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Writing for Publication in Medical Education in High Impact Journals

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Abstract. – BACKGROUND: One of the key priorities of a scholarly teacher is to demonstrate the ability to contribute to the advancement of knowledge, and transformation of new knowledge into applications that can be of value to the profession and the teaching/learning community. However, successful contribution to a scholarly activity such as publication is challenging particularly when academics lack confidence in their writing skills.

AIM: The aim of this article is to highlight keys for successful publication in medical education.

METHODS: We reviewed the current literature, recent medical education proceedings, and Association of Medical Education in Europe (AMEE) Guides and explored the basic principles for creating a scholarly publication. We have also reflected on our collective long experience as reviewers to educational, scientific, and clinical journals as well as our roles on editorial boards of medical education and scientific journals.

RESULTS: Using the methods described, we have developed the following twelve tips: (1) Start with the end of mind, (2) Sharpen your idea, (3) Select the right journal, (4) Discuss authorship, (5) Adhere to ethical principles, (6) Prepare the manuscript, (7) Avoid common mistakes, (8) See it from the reviewer's eyes, (9) Prepare a cover letter, (10) Respond to the editor's and reviewers' reports, (11) Don't be discouraged by rejection, and (12) Reflect on your experience.

CONCLUSIONS: Writing for publication in medical education, particularly in journals with high impact ratings, is a challenging task. However, becoming passionate about your contention, and working on transforming your idea into a published work necessitates self-regulation, resilience, visualization of outcomes, and implementing scholarly approaches. Overcoming challenges and focusing on your goal can be reached if these tips are applied.

Key Vords:
Publishing, Medical education journals, Keys for success, Writing skills, Reviewers' reports, Cover letter, Authorship.

Introduction

In a scholarly environment a culture of writing for publication is a necessity. Through publication academics have the opportunity to share their work and innovations with other academics and researchers[1-4]. While publishing fosters the advancement of knowledge in related disciplines, academics publish their work for a number of reasons including[5-7]:

- Sharing experience, innovation and lessons learnt with other professionals and educators.
- Stimulating scholarly debate and suggestions for future development that could prompt new research and further studies.
- Improving the standards of students' education and learning and hence the standards of career development and the quality of patients' healthcare.
- Contributing to the advancement of the profession and enhancing the body of theory and understanding.
- Contributing to the improvement of research quality in the university where researchers work, and improving academic standing and their opportunities for research funding and promotion.
- Gaining recognition and prestige for their research/publication contributions.
- Receiving feedback from the peer reviewers and editors that can help in improving the work as well as the publication.
- Establishing a network of academics working on similar projects and sharing the same area of research interests.

Those who are keen to maintain their contribution to research can help establish a research environment in their workplace and encourage novice researchers to master research skills and write for publication.

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Writing for publication is a challenging and demanding job. This could be related to inadequate knowledge and skills in writing for publication, lack of time and commitment to write, and a lack of confidence and motivation to start writing[8]. Also some researchers feel dejected and not encouraged to resume their writing, particularly after receiving a rejection of their manuscripts from one or more journals[9]. Overcoming these situations may necessitate further training on how to write for publication. Those who are interested in publishing, not only in peer-reviewed journals but also high impact publications, may need further training[10-12].

There are several resources and a wealth of literature on developing writing skills and writing for publication including a series of articles by *the Journal of Clinical Epidemiology* on successful academic writing[13-16], textbooks on writing research papers[17], online resources; including the Purdue University Online Writing Lab, OWL (https://owl.english.purdue.edu), and the Online Research Skills Module by University Graduate College, Cardiff University (http://cardiff.ac.uk /ugc/training/online-research-skills-modules) and BMJ learning (http://learning.bmj.com) and crash courses on medical writing for health profession[10]. Writing skills can be improved through collaborative writing groups[18,19], seminars on writing, peer coaching to support writing development[11,20], and short courses[12]. However, most of these resources are designed for postgraduate students and focus on skills needed for basic science and biology manuscripts. There are limited resources designed to help medical educators write scholarly manuscripts[21,22].

While many researchers and educators focus on the number of papers they can publish, more important is the quality of the work and impact on their disciplines. Interestingly, two of the 2013 Nobel Prize laureates in Physiology or Medicine, James E Rothman and Randy W Schekman have a publication record as per PubMed of 228 and 23, respectively, and the number of citations their research have scored ranged from 2148 to 11 and 366 to 26, respectively. This emphasises that the quality and originality of publication is vital in achieving your scholarly goals (http://www.ncbi.nlm.nih.gov/pubmed/?term=schekman+rw).

