Review Article

Types of Publications in Medical Research Journals-Promote, Publish and Flourish

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Abstract

Medical science completely depends on reporting of the scientific information through scientific journals, newspapers & magazines. Each specialty in medical science is coming with its journals and newer forms of publications according to their needs. Publishing different types of a scientific paper are advantageous to researchers from multiple points of view. New researchers mostly focus on publishing original research to serve their motive of career advancement while experts attempt to gain their authorial voice in influencing the wider audience by other types of publications. Each type of paper has a different format and researchers must comply with journal guidelines. Surprisingly, numerous young researchers and few experienced researchers are dubious about which sort of paper to write and how to get it published. One of the most cited possible reasons for failing publication is a dearth of skills and experience in writing and publishing. The objective of this paper is to provide an overview of the common types of publications. This compilation of the different types of publications will help novice and other researchers in publishing their research in various ways in reputed target journals.

Keywords: IMRAD, manuscript, medical writing, research, scientific publication types.

Introduction

Publishing scientific paper’s history dates back to the 17th century with the French Journal des Savants and the British Philosophical Transactions of the Royal Society as pioneer journals. Even though general medical journals began at the end of the 18th century, specialist medical journals flourished in the 20th century followed by the subspecialty journals.[1] Unfortunately, medical journals took a long time to flourish since they focused on publishing only scientific studies. [1] However these journals have become more scientific in due course of time by offering a large array of different paper varieties to benefit the scientific community.[2] It is a very well-known fact that getting the research published is harder than doing good research. Nonetheless, primary criteria in publishing research are still career advancement with more emphasis on original research.[3] The quantity of papers submitted to available journal space nowadays is exceedingly high owing to which authors get a rejection for their manuscripts. Researchers can target high impact journals by communicating them with other forms of scientific publications. Surprisingly, many of the
young researchers and few experienced researchers are unsure which type of article to write and how to get it published. Some of the papers are suitable for early-career researchers, some require very experienced authors. Other forms of publications can help researchers to use their expertise and have their own authorial voice in reaching a wide audience.

The objective of this paper is to provide a broad overview of the common types of publications. The compilation of the different types of publications will serve as a guide for them in a future scientific career. It will help to familiarize the novice researchers with the varied kind of articles published by the medical journals.

Methodology
Various medical journal publisher websites were searched for different types of papers published. Types of publications enlisted in the author instruction portal of these journals were compiled. For the present article types of publications are classified broadly into 3 types based on the type of issues (Regular, Special issue and Guidelines & Documents). [Figure 1]

Results
It was found that papers with the same meaning were published with different names in different journals. In addition to differing in the names, journals differed in guidelines for manuscript publications (total no. of words, tables/figures, references, etc.) as per specialty scope and requirements.

Types of Papers
1. Papers published by the researcher
1.1 Original Research/Research article/Research Article[4-6]
This is the most common and valued type of publication reported in all the journals. These articles are suited to all kinds of study designs. Since it is reported in the form of a manuscript by the researchers who conducted the study, the article is reported as original research. The research hypothesis/research question is described at the beginning of the study and is followed by the detailed methodology, interpretation of the results, and possible implications. The structure includes the Abstract, Introduction, Methods, Results, Discussion (IMRaD).

The research articles which do not require a full paper are submitted as a brief research article. It is a shorter version of original research. These papers present brief reports of large studies and present the researchers view on the topic of interest. Also, they report new developments, advances, and novel aspects of experimental and methods in the medical field. These publications are considered by the editors thinking that they will be motivating to other researchers and in turn, more research will likely come out in the near future. The structure is in IMRAD.

1.3 Companion Papers[11]
Companion papers (IMRAD structure) overlap in the use of primary data or share authors and consider a similar topic from a different angle. Sometimes authors can be different. These papers should be submitted within two weeks of each other with a clear mention of companion papers in covering letter. Authors are required to explain the unique and novel contributions of such papers to the journal editors. Authors should prior inform editors if companion paper is submitted to another journal.

1.4 Study Protocols[12-14]
The protocol is the detailed plan of the study. It gives an idea about the proposed or ongoing study and can be of any design. It has to be kept in mind that study participant recruitment should not be completed during the submission process. Study protocols include complete information about the hypothesis, the need for the study, methodology, all ethical formalities, and source of funding. Preference for publications is generally given to long term studies which will have considerable
future implications when compared to protocols for pilot and feasibility studies.

1.5 Rapid Communication/Letter\[^{5,10}\]
Rapid communications are usually published quickly after its submission by the editors. It is useful for researchers with information that are time-sensitive. Also, they disseminate preliminary results that are likely to have a significant impact. Such publications come out during public health emergencies. The format is similar to short communications in terms of word count.

