



Standard measures of scientific journals' credibility—current and future perspectives

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Publishing scientific content as research papers, reviews, reports, and short communication is conventional and the most widely used practice in current era. Almost 25,000 biomedical journals are available globally for processing and publishing scientific content. The numbers of scientific journals are increasing annually by 3.5% worldwide.¹ Electronic journals/magazines have more 'reachability' among the global community than paper communications. Publishing articles in journals have been in existence for more than 300 years, and their role is to provide a platform to communicate new findings of research.² Author submissions are vital for any journal and it 'gives life' to the journal. The author submissions are based on each journal's audience and their impact on the scientific community. The main objective of this editorial is to discuss about the measures of scientific journals' credibility, which may enhance the current knowledge and facts to readers of Journal of Young Pharmacist.

Measures of scientific journals' credibility

In the past, scientific papers used to be more of a leisurely venture, but the present day scenario is completely different. Journal quality is determined by the 'Indexing statuses'. Gross and Gross first reported the use of counting references to rank scientific journals. Later, Garfield and Sher of the Institute of Scientific Information (ISI) suggested a method for calculating 'Impact factor'. The aim of ISI is to create Journal with Impact Factor (JIP), which will aid the Science Citation Index (SCI) for ranking purposes. The first report of SCI and JCR (Journal Citation Report; bi-product of SCI) was published in 1963 and 1975 respectively.³

Usually, indexing will be based on each journal's scope and quality of papers published in that journal. Normally, biomedical journals are indexed with Medline, Pubmed/Pubmed central, Scopus and Thomson Reuters. Pubmed and Scopus very large databases and have abstracts as well as full paper links with that data base. This enables the global user to have link with recent advances and global scientific communication. Moreover, the search engine provides the 'sciensomatirc data' for all the indexed articles, and provides citation alerts to the requester. The term 'sciensomatirc' may be defined as the quantitative and qualitative measures of the scientific literate. Few indexing

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agents have come up with 'Source Normalized Impact per Paper (SNIP)', which gives an idea of the indexing status of each paper published in that particular journal. SNIP details can be accessed in Scopus indexed journals in indexing agent website.

Determining factors of journal credibility

The credibility of each journal can be assessed by various factors such as indexing status (available in PubMed, Ulrich's Periodicals Directory and JCR database) and impact factor. Impact factor is a measurement of average citations received over a two years period and it may not figure out the real impact of the journal.^{4,5} The following factors may determine or influence positive impact in the scientific community.

- Quality/originality of the paper
- Accuracy of the data published
- Percentage of internationalization
- Percentage of collaborative research
- Journal user (citation and reachability)
- Access system
- Citation index

Quality/originality of the paper

Many a time, journals publish variety of papers which include reviews, original research, short communications, correspondence, recent trends, case reports, etc. However, the contribution of original research papers is very high for a journal's future. The research paper should be free from plagiarism, fabrication of data and other malpractices. In recent years, number of papers withdrawn after publication has increased gradually, this does not reflect well for and on the scientific community. Publication is a trustworthy process, and author has to respect the publication ethics.²

Accuracy of the data published

Authors are the responsible persons for the data (in their articles) presented in the journal. Sometimes, the editor may not be able to assess the quality of data presented in the journal, and he/ she may seek help from the review process to aid in the final decision. Authors also need to archive their research data after publication, because sometimes the editor or journal user may request the author to provide their data for a clear understanding of their work. In recent years, many authors are citing a paper by reading the abstracts available in PubMed, Scopus or any other bibliographic data base. This is an unethical publication practice. In our previous experience, few of the papers were withdrawn by the author when we requested to submit the copies of the cited paper and a copy of Ethics Committee's approval letter. Hence, we

suggest and recommend authors to preserve the data of their research, copies of the referred papers and author declaration information for future references.

Percentage of internationalization

Many times we can observe internationalization (is the process of increasing involvement of enterprises in international authors/readers) on the research papers. Sometimes author may think, internationalization can influence the publication process, but it's in reality, a prime example of author bias. Many times manuscripts get rejected because of the scope of the manuscript into that particular journal and depth of the research. Sometimes, the editor also influences the publication process by 'taking care' of known authors and invited reviews,. This does not help the journal to achieve it's true objective.