To develop these tips, PubMed, MEDLINE and Google Scholar were researched using the following key words, "Writing research", Writing publication", "Writing for publication", "Writing paper", "Writing medical education", "Writing scientific paper", "Writing skills", "Publishing scientific papers". To enhance the search outcomes, we examined the abstract books of the Association for Medical Education in Europe (AMEE) conferences from 2006 to 2012 as well as reviewed books and documents created by AMEE on the topic. We also explored our collective experiences in medical education research as full time academics and researchers at universities in Australia, USA, Japan, South East Asia, and the Middle East. The following 12 tips aim at outlining approaches and keys for successful preparation of a manuscript for publication in high impact medical education journals (Table I).

Tip 1

Start with the end of mind

One of the keys for success of a project is to visualize what you will end with. This should be established from the outset. Explore the different aspects of your idea and visualize how the audience will find it. It may be a good idea to summarize the outcomes and possible conclusions of your paper in 4-6 lines. Then critically analyze what you will end with. Think about your research/paper idea and whether you need to modify it to make the whole idea and outcomes much clearer to the audience[23].

Remember a good paper is usually triggered by an innovative idea or a problem that will be of interest to other researchers and educators. This is particularly important if the idea or the challenge that moved the researchers represents a common phenomenon experienced by other edu-

Table I. Twelve tips on writing for publication.

1. Start with the end of mind.
2. Sharpen your idea.
3. Select the right journal.
4. Discuss authorship.
5. Adhere to ethical principles.
6. Prepare the manuscript.
7. Avoid common mistakes.
8. See it from the reviewer's eyes.
9. Prepare a cover letter.
10. Respond to the editor's and reviewers' reports.
11. Don't be discouraged by rejection
12. Reflect on your experience.

cators from other countries regardless to their culture, educational system or subject matter. Although such problems may be highlighted in the literature or there may be a few papers touching on it, your idea explores new approaches and examines different perspectives not examined before, and could bring a better understanding to the problem.

Many of us may have similar experience but few of us think about going further to explore their ideas and possible new applications. Do not waste such opportunities. This may be the starting point for a research project or a study that you may become passionate about and could lead to a scholarly publication.

Why is a new idea or a common problem that has not been studied in detail important? A new idea could:

- Open new doors for further understanding or give more accurate analysis of the situation.
- Enable the advancement of knowledge in a particular area.
- Establish a nucleus for an original research work.
- Engage the reviewers and the editor assessing the work.
- Provide new insight for readers and researchers.

At this stage you may need to ask yourself:

- What do I need to say?
- How can I critically analyze my idea?
- What is the right format to transfer this idea into a scholarly work?

Before going further with your idea, you may need to examine if the idea is worth study. More importantly can you complete your work within a reasonable time? Do you have the resources and expertise needed for the project? Do you need collaboration? Whom should you invite to join you? What can co-authors bring to the project?

This reflective process will enable you to visualize the whole project and what exactly is needed. It will also enable you to become engaged with the idea and motivate you to move from the stage of "finding an idea" to "transferring an idea into a project" [24].

Tip 2

Sharpen your good idea

To further explore your idea and strengthen it you will need to[25]:

- Examine the related literature and what was published about your idea – what do we know and what do we need to know?
- Assess your idea again and examine if it adds anything new to our knowledge in this area.
- Sharpen your research question, write down the hypotheses behind your work and critically evaluate what you are trying to prove.
- Examine the methodology you are planning to use. If you are planning for a research project, would you use qualitative, quantitative or mixed research? What is your justification? Are the methods you plan to use valid and reliable? Do they enable you to answer the research question?
- Plan the statistical methods you will use and whether these methods are optimum to interpret your data analysis and answer your research question.
- Re-examine the strengths and weaknesses of your work and what you can do to clearly outline the outcomes of your work.
- Write down the possible impact of your project. Do not exaggerate.

At this stage you may:

- Assess the longitudinal plan of the study, the stages of the project, and identify a rough date of submission.
- Discuss authorship and who you think could be a potential co-author and bring something useful to the project.
- Work out ethical approval required for your project.
- Think about challenges that may interfere with your plans and how to manage each of these challenges.
- Think about the journal you will publish your work in.

Tip 3

Select the right journal

Thinking about the journal you would like to publish your work is vital at this stage for a number of reasons:

- Visualize your final product and what you will end with.
- Think about the type of papers published in medical education journals and which type is suitable for your idea.
- Examine papers published in the journal and learn whether the journal publishes the type of work you plan to conduct.

- Form an idea about the audience of the journal, the focus and areas of interest to the journal.
- Check the average time between submission of a manuscript, finalization of the review process and the final acceptance and publication.
- Study the author's guidelines, the journal's requirements, and whether you need to discuss your idea with the editor first.

Another benefit for selecting the correct journal at this early stage is to identify the Journal Impact Factor, the journal's rejection rate, and whether there are processing fees for publishing your paper or printing coloured illustrations. It is also important to know whether the journal is an open access journal, a paper journal or both.

