** "Three out of 5 samples from Asuncion and 1 out of 5 samples from La Paz demonstrated drug resistance."

Describing Results: Lead the Reader



- Each figure/table should have at least one paragraph describing the results in that figure.

BE SURE TO REFER TO EACH FIGURE/TABLE IN THE TEXT

- Each paragraph should end with a sentence **summarizing** (not repeat) the **important result** from that figure/table.

- **Chronological/Historical**

1st ☐ 2nd ☐ 3rd ☐ Lastly

Most important result, may be last

- **Thematic**

Most logical sequence

- **Generalize from the data**

Point out trends and patterns.

Tell the readers what to notice

But avoid bias or interpretation

Paragraph organization in results



- First sentence describes the experiment and why it is important.
- Next sentences describe the results and any issues about controls.
- Last sentence should be about the exciting findings and their importance (be careful with making assumptions or going into conclusions!).

In what tense should the results section of a paper be written?

- A. In present tense
- B. In past tense
- C. In both tenses

Results: talk about what is important



- Point out similarities

"The distribution of occurrence of Delhi genotypes by drug susceptibility status is shown in Table 2. Similar frequencies of the Delhi phenotype were found among resistant and susceptible isolates."

Results: talk about what is important



- Point out differences: include details (numbers) and refer to the figure

“Among the 83 isolates studied, 60 isolates belonging to the Delhi genogroup displayed a distinctive set of sequences as shown in Figure 3.”

- While presenting results, be concise/brief when describing a table or figure

Incorrect: It is clearly shown in Table 1 that nocillin inhibited the growth of *N. gonorrhoeae*.

Correct: Nocillin inhibited the growth of *N. gonorrhoeae* (Table 1).

Results: describe statistics correctly

If you ran a statistical analysis, make sure that you say what type of test and what level of significance

Correct: “X was significantly higher in males than in females (t-test, p-value<0.05).”

If you did not run a statistical analysis, be careful with saying “x was significantly higher in males than in females”

The word “significantly” implies statistical significance
Don’t use the word 'significantly', if you did not run a statistical analysis!

Correct: “There appeared to be higher levels of x in males than in females”

Results: scientific words



In describing the importance of your data, be strong but cautious:

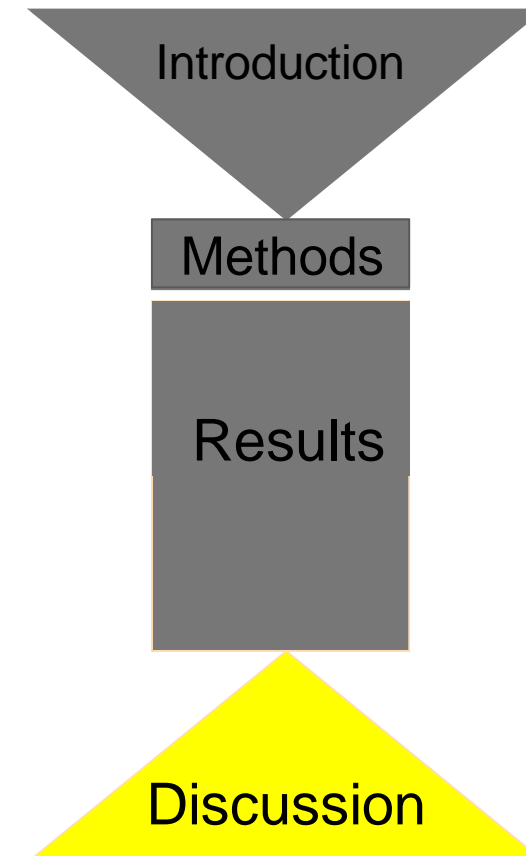
- Incorrect: "This definitively proves that drug resistance is higher in Esmeralda."
- Correct: "This suggests that incidence of resistance to anti-malarial drugs is higher in Esmeralda."

Discussion



This is YOUR opportunity to:

- Put your data into perspective
 - How does it fit into the field?
- Propose a model
- Propose new experiments
- Make your readers think

