

Original Research Article

Mastering the art of publishing in scholarly journal

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Abstract: Scientific publications represent a platform of sharing knowledge and generating guidelines about a particular field of interest. The procedure of writing for a scholarly journal begins with the conception of the idea and implementation of it demands the author to be original, organized, innovative and persistent. The art of writing for a scientific journal can be an exhaustive process therefore this article sketches out the concise overview of the structure, content and technical information regarding the process of writing and publishing, to help guiding the budding scholars to explicit their finding in a captivating manner.

Keywords: author, article, investigations, manuscript, publication, plagiarism, scientific research, scholarly journals.

INTRODUCTION

Factual, complete, verifiable, and applicable knowledge pertaining to mankind can be acquired by authentic scientific research. Scholars and researchers make undaunted efforts to pursue high quality research, which can make contribution in existing database of scientific literature, aiming to improve the way we live and most importantly saving precious lives. If a researcher is willing to share his knowledge worldwide, writing up his finding is the best way that provides theoretical insight and sharing practical implications about his work. Getting the first academic paper published can be a great challenge, demanding commitment and substantial hard work. Manuscript preparation and submission process in scholarly journal is sometimes the most strenuous part of the research. Understanding the shortcomings in the preparation of the research article and the entire process of publishing helps in getting the manuscript promulgated, and also enhances the research profile of the researcher [1, 2].

The two most important questions to take into consideration are-“whether the author has a story to put across?” and secondly “who are the target readers for his research findings.” Editors and reviewers look forward to inceptive, authentic and innovative research

which can make contribution to existing field of study and directly impacts patient healthcare. This means that inferences of the research must be logical, substantial and based on adequate robust data. The more inventive and original is the research, the more people will be fascinated to give it a read. Identifying the addressees is a prime factor for selection of the right journal in which the manuscript is to be submitted. Importance should be given to the fact, whether the research is of interest to international, local or regional audience [1-3].

TYPES OF STUDY DESIGN

Primary Research

1. Observational studies- In this type of study the target population chooses to live their daily lives and only report their activities to the researcher. The investigator does not intervene, only measures.

(a) Analytic study- Analyze the relationship between status of health and different variables.

(i) Cross sectional study- it provides the information of association between disease and its related factor at one point of time in a cross section of population, the result of which can be generalized on the whole population.

(ii) Case control study- also known as retrospective study, proceeds backward from effect to cause. This study takes a different approach and compares the

patients who have an outcome (case) with the ones who do not have any (control). The investigator goes back in time and identifies the exposures or other factors that might be causative of a particular disease.

(iii) Cohort study- also known as prospective study proceeds from cause to effect. It involves analysis of large group of population forward in time. Some people will have a particular exposure that others might not have. Different groups are compared by the investigator to see which one is most likely to develop an outcome.

(b). Descriptive study- describes distribution of a disease in a particular human population.

2) Experimental study- also known as intervention study, it attempts to modify determinant or progression of a disease.

(a) Randomized controlled trials- use interventions to evaluate how change in behavior affects the health of some people.

Secondary Research

1. Meta analysis- statistical procedure of combining results and data from a number of credible studies on a particular topic.

2. Simple (narrative) review- A constructive analysis of the documented literature in a particular field.

3. Systemic reviews- Systemic reviews assess, evaluate and summarize the results of multiple research studies with sound methodology [4, 5].

TYPES OF RESEARCH ARTICLES:

1. Original scientific articles: a scientific article can proclaim to be original only when it addresses a new approach to deal with the problem, widens the horizon for the budding researchers and offers an opportunity to testify the results.
2. Research articles: research articles are the ones which deal with the already known facts and methods applied on new test samples.
3. Review articles: also known as survey articles; summarizes contemporary state of understanding on a topic, of previously published articles rather than recounting new analysis, facts or figures.
4. Full articles: they contain sententious details, significant specifics, developments and outcomes.
5. Microarticles: datas, methods, softwares, videos and many such research outputs can be published through this format.
6. Case report: is a detailed report pertaining to signs, symptoms, diagnosis, treatment and follow-up of a particular patient.
7. Case series: is an observation of a health care provider, of the group of patients who are provided a specific treatment [1, 6].

SELECTING THE RIGHT JOURNAL FOR PUBLICATION

Choosing the right journal for your article can improve the chances of its acceptance and ensure that your work reaches the target audience.