The guidelines for authors will help in identifying the type of papers published. For example, (http://www.medicalteacher.org/medteach_wip/pages/authinfo.htm). The manuscripts currently published in medical education with high impact can be summarized as follows:

- Original research: *Academic Medicine, Medical Education, Medical Teacher, BMC Medical Education, and Advances in Health Sciences Education.*
- Systematic and brief reviews: *Academic Medicine, Medical Education, Medical Teacher, BMC Medical Education, and Advances in Health Sciences Education.*
- Twelve tips*: Medical Teacher*
- Articles: *Medical Teacher*, *Academic Medicine.*
- Short communications*: Medical Teacher*
- How we…: *Medical Teacher*
- Around the world: Medical Teacher
- Commentaries: *Medical Teacher, Medical Education, usually by invitation.*
- Reflections*: Advances in Health Sciences Education.*
- Letters to the Editor: *Academic Medicine, Medical Education, Medical Teacher, BMC Medical Education, and Advances in Health Sciences Education.*

Some journals like *Advances in Health Sciences Education* publish special columns from time to time such as "Methodologist's Corner", "From the Archives", and "If I Had Known Then" as special invited submissions. Table II summarises journals on medical education with high impact ratings.

Although general medicine journals with high impact factor (e.g., *JAMA, and NEJM*) are seeking authors to publish randomized control trials (RCT) because these are the types of studies that affect practices the most and may give insight into long-term effects[26], in education RCT are not favored and very few papers studied medical education problems using RCT. Therefore, understanding these differences as you select the correct journal for your work is important[21]. However, some general medical journals with high impact ratings may publish papers on medical education; see Table III for examples of such journals.

Print out 2-3 examples of papers published in the journal you finally decide on. Also peruse the authors' guidelines, the journal requirements including the style, organization of the manuscript, the needed subtitles and the way references are presented in the manuscript.

Currently there are at least three models for commercial publication of scholarly journals:

1. Subscription-based journals that allows access to the articles only upon the payment of institutional or individual fees. In this model, all authors have to sign a Copyright Transfer Agreement (CTA) to the publisher as a condition of publication.
2. Open-access (OA) journals in which contents are freely available online (http://www.doaj.org). The authors in this model retain the copyright of their work but have to pay an Article Process Fee to the publisher. Some journals in this model are not fully open access and a subscription is required for some articles.
3. Hybrid open-access journals. This is a recent move made by subscription-based journals offering authors an open access option. In this case authors have to pay an additional fee to publish their article online. The publisher may not allow the authors to retain the copyright of the work.

With these options in mind, authors have to select the journal that best matches their needs in terms of quality, Journal Impact Factor, contents, affordable processing fees, copyright conditions, and average duration it takes the journal to review papers and publish accepted work.

You have to be realistic about the end product and the correct journal to choose. If you aim too high, you may face rejection and have to revise the manuscript to match the new journal style before resubmission.

Table II. Details of journals on medical, and dental education including URL, Journal Impact Factor and type of papers accepted for publication.

Journal	Journal abbreviation	URL	Publisher	Journal Impact Factor	Type of papers accepted
Academic Medicine	ACAD MED	http://journals.lww.com/AcademicMedicine/pages/default.aspx	Association of American Colleges/ Wolters Kluwer; Lippincott Williams & Wilkins	3.292	• Articles, perspectives, commentaries, reviews, point-counterpoints • Research reports. • Innovation reports. • Special features (cover arts, last page, letter to the Editor, Teaching & learning moments)
Advances in Health Sciences Education	ADV HEALTH SCI EDUC	http://link.springer.com/journal/10459	Springer Netherlands	2.061	• Original research paper. • Reflections • Reviews • Methodologist's corner, from the archives, If I had know then (these are written by special invitation from the Editor).
Advances in Physiology Education	ADV PHYSIOL EDUC	http://advan.physiology.org	The American Physiological Society (APS)	1.547	• Using classic papers to teach physiology. • Original papers. • How we teach • Illuminations • Research course • Source book of laboratory activities in physiology.
American Journal of Pharmaceutical Education	AM J PHARM EDUC	http://www.ajpe.org	The American Association of Colleges of Pharmacy (AACP)	1.205	• View points. • Articles. • Research articles. • Instructional design & assessment. • Reviews. • Letter to the Editor • Book reviews • Special reports
Biochemistry and Molecular Biology Education	BIOCHEM MOL BIOL EDU	http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1539-3429	Biotechnology and Applied Biochemistry, BioFactors, IUBMB Life/Wiley & Sons Inc.	0.840	• Research articles • Reviews • Laboratory exercises. • Student centered education. • Multimedia in biochemistry 7 molecular biology education. • Book reviews
BMC Medical Education	BMC MED EDUC	http://www.biomedcentral.com/bmcmededuc	BioMed Central, Open Access Journal	1.41	• Research articles • Reviews. • Debates.

