Editorial

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# Getting Published : The Inside Story

Publishing original articles in a science journal is an essential requirement for career progression and is an important signature of a researcher's endeavour to contribute to science. However, on the part of the journal authority, the importance of publication is to take the science forward by proving/disproving some hypothesis with factual evidences or generating some new hypothesis.

Let us start the discussion with some semi-arbitrary information. A good medical journal with moderate to high impact factor receives about 3000-4000 research articles annually. However on an average, even if 15-20 original articles are published in a single issue of a monthly published journal, the number of published articles is no more than 250 per year. Hence not more than 10% of all submitted articles get published. The articles submitted undergo screening and have to pass through a stringent peer-review process. It needs to be appreciated that not all articles are worth reviewing and additionally there are only finite number of good reviewers available. Hence the handling editor or associate editor rejects upto 80% of all articles submitted and only about 20% are sent for peer review of which about half make it to the print issue of the journal after revisions.

But what are the primary reasons for which an article is rejected? How can we improve our articles to increase its chance to be published in an impactful journal? It is worthwhile to mention here that one should be careful about the so called predatory journals. It has been mentioned in the reputed journal 'Nature' that articles are published (taking fees from authors which is not synonymous with publication charge. Publication charges are applicable only after acceptance of the article following stringent peer-review for most of the reputed journals, more specifically if the journal is open-access). Predatory journals do not undertake necessary quality checks for issues such as plagiarism or ethical approval and lacks transparency in many aspects. These journals pose a global threat (https://www.nature.com/articles/d41586-019-03759-y)

Once an article is submitted, it passes through a stage of technical checks by the journal authority to verify whether the 'Author's instruction' has been followed strictly with respect to various aspects. If not, the article is 'Unsubmitted'. However this does not mean that it has been rejected. The primary reasons may be that there is no mention about the 'Conflict of interest', 'acknowledgement to the Grant providers etc' or STROBE/PRISMA/CONSORT (mentioned later) is missing. It may also be related to the fact that the appropriate font size is not followed or line/page number and line spacing is either missing or not appropriate. Once all requirements are fulfilled and the article has been resubmitted, it is likely to be categorised as 'Submitted to the journal'. However, in majority of cases it is rejected with a soft letter from the editorial office expressing their inability to accept the article but with an advice to consider the journal again for future submission of other articles. This means the article did not get the fortune to get peer-reviewed before rejection.

Here are some points to ponder upon. Rejection at first sight is primarily done by seeing the title and the abstract only. Hence be careful when an abstract is being written. However, as the abstract should be written after completing the manuscript writing, we will discuss about it at the end of this editorial.

The first part of the article is '**Introduction**'. Please remember that no good journal will accept an article unless it has some novelty of information. This section should ideally focus on three things. First of all, please mention in brief the knowledge that is already available on the particular topic. Please try to avoid any unnecessary information which is not related to the respective research. In fact, the draft-writer should ask himself after writing each line: 'How is this sentence related to the current research?' 'Is this at all relevant to the current research?' After mentioning the available knowledge, one should focus on the 'knowledge gaps' in the current understanding. And finally, why is this research undertaken and how could it make some progress to meet up these 'knowledge gaps'? In fact, it is the section where you should mention the '***Hypothesis of the study'***. A research work without a specific and concrete hypothesis has a grim probability to reach the printed form. Please restrict this section to 400-500 words as most of the journals ask to complete an article within 2500-3000 words (excluding Abstract, References, Figures and Tables). Some journal specifically wants a summary of information as 'Research in context' or 'Highlights' to make it attractive to the readers.

Next section is on '**Materials and methods'**. Though this section may not carry much significance to general audience, this is the most critical section that determines the fate of the article. It is frequently and aptly said that "Describe your subjects first". Many reviewers prefer the participants to be referred as 'Subjects' and the term 'patients' should be avoided. Very frequently, this section is unnecessarily shortened (assuming that readers are already versed with the topic). But to a peer-reviewer/ scientific researcher the most important non-compromising questions are: Who were the participants of the study? Is the inclusion/exclusion criteria sufficient to answer the question related to the hypothesis? How were they selected? Were they adequate in number? Was this selection in a random way or in the non-probability purposive format that groups were divided? Was there an approval from 'Institutional Ethics committee'?