Percentage of collaborative research

This is one of the factors for authors to expand their core activities. Collaborative research improves the quality of the work, depth of the research and gives more hands to complete the targeted work in an effective manner. Before collaborating, the authors have to enter into "Gentleman's agreement" between themselves for sharing of the research outcomes.

Journal user

The main purpose of publication is to make the authors work more visible. Since the Neolithic era, publication was and is one of the most important processes to document our knowledge and make it available for others.⁶ Hence, visibility of the publication is one of the important criteria for credibility of the authors' manuscripts.

Access policies

It depends on the publisher and the origin of their publication. Few publishers are allowing user/ author to use publisher material based on the compliance of 'Creative Commons Attribution 4.0 International License'. Author must also understand the access policies of their manuscript. Sometimes, the authors may upload the 'access-restricted articles' in public domain, which is an unethical practice. Before uploading any access- restricted article into the public domain, authors have to go through the copyright information of that particular journal.

Citation index

It is a factor which gives the number of users who've cited the article in their papers. In 1960, Eugene Garfield's Institute for Scientific Information (ISI) introduced the first 'Citation index' for the academic journals. In recent years, citation index of the scientific journals are done by ISI and

SNIP is carried out by Scopus. The number of citations for a single article can be found in Google Scholar.

Particulars	Journal Metrics Values of Journal Young Pharmacist		
	2011	2012	2013
SNIP	0.649	0.765	0.869
IPP	0.408	0.727	0.941
SJR	0.208	0.341	0.391

Source: <http://www.journalmetrics.com> *Last accessed on 28/03/2015.

Influencing factors on scientific publications

The time and cost of the publication are determining factors in publication sector. Anything not highlighted at the right time loses its relevance to the scientific society. There are three important different bias influencing the scientific publications *viz.*, editor bias, reviewer bias and author bias.

Infusing factor	Sub-category	Observation	Justification
Editor bias	Location bias	Manuscripts submitted from some region(s) get rejected by the editor.	Questionable publication ethics by few authors from that particular region will induce editor bias.
	Institution category	Manuscripts from unfamiliar or small institutions usually might get rejected by the editor.	Inst. of the author may not be consulted and much attention must be given to the scientific content.
	Result bias	Mainly statistical analysis contributes in bias in results. Many authors use the wrong statistical method or erroneous message on the statistical test outcome. Sometimes, authors use multiple tests to compare the significance and this is not presented in a comprehensive manner.	Author may correct their point of view, but editor/reviewer may not be familiar with the test used by the author. Author has to give the interpretation in clear, concise manner, and must be ready to provide the worksheet to the editor at any time (if so required).
	Language bias	Even if the outcome of the research has significant contribution to research, many times the manuscript gets rejected due to language content and grammatical errors.	Author should consider all the issues in manuscript preparation and must understand the policies of the journal before submitting to the journals.
	Bias on invited articles	Sometimes the author of the invited article may influence the journal editors to publish his/her article (invited article) in prescribed time.	Instead of sending the invitation to the review editors to write a paper on particular topic, the editor can send a invitation to the potential researcher who has significant contribution in the subject area.
Reviewer bias		Reviewers are vital determining factors for access to and recommendation of the manuscript for publication. The editor of any scientific journal cannot be master in all subject areas and he/she may require help from the subject expertise.	Sometimes, reviewers may give wrong interpretation(s) from the study outcomes, and that can cause the manuscript to get rejected.
Author bias	Funding bias	It is one of the influencing factors for paper publication. Authors may perform well, find a significant outcome and forget to document it as a publication. This is because of the self-interest of the authors. Moreover, if any study is carried-out with help of funding, the author(s) have to show the proof of documentation of the study outcome by publishing the work.	Author(s) should document their findings on a global platform whether the findings are positive or negative. The researchers should consider the study outcome is a finding and try to archive it in the global platform by publishing or patenting their work.
	Result bias	Result/outcome of the studies are very important for research. However, in recent years the most authors consider only positive findings as a result, and don't publish their negative findings, assuming that it won't get much scientific attention.	Authors have to consider both positive and negative findings as a result and try to archive it in a proficient manner.

