How to Write a Scientific Abstract

Patricia Riley

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What is an Abstract's Purpose?

- Summarizes your research in a concise, clearly written sentences that informs readers about an article's content
- Researchers use abstracts to determine whether a paper is relevant to their work and/or decide which papers to acquire and read
- Academic conferences organizers use abstracts to determine relevance, interest to audience
- Meeting participants only receive copies of the abstracts in proceedings
- In research databases, the abstract is usually the sole part of the paper that they see without cost and is typically 200-250 words

Components of a Scientific Abstract

- Title and author information
- Background
- Methods
- Results
- Conclusions

Key Elements of Abstract Writing:

Three Essential Parts

Part 1: Preparing to write your abstract

Part 2: Abstract Structuring

Part 3: Abstract Check: Style and Flow

PART 1: Preparing to write your abstract:

Complete your research paper

- Authors usually write their abstracts after they have finished their research papers

- This way the abstract contains the major points of the article

- If you need an abstract for a conference paper, or proposal
  before your paper is completely finished,
    be sure to have a draft or outline form of
   the paper from which you can create your abstract.

Read your research paper completely

- Highlight or underline the important points and copy and paste them into a separate document

- After you finish reading your paper, review your underlined material and select sentences that help explain the research topic, research question, methods, results, and conclusion

- Retain this material for your abstract

Identify Keywords

- Remember that online databases have keyword search engines for finding abstracts
- Note relevant keywords that will help researchers find your paper.
- Set these aside for use in your abstract.
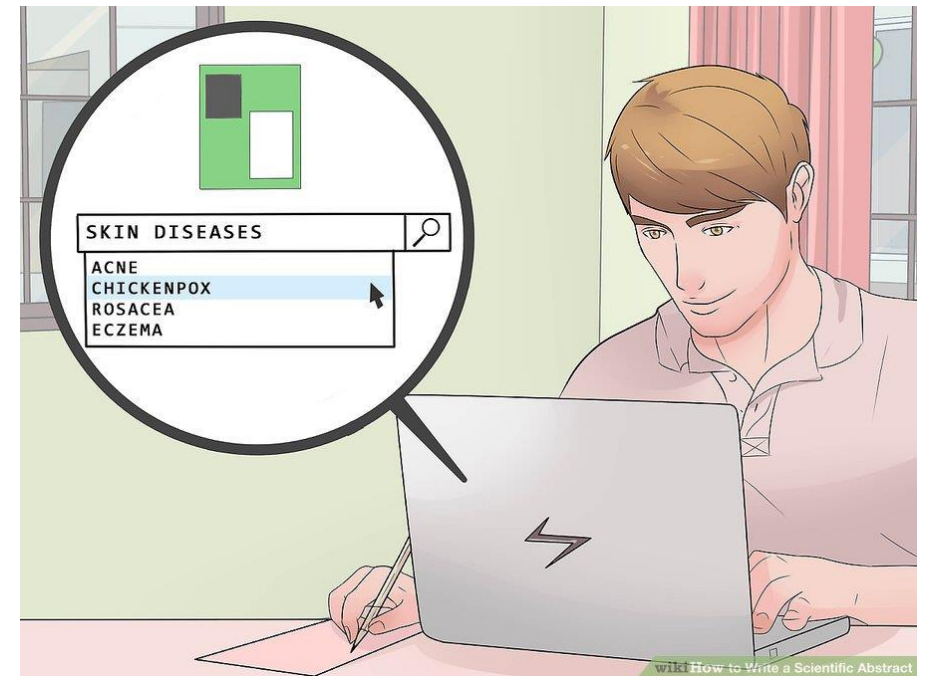
Part 2: Structuring an abstract

Explain the background of your study:

- Write 1-3 introduction sentences that explain the research topic, purpose of the study, and research question(s)

- The first sentence should be interesting, eye-catching, and draw the reader into your piece.

- As the shortest part of the abstract, your background should convey what already is known about the subject and how it relates to your paper.

- The background also explains what we do not know yet about the subject and thus what the study examined and/or what your paper presents.

- Think of the research paper as having investigated a particular scientific question. Other researchers will value knowing your research question.

Writing your abstract "Background"

- Your background section should answer questions like:
  - What did I study?
  - Why is my research question important?
  - What did my field of study know about my research question before I did this study?
  - How will this study advance knowledge in our field?
- Try to use an active voice and reduce passive language throughout your abstract.
  - "The project assessed the presence of viral load test results in patients' charts"
  versus
  - "The patients' charts were assessed for the presentence of Viral load test results."
- Minimize use of pronouns like "I" or "we." Write about "the study," "this paper examines," or "this research" instead of "my study" or "I write about..."
- Keep your abstract in the past or present tense but not in the future. For instance, do not write: "this paper will examine" but "this paper examines" or "the results showed."