Next issue will be the 'power of the study'. In short, it tells us whether the study has sufficient capability to answer the question raised in the hypothesis. Hence calculation of sample size is another big issue which may also determine the prospect of the article. In this section, it is not necessary to mention the statistical formula on which the calculation is made. But you should mention the principles of such calculation: What degree of power have you chosen (90% or 80% equivalent to a Type 2 error of 10% or 20% respectively. Power less than 80% is not acceptable?) However, the allowed type 1 error is only 5% or less, and this also needs to be mentioned. Also, you must mention, what was the standard deviation for the related samples? This must be available in some previous literature. The margin of error you have chosen apriori (may be based on confidence interval of previous studies) may also be necessary to calculate the sample size (equivalent to type 2 error). However a detailed discussion on this aspect is beyond the scope of this article.

Many of the reputed journals require some other forms to be filled up. At an individual level for the beginners, usually the study is either cross-sectional or prospective. This needs a 'STROBE' (STrengthening the Reporting of OBservational studies in Epidemiology**)** statement to be filled up. Similarly a meta-analysis deserves a PRISMA statement (Preferred Reporting Items for Systematic Reviews and Meta-Analyses). For conducting a randomised controlled trial with intervention, the trial must be registered with Clinical Trials Registry-India (CTRI) and while writing the article the CTRI registration number must be mentioned and a CONSORT flow diagram (Consolidated Standards of Reporting Trials) must be included in the manuscript. All these formats are available online.

In the **'methods'** subsection you must clearly mention the clinical parameters and the biochemical, pathological, radiological tests you have done. With regards to the new investigations (and frequently for the established investigations also) you must mention the instruments used (with the company specification including the name of the country which has marketed this), the kits used (again with the company specification including the name of the country where it is manufactured), the reference range for a particular analyte, the precision i.e. the lowest level that the machine could detect, and co-efficient of variation of such determination as reported by the manufacturer.

Next important aspect in 'Materials and methods**'** is mentioning the statistical aspects related to the analysis of the collected data. Here you must clearly mention the name of the statistical tests you have applied. The appropriateness of applied the statistical tests also have a clear role in determining the fate of the article. Before subjecting any set of data for comparison, one must look for the 'goodness of fit' to examine whether the data is normally distributed or not. Please remember that the necessary tests vary according to whether the data is normally distributed or not. For data which are not normally distributed, you should choose appropriate tests for non-parametric data or use bootstrapping. If you plan to do a regression to find some predictors or something else, please mention beforehand the covariates that you will use. Please note that if two co-variates are highly correlated, then multicolinearity assay must be done to calculate 'the variance inflation factor'. It is childish to mention that you have taken a p value of $<0.05$ for determining the significance as this is now a universal truth. Also if you have adjusted your data for some confounders, please mention it.

The next part is about presenting what you have found in the experiment in the **'Results'** section. Please be careful to present the baseline data first, as it is already mentioned that a reviewer deserves to know the background information of the included participants. Please note that a direct copy of the software output of the results indicates nothing other than your non-professionalism. Please do not stress much upon the p

value only. You must mention the comparative results side by side and then mention the p value as a marker of the degree of significance and the test by which this value is obtained. Do not mention p=0.000, though it is given in the software output. You should change it to p = <0.001 to indicate the level of significance. Also one should be aware that, on similar questions (or subsets of this question) repeated tests may inflate the type 1 error and make the interpretation fallacious and non-acceptable. Apart from these, it is worth mentioning that most of the journals do not allow more than a total of 4 tables and figures altogether. Very frequently it is seen that the results are mentioned simultaneously in tables, in text and sometimes in diagrams also. It is not only unnecessary but also poses as a source of irritation to the reviewer. Hence one should not put the results in duplicate in separate formats. If a diagram does not add anything extra, please do not include it, even if you have made it with beautiful colours (Remember charges for publishing even after acceptance is very high for coloured diagrams). Please do not forget to refer to your tables/diagrams in the appropriate areas of the text while submitting. Otherwise the table/diagram may go unnoticed. Please note that you should use same number of decimal places for similar type of data. Also, if you plan to submit the articles to a European Journal, please use SI Units in place of conventional units.

