



Editorial

Writing for Publication 101: Why the Abstract Is So Important

For all biomedical journals, an abstract is a succinct yet comprehensive synopsis of the contents of a prospective or published paper.¹ Despite their crucial importance, abstracts may be prepared hastily at the time a paper is submitted without clear regard for the potential consequences. This editorial will examine the abstract from many dimensions to highlight its intended purposes, importance in publication, and effective construction.

Purpose

Journal article abstracts serve several purposes: summarization, description, sorting, and indexing. Abstracts are designed to highlight key points from major sections of the paper and to explain what the paper includes. Effective abstracts provide sufficient details to expedite classifying the paper as relevant (or not) to readers' clinical work or research interests. Online biomedical databases use abstracts to index articles and facilitate retrieval of the abstracts.² In 2016, the PubMed database indexed 23 531 948 citations,³ so locating any single paper in that pile reflects the monumental challenge of effective abstraction.

Importance of an Abstract

Abstracts have been compared to movie trailers because they offer previews with highlights that help viewers decide whether they wish to see the entire work.⁴ Although that simile is strained (abstracts require spoiler alerts because they give away the ending), abstracts are pivotal in many publication decisions made by different audiences.

- *Journal editors* are busy professionals who read hundreds of abstracts annually to screen papers for preliminary consideration. Although some editors contend that “[a] bad abstract won’t by itself cause journal editors to reject a scholarly article, but it does incline them toward an initial negative answer,”⁵ unless it is a slow day in the editorial office, I would anticipate the latter rather than the former response. Just as a well prepared abstract can heighten an editor’s interest to read the complete paper, a poorly prepared abstract can precipitate immediate disinterest in doing so or expending journal resources in peer review. A poor-quality abstract rarely summarizes a high-quality manuscript.
- When a new manuscript is submitted to a journal, the editor invites *prospective reviewers* with expertise in the topic area to appraise the paper. The only part of the manuscript that these reviewers see is the abstract.⁶ A poor-quality abstract will likely dissuade the best experts from investing time and effort to review and improve the paper, thereby defaulting invitations to reviewers lower on the list and extending the time required for completion of peer review.
- When manuscripts enter peer review, *assigned reviewers* will form their initial impressions about the paper from reading the abstract. As with editors, reviewers may not recommend rejection of a paper solely because of a weak abstract, but that negative first impression may color expectations and adversely affect appraisal of the paper.

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- An incomplete or poor-quality abstract may cause *database indexers* to make indexing errors or omissions that relegate the paper to literature search obscurity.
- The abstract is typically the first and often only part of a published article that *prospective readers* interested in the topic can readily access with a database search. An incomplete or unclear abstract can discourage readers from adding that paper to their reading list. For a majority of potential readers, “the paper does not exist beyond its abstract.”^{6(p172)}
- *Researchers* attempting to locate relevant sources for studies, systematic reviews, or meta-analyses will quickly disregard poor-quality abstracts because they lack time to check full copies of those papers.

At every juncture along the publication continuum, abstract quality is a major determinant in the life and legacy of a paper. Preparing a high-quality abstract that will entice interested readers to examine your complete paper requires the author to simultaneously avoid common weaknesses in published journal abstracts and recognize the attributes of an effective abstract.

Any health care professional who searches the biomedical literature has likely encountered many of the weaknesses commonly found in published journal article abstracts (Table 1) and experienced the frustration that accompanies that wasted effort. As consumers of abstracts, then, critical care nurses can appreciate the value of a well-constructed abstract.

How to Prepare an Effective Abstract

Constructing an effective article abstract involves 4 activities: recognizing the essential attributes of any abstract, following the journal’s instructions for submitting abstracts, distinguishing between types of abstracts, and tailoring abstracts to specific types of articles. The most important directive is following the journal’s instructions; however, because those are journal specific, I will cover the other 3 activities here.

Essential Elements

Abstracts for journal articles can differ in content, form, length, and other features, but also share certain features in common. Table 2 lists the essential elements of any journal article abstract.

Types of Abstracts

There are 2 general types of journal article abstracts: unstructured and structured. Unstructured abstracts

Table 1 Common weaknesses of abstracts in published journal articles^{4,6}

- Are **cursorly**, ie, lack adequate information for readers to understand what was done and how
- Miss important information**, eg, sample size(s) or research instrument(s)
- Are **excessively detailed** and lack focus
- Are **too long**, exceeding the word limit (usually about 250 words) specified by the journal
- Are **verbose** and lack economy in expression
- Include **extraneous content**, eg, literature findings peripheral to topic
- Include **reference citations**
- Are **disorganized**; unstructured abstracts may lack orderly transitions or progression, structured abstracts may have misplaced information
- Confuse, reuse, or transpose** the abstract and the paper’s introduction
- Introduce new information** (not mentioned in article)
- Overstate the data** from the current project/study in the Conclusions
- Lack correlation** between Conclusions and the current project/study findings
- Contain **grammar, spelling, or punctuation errors**

Table 2 Essential elements of an abstract in a journal article⁶⁻⁹

- Succinct summary of most important content in the paper
- Writing is clear and concise
- Abbreviations are fully spelled out with first use
- Free of reference citations
- Free of bias in selected content and manner of expression
- Free of grammar, spelling, and punctuation errors
- Format and inclusions meet all journal requirements
- Word count is less than journal’s specified maximum (usually about 250 words)

summarize the contents of a paper in a narrative paragraph. Since the late 1980s,¹⁰ most biomedical journals—especially those that publish research and quality improvement (QI) reports—have adopted the structured abstract, which specifies distinct, labeled sections (eg, Background, Methods, Results, Discussion) for rapid comprehension¹¹ and consistency in abstract content.⁹ Not all journal papers (eg, editorials, general review articles, case studies) fit that model, however, so journals may use both types of abstracts and modify content according to the type of paper.