Table continued

Table II *(Continued)*. Details of journals on medical, and dental education including URL, Journal Impact Factor and type of papers accepted for publication.

Journal	Journal abbreviation	URL	Publisher	Journal Impact Factor	Type of papers accepted
CBE Life Sciences Education	CBE-LIFE SCI EDUC	http://www.lifescied.org	American Society for Cell Biology	1.188	• Letter to the Editor • Features • Articles • Essay • Research methods • Reports • Current insight
European Journal of Dental Education	EUR J DENT EDUC	http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1600-0579	Association for Dental Education in Europe/ Wiley & Sons Inc.	1.012	• Letter to the Editor. • Original articles. • Proceedings. • Reviews
Journal of Biological Education	J BIOL EDUC	http://www.tandfonline.com/toc/rjbe20/.U4Y8kF5v1g0	Taylor & Francis Group	0.269	• Research papers • Case study • Review • Book reviews
The Journal of continuing education in the health professions.	J CONTIN EDUC HEALTH	http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1554-558X	Society for Academic Continuing Medical Education (SACME)/ Taylor & Francis Group	1.321	• Original research • Innovations • Foundations • Forum
Journal of Surgical Education	J SURG EDUC	http://www.jsurged.org	Association of Program Directors in Surgery/ Elsevier	1.634	• Letter to the Editor • Original reports • Reflections • Reviews • History • Educational institutes.
Medical Education	MED EDUC	http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1365-2923	Association For the Study of Medical Education (ASME)/ John Wiley & Sons Inc.	3.546	• Original articles • Reviews • Commentaries • The cross-cutting edge articles • Assessment • Letter to the Editor
Medical Teacher	MED TEACH	http://informahealthcare.com/journal/mte	Association for Medical Education in Europe/ Taylor & Francis Group	1.824	• AMEE guide • How we • Articles • Short communications • Letter to the Editor
Teaching & Learning in Medicine	TEACH LEARN MED	http://www.tandfonline.com/toc/htlm20/.U4ZOL15v1g0	Taylor & Francis Group	0.935	• Applied research • Research basic to teaching & learning • Developments • Reviews

Table continued

Table III. Examples of general medical/surgical journals that may publish medical education articles in some of its issues.

Journal	Journal abbreviation	URL	Publisher	Journal Impact Factor	Type of papers accepted
Journal of the American Medical Association	The JAMA	http://jama.jamanetwork.com/journal.aspx?linkid=universal-links-1#AuthorReadings	American Medical Association	29.978	• Reviews/mini reviews • Perspectives • Articles covering new developments
The Lancet	Lancet	http://www.thelancet.com	Elsevier Limited	39.060	• Reviews/mini reviews • Perspectives • Articles covering new developments
The British Medical Journal	Brit Med J	http://www.bmj.com/	The British Medical Association/BMJ publishing group Ltd.	17.215	• Reviews/mini reviews • Perspectives • Articles covering new developments
The New England Journal of Medicine	N Engl J Med	http://www.nejm.org	The Massachusetts Medical Society	51.658	• Mini reviews • Perspectives • Articles covering new developments
The Medical Journal of Australia	MJA	https://www.mja.com.au	Australian Medical Association	2.853	• Reviews/mini reviews • Perspectives • Articles covering new developments
Canadian Medical Association Journal	cMAJ	http://www.cmaj.ca	Canadian Medical Association	6.465	• Reviews/mini reviews • Perspectives • Articles covering new developments
Annals of Internal Medicine	Ann Intern Med	http://annals.org/journal.aspx	The American College of Physicians	13.976	• Reviews/mini reviews • Perspectives • Articles covering new developments
Journal of the American College of Surgeons	J Am Coll Surg	http://www.journals.elsevier.com/journal-of-the-american-college-of-surgeons/	American College of Surgeons/Elsevier	4.500	• Reviews/mini reviews • Perspectives • Articles covering new developments
Annals of Surgery	Ann Surg	http://journals.lww.com/annalsofsurgery/Pages/default.aspx	Lippincott Williams & Wilkins (LWW)	6.329	• Reviews/mini reviews • Perspectives • Articles covering new developments
Journal of General Internal Medicine	J Gen Intern Med	http://www.springer.com/medicine/internal/journal/11606	Springer Limited	3.278	• Reviews/mini reviews • Perspectives • Articles covering new developments
ANNALS Academy of Medicine Singapore	Ann Acad Med Singapore	http://annals.edu.sg/current.cfm	The Academy of Medicine, Singapore	1.362	• Reviews/mini reviews • Perspectives • Articles covering new developments
Kaohsiung Journal of Medical Sciences	KJMS	http://www.kjms-online.com	Elsevier Taiwan	0.502	• Reviews/mini reviews • Perspectives • Articles covering new developments

Table continued

Table III. Examples of general medical/surgical journals that may publish medical education articles in some of its issues.