The last part of the article is '**Discussion'** which includes **Conclusion** also. Some journals specifically want a separate section on conclusion as well. This section should be written very meticulously and must conform to your results directly. *However you should avoid mentioning your results again in this section.* Specifically you should compare your observations in the perspective of others' findings available in the literature and try to put forward explanations for those differences. Not only should you critically analyse the results, but you should also discuss about the methodology (especially if it is different from others) if needed. If something novel or new information is obtained, you may put it as a new hypothesis to be explored in future studies. Please do not overstate any information which was not related to your experiment. For example: if you have found that 25-hydroxy Vitamin D level was different between obese and non-obese subjects and it was significantly low in obese, please do not comment that the obese persons might benefit from Vitamin D supplementation. This statement was not studied in your experiment and needs a separated and dedicated RCT to be valid.

Some journal also needs some information on the **'Limitation of the study'**. Please note that if you have calculated the sample size, it should never be perceived as a limitation of the study. However, if something in not done or tested for some reasons (like logistic or economic constrains) which is not extremely important but should have been done ideally, it should be mentioned as a limitation. Again it is also essential to know that as the experiment was done on a particular population, it should not be generalized to be applicable in other age groups or other ethnic population. This also needs to be considered in section 'Limitations of the study'.

Returning back to the **Abstract** section, it is necessary that this section should be structured. For most of the journals, it must be limited to 250 words. The main focus should be on the 'Introduction' which in 3-4 sentences should be able to state the hypothesis i.e. why the study is performed, following the same format that we have already discussed at length. In the 'Method' section, it is necessary to state the nature of the study and enumeration of the general and special methodological processes only without any additional details. While in the 'Results' section, it is not possible to mention about all, it is mandatory to put the main observations in short (including the numerical comparative results of main findings with significance, if word limit is not exceeded). Finally the 'Conclusion' should be made in 2-3 sentences and it should be crisp and conform to the hypothesis and the results. Also try to make the title short, novel and attractive so as to draw the attention of the reviewer.

Before concluding, it is necessary to mention that you should choose an appropriate journal for your article. For example, some journals publish articles based on patho-physiology, some are interested in clinical epidemiology, some are interested in clinical research, and some journals do not publish meta-analysis and so on. You must be careful about the audience of your article before selection of your journal. Impact factor is also a big issue before you send an article to a particular journal.

Please note that the article must be written in a very simple language, easy to understand, with no grammatical errors and without any unnecessary capitalization. Ornamental English has no special privilege in this respect. One small tip is that: You may send it to some of your reliable colleagues or friends or researchers to get their input. You may acknowledge their names but this help does not qualify them for an authorship for the article as per standard guidelines laid by ICMJE *(International Committee of Medical Journal Editors)*. Alternately you may follow this trick also: Complete the write up, forget it for about 2 weeks and then work on it again. You will surely find many discrepancies which evaded your notice earlier as you were very close to it at that time.

So to conclude, if your research work is hypothesis-driven, inclusion/exclusion criteria and intervention (if any) are optimum and ethically approved, the number of subjects are adequately powered to address the hypothesis, appropriate statistical tests are applied and results have some novelty of information in the clinical or research field and conforms to the hypothesis, it is very likely that your article will not get rejected at first sight and is bound to reach the stage of peer-review. If it undergoes review and is then rejected, you will also get the reasons for the rejection from 'Reviewers' comment'. You could amend the article in lines of their suggestions and resubmit to some other journal with less impact factor and you are likely to get 'SUCCESS'.

Happy publishing.

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