Following factors illustrate how well regarded the journal is,

1. Wide circulation- Indicates that it is read by large number of people.
2. Low acceptance rate- It means that journal receives enormous publications but it selects to publish the authentic and best ones.
3. Long citation half-life- It indicates how often, over the period of time, the journal and its articles are cited.
4. High impact factor- Impact factor is the measure of the frequency of citations received by articles of the journal in a particular year [1, 3, 7].

PREPARATION OF THE PAPER

Title

It is the precise way of describing the content matter of the research. It entices the readers to take interest in the topic and directs them to determine if it is of any relevance to them.

An appropriate title should be:

- Catchy
- Unambiguous
- Short and specific
- Comprise of the main characteristic features of the article
- Should attract attention of the audience, for it to be easily remembered [1, 7].

Authors

Only those authors who have made contribution in creation of the work should be given due credit; the ones who have drafted and critically revised the research work and the ones who are willing to take responsibility of the final manuscript [1, 3, 7].

In multi authored publications, authors' credit for contribution has following approaches:

1. The "sequence-determines-credit" approach (SDC) - in this approach sequence of the authors determines decreasing order of their contribution towards the paper work. The first author gets complete credit of the impact factor, the second author gets the half, third one gets one third of the impact, so on and so forth upto the number of permissible authors according to the type of article.
2. The "equal contribution" norm (EC) - contribution made by each author is credited with equal proportion of the impact and their names are sequenced in alphabetical order.
3. The "first-last-author-emphasis" norm (FLAE) - in this norm first author gets whole of the

credit followed by the last author getting half of the impact and credit of the remaining authors is impact factor of the journal divided by total number of authors.

4. The “percent-contribution-indicated” approach (PCI) - in this approach details regarding the contribution of each author is quantified in terms of percentage [8].

KEY WORDS

A list of 8-10 keywords is requested by most of the journals. These words alongside the ones in the title effectively capture the research. Indexing and abstracting services use keywords and hence selection of the appropriate ones increase the probability of the article being found on searches [1, 7].

ABSTRACT

It is the concise distillation of the research done. It should clearly describe what has been done, the way it was done, what the results depict and the author’s interpretations. Significant details of the article should be precisely illustrated, so that it motivates the readers to read further in detail [1, 7].

INTRODUCTION

It must be comprehensive and not a history lesson. It should gradually lead readers to the core of research. It must clearly define the questions that are being addressed, described and analyzed further in the paper. It must also communicate the facts that are already known and others that are being challenged or further by the investigation [1, 7].

METHOD

It is overview of procedure in detail that guides the reader to replicate the research and to assess if conclusions are justified by the methodology. It should be explained in past tense. Method should necessarily explain the following

1. Type of study
2. Sample size
2. Sampling technique
3. Where the research was carried out
4. Inclusion and exclusion criteria
5. How the investigation was conducted
6. What were the modes of data collection?
7. Techniques for result analysis [1, 3, 7].

RESULTS

Results should infer the new findings of the research objectively and provide concise and logical explanation. Results contribute or upgrade the existing scientific knowledge. It must critically abridge the important observations. Instead of the descriptive text, findings can be best presented in form of tables, figures and graphs. Also, the values of statistical significance should be well defined (e.g. p value <0.05) [1, 3, 7]

Biostatistics – it is a branch of statistics dealing with interpretation of mathematical facts and datas related to biomedical sciences.

Applications-

- It analyses whether the difference between two variables is by chance or real.
- Studies correlation between similar and different attributes in the same population.
- Evaluates efficacy of sera, vaccines etc.
- Measures morbidity and mortality rates.
- Evaluates the achievements and helps in fixing priorities of public health programmes.

Following are some of the statistical analysis that can represent the results of the research/investigation in numerical form-

1. Statistical averages

- i) Mean – it is obtained by summation of individual observations and dividing them by total number of observations.
- ii) Median – it is the number separating lower half with higher half of data sample, population or probability distribution. Median is obtained by arranging the data in either ascending or descending order of magnitude and then locating the middle observation.
- iii) Mode – most frequently occurring observation in the data distribution.

2. Measures of dispersion

- i) Range – difference between the highest value and lowest value in a given sample
- ii) Mean deviation – it is the average of deviation from arithmetic mean.
- iii) Standard deviation – most widely used common measure of studying deviation. It is square root of the mean squared deviation from arithmetic mean.