How Can the Health System Retain Women in HIV Treatment for a Lifetime?

A Discrete Choice Experiment in Ethiopia and Mozambique*

Introduction

Option B+, an approach that involves provision of antiretroviral therapy (ART) to all HIV infected pregnant women for life, is the preferred strategy for prevention of mother to child transmission of HIV.

Lifelong retention in care is essential to its success. ICAP and CDC conducted a discrete choice experiment in Ethiopia and Mozambique to identify health system characteristics preferred by HIV-infected women to promote continuity of care.

Share your research methods

- The second-longest section of the abstract, your "Methods" section should explain in 2-3 sentences how you conducted your study and what exactly you did. Did you use qualitative and/or quantitative methods? Methods can include lab experiments, ethnographic fieldwork, interviews, surveys, and/or data analysis.

- Your "Methods" section should answer these

    kinds of questions:
    - What was the research design?
    - How long did the study last?
    - What was the sample size?
    - How did you recruit participants?
    - What was the research setting?

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Methods

Women living with HIV and receiving care at hospitals in Oromia Region, Ethiopia and Zambézia Province, Mozambique were shown nine choice cards and asked to select one of two hypothetical health facilities, each with six varying characteristics related to the delivery of HIV services for long term treatment. Mixed logit models were used to estimate the influence of six health service attributes on choice of clinics.

Demonstrate your results

- Write 1-2 sentences describing the results/findings of your study. Major findings include key quantitative or qualitative results or identified trends.

- Your "Results" section is the most important part of your abstract because it explains what you discovered and the relevance of your work to other people's research.

- This is the time to elaborate and give details.

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Results

2,033 women participated in the study (response rate 97.8% in Ethiopia and 94.7%in Mozambique). Among the various attributes of structure and content of lifelong ART services, the most important attributes identified in both countries were respectful provider attitude and ability to obtain non-HIV health services during HIV-related visits.

Availability of counseling support services was also a driver of choice. Facility type, i.e., hospital versus health center, was substantially less important.

Conclude with the main point and impact of your research

- In 1-2 sentences, iterate your overall summary of the project and its theoretical and/or practical impact on the pertinent field(s) of study.

- State whether your research has filled a knowledge gap. The conclusion should be data-based and very factual. Do not present unsubstantiated personal opinions.

- End your "Conclusion" with a strong final sentence

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Conclusions

Efforts to enhance retention in HIV care and treatment for pregnant women should focus on promoting respectful care by providers and integrating access to non-HIV health services in the same visit, as well as continuing to strengthen counseling.

Choose a title for your abstract

- Your title should summarize the abstract and convince reviewers or potential readers that the topic is important, relevant, and innovative.

- The abstract title can be the title of your paper. Be sure to include your name, institutional affiliation (if applicable), and contact information under the title.

- Some organizations, journals, or conferences require a special format for the title, which could be all uppercase letters, bolded, or italics.

Part 3: Checking Style and Flow

Read your abstract aloud and check content accuracy and flow

- Your abstract should be short and concise but also flow smoothly.

- Make sure you have adequate transitions from sentence to sentence and consider adding transition words like "additionally" or "furthermore."

- Fix any problem sentences that represent your findings inaccurately or are unclear in their meaning.

- Read the abstract as if you were another researcher deciding whether to read your paper. Do you find the abstract has the right information to help you decide whether to read it? If not, ask yourself what is missing.

Proofread for correct grammar, spelling, and punctuation

- Consider printing out your abstract and editing it with a pencil or pen.

- Having your work in print versus on your computer screen can help you catch additional mistakes and envision how your abstract will appear in printed mediums.

- Because your writing style impacts readers' perception of your work, effective style and accurate grammar and mechanics are important elements of a successful abstract.

- Be sure to place commas and periods within quotation marks, e.g. "Milton said." "Milton said".

Proofread for correct grammar, spelling, and punctuation (cont'd)

- Do not end sentences with prepositions (of, for, about).

- Vary your verbs and nouns from sentence to sentence and use a print or online thesaurus for synonyms in order to not sound repetitive.

- Avoid vague adjectives like "very" and "many." Try to quantify your findings with specific numbers or conditions that offer comparisons. For example, "135 patients participated" or "Results after 6 months of the intervention were 30% better than at the onset."

- Written years should not have apostrophes. Write "1990s" rather than "1990's."

- Eliminate unnecessary content and add any missing important pieces of information.

Complete a word count

- Make sure that your abstract is not too long or excessively short.
- Aim to have as close to the word count limit as possible, whether for example, 200 or 250 words.
- Some journals or conferences will reject abstracts that are too long so be sure to be accurate.

Share your abstract with a friend or colleague

- Having another person review your abstract will ensure that your abstract makes sense to potential readers.
- If they have suggestions for changes, re-read your abstract and revise your work.