

ART OF WRITING

Formulating the Right Title for a Research Article

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Abstract

Title is an important part of the article. It condenses article content in a few words and captures readers' attention. A good title for a research article is the one which, on its own, is able to introduce the research work to the fullest extent, but in a concise manner. Writing scientific titles that are informative and attractive is a challenging task. This communication describes the importance of titles and the methods of creating appropriate titles for research papers.

Introduction

Title is the gateway to the contents of a scientific article. It is usually the first part of a manuscript that the editors and reviewers read. After publication, it is the first (and many a times, also the only) part of an article that readers see. Based on their understanding of the title, readers decide if the article is relevant to them or not. Similarly, readers who are browsing through a database get to see only the title. The first impressions created by the title, help them decide if there is a need to take a detailed look at the article. Hence, authors should take efforts to choose an informative, appropriate and catchy title for their research article.

Functions and Types of Titles

Before we get to the actual task of describing how a title should be written, let us describe the role that the titles are expected to play. Titles are expected to describe the content of the paper, so that readers can have an idea about what the paper is about and take the decision

regarding reading it. A title should help differentiate that particular article from other papers on the topic. Titles should catch and hold readers' attention, thereby enticing them to read the entire paper. A title is also expected to ensure that the paper gets "picked up" when interested readers are looking for articles on a particular topic in a database.^{1,2} In short, we expect the title to attract readers so that the article is read, appreciated and cited.³

Various categories of titles are described and each type informs readers about the content in differing manner. Although, Hartley has enumerated at least 13 types of titles,⁴ we will consider three broad categories:⁵ declarative, informative and interrogative. Declarative titles state the main finding or conclusion stated in the paper. Descriptive titles describe the article theme, but without divulging its findings or conclusions (For example, "Randomized controlled trial of a

monoclonal antibody against the interleukin-2 receptor as compared with rabbit antithymocyte globulin for prophylaxis against rejection of renal allografts"). Many descriptive titles include all aspects of the research question studied (participant, intervention, control and outcome; PICO). Although, this makes the title rather long; it has certain advantages too: One, the readers get complete information about the article content. In addition, as such a title contains several "key words", it increases the article's chances of being discovered by search engines,⁶ being read by discerning readers, and being cited by investigators.⁷ Interrogative titles usually restate the research question (in part or in full; for example: "Does occupational exposure to anesthetic gases lead to increase of pro-inflammatory cytokines?"). Generally, descriptive titles are preferred, as they inform the reader about what a study entails but not about the study result. This helps maintain the suspense about the outcome. On the other hand, a declarative title states the outcome and it is believed that a casual reader may then not have much curiosity left for reading the entire paper (For example, "An observational study to determine the effect of inhaled steroid administration for over two years on the final height in children with bronchial asthma" vs. "Administration of

inhaled steroids to children with bronchial asthma for a two-year period leads to reduction in final height achieved”).

From the construct point of view, titles can be classified as nominal-, compound- and full sentence-titles.⁸ Nominal titles capture main premise of the study (for example, “Off-label drug use in neonatal intensive care unit”). Compound titles (or hanging titles) have a subtitle. The subtitles are primarily used to present additional relevant information. They may provide additional context, inform about the study design (for example, “Small-to-moderate decreases in cold hypersensitivity up to 3 years after severe hand injuries: A prospective cohort study”) or provide geographic (for example, “Human leukocyte antigen diversity: a South African perspective”) or temporal scope (for example, “Pelvic floor muscle training for female stress urinary incontinence: Five years outcomes”) of the research. A subtitle is also used to add substance to a provocative or a literary (e.g. “First know thyself: cognition and error in medicine”) title.⁸ Compound titles also correlate with higher number of citations.^{4,9} Full-sentence titles are uncommon and tend to be longer. They indicate an added degree of certainty of the study results (For example, “Serum Vitamin D Is Significantly Inversely Associated with Disease Severity in Caucasian Adults with Obstructive Sleep Apnea Syndrome”). Titles for research articles that end with an exclamatory mark are scarce. No one construct is ideal or better than the other and they need to be chosen depending upon the article’s premise. Author’s individual preference and judgment also play a part.

Attributes of a Good Title

- **Informs the reader accurately about the contents of the article:** It is the foremost ‘duty’ of the title that it would tell readers (and not mislead)

about what the article is about.

- **Is simple, direct, clear, brief and attractive:** A good title should be interesting, easy to read and understand and catchy.¹⁰ It should convey information in an unambiguous and precise manner. It should not be open to multiple interpretations and should not confuse the readers about the message it intends to communicate. The issue of appropriate length of a title is hotly debated with contrasting suggestions. Some journals go to the extent of actually prescribing the number of words (generally 10-15 words) or characters that can be used in a title. A lengthy title may seem unfocused, distracting and outright boring. On the other hand, a short title may be able to provide information in general terms only, thereby failing in its primary duty of enlightening readers about the article content. Articles with such “general” titles are likely to be read less frequently. So, how does one choose a title of appropriate length? I think that first and foremost, it should have as many words it needs to explain the article’s main theme and content. Secondly, it should also include as many “key words” as necessary to ensure that the article gets picked up during an electronic search. Once this is ensured, the author should check for and omit words that do not add meaning or value to the title. Redundant words and phrases such as “investigation of” or “study of” or “observations on”, etc. should be excluded from the title.³

