



# Preparing an Abstract for Scientific Conferences and Publications: A Beginner's Guide

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## Abstract

An abstract is a window to a research work. It describes the work in 250 to 500 words in either a structured or an unstructured format. The aim, methods, results, and conclusion are the core components. The integral aspect of writing an abstract is summarizing the entire work in limited words that not only gives away important data but also gives a clear message to its readers. In the fast-rising world of publications, abstracts are often the decisive factor in initial editorial decisions of acceptance or rejection. Good abstracts may improve citations of a work because these are often the only freely available part of the article. Graphical abstracts are becoming an integral part of submission requirements in most journals and tend to depict content figuratively. Although a book can never be judged by its cover, a well-written abstract will always draw attention to the work of the author. This article will act as guidance for writing a good abstract and familiarize readers with all components of the abstract.

## Keywords

- ▶ graphical abstract
- ▶ methods
- ▶ reporting

## Introduction

The abstract is one of the most important parts of a scientific publication. The word abstract could be decoded as “AB—absolutely, STR—straightforward, ACT—actual data presentation and interpretation.”<sup>1</sup> In simple terms, it denotes bringing out important findings and presenting them as a summary. In conferences, the abstract is the only part that is on display for readers. Even in electronic databases like PubMed, the abstract is the most read part of the research paper. This is important in relation to the possible citations of a research article as the zest of the work is mentioned in the abstract. As for most readers, going through the abstract is universal before the full version of the author's work. For editors and reviewers, the abstract is the unique selling proposition of the article. This calls for the unbiased and

clear presentation of the work in the abstract in the best possible way in limited words.

## The Name: Title

The title of the study has to be simple, and accurate. It is the face of the article. The title can be intriguing enough to make the reader curious to go through the abstract. It is usually better to decide on the worthy title after the completion of the article and the abstract. Amusing or funny titles should be avoided. Abbreviations should also be avoided in the title. Long titles often miss the point of the study. So the title should be brief and concise, and should contain important keywords (or MeSH terms) for better visibility in search engines. The titles depend on the audience and the manuscript format. For research articles, it is typical to include the

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details of PICO, that is, population studies, controls, intervention, and outcomes, or its variations, in the title. Most journals do not prefer a declarative title, one that focuses on the results, while others want the study design as a part of the title. Nevertheless, a good informative title is likely to attract readers and must be thought through well.

### The Four Pillars: Background, Methods, Results, and Conclusion

Scientific abstracts can be structured or unstructured. The word limit is usually 250 to 500 words. Writing as bullet points first and later converting them to simple sentences is the trick.

In a structured abstract, the body of the abstract is supported by four essential pillars. It is important to write the abstract in our own words in these four sections instead of copying and pasting from the full text. The main focus should be on showing the truth of the research rather than defending one's argument.

**Background** It is the rationale of the study. It is usually the initial short part of the abstract and is made up of two to three sentences. It not only sets the tone of the abstract but also clarifies the aim of the study as per the authors. Describing the knowledge gap that previous studies failed to address is helpful. A long background will be troublesome in not only losing words for results but also creating ambiguity regarding the exact target of the study. It is unnecessary to cite the author's previous work in the background, and avoidance of unnecessary content is important. The background consists of the following:

- (1) What is known to all readers on the topic?
- (2) What is unknown about the topic? (Knowledge gap.)
- (3) What is the aim of the study?

**Methods** It is an important component of any abstract. It should depict what the study is about, where the study was conducted, and how the study was done. It is the description of the implementation or the intervention. If methods lack transparency, the chances of rejection of the article increase. It should contain the following points:

- (1) The study design (observational/interventional, prospective/retrospective).
- (2) The study setting (outpatient/inpatient/intensive care unit [ICU]).
- (3) The participants (inclusion/exclusion).
- (4) The sampling method of included patients (random/consecutive).
- (5) The treatment of intervention and standard arms.
- (6) The duration of the study (date/month/year).
- (7) The primary and secondary outcomes of the study and the timing of the measurement.
- (8) The parameters used for measuring outcomes.
- (9) Blinding, if any.
- (10) Randomization.
- (11) Any statistical method used for analysis.