Journal	Journal abbreviation	URL	Publisher	Journal Impact Factor	Type of papers accepted
BMJ Open	BMJ OPEN	http://bmjopen.bmj.com	BMJ Publishing Group, British Medical Association House, London, UK.	1.583	• Reviews/mini reviews • Articles covering new developments
Journal of Royal Society of Medicine	J Roy Soc Med	http://jrs.sagepub.com/content/current	Royal Society of Medicine Press Ltd, London, England.	1.717	• Reviews/mini reviews • Articles covering new developments
Journal of Postgraduate Medicine	J Postgrad Med	http://www.jpgmonline.com/aboutus.asp	Medknow Publications Media PVT Ltd, India	1.078	• Reviews/mini reviews • Articles covering new developments
European Review for Medical and Pharmacological Sciences	Eur Rev Med Pharmacol Sci	http://www.europeanreview.org	Verduci Editore, Rome, Italy	1.093	• Reviews/mini reviews • Articles covering new developments

Tip 4

Discuss authorship

All authors should carefully read the journal's guidelines and adhere to the journal's regulations. The role of each author should be discussed early and the final list of authorship position should be finalised based on the actual contribution of each author to the research work done and the writing and editing of the manuscript. If there is disagreement, the conflict should be discussed among the authors. If not resolved, a final decision should be reached by the principle researcher based on the outcomes of the discussion with the team and the supportive evidence for contribution of each co-author[27].

Recently the prevalence of honorary authorship in biomedical publications has been studied[28]. While this trend is relatively common in biomedical publications, there are no studies outlining this problem in medical education journals. However, regardless of the areas of publication, authors should comply with the International Committee of Medical Journal Editors' (ICMJE) criteria for authorship Recently, the ICMJE added a fourth criterion for authorship to emphasize responsibilities of each author to the design of work, interpretation of data, critical input to intellectual contents, revision of the final version, and being accountable for all aspects of work published[29] (http://www.icmje.org/ethical_1author.html).

Tip 5

Adhere to ethical principles

All authors of a paper should declare to the journal any potential conflicts of interest in relation to their submitted work. The form is usually supported by the journal or is included as part of the online submission system of the journal. Most journals will not process the submission further unless they receive the completed form and a statement of approval from the appropriate institutional review board (IRB). In this regard the International Committee of Medical Journal Editors (ICMJE) developed an electronic uniform disclosure form in 2009. Since then the form has been modified and the current version is available at (http://www.icmje.org/coi_instructions.html). Forms created by the journals are usually based on the ICMJE recommendations.

Authors should be aware of misconduct that could damage the researchers' reputations. Misconduct in relation to authorship includes:

- Fabrication or falsification of data and results of a research paper.
- Duplicating a manuscript.
- Submitting the same manuscript to another journal at the same time.
- Self-plagiarism (using sentences or paragraphs from one of the author's published work)
- Plagiarism (using ideas, words or work of others without acknowledging their work).
- Using a published method or a research protocol without giving credit to the original creator.

Plagiarism detection tools (such as http://plagiarism-detection.com; http://www.plagiarism-scanner.com; http://www.scanmyessay.com) are available and most journals scan papers submitted for publication for plagiarism prior to deciding to ask an associate editor to decide if the manuscript is suitable for peer review or not[30].

Tip 6

Prepare the manuscript

The structure of the current scientific paper "Introduction, Methods, Results and Discussion (IMRAD) first appeared in the 1940s and by the 1980s was the only format used in original research papers[31,32]. Individual studies may differ in the specific elements in each section, but should follow a formal structure. The other element that is now commonly included in a manuscript is a structured or unstructured abstract which precedes these sections. In writing a paper you must ensure that each section is organised and includes the appropriate information[8,33]. Table IV summarises resources that can help authors in preparing their manuscripts.

Abstract:

An absolute essential element of a good manuscript is that the abstract accurately reflects the body of the manuscript. Research has shown that there are frequent inconsistencies in the information contained in the abstract and the results. This is a common mistake that is likely to result in quick rejection[34]. Many journals specify both the format and number of words that can be included in the abstract. The abstract should convey the key points of the paper in a clear and concise way.

Introduction

This section should introduce the topic and include background information to allow the reader to understand why you chose to write the article and what question you are seeking to answer. It is also important to indicate why the topic matters to the readership and how it is relevant[15]. In a research manuscript the final sentences often explicitly state "the goal of the study was…"

Methods

In writing this section, the author should seek to answer the question, "If someone wanted to repeat this study, is all necessary information here to allow them to do this?" If the answer is yes, it suggests that the critical elements are included. It is also the section that editors and reviewers use to determine whether the study is likely to be valid. This includes a critical look at the study design, assessment methods, statistical analysis, and risk of bias. Studies in medical education may use any one of a number of qualitative, quantitative and mixed methods. The validity and reliability of the method used should also be evaluated[15].