What are PubMed indexing and Scopus indexing?

Pubmed is a free search engine for accessing the abstracts on life sciences and biomedicine in Medline database and this is maintained by the United States National Library of Medicine (NLM) at the National Institutes of Health. PubMed first released in office-based Medline searching in Jan. 1996 and free public version was made available in June 1997. PubMed article has article identifier which was not similar to the PubMed Central Identifier (PMCID) and this allowed authors to ensure their article(s) were easily traceable. On 17/12/2014, PubMed launched the 'PubMed Commons' (A forum for scientific discourse) tab on their website which enables the user to record their comments on the PubMed indexed article. In 2000, staffs of National Center for Biotechnology Information (NCBI) library created PubMed retrieval system and PubMed Central. As of February 2014, the PubMed central archived 2.9 million articles and has given free access to users.⁷

Scopus is a product of Elsevier and is a bibliographic database of Elsevier. It contains abstract, citations, author profiles, name formats, institution mapping, journal merit information, author merits, etc. It covers nearly 22,000 titles from more than 5,000 publishers. The main difference between these two indexing agents is the subject which they are indexing. Usually, Pubmed indexes biomedical journals and Scopus indexes both biomedical and social science journals.

Current status of review process

Currently, many journals work with single blind or double blind review system to review the manuscript. In single blind system (author will be 'blinded'), the author name and affiliation can be viewed by the reviewer and that does influence the acceptance rate. In double blind review

process, the author's name will be masked and both the parties (author and reviewer) are 'blinded' in the review process.

Future perspective in review process (Open review process)

In the future, author submission can be left for readers' review before publication. Many scientific journals opt for the double blind or single blind review process and some times, the reviewer influences the article publication. Some years ago, PUBMED opened the gate for open review in their portal. One could register and proffer comments on indexed articles in PUBMED central. This enhanced the author's performance and they devoted much attention on presenting their paper(s). Many journals have an 'Adding comments' option at the base of the articles published with them, but it's not utilized on a frequent basis by both the journal users and readers. Since lots of changes arise in the global scientific community, in the future, journals can opt for the relevant open review system, in order to ensure an even better quality of the manuscripts published by them.

How does open review process work?

The editors/editorial staff may leave the title of the manuscript and abstract of the same on their online manuscript management system for a pre-set time period and wait for 'reviews request' in that specific time period. One of the editors of that particular journal reviews the profile of the requester and sends the complete manuscript to the eligible requester for review. In this manner, an increased interaction between the journal and reviewer takes place, and eventually, the double-blind review process with better quality can be ensured.

REFERENCES

1. There are 25,400 scientific journals and their numbers in increasing by 3.5% a year. Available in <http://casesblog.blogspot.com/2011/03/there-are-25400-scientific-journals-and.html> [Last accessed on 27/02/2015].
2. Parasuraman S, Raveendran R, Mueen Ahmed KK. Violation of publication ethics in manuscripts: Analysis and perspectives. *J Pharmacol and Pharmacother*.
3. Parasuraman S, Mueen Ahmed KK. Issues in manuscript writing. *J Young Pharm*. 2013; 5(2): 35-7.
4. Quick guide to accessing journal credibility. Available in http://health.library.emory.edu/documents/quick_guide_to_assessing_journal_credibility2.pdf [Last accessed on 11-04-2015]
5. Saha S, Saint S, Christakis DA. Impact factor: a valid measure of journal quality? *J Med Libr Assoc*. 2003; 91(1): 42-6.
6. Mathur VP, Sharma A. Impact factor and other standardized measures of journal citation: A perspective. *Indian J Dent Res*. 2009; 20(1): 81-5.
7. Lindberg DA. Internet access to the National Library of Medicine. *Eff Clin Pract*. 2000 Sep-Oct; 3(5): 256-60.