**Results** It is the narrative description of the important outcomes of the study. They should include both positive

and negative outcomes of the research article. Rather than stressing that there is a significant difference, it is better to show the numbers and cite the *p*-value. Any abstract without data always comes low on priority for acceptance. Never quote results that are missing from the full manuscript. More importantly, the results should be logical. It should contain the following points:

- (1) The total number of participants including gender and age of the group who were screened and those who completed the study.
- (2) Whether or not the baseline characteristics were comparable.
- (3) The description of both primary and secondary outcomes (with numbers as well as percentages of each and relevant *p*-value).
- (4) The expression of outcomes in mean, median, and number needed to treat, odds ratio, relative risk, and risk difference along with the confidence interval.
- (5) Relevant data on adverse events and dropouts.
- (6) Tables and figures in abstracts are optional and are available at times in electronic uploads on conference Web sites.

**Conclusion** The concluding line is a precise statement on the importance of the study findings.

It should contain the following things:

- (1) Important take-home message for readers.
- (2) Any vision that needs further study.
- (3) Add trial registration number to the last (Clinicaltrials.gov/ CTRI).
- (4) Trial acronym (if present).
- (5) Funding, if any.

One problem often noticed with the conclusion is that the authors may want to comment on implications much beyond the ambit of their work. A conclusion that is not limited to the confines of the results often gets adverse inputs from the reviewers.

### The Five Cs: Concise, Clear, Clean, Coherent, and Comply

The content of the abstract should be concise, should have clarity, and should be neatly depicted (→ **Table 1**). The flow of the content should be coherent. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement states that an abstract should be *informative* and provide a *balanced summary of what was done and what was found*.<sup>2</sup> The Standards for Reporting Diagnostic accuracy studies (STARD) checklist for abstracts is to be followed for standard reporting of all components of conference or scientific abstracts.<sup>3</sup> For reporting abstracts of randomized controlled trials, the Consolidated Standards of Reporting Trials (CONSORT) checklist of reporting of abstracts are to be followed.<sup>4</sup> Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 Abstracts Checklist is a better format for reporting abstract in

**Table 1** Dos and Don'ts while creating a conference abstract

Dos	Don'ts
Adhere to author guidelines	Avoid discrepancies in data
State important findings—positive and negative	Do not write abstracts on the last day of submission
Always mention <i>p</i> value in results	Do not use jargons or acronyms
Keep sentences simple and concise	Do not include results that are missing from the manuscript
Use active tense over passive narration	Avoid making claims larger than the findings
Use abbreviations only if defined	Do not copy-paste from results in the manuscript
Use intelligent keywords for better visibility	Do not cite previous articles in the abstract
Describe in past tense	Avoid repetitions
Revise for errors—factual or grammar	Do not make personal comments
Read the abstract again for flow: proofread	Do not overcrowd the content of the abstract

systematic reviews.<sup>5</sup> A study of 243 abstracts of original articles revealed that one-third of all abstracts had either an omission or inaccuracy, while three-fifths of the abstracts were deficient.<sup>6</sup> The possible reasons for inaccuracies in the abstract include lack of dedicated time for the abstract, last minute rush for submissions, and lack of proper check of numbers.