Results

This section reports the findings and evidence that provides a framework for the following discussion, summary and conclusions. It should be organised in a logical fashion with the most important findings presented first. If there are many findings, grouping them into sections will make it easier for the reader to see that each item was addressed. This is usually where graphs and tables are included. One common mistake is to include data both in the text and in a figure. Generally this should be avoided. Redundancy generally only serves to lengthen the manuscript. There should be no interpretation of the data in this section. It is critical to make sure that the results reported agree with those reported in the abstract. When deciding whether to include data in a group, figure or chart, keep in mind that there should only be one message from the data. The figure and accompanying text including legend, titles, axis labels should be sufficient for this to be a standalone piece of information. The specific journal requirements for type of figure, graph or chart may differ, so pay close attention to this as it is again a common area for mistakes that can lead to rejection of the manuscript[14].

Table IV. Key resources for authors preparing articles on medical education.

Resource	Description/Uses	URL
Observational studies (STROBE Statement)	Checklist of items that should be included in reports of observational studies	http://www.strobe-statement.org/fileadmin/Strobe/uploads/checklists/STROBE_checklist_v4_combined.pdf
Cross-sectional studies (STROBE Statement)	Checklist of items that should be included in reporting cross-sectional studies	http://www.strobe-statement.org/fileadmin/Strobe/uploads/checklists/STROBE_checklist_v4_cross-sectional.pdf
Cohort studies (STROBE Statement)	Checklist of items that should be included in reporting cohort studies	http://www.strobe-statement.org/fileadmin/Strobe/uploads/checklists/STROBE_checklist_v4_cohort.pdf
Guidance on scientific writing (EQUATOR network)	Guidelines and key books and other resources on scientific writing	http://www.equator-network.org/library/guidance-on-scientific-writing/
Systematic reviews and meta-analysis (The PRISMA Group)	Checklist, flow diagram, PRISMA explanation & elaboration document	http://www.prisma-statement.org
Quality improvement in healthcare (The SQUIRE Project)	Standards for quality improvement reporting excellence	http://squire-statement.org
Statistical Analysis and methods in published literature (The SAMPLE Guidelines)	The statistical analysis and methods in published literature	http://www.equator-network.org/wp-content/uploads/2013/07/SAMPL-Guidelines-6-27-13.pdf
Disclosure of potential conflict of interest (International Committee of Medical Journal Editors, ICMJE unified competing interest form)	ICMJE Form for disclosure of potential conflicts of interest	http://www.icmje.org/conflicts-of-interest/
Recommendations for the conduct, reporting and editing a scholarly work (ICMJE)	ICMJE - Recommendations for the conduct, reporting, editing, and publication of scholarly work in medical journals.	http://www.icmje.org/recommendations/
Guidelines to authors of scientific articles (European Association of Science Editors; EASE)	EASE guidelines for authors and translators of scientific articles to be published in English	http://www.ease.org.uk/sites/default/files/ease_guidelines-june2013-english.pdf
The Mayfield handbook of technical & scientific writing	An online handbook for technical and scientific writing authored by Perelman LC, Paradis J, Barrett E.	http://www.mhhe.com/mayfieldpub/tsw/home.htm
Best Evidence Medical and Health Professional Education (BEME)	Resource documents from BEME including Spotlight template	http://www.bemecollaboration.org http://www.bemecollaboration.org/Resource+Documents/
The Cochrane Collaboration	Resource documents and glossary from Cochrane as well as training workshops conducted in UK by Cochrane group.	http://www.cochrane.org http://www.cochrane.org/training http://www.cochrane.org/glossary
International Handbook of Research in Medical Education	A great resource on the topic edited by Norman, Geoffrey R., van der Vleuten, Cees P.M., Newble, D.I. Published by Springer.	http://www.springer.com/education+%26+language/book/978-1-4020-0466-7

Figures & Tables

Each figure should make one point and a figure should be freestanding. Labels should be clear and legible and must be readable in publication. Use consistent sizes, fonts, styles in all graphics across the manuscript. Tables should be standalone pieces of information and designed in a way that clearly shows key results and calculations used.

Discussion

This section should use the same framework as the results section. The data should be interpreted to provide a coherent story of what the results mean; what is the significance of the findings? One should also ensure that statistical significance is differentiated from meaningfulness. The results should also be discussed in the context of what is known about this topic with a goal of showing how the new information adds to the body of knowledge (literature) around this topic. It is important to discuss not only the strengths of the study, but also the limitations. The authors need to be careful not to generalise the findings beyond what is supported by the data. The limitations can also serve a platform from which to launch ideas for further study[16].

References

This is also an area of common mistakes. Make sure to use the correct format for the references and verify that they are accurate. Using a tool such as Endnote can greatly simplify this provided the data inputted is correct. Research librarians can be indispensible for helping with this.