4. Test of significance

- i) Standard error of mean – it gives distribution of sample means from the same population.
Standard error of mean = Standard Deviation / \sqrt{n}
- ii) Standard error of proportions
Standard error of proportions = $\sqrt{pq/n}$
p and q = proportion of occurrence of events in two different groups of the sample
n = sample size
- iii) Standard error of difference between two means – it finds out if the difference between means of two groups is significant enough to indicate that sample are representative of two different universes.
- iv) Standard error of difference between two proportions – it evaluates if the difference between proportions of two group is for real or by chance occurrence.

5. Chi square test (χ^2) – developed by Karl Pearson. It is a qualitative method of testing significant difference between two proportions. It is also used when comparison between two groups is done.

6. Z test– it evaluates the significance of difference in means for larger samples (>30)

$Z = (\text{observation} - \text{mean}) / \text{Standard Deviation}$

7. 't' test– designed by W. S Gossett. His pen name was 'Student'. Hence the test is known as 'student t test'. This test is used to test the hypothesis when the sample size is small.

- Unpaired 't' test – applied to unpaired data of independent observation of individuals of two separate groups or sample from two populations, to evaluate difference between mean of two groups.

- Paired 't' test- is applied to paired data of independent observations from one sample only, generally before and after treatment intervention, at two points of time.

8. Analysis of variance (ANOVA) – it tests the hypothesis whether any true difference exists between mean performances of two or more populations [9].

DISCUSSION AND CONCLUSION

Discussion must elucidate the meaning of the results, in respect of what is already known regarding the subject. It should explain if the results are in support with the existing concepts and also if any limitations exist. Most of all the discussion should delineate how the investigation has moved the preexisting scientific knowledge ahead. All the speculations and interpretations must be based on factual information and not imaginary. Conclusion must support the results and not extend beyond it.[1,3,7]

REFERENCES

Represents the previously published work and author's inspiration that must be acknowledged. Any new source of information that has not been known before must be represented with a citation. Citation and reference formats vary in accordance with different journals. Most commonly used is Vancouver convention's rule for literature citation (e.g Haas AN, Susin C, Albandar JN. Azithromycin as an adjunctive treatment of aggressive periodontitis: a randomized clinical trial. N Engl J Med. 2008 Dec; 35(8): 696-704) [1, 7].

ETHICS

Scientific breach and misconduct of publishing must be well understood to make sure that a particular research/article gets a best start. Examples include –

1. Conflict of interest – not revealing a journal that author has indirect/direct conflict which may influence the outcome of the research and averts him from being unbiased.

2. Plagiarism – stealing or copying someone's original work and passing it off as one's own.

3. Simultaneous submission – paper/article/research work should be submitted to one journal at a time and not many.

4. Research fabrication – falsification/manipulation/making up of scientific data in order to get it published.

5. Salami slicing – splitting up the main manuscript into several small papers [1, 7].

PAPER SUBMISSION AND ACCEPTANCE PROCESS

1. Before passing on to the journal, technical pre-screening is carried out to check if the manuscript is complete

2. If submitted paper does not fulfill the requirements, it will be returned to the author to make necessary amendments and resubmit.

3. The submitted paper is pre-screened by editor in chief to check whether paper complies with scope of the journal, has relevance and is of any interest to the readers.

4. Followed by editor in chief, the associate editors evaluate the manuscript in detail and initiate the highly qualified peer reviewers to analyze the same.

5. Reviewer comments are forwarded to the associate editors who make a decision and final recommendation to the editor in chief.

6. Further through the editorial office, authors are being notified regarding the decision of their respective papers.

7. Depending on degree of revisions and reviewer's responsiveness, the entire process of peer review may take around 15-20 weeks [3, 7, 10].

CHECKING THE STATUS OF YOUR ARTICLE

Status of the paper can be checked by "trace your article" feature through a reference number that an author receives via email at the time of the submission or after the acceptance of the article [1, 7].

CONCLUSION

The scientific articles play an important role in exchanging information in our profession. Therefore probity and quality of the standard guidelines of publishing must be abided by while writing research article. This article help authors to brighten the chances of getting their paper published and reap academic rewards by making contribution to the existing scientific database.

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