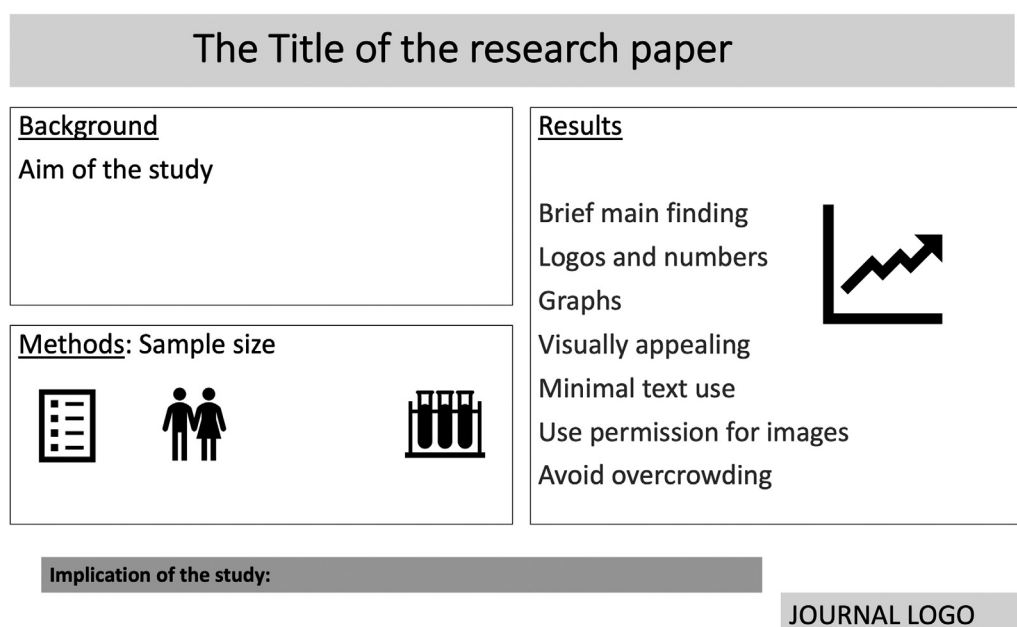
### The Perils of Abstract

- (1) *Exaggerated jargon* Avoid the usage of jargon.
- (2) *Unclear methods* The method of the study has to be made simple in the abstract for a better understanding of the study. Unclear methods would lower the chances of acceptability.
- (3) *Overstressing* Avoid overstressing findings and avoid mammoth claims in the article.
- (4) *Repetitions* Never repeat the lines in the abstract.

- (5) *Hype of conclusion* Do not extrapolate larger than the findings of the study.
- (6) *Numbers mismatch* Avoid discrepancies between study numbers and percentages in the abstract.
- (7) *Abstract–full paper conflicts* Often conference abstracts are completed in a hurry to ensure submission by the conference deadline. Finally, when the authors write the full manuscript, glaring inaccuracies may become apparent. It is always a good idea to complete the full manuscript at the initial step. This helps avoid such conflicts and also ensures a good abstract–full paper conversion rates.

### Alternative Forms of Abstracts

- (1) *Highlights* Many journals these days seek study highlights alongside the abstract. This describes what is already known, what the study adds, and implications in two to three lines each in a separate box.

**Fig. 1** A format of graphical abstract along with dos and don'ts.

- (2) *Summary* Some journals request for a lay summary of important findings to be written in three to five lines. These are usually described in a nontechnical language for easy understanding and must avoid difficult scientific terms.
- (3) *Graphical abstracts* It is the visual depiction of the findings of the study. It serves as a stand-alone figure that has all the components of the abstract. A quick overview of the image covers all the aspects of the abstract. Journals seek graphical abstracts for easy result dissemination. These figures are uploaded separately (– Fig. 1). These have gained increasing interest these days, especially because of the ease of their dissemination via social media including Twitter (now X), Facebook, and Instagram.
- (4) *Video abstracts* They consist of videos of the authors explaining important findings of the study as well as how they conducted the study. These video abstracts lead to increased citations of the research article.<sup>7</sup>

## Conclusion

Abstracts should summarize the research article. It should convey a clear message. It should not give judgments. Well-written abstracts convey 1,000 words from the full manuscript. They lead the readers to the full work of the authors. It should be treated with care for the ultimate acceptance of the article.

### Ethical Statement

Not applicable.

### Authors' Contribution

All the authors contributed equally to the article.

### Data Availability Statement

There are no data associated with this work.

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### Conflict of Interest

None declared.

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