Tip 7

Avoid common mistakes

Common mistakes may damage your submission and in many cases may result in an editorial decision not to send the paper for peer-review[34-37]. These common mistakes include:

- The submission does not follow the journal's guidelines to authors.
- The paper is too long with redundant information or too short and incomplete.
- The manuscript is not written in academic English and is generally below the standards of the journal.
- Too many tables and figures. Tables are poorly designed and the figures/illustrations are of poor quality. The findings in the tables are repeated in the manuscript under the results and or in the discussion. Educational values of each figure and table were not carefully studied to sharpen the focus of the paper.
- The paper is not free from typological and grammatical errors.
- References do not follow the journal's style, contain mistakes, some citations in the manuscript are not listed in the references, citations are not up-to-date, and important related papers are not cited or incorrectly cited.
- The title of the paper does not match with the abstract, the research question and/or the work done.
- The methods used are not valid or reliable and do not enable authors to answer the research question.
- The statistical methods used are not well selected, and the results are over interpreted. Confounding factors were not carefully considered in the data interpretation.
- The paper contains several inconsistencies and current research findings are ignored.
- The paper contains too many medical and scientific terms; not suiting the general readership of medical education journals.

Studies have reported that many of these are common reasons that medical manuscripts are rejected[38,39].

Tip 8

See it from the editors' and reviewers' eyes

Most authors forget the fact that the first readers of their paper are the editors and the peer-reviewers allocated to examine their paper. Therefore, it is vital to see your manuscript from the editors' and reviewers' eyes. Remember the editors and reviewers do not look at the same issues. Editors are concerned about a number of key issues: (1) Does the work match the needs of the journal's readers and the journal's style? (2) Does the work match with the standards set by the journal? (3) Does the work help in the advancement of our knowledge in the area addressed? What exactly does the paper add to what we know? (4) What type of criticism is raised against the paper from one or more reviewers? and (5) Is there an ethical issue, conflict of interest or plagiarism?

On the other hand peer-reviewers focus on the following questions/issues:

- Is the research question original and well defined?
- Is the data sound and well controlled?
- Are the methods used well described, valid and reliable? Did they enable the authors to adequately answer the research question?
- What are the strengths and weaknesses of the study?
- Are the statistical methods used the right methods? Is the interpretation of the results sound and have any biases or confounding factors been considered in the methodology design, analysis of data and interpretation of findings?
- Does the title of the paper reflect the abstract, work done, and the overall conclusions?
- Are the references cited up-to-date and a reflection of our current knowledge?
- Are the tables and figures clearly presented? Are there any areas that need improvement?

Authors should consider these points while writing and revising their paper prior to submission. Important questions to be considered here may include[39,40]:

- Is the abstract within the word count? Are there any inconsistencies between the paper's title, abstract content and other parts of the paper?
- Has the paper met the guidelines for authors and the journal's requirements?
- Have you prepared a suitable cover letter to the editor to accompany submission?
- Are the references correctly cited and contained in the list of references?
- Have you reviewed the whole manuscript for any spelling or grammatical errors?

Tip 9

Prepare a cover letter

The cover letter submitted with the manuscript constitutes an important component in the submission. Most authors do not know how to write a cover letter and what exactly should be stated in the letter. Therefore, letters are usually directed to the journal's editor with a brief statement such as "please find enclosed a manuscript submitted for publication". A good cover letter should include:

- Title of the paper, authors' names, name of the institute, and type of paper.
- A brief statement about the problem/rationale of the paper and what the research question was.
- Research method used and a brief justification for selecting that method.
- Key findings and the meaning of what was found.
- Significance of work done to the readers of the journal.
- Name of corresponding author and contact details.

Some journals ask for the inclusion of a statement that the paper has not been submitted to any other journal and is not under consideration elsewhere, none of the paper's contents have been previously published and the authors have no conflict of interest to declare.

Tip 10

Respond to the editor's and reviewers' reports.

Usually it will take 6-8 weeks for the authors receive an email from the journal's editor about their submission[41]. The decision made may be one of the following options:

- The article has been accepted without additional changes.
- The article is accepted subject to satisfactory amendment being made.
- The article has major problems and is rejected.

The editor of most journals usually allocates the review process to one of the associate editors. The associate editor has to review the paper first and decide if the paper is suitable to be sent for review process or not. If the paper is found not original, has major problems or does not help in the advancement of our knowledge in the area studied or not reflecting the needs of the journal's readership, the associate editor may decide to reject the paper and send a letter to the corresponding author without sending it for peer-review. The rejection letter in this case is usually received within 2-3 weeks after submission[42].

Most journals ask 3-4 reviewers to review the submitted paper. Once the reviewers' reports are received by the journal, the associate editor forwards a letter to the corresponding author outlining the editor's decision and the peer-reviewers' reports. If the decision was to submit an amended version addressing the reviewers' concerns, usually the associate editor states in his/her letter that the revised version will be revaluated by the original reviewers and that this invitation does not guarantee eventual acceptance of the manuscript.