1.6 Letter to the editor\[^{16,15-18}\]/ Rapid Responses\[^{19}\]/ Correspondence\[^{20}\]
These short communications write on any topic which catches the audience’s attention. Mostly it is written to comment on a recently published article. It should be objective, constructive, and purposeful. Preference for publication is given if it is submitted within a stipulated period time as per journal guidelines. Should contain sufficient new or vital information that justifies publication. Authors have to disclose any conflicts of interest before giving personal opinions. Additionally, authors are invited to give their feedback to the letters received by the editors in the form of a letter to the editor. International Committee of Medical Journal Editors (ICMJE) recommends publication of letters along with an author’s reply. The author’s response to the letter is also called as closure.\[^{21}\]

1.7 Software Tool Articles\[^{5}\]
These peer-reviewed articles give a detailed insight into newly developed software in the medical field. Information regarding the rationale for development, details of code used for construction, and how to use it by other researchers in their research is mentioned.

1.8 Methodology articles\[^{5}\]
These articles describe the new methods developed and materials used in research. Priority is given to these articles considering the novelty of the work.

1.9 Review Articles\[^{4-7}\]
Review articles update the knowledge and generate guidelines about a topic by creating a readable synthesis of the best resources available. These are critical evaluations of the material that has already been published. It is often written by authors after an invitation from the journal. Few journals do not consider unsolicited reviews. It is prudent to have a pre-submission inquiry letter to the journal if the authors are aiming for that particular journal before spend time writing it. Different categories of review articles enlisted below\[^{22}\]

a. Overview
b. Qualitative systematic review/ qualitative evidence synthesis
c. Rapid review
d. Scoping review
e. State of the art review
f. Systematized review
g. Umbrella review
h. Critical review
i. Literature review
j. Mapping review/ systematic map
k. Systematic review
l. Meta-analysis
m. Network meta-analysis
n. Cochrane review

1.9.1 Narrative Review\[^{6,23}\]
Narrative reviews are not based on a systematic literature search. They lack a predetermined research question and thereby presents results of studies that were available to the authors or as per the authors’ convenience. Though narrative reviews are informative, it is prone to selection bias. The reported outcomes are sometimes a bit confusing when similar studies have diverged results and conclusions. These reviews focus to provide up-to-date information on a topic from the perspective of internationally recognized experts.

1.9.2 Systematic Review\[^{6}\]
A systematic review, synthesize all the empirical evidence to answer specific research questions based on pre-specified eligibility criteria. The methodology focuses on reducing bias and present reliable data for decision making. Steps in the systematic review include synthesis of review
questions, defining inclusion & exclusion criteria, developing search strategies (using multiple databases), selecting studies, and assessing its quality, analyze & interpreting results.

1.9.3 Meta-analysis
When a statistical component is involved in systematic reviews it is termed as meta-analysis. With the use of statistical procedures and appropriate skills, the data from several studies are cumulated into a single quantitative estimate. The pooling of data from smaller studies is done systematically considering sample size, variability in study design, and findings. Steps involved in the meta-analysis are: formulating a research question, systematic review, data extraction, standardization & weighting studies, and final estimates of effect. PRISMA guidelines are mainly used by authors to improve the reporting of systematic reviews & meta-analysis.

Cochrane Database of Systematic Reviews comes out with a systematic review of research in health care and health policy called as Cochrane review.

2: Papers published by experts in the field
2.1 Guest Editorial [24-26]
These are short, invited opinion pieces that provide an opportunity for an author to reflect on a recent event, methodological innovation, or gap in the literature which could be important to the research community. Many successful editorials do all three, culminating in proposing an agenda for the discipline. Keeping in view the expertise of the authors these are solicited by the journal. While submitting guest editorials, authors are required to declare any competing interest.

2.2 Commentary [24,25]
Commentaries are short, narrowly focused articles that are usually solicited by the journal from recognized experts in a particular field. These provide a forum for presenting varying perspectives of the researchers on a topic. It can be of two types, the first form aims to focus on articles recently published in the journal, discuss issues or concepts, and place new findings into context. Another one is editorial and covers an aspect of an issue that is relevant to the journal's scope.

2.3 Perspective/Personal view/View point [7,26]/Opinion & Hypotheses [26]
These provide experts with a forum to present scholarly reviews on certain concepts or ideas and it represents a personal point of view. The ideal perspective conveys a sense of urgency by focusing the need, the relevance of the topic, and practical suggestions to address the same by suggesting alternative approaches. Authors are expected to present evidence-based information. Such articles promote discussion on current issues and are shorter in length. To gather a broad and diverse audience, perspectives should be written in an engagingly.

