



**Original Article**

**Opinion of Health Care Professionals towards Submitting a Research Article to a Journal.**

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**Abstract:** There are no specific criteria to measure a journals quality, but indexation of a journal in a reputed database such as PubMed/Medline, SCOPUS, EMBASE etc, and whether the journal is having an impact factor produced by Thomson Reuters are looked upon. Many more indexation database have come up recently, and authors are publishing more articles than before.

**Key Words:** Indian medical research; Indexed journal; Impact factor; Publication

**Introduction:**

The first question of an author after completing his research is, where to publish? Although there are many factors to consider while submitting a research paper to a journal, two most important things are indexation of the journal and controversial impact factor (IF). It is considered that papers published in journals with high IF or indexed with Pubmed are likely to have a higher research impact compared to papers published in non-indexed or low-IF journals. Hence, an author gives preference to journals with Pubmed indexing or high IF.(1)

But the problem is coverage of Indian journals in databases like the Pubmed, Science Citation Index, EMBASE, SCOPUS is very low. For example, of the 5500 plus journals covered in the Pubmed system, just 39 (0.71%) are from India. Similarly, in the EMBASE of Elsevier, the number of Indian journals is 128 (1.71%). It is no better in any other global databases.(2)

Regarding IF, it is used as a proxy for measuring the quality of a journal. IF is awarded to the journals indexed in Thomson Reuters Journal Citation Reports. IF has long been a controversial issue and has been criticized for manipulation and incorrect application. (3) When an author is looking for indexed or a high impact journal, he wants his research to

reach maximum possible readers. Indexation services give journals wider coverage for easy accessibility to their published articles.

Apart from indexation and IF, the other factor which affect the submission of a research article are publication time and fees, ease of submission, reach of the journal, online submission and simple author instructions.

Selection of high quality journal becomes a difficult decision for the authors as there is no clarity on the issue. Since some journals are indexed in highly rated indexation services like Pubmed but have no IF, while some have high IF but are not indexed in Pubmed. Recently many more indexation services have come up. These include Directory of open access journal (DOAJ), Genamics Journal Seek, Hinari, Index Copernicus, Open J Gate, Pro Quest, get cited, new jour, Ulrich's International Periodical Directory etc. Here the question of relevance of these indexation services arises and also whether the journals indexed with any of these databases will be considered as indexed.

India publishes a huge number of journals, there are about 600 journals in biomedical subject alone. (2) But, the major question is how to assess the quality of these journals. Due to pressure of publishing by academic institutions and so called publish or perish culture, there has been increase in number of publications from India, but these articles are published in journals which are not indexed in PUBMED, SCOPUS, EMBASE and also the quality of these publications remains dismal. Due to lack of quality of these publications and also due to increased number of journals and publications in future it might lead to a new culture known as "get international, get indexed and cited or perish".

If we go by the numbers, a recent article on scientometric analysis of Indian research (4) concluded that India holds

12th rank among the productive countries in medicine research with a global publication share of 1.59% and registering a growth rate of 76.68% for the papers published during 1999-2003 to 2004-2008. But the paper also states that high quality research in India is grossly inadequate and requires strategic planning, investment and resource support. Considering all the above factors, we came up with the present study, with an objective to know the opinion of health care professionals towards submitting a research publication to a journal.

#### Material and Methods:

This was a cross-sectional questionnaire-based study conducted in two medical colleges in south India, in November 2013. Prior approval was taken from the Institutional Ethics Committee to conduct the study. Structured questionnaire contained 15 close ended questionnaires. In addition, space was provided to give suggestions and provide any additional information.

Participants were explained the purpose of study and were requested to complete and return the questionnaire immediately. The selected teaching faculty was from different cadres i.e. from tutors to professors. Those who had published at least three original articles were included in the final analysis. More than one response was allowed in some questions (Appendix I). The questionnaire was pre-tested in ten junior faculty members and was suitably modified before administering to the respondents. The information was recorded and analyzed using Microsoft Excel (2007 version)

#### Results:

A total of 297 respondents participated in the study, out of which 263 completed the questionnaire. the demographic data and the number of publications is shown in Table 1.

Academic Post (number)	Total experience (in years) (mean)	Age (in years) (mean)	Total number of publications	Number of publications as first author
Professor (54)	18.2	54.5	87	32
Associate Professor (72)	12	42.5	95	56
Assistant Professor (84)	6.3	34.1	107	87
Tutors (63)	4	29.3	93	36

Assistant professors had more number of publications and also had the maximum number of publications as first author. The number of teaching staff who were willing to pay the publication fees and the amount is shown in Table 2.

Academic Post (number)	None	<2000 Rs	2000-5000 Rs	5000-10000 Rs	>10000 Rs
Professor (54)	12	23	9	5	5
Associate Professor (72)	18	36	10	6	2
Assistant Professor (84)	24	42	12	4	2
Tutors (63)	27	24	9	2	1

More than 90% of the staff were not willing to pay the publication fees of >10,000Rs, but majority were willing to pay if the publication fees was <2000Rs.

The number of articles published in indexed journals is shown in Table 3

Academic post (number)	No. articles published in indexed journals	No. of articles published in pubmed indexed journals
Professor (54)	87	9
Associate professor (72)	95	6
Assistant professor (84)	107	4
Tutors (63)	93	3

Among the papers published <10% were published in journals which are pubmed indexed. The other indices in which the articles published were, Index Copernicus, Google Scholar, EBSCO, Open J Gate, Scopus and Embase. Highest percentage of Pubmed indexed journals was published by professors i.e. around 10%.

The opinion regarding impact factor generated by Thomson Reuters is shown in Table 4.