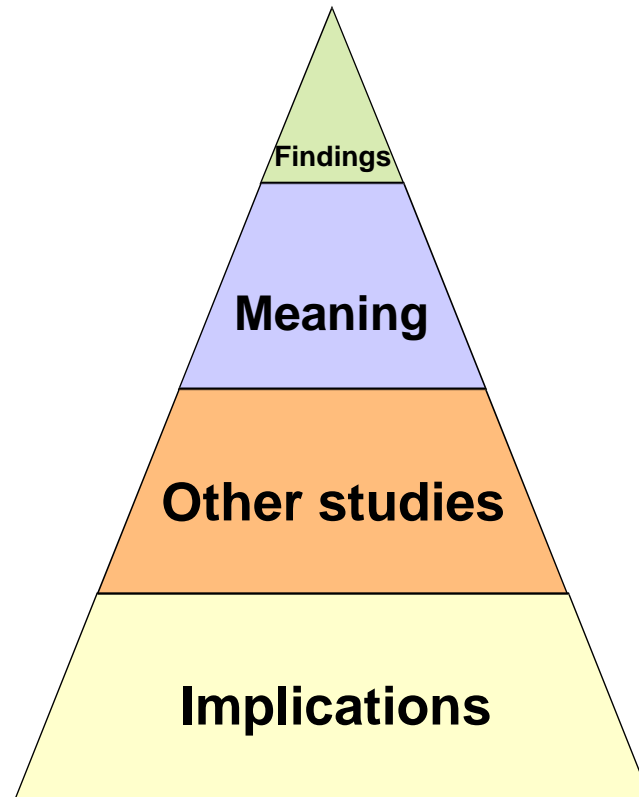


Discussion: Flow

Specific



General



- Consider your question: provide the answers to it
- Provide some interpretations for the answer
- Use the statistical trends to conclude on the question
- Compare and contrast your result with relevant existing literature
- Describe the generalizability of your results
- State limitations and unanswered questions

First Paragraph of Discussion



State the main point in the first sentence.
(or last sentence). Power position!

Summarize only your major findings in terms of
how they support your main point.

Discuss subsequent points in order of
importance

Summarize how each point or result supports
your hypothesis or conclusion

Discussion points



Table 2. Generic Construct for Writing the Discussion Section

Paragraph	Objectives	Example Sentence
1	Describe the major findings of the report Answer the research question Don't make conclusions	"The main finding of our research is that, with our lung model, the moisture outputs of device A and device B were not different."
2	Interpret your findings Explain what you believe the major findings mean Don't over-interpret	"During mechanical ventilation both systems provided a moisture output that exceeds current standards."
3–5	Compare your results to the current literature on the same or similar topics Use references to support your interpretation of your findings and the current literature Make sure to discuss the literature that conflicts with your data and explain why the reports conflict	"Pierson et al found that device A was superior to device B in an animal study under uncontrolled conditions. Our findings were obtained under controlled laboratory conditions."
6	List the limitations of your study Describe the generalizability of your results to other situations Describe problems you encountered in the methods	"The duration of our experiment was 4 hours. Performance of these devices beyond that time frame is unknown."
7	List unanswered questions Propose further research that should be undertaken	"Further studies using small tidal volumes are necessary before pediatric use can be recommended."
8	Conclusion Answer the research question and explain your interpretation of the findings Don't make conclusions not supported by the results	YES: "We found no difference in the moisture outputs of system A and system B. Both systems can be used to provide humidification during short-term mechanical ventilation of adults." NO: "Moisture output of system A was significantly greater than system B. System A may improve mucociliary function, enhance secretion clearance, and reduce the incidence of ventilator-associated pneumonia."

Branson (2004)

What is the most common mistake in the discussion section of a research paper?

- A. Not interpreting the results
- B. Irrelevant citations
- C. Unjustifiable inferences

The Conclusions Section



- Must be stated in clear, simple language
- Do not repeat data or discussion
- Your hunches and inferences can be here, but distinguish between speculations and facts

e.g., “Though the difference between the treatment groups was statistically significant, we suspect that the difference will not influence hospital mortality.”

- Provide future direction for research

Final Words



“Writing is a skill born from practice. The first step to becoming a good writer is becoming an avid and careful reader. A researcher’s early experiments in writing should include multiple rewrites, with constructive criticism from a mentor.”

- Richard Branson (2004)

Acknowledgements



Branson, R.D. (2004). *Respir Care*, 49(10):1222–1228

Global Health Network & Sustainable Sciences Institute (SSI)'s
Scientific Manuscript Writing Workshop (2021)

McMillan, V. E. (2011). *Writing papers in the biological sciences*.
Boston, MA: Bedford/St. Martin's.

Penrose, A. M., & Katz, S. B. (2010). *Writing in the sciences:
Exploring conventions of scientific discourse*. Boston, MA:
Longman

Winsor, D. A. (1993). Constructing scientific knowledge in Gould
and Lewontin's 'The spandrels of San Marco'. *Understanding
scientific prose*, 127-143.

Thank you for listening.

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Examining a paper through the eyes of a peer reviewer

Blessing Mawire
Lead, Research4Life Country Connectors

Article Review



Main Review Areas:

Structure of the paper

Title

Content

Methodology

Bibliography

Contribution with existing research

*Let us look at an example

research4life



The Do's and Don'ts of article writing and Plagiarism

Gracian Chimwaza

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Centre for Africa (ITOCA)

Mercy Moyo

Deputy Director (Research & Training), ITOCA

Do's



- Ensure clear and precise communication of your work, focusing on its novelty rather than storytelling.
- Emphasize the ideas and methodologies employed, providing specific justifications for your research.
- Verify the accuracy and correctness of the data you present, as your innovative ideas and methodologies may guide future researchers.
- Present your materials comprehensively, covering all aspects of the topic.
- Consult diverse sources of research to obtain trustworthy and up-to-date information.