2.4 Technical notes/Technical Innovation/Technical Developments [27,28]
These are short articles (IMRAD form) which focuses on newly developed techniques or procedure or modification of an existing technique or procedure (an experimental or computational method). They are preferred for publication due to the novelty of the concepts and their potential for clinical applications.

2.5 Essays [26]
Essays are opinionated articles on a topic of interest to experts, as well as to the readers, including the general public. It takes an imaginative approach to a provocative question, with an engaging through rigorous investigation of the problem. It is written in a semi-journalistic style that captures the interest of both professionals and non-professional readers. Haveno strict length limits.

Trends [29]
It is a brief description of timely topics. It highlights directions for research or practice. Trends articles are by invitation only.

2.6 Book Review [30]
This is a brief and unbiased critical evaluation of a book that is assumed to be of journal interest. The journal publishes book reviews at the discretion of the editor. It focuses on the book’s purpose, content, and authority. Highlight what
authors have tried to do evaluate how well the author has succeeded in the opinion of the reviewer. Both the strengths and weaknesses are critically analyzed.

2.7 Clinical Practice Guidelines[7]
These documents come out with guidelines from a panel of experts for special circumstances in the medical field. The guidelines are based on evidence from systematic review and meta-analysis. Authors and panelists have to disclose a conflict of interest while submitting.

2.8 Consensus Statement[6,7]
These documents represent a comprehensive analysis of a disease or condition, therapy, intervention, or health policy often resulting from the work of a consensus conference or expert panel convened to offer recommendations or to set a policy to improve health care.

2.9 White Paper[7]
A white paper is generally a report that outlines a complex issue, its prevalence among the population, source, consequences, and also explores possible solutions to the complex issue. Generally given by professional bodies. Details of the expert committee are provided at the time of submission.

2.10 Policy Documents[7]
Focuses on a particular topic and suggests strategies and recommendations on that topic. Policy documents are given by professional bodies or by experts in the field.

2.11 Monograph[29]
Focused on a particular topic/related subjects and are compiled completely in the form of chapters, sections, or parts. It is released in a manner of book or journal article and is often a scholarly essay or learned treatise by a single author.

3.1 Case Reports& Case Series/Case Studies[18,31,32]
These articles report rare instances of a phenomenon and fosters the progress of the medical field with new ideas. It’s a detailed report of the individual patients (symptoms, signs, diagnosis, treatment, and follow-up) and contains an extensive review of the relevant literature on the topic. It gives a forum for busy clinicians to report new findings who may not have the time or resources to conduct large studies. Case series is a collection of patients with common characteristics. In short, it is a collection of case reports. The number of patients to be called case-series is debatable. Researchers can follow author instructions to clarify before submitting. These articles lack comparison groups and hence their data may be incomplete but are useful for generating hypotheses for future studies. Article structure includes introduction and importance of the case, other similar and contrasting cases in the literature, discussion, and references.

3.2 Pictorial Essay/Clinical Images[7,33]
Provides both textual and visual information of a topical issue. Generally, rare and educative cases are presented under this section. They are given preference since it has high educational value and high quality of illustrations. The article consists of a short unstructured abstract, brief introduction, subheadings to organize the material, and a summary. Up to 20 to 30 figure parts can be included.

3.3 Video Articles[5]
Present the study findings through visual media. Complex and novel procedures which favor video article can be submitted under this. Easy to submit and is subjected to a quick & transparent peer-review process.

4.1 Editorial[28,34-36]
These publications showcase the view & perspectives of the editors or publishers of the journal. It can be related to the type of published articles, the scope of the journal, any research misconduct or journal policy which can have significance to the medical community or society at large. It should be concise & detailed, authoritative, scholarly, insightful, and thought-provoking.
4.2 Supplements, Theme Issues, and Special Series[37]
Deal with related issues or topics, are published as a separate issue of the journal or as part of a regular issue and maybe funded by sources other than the journal’s publisher. Since they are funded by other sources, chances of bias the content of supplements through the choice of topic and viewpoints are more. Editors make sure supplements are published with the same policies as the primary journal.

4.3 Overview articles[38]
These articles synthesize and summarize the findings and conclusions of the papers published in a special issue.

4.4 Epilogue[39]
It’s a short article at the end of a forum, special issue, or special topic collection that is written by, as applicable, the journal’s editor-in-chief, an editor, or the guest editor involved. Should include a summation of the preceding articles’ findings and may draw broader conclusions than the individual articles.

