



REVIEW ARTICLE

How to publish a scientific manuscript in a high-impact journal



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Summary Scientific publishing is an essential aspect of medical progress. New advances in human knowledge are communicated to the outside world through publications. It is essential that this knowledge is accurate, valid, reproducible, and clinically useful. Many aspiring clinicians and scientists dream of publishing their work in high-impact journals. For these dreams to become reality, it is essential to follow the basic principles of scientific research and publishing. In this paper, I outline my own personal view on how to publish your paper in such high-impact journals. I discuss the strategy for high-impact research, the logistics of manuscript submission, the likely outcomes, and the reasons for failure or success. I provide an insider's view of what editors look for in a successful manuscript and I offer advice on how to achieve this success.

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Introduction

Journals are the custodians of scientific endeavor and advancement. They aim to publish sound research with enduring conclusions that will stand careful scrutiny and validation. As such, they are always seeking to publish material that has an impact on the scientific and medical community. Key elements of this work are novelty and the potential for stimulating further discussion and research. As

aspiring authors, your aim is to produce such a document. Therefore, to produce a high-quality scientific paper, high-quality research must be performed. In reality, this is not as simple as it sounds. Some essential requirements are needed to achieve success. Even the most experienced researchers sometimes overlook these essential requirements and the output often ends up in lower-tier journals. In the following section, I have outlined the essential requirements for a solid high-impact publication.

Do good research

What are the essential requirements for good research? For aspiring young clinician-scientists, it is essential to choose a good unit with a good mentor. Mentors are essential in

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guiding us through the maze of scientific folly, pitfalls, and dead ends. They inspire us to find the best within us, keep us focused, and ensure delivery of success. When setting out to research a particular topic, it is essential to *read the literature* and master what has already been completed previously; there is no reward in reinventing the wheel!

Formulate an important research question

What defines such a question? Generally speaking, and for clinician-scientists, the research question has to stem from a *clinically important topic* that has a significant disease burden in the society in question. It is therefore best to *avoid rare diseases*, which are better researched in bigger and more established units with plenty of research support that can be diverted to such rarities. Choose a *research active area* where there is likely to be new ideas and methods you can use, and crucially, have plentiful grant funding. Aim to *define mechanisms* and not merely do a descriptive confirmatory type of research. Choose a topic that others around you have expertise in and can help you if things get difficult.

Do not work alone because this is self-defeating and will likely produce poor quality research output

Think of *collaborating* with national/international groups. Multicenter studies have a far greater impact and validity and ensure publication of your output in higher-tier journals. The next section deals with the importance of a sound study design.

Sound study design

The most important aspect of any research study is its *design*. This must be as near perfect as possible from the outset. If the design is defective, it will be impossible to fix it at the time of writing the manuscript, no matter how perfect your writing skills are. All editors and reviewers look for the quality of the study design as the first parameter. If defective, the manuscript does not progress further. Many projects are wasted opportunities because *inappropriate controls* are used. As much as possible, try to use *healthy volunteers* as controls; do not be put off by what ethics committees "might" think. Match controls and patients for age and sex, whenever possible. As mentioned previously, purely observational studies rarely answer questions of mechanisms definitively. A double-blind randomized placebo-controlled parallel group trial design is the most robust. It is so important to *involve a statistician at the beginning, not at the end*, of your study! You must define a primary endpoint before you start. Do a proper power calculation, which requires an estimate of the size of effect you can expect and the standard deviation of the primary endpoint measured. If you cannot do this, then you probably need to do a pilot study to define variability and reproducibility of the endpoint. If the "n" value is impracticably large, consider another endpoint or, better still, a collaborative project with another group.

Writing your manuscript

Having performed all aforementioned stages, and produced some amazing results, you have the task of preparing your manuscript. The simple secret to successful writing, scientific or otherwise, is that you are telling a story; therefore, it must make sense! It must have a beginning, a middle, and an end with a "take home" message. Other scientists reading your paper want to know what you did, why you did it, what you discovered, and what you think it means. Good scientific writing demands clarity, brevity, and logic. Thus, each paragraph should be able to stand alone, and yet provide context to what precedes it and what follows it. Use simple language and observe the rules of good grammar, spelling, punctuation, and linguistic style. You must avoid any irrelevant information, no matter how strongly you like it. Your research may have involved years of hard work and numerous experiments, but the rest of the world does not need to know about these! Include only the work that is relevant to the main topic of the paper and the scientific questions it is addressing.

Most journals demand a rigid structure and ask authors to adhere to certain conventions. You must follow these instructions rigorously to avoid wasting time in endless corrections and communications with the journal editorial staff. Thus, it is important to make every effort to produce a near-perfect manuscript the first time around. The most common convention for scientific manuscripts follows the format: Introduction, Methods, Results, Discussion, Acknowledgements, References, Tables, and Figures.

Before you submit

Before you submit your manuscript, it is essential to appreciate that you have only one opportunity to attract the attention of the editor; if this is wasted by careless mistakes or omissions, your chance is lost. It is always very helpful to ask a nonspecialist colleague to review your manuscript and comment on readability, typographical errors, grammar, etc. More importantly, the colleague would be able to advise you about whether your manuscript is logical and if the story makes sense. Serious consideration has to be given to the title of the manuscript, the abstract, and the cover letter to the editor, as explained in the following paragraphs.

The importance of the title

The title is the first window for readers to look at your work. Therefore, select a title that catches their attention, accurately describes the contents of your manuscript, and makes people want to read further. A good title should be concise, convey the main topics of the research, and highlight the importance of the research findings (i.e., keywords). Your challenge is to come up with a title that is not too long (which could be clumsy and annoying) or too short (which could lack crucial selling points about your research). The best approach is to write down a few possible titles, think about how they describe the content

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