Puns and irony make the titles humorous and more attractive. Such titles grab immediate attention. However, readers who are not familiar with these may fail to understand the title. They may simply pass over the article even though it is

relevant to them.⁵

- **Does not contain abbreviations or jargon:** Use of non-standard abbreviations in the title distracts and disturbs readers.¹¹ If acronyms have to be used in the title, it is advisable to spell them out. Otherwise, there is a possibility that readers not familiar with the acronym might skip the article altogether.⁵ Similarly, titles with jargon, too many technical words or chemical formulas are considered uninteresting, unwieldy and difficult to read and can confuse readers,³ inducing them to shun the article altogether.¹²
- **Does not contain numerical values of the parameters:** There is generally no need to include numbers in the title (For example, “Use of probiotics in children with diarrhea is associated with reduction of 11.3+/- 2.1 hours in the duration of diarrhea”). Some authors use numbers disclose the study period or to mention the number of participants, if the sample size studied is quite large.¹³
- **It is line with the tenor of the paper:** Medical research is a serious business. Hence, it is better to avoid amusing or hilarious titles for research articles. Although they might attract some initial attention, findings in articles with amusing or humorous titles are usually taken less seriously¹⁴ and are cited less often.
- **Includes keywords used for indexing:** If key words that are used for searching or indexing are used in the title, the article is more likely to be accessed.

The Procedure of Writing a Title

Title is usually one of the last sections to be written.¹⁵ Even though this may be generally true,

Table 1: Checklist for finalizing title for a research article

Factor	Remarks
Check Instruction to authors provided by the Journal	Certain journals provide specific instructions with regards to the maximum number of words (or characters) allowed in a title; whether hyphen-, colon, etc. could be used and if study design, species or population studied needs to be included in the title and whether the title should be declarative or descriptive or just informative!
Does the title indicate the main theme of the research paper? Is it clear?	On reading the title, a reader should know exactly what the paper is about. No two interpretations. No ambiguity. Not misleading. No confusion about what it means. Precise
Is it too long or is it too short?	Really speaking, the prime consideration is not the number of words or characters in the title (unless, the journal directs!!!). The length of the title should be "just right". A title that has un-essential words is too long, shorten it. A title that does not say what the article is about, is incomplete. It lacks focus. It may be "too short". Expand it.
Is it too unwieldy? Does it contain relevant "key words"?	Consider breaking it into a title and a sub-title Incorporation of all the relevant "key words" in the title ensures greater discoverability and visibility through search engines
If using many technical words...	Will the intended readership understand the jargon? If not, simplify. Is the jargon making the title "difficult to read"? If yes, simplify
If using abbreviations...	Do they have to be there? Are they well-known (e.g. DNA, MRI) and do not need to be explained? Will the article miss out on being picked by the search engines? Consider providing the expanded term, as well.
If the result is stated in the title....	Will it kill the curiosity? Will the readers lose motivation and interest to read the full article?
If using numbers in the title...	Are the numbers really large to be mentioned in the title itself?
If using a clear statement about the outcome	Are the results really unequivocal, definitive and unchallengeable?
Is it in line with the article's tenor?	How will editors, reviewers and readers react to a hilarious title for an article dealing with a serious research issue?
If using pun, irony or humor.....	These do help the title grab readers' attention. Will it be understood and appreciated by all readers? Is it culturally appropriate? Is there a need to use a sub-title to help readers understand what lies in the article?
Need to make it more interesting, attractive and catchy?	See if you can use a quote, use an anagram or introduce a clever play of words.....

the work on the title can begin when a paper is being written. For example, it is a good idea to make a note of a few sentences, phrases or ideas that define the main theme of the paper; which could be later used in the title.¹⁶ One could go on refining these phrases, as new versions of the manuscript are written.¹⁷ By the time writing of the manuscript text is accomplished,

the author will have a working title consisting of at least two or three key terms that can give readers a sense of the content and angle of the research paper. Such a strategy has another advantage: it helps the author to maintain and regain focus. It is not uncommon for the author to wander away from the main research theme, while writing and revising manuscript versions.

Building a working title while the manuscript is being written is helpful in preventing the author from going astray and if he does, to re-orient himself to the main purpose of the study. Those who wish to begin only after the entire manuscript text is ready can also write a one-paragraph summary of the manuscript as a starting point for selecting a title. They can then formulate a couple of sentences (working title) with key words and key terms that provide description of what the paper contains.⁶ The next step is to compress the title by getting rid of redundant words and refining it by making it easier to read, succinct and catchy.^{5,8} There are several ways in which a title can be made attractive. These include using a famous quote in the title, twisting or playing with a quote, going for a clever play of words, making a provocative statement and creating a new acronym or anagram, among others. The title should not be finalized in a hurry. Also, it is worth asking for colleagues' and friends' opinion. Their suggestions can help improve the title.

To summarize, it is not easy for authors to select an appropriate title; since multiple (at time, contrasting and conflicting) factors need to be considered while finalizing a title. A checklist depicted in Table 1 may make the task easier.

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