This is a great opportunity to the authors to submit an amended version within the time frame allocated by the editor in his/her letter. To respond to the editor's and reviewers' reports, the authors should:

Carefully read the reviewers' reports and the associate editor's letter and identify what is exactly needed.

Distribute the work among the authors and agree on the type of changes needed. All changes made to the manuscript should be in a different colour, bold, or underlined. Track changes should not be used.

The corresponding author should prepare a response letter addressing in a point-by-point format each point raised by the reviewers and the changes made to the manuscript including page number, and line numbers of each change made.

If changes were not made to an item/query raised by a reviewer, the authors have to present in the response letter a strong argument for their decision.

The authors should ensure that the changes made are meaningful, and have helped in improving the manuscript and targeted the points raised by the peer-reviewers.

Tip 11

Don't be discouraged by rejection

The reject rate of scientific and medical education journals, particularly those with high Journal Impact Factor, is in the range of 70-80% and in some journals up to 90%. Rejection may be (i) an outright rejection made at the editorial level (5-10%), (ii) rejection and invitation to resubmit (5-20%). If major revision is needed, the editor may state that there is no guarantee that the amended version will be accepted and the submitted version will undergo peer revision, and (iv) rejection (60-70%) because of poor design of the study, major problems in methodology and the way the paper presented[35,43]. These percentages vary depending on the journal's rejection rate, the journal Impact Factor, number of issues per year, and whether a journal is open-access or traditional.

There are several factors for rejection and authors should be aware of common causes for rejection:

- The subject of the paper is outside the scope of the journal.
- The paper is not original and has low publication priority.
- Reading was not engaging, flow was difficult and several statements were not scientifically correct and/or not justified by the literature.
- Poor English and writing style.
- Problems with the study design; several confounding factors not addressed in the study could explain the study findings.
- Methods selected are not valid and/or cannot enable authors to answer their research question.

Problems in statistics, methods used, the way results are presented and/or the interpretation of findings.

The possibility of rejection is generally high when one or more of these reasons are highlighted by the peer-reviewers or earlier by the editor.

Rejection is part of our academic life. Very few authors get their submission accepted fully at the first submission or are only asked by the editor to make minor changes. Grief reaction should be managed as soon as possible and researchers have to learn how to use rejection to improve their future scholarly work and the quality of their publications. Before submitting to another journal, authors may need to:

- Readjust or rewrite the title if needed.
- Discuss with your co-authors the best journal to submit your paper.
- Review the whole paper guided by the new journal's instructions including the way the abstract is written, titles and subtitles needed, citation and the way references are presented.
- Consider the comments highlighted by the peer reviewers and the editor from the last submission.
- Prepare a new cover letter directed to the editor of the journal selected.

In case your paper was rejected by several journals, you may in the end decide to review the whole study, work on the design, the research question, revisit the method used and conduct the study again. Although such a decision may be hard, you will ultimately produce a stronger study, particularly if you are passionate about your original idea.

Tip 12

Reflect on your experience

Self-reflection is a metacognitive capacity that is considered central to perception of significance, understanding explanations, and evaluation of performance. Therefore, the process eval-

uated in self-reflection and insight is vital in personal growth and learning from mistakes and previous experience. The aim of such exercises is not the emotional thoughts and behaviours but rather the collective value of research, scholarly work and the individual targets for quality publications.

As a researcher, self-reflection and insight:

- Are essential for achieving self-regulation.
- Facilitate the exploration of future directions in research and the demand for quality publications.
- Enable motivating progress and keep researchers focused on what needs to be achieved.
- Foster critical thinking processes and motivation.

Reflection is a skill that needs to be learned and practiced regularly[44]. However, researchers may not realize the effect that reflection has on their development, or they might have difficulty thinking through a research situation or gaining insight for making changes and using self-reflection in a purposeful way. Discussing the study or paper with a mentor or colleague may provide new perspective or insight into tailoring the paper or the study to publication.

Conclusions

The twelve tips discussed in this paper should provide novice authors from Medical Education Departments as well as module/unit coordinators, PBL tutors and basic and clinical science academics with concrete approaches on how to get their work published. As is the case with medical and science-based journals, it is vital to realise that there are standards set by medical education journals and authors have to meet these standards. Therefore, in order to get published, authors should see their work through the eyes of editors and reviewers because they are the first readers of submitted work. Planning the publication by starting with the end of mind, reading related literature, adhering to ethical procedures, and avoiding common mistakes are key elements for reaching your goal. Continuous evaluation of work done and the manuscript is vital. Bringing these twelve tips into your action plan will allow you to have a better approach and hopefully successful outcomes with your submission to a medical education journal.

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Conflict of Interest

The Authors declare that there are no conflicts of interest.

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