4.5 Corrigendum or Author Correction[40,41]
It is the notification of a significant error made by the authors in a published article. Usually, such errors could affect the publication record or the scientific integrity of the paper. Authors have to give a valid explanation for corrections required. Few reasons like changes in authorship, unintentional mistakes in data presentation, etc. are most commonly seen.

4.6 Erratum or Publisher Correction[40,41]
It is the notification of an important error made by the publishers. These errors can affect the reputation of the authors or the journals. Admissible and insignificant errors in a published article that do not affect the article content or scientific integrity (e.g., typographic errors, broken links, wrong page numbers in the article headers, etc.) can be corrected through the publishing of an erratum.

4.7 Retractions & Retraction Notices[37,41]
Notice of retraction is given by journals when a published article violates the author guidelines while publishing. This can be due to either as a result of scientific misconduct or plagiarism or honest error. These articles remain available in the public domain with but they are clearly labeled as retracted. Reason for retraction of article and person (author, author’s legal counsel, head of the department, the dean, or the journal editor) who withdrew the article is very well defined by the journals.

A “retraction in part” or “partial retraction” is the result of an incorrect section or a particular portion of an article that is incorrect, leaving the majority of the information and the article’s stated conclusions uncompromised by the removal of that portion of the content.

4.8 Expression of Concern[37,41]
It is a publication notice given by the journal editors to focus attention to possible problems, but it usually does not go far to retract or correct the article. This happens when an editor has a significant concern about the reliability of the article (publication misconduct by the authors) but not sufficient information to give notice of retraction until an institutional investigation is complete.

4.9 Republications/Replacements/Corrections[37,41]
These are done in cases where the journal feels that honest error (e.g., a misclassification or miscalculation) leads to a major change in the direction of the significance of the results, interpretations, and conclusions. Articles in such cases are retracted and changed versions are published. Explanation of retraction with republication is well defined and the extent of changes is available in supplementary materials for complete transparency.

A conference proceeding is the published record of a conference, congress, symposium, or other meeting sponsored by a society or association, usually but not necessarily including abstracts or reports of papers presented by the participants. When the entire text of the papers
presented is included, the result is called transactions. Conference papers can be published by the organizer as Abstract Book, Proceedings, and Special Issue. Conference papers are typically published in collections called "proceedings":

4.11 Announcement[7]
It can be a general or specific message to the journal audience. This might be a calendar of events, a call for papers. The publication of a submitted announcement is at the discretion of the editor.

4.12 Panel of Reviewers[7,42]
Journals come with a panel of reviewers to acknowledge all the reviewers who are part of the peer-review process of the journal policies.

4.13 Obituaries[7,19,25]
Pay tribute to the life and work of members of the profession who have died. It provides detailed information about the person’s achievements & accomplishments.
Discussion
It can be argued that medical writing should not be confined to academic exercise only. Health care professionals can reach to the general public and laypeople through newspaper & magazine articles. The content should be written in simple language, with non-medical terminologies. Better communication can help patients understand the condition and empower them to make more informed decisions for their illness. So scientific writing has to be categorized according to the target populations.

Scientific writing generally follows a specific format with pivotal sections. Though there is no rule to adhere to these guidelines, following these breaks down the complex information and helps to perceive them better. One of the most cited possible reasons for failing publication in literature is the lack of necessary skills and experience. Rejection from journals which is disheartening is commonly faced by young as well as experienced authors. Instead of taking the decision not to attempt another paper in the future, they should focus to overcome shortcomings. Authors should try to gaze at the reasons for the rejection of their writings. Contrary to belief, editors don’t like to reject papers. However, in doing justice to the readers worldwide they reject paper of lower quality and priority.

It is essential to take note that not all journals to publish each sort of article and accept papers that are past their extension. By going through the author’s guidelines, researchers can have a reasonable thought of the types of articles ideally accepted by journals. Authors can likewise send a pre-submission inquiry letter to the editor of the target journal before they spend time writing it. It tends to be worth-thinking to choose the journal before writing the paper. Ideally, the target journal can be one in which comparable work has been published. There are often slight variations from one journal’s format to another but every journal has instructions to authors available on their website and authors must download and consent to them.

Why this article is significant?
Since the most recent couple of decades, a standards move has been observed in qualitative and quantitative scientific writing in medical literature in building a smidgen of evidence. However, the constrained availability of room for publications in peer-reviewed journals compels researchers to look for different forms of writing. This paper features a different kind of scientific writing to the novice, experienced researcher, general practitioner & editors. The present review has compiled and endeavored to categorize various terminologies existing in literature for the same type of publication wherever it was applicable so that researchers should have an unmistakable comprehension. It provides a valuable asset for the researchers in publishing their work by fitting into one of these forms of publications in reputed journals and educating the general public on the loose.

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