Tailoring Abstracts to Type of Article

Professional journals publish various types of papers, including reviews, case reports, QI reports, research reports, and others (eg, systematic reviews, meta-analyses, editorials). Because the content considered appropriate varies with each type of article, the abstracts for each can be modified accordingly. Here are some examples of this tailoring for 4 types of articles.

Review papers. In its simplest form, a narrative review summarizes, synthesizes, critiques, and analyzes current literature related to a specific topic to derive evidence-based implications for patient care. For *Critical Care Nurse*, a review paper might focus on management of a patient with chest trauma or best practices for supporting early mobility. In order for readers to judge the validity and objectivity of reviews, it is helpful if authors describe how and where they selected articles, the quality of those reports, and the implications of their findings. Abstracts for review papers may be modified from the sections suggested for the considerably more rigorous systematic review¹² to include the following aspects:

- Introduction: relevance of topic, review objective
- Methods: article selection criteria, databases searched, key terms, dates searched
- Results: number and type of articles located (flowchart to illustrate total vs final article count, reasons for not selecting), notable features of studies, patient demographics, main outcomes
- Synthesis, analysis, discussion: summary of relative differences in effectiveness of outcomes, quality of studies, gaps in literature
- Implications: summary conclusion with implications for practice

Other sources suggest slightly different inclusions for narrative report abstracts; for example, IMRAD¹³ (Introduction, Methods, Results and Discussion) and Background, Aims, Sources (databases, keywords, timeframe), Content, Implications.¹⁴

Case Reports. Case reports describe a specific patient's medical problems and clinical management for educational and/or scientific purposes. The CARE Guidelines were developed as an international standard for presenting clinical cases to improve the accuracy, transparency, and usefulness of these reports.¹⁵ The 2013 CARE Checklist relates that the case report abstract may be structured or unstructured as long as 4 elements are included¹⁶:

1. Introduction. What is unique about this case? Why is it important?
2. Clinical findings. What are the patient's chief complaints and the most important clinical (signs, symptoms, laboratory, imaging) findings?
3. Most important diagnoses, medical interventions, and patient outcomes.
4. Conclusions. What are the most important take-away lessons from this case?

QI Reports. QI reports describe efforts by health care professionals to improve the quality, safety, and value of care delivered to patients and families. The revised Standards for Quality Improvement Reporting Excellence (SQUIRE) Guidelines were developed to provide a framework for reporting new findings about how to improve health care.¹⁷ SQUIRE's guidance relative to abstracts directs authors to summarize all key information from each section of the text using the abstract format of the intended publication. For *Critical Care Nurse*, a QI report abstract would include the following sections²:

- Background, including relevance of issue to readers
- Local problem, including project purpose, objectives
- Methods
- Interventions
- Results, data that demonstrate impact of interventions
- Conclusions with recommendations

Research Reports. Some prestigious medical journals instruct authors to use a fairly lengthy list of abstract subsections for research reports, including the following⁸:

- Importance
- Objective
- Design
- Setting
- Participants
- Interventions
- Main outcomes and measures
- Results
- Conclusions and relevance

Other highly regarded journals simply direct authors to provide an abstract of not more than 250 words that consists of 4 paragraphs: Background, Methods, Results, and Conclusions.¹⁸ Below are some helpful suggestions to assist authors with each section.

- Background. This should be the shortest abstract section; it should briefly describe what is already known about the subject area of the study and

what is not known, the latter being the current study focus.⁶ This section highlights clinical relevance, establishes rationale for the study, and clarifies study objectives/questions.

- **Methods.** This section describes how the study was conducted, including study design, duration, sampling technique, sample size and subgroup size(s), nature of treatments or interventions administered, data collection tools, primary outcome measure and how it was determined, and data analysis.⁶
- **Results.** This is often considered the most important section of the abstract because anyone reading an abstract does so primarily to determine the findings. The greatest amount of space should therefore be allocated for the Results to afford as much detail and precision as the maximum word count allows,⁶ including sample size, subgroup size(s), and dropout rates. Provide actual quantitative results for all main outcomes, important negative outcomes, and, if possible, the most important secondary outcomes, each with its respective statistical significance value.⁶ Include numerical results and their statistical support (eg, means, standard deviations, *P* values, relative risks, effect sizes, confidence intervals, odds ratios).⁹
- **Conclusion(s).** Principal conclusions directly derived from the study results.¹⁸ Must be based solely on the data generated by the current study and typically limited to primary and very important secondary outcomes. Salient unanticipated findings and practical application of findings may be mentioned.⁶
- **Limitations.** Some journals require and many studies warrant full discussion of study limitations located under its own heading.

Closing

Journal article abstracts will retain their pivotal role in the location and dissemination of new health care science and practice findings, so health care professionals who contribute to this literature need to be skilled in composing abstracts that are descriptive, informative, yet succinct. As communication media advance to penetrate biomedical literature, the entire critical care team needs to anticipate that those forms of communication will redesign the abstract into graphical, video, readable (for laypersons), and tweetable formats that are just beginning to emerge.¹⁹ Before venturing into

tomorrow's abstract designs, however, we need to first ensure that we have mastered the fundamentals of preparing a good abstract regardless of its medium. I hope that this overview on preparing abstracts facilitates your publishing endeavors. **CCN**



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