Do's Continued



- Thoroughly examine your research materials and information for reliability, and support them with ample analysis and logical reasoning to demonstrate their relevance and alignment with your research.
- Support your findings with solid evidence and compelling arguments.
- Utilize scientific terminology in your paper, while including only the necessary level of detail about your research work.
- Keep track of your bibliography and references, organizing data by source or marking notes to remember the origin of individual facts.
- Proofread your paper multiple times, and don't hesitate to seek assistance from friends, peers, colleagues, or professional editors for proofreading and refining the paper.

Article clearly defining method used and scope of study



1-s2.0-S2468227623000042-main



Open in desktop app

The goal of this work is to assess trends in the multi-disciplinary production of evidence synthesis from Africa-based researchers using a bibliometric analysis approach. This work complements recently published research on collaboration on evidence syntheses in Africa [9]. We aim to add to this knowledge an understanding of regional trends in the conduct and publishing of evidence synthesis across disciplines, identifying the types of evidence synthesis used in different disciplinary domains and establishing a baseline for future assessment of regional capacity for evidence synthesis. Moreover, given our role as librarians and information specialists that support evidence synthesis in our respective institutions and regions, we were also interested in exploring whether librarians and information specialists are involved in supporting the published evidence syntheses from African researchers.

Methods

Study scope

Our aim was to examine longitudinal trends in the production and publication of evidence synthesis across disciplines in Africa. Thus, the criteria for inclusion of articles in our study were:

- 1) A study (as defined in the titles/abstracts by the study authors) falling into any of the following evidence synthesis categories: systematic review, meta-analysis, scoping review, systematic map (including evidence gap maps and mapping reviews), realist review, rapid review and umbrella review
- 2) Including at least one author affiliated with an institution in an African country
- 3) Addressing any discipline or topic
- 4) Published in any language

Systematic reviews, the most well-established form of evidence synthesis, were relatively uncommon prior to 1980 [5]. For this reason, we also limited our search to studies published in 1980 or later. We excluded studies about (i.e., not applying) evidence synthesis methods, protocols for evidence syntheses and those only claiming to be traditional literature reviews.

Trends in evidence synthesis publishing across disciplines in Africa: A bibliometric study

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Information Work in Southern Africa: Agricultural Knowledge and Information Systems

Don'ts



- Be truthful when representing yourself to the readers and avoid any misrepresentation.
- Only include information that directly addresses the questions at hand. Irrelevant content will not contribute to any new insights regarding your work.
- Avoid unnecessary lengthening of your paper. Instead, focus on providing relevant and concise data to support your work and convey your point effectively.
- Refrain from disclosing incomplete or illogical reasons for conducting the research.
- Adhere to the recommended word limits and demonstrate your ability to follow guidelines, work within limitations, and present your findings systematically.
- Avoid excessive generalizations in your paper, as it may imply a lack of substantial content or meaningful contributions.

Don'ts Continued



-
- Ensure that each of your findings aligns with the overall objective of your research and provides support for your argument.
 - Remember to reference any relevant supporting material or related research conducted by esteemed researchers. This will enhance and complement your research paper.
 - Instead of citing Wikipedia, seek out unquestionably reliable sources for your citations.
 - Refrain from plagiarism and always thoroughly proofread your work before submitting it.

How to avoid plagiarism



Plagiarism must be avoided if you want to preserve your academic integrity and provide due credit to the information's original authors or developers.

- Proper citation and referencing should be used when incorporating information from sources. Follow the specified citation style guidelines provided by the Journal Publisher. Use reference management software (Mendeley, Zotero, Endnote)
- Take careful and accurate notes when conducting research, ensuring you summarize the main points or ideas in your own words. This helps prevent unintentional copying of the original text.
- Use quotation marks and accurate citations when directly quoting a source.
- Attribute ideas and information to the original author or source, especially if they are not common knowledge. This applies to both written and visual content.

How to avoid plagiarism Continued



- Understand and practice the skill of paraphrasing, which involves expressing someone else's ideas using your own words. However, be cautious not to simply replace a few words or sentence structures while retaining the original meaning. Instead, aim to comprehend the information and rephrase it using your own language and sentence structure. Always cite the original source when paraphrasing.
- Effective planning and time management are crucial to avoid rushed work and reduce the likelihood of accidental plagiarism.
- Utilize plagiarism detection tools such as Turnitin or Grammarly before submitting your work. These tools compare your writing to a vast database of published works, assisting in identifying any potential instances of plagiarism that might have been overlooked.
- Seek guidance and assistance if you are unsure how to cite a source or have any questions about plagiarism.

Plagiarism and AI



- Plagiarism has been on the high due to popularity of AI tools such as ChatGTP
- There are software that can also detect if text is AI generated
- <https://contentdetector.ai/> - Is a ChatGPT plagiarism detector, a GPT 3 content detector, GPT 4 content detector, and a Jarvis AI content detector

Questions and Answers

Next webinar in 2 weeks: 20 June 2023 (Tuesday)



- Understand the perspective of various key constituents involved in the writing and publishing process
- Gain additional insight into the dynamics of successful publishing
- Have an opportunity to submit questions to clarify specific points
- Review concepts discussed throughout the course

Open on the course platform 16 June 2023