Academic post (number)	Awareness about impact factor		Number of articles published in journals having impact factor of >1
	Yes	No	
Professor (54)	9	45	2
Associate professor (72)	12	60	2
Assistant professor (84)	15	69	1
Tutors (63)	14	49	2

Most of the staff had no idea about impact factor, but the knowledge about impact factor was more in junior faculty than that of the professors. The articles published in journals having impact factor of more than one was less than 3% in all the academic staff.

Results for other questionnaires:

The criteria taken into consideration while submitting a manuscript to a journal are the rapid publication within two months and online submission (70% of the respondents opted for these two criteria's). Only 11% of the Faculty responded positively for all the criteria (question 3). About 59% of them published for getting academic promotions whereas 20% of the faculty opted for all the three criteria (question 4).

The respondents preferred the journals having international reach, journals having easy instructions to authors, and the Version of either print or online did not matter to most of the respondents. Maximum of the respondents (77%) opted for new journals which are indexed (not Pubmed indexed, but indexed in other database). The knowledge regarding Indian journals database like IndMed and MedInd was very low amounting to only 11%.

Around 72% of the faculty responded that acceptance rate is the most difficult factor for publishing articles in Pubmed indexed journals followed by instructions to authors. The respondents were least concerned about the publication time. Most of the faculty (87%) have not heard of any other bibliometric indices of a journal apart from impact factor. 90% of the faculty opined that publications should be made compulsory for promotions, and 69% of the faculty were willing to publish till their elevation to the post of professor. Only 12% were willing to publish till retirement.

Regarding submission to an international journal, only two professors had submitted case reports to LANCET which was rejected and rest of the faculty did not submit to any international journal of repute such as JAMA, NEJM etc. In national journals 59% of the staff had submitted either to

JIMA, IJMR, NMJI etc and the acceptance was around 30% of all the staff.

#### **Discussion:**

Scientific publishing capabilities, which includes both quality and quantity, reflect the strength of science and technology of a country, but recently in India, only the number of articles has increased rather than the quality.(4) The low rates of internationally published articles, the 'inadequate' or 'poor' quality of the articles published, and the lack of relevant research have often been commented upon.(5-7)

Due to internet revolution there has been an increase in number of journals, which are publishing more than hundreds of manuscripts in a single issue and it is highly impossible to conduct peer review process in a quarter. It is the worst part of the journal publishing and such journals will damage the country's image on scholarly content and its publishing.(8)

Authors should be wise enough and have good sense in choosing a right journal, which will impact their writing and could be further used and cited by other researchers. Journal quality will always be judged based on many factors, such as editor's experience, Editorial board, Quality of articles, Quality of peer review, Reviewers, publishing on time, non-interruption in publishing of issues etc". (9,10) Nowadays authors are interested in increasing the number of papers in their resume, and are not concerned about the quality of journal.

To be recognized as an authoritative, high-quality scientific source of information, a journal must be widely available. Indexing and abstracting services facilitate the wide availability of a journal and provide information to researchers that are relevant to the field. Though each discipline may have indexing and abstracting services specific to the field, the most well-known, widely accepted databases include:

- PubMed/Medline
- ISI Web of Science
- SCOPUS
- EMBASE

The salient features of these databases are described below.

#### **PubMed/Medline**

PubMed a free resource that is developed and maintained by NCBI (National Center for Biotechnology Information) at the NLM (National Library of Medicine), at US National Institute of Health (NIH).(11) PubMed comprises over 22 million citations for biomedical literature from MEDLINE, life science journals, and online books. PubMed citations and abstracts include the fields of biomedicine and health, covering portions of the life sciences, behavioral sciences, chemical sciences, and bioengineering.(11)

MEDLINE is the U.S. National Library of Medicine's (NLM) premier bibliographic database that contains over 19 million references to journal articles in life sciences with a concentration on biomedicine. A distinctive feature of MEDLINE is that the records are indexed with NLM Medical Subject Headings.(12)

However, PubMed has limitations, like it excludes a large body of both peer reviewed and also the so called "grey" literature (non peer reviewed). Both are significant sources of knowledge, we should make better use of. Peer Reviewed literature (that has undergone pre publication peer review) has its own limitations(13) that grey literature is free from.

Grey literature does not suffer from any form of publication bias, is instant, and guarantees true freedom of expression to scientists with contrarian views. Conn et al (14) noted that meta-analyses that exclude grey literature is likely to over-represent studies with statistically significant findings.

#### **ISI Web of Science**

It covers multiple academic disciplines including the sciences, social sciences, arts, and humanities, and across

disciplines. Web of Science does not cover all journals, and its coverage in some fields is less complete than in others. Web of science consists of six databases: Science Citation Index Expanded (covers over 7,100 major journals across 150 disciplines); Social Science Citation Index; Arts and Humanities Citation Index; Conference Proceedings Citation Index; Index Chemicus; and Current Chemical Reactions.(15)

Web of science is different from other "abstracts and indexing" databases because of the strict journal selection process. Journals selected for Web of science will have their impact factor (IF) calculated by the Journal Citation Report (JCR). IF has been criticized for manipulation and incorrect application by one editors of NATURE which is one of the most reputed journals(3). There are multiple factors that could bias the calculation of the IF.(16)

IF is not available for all indexed journals. Not all journals indexed even in MedLine/PubMed are indexed in the Thomson Reuters Journal Citation Reports. Similarly, not all journals indexed in Thomson Reuters Journal Citation Reports and consequently have an IF are listed in Index Medicus/PubMed/MedLine.

#### **SCOPUS and EMBASE**

These are the products of Elsevier. Scopus contains over 20,500 titles from 5,000 publishers worldwide, 49 million records, 78% with abstracts, includes over 5.3 million conference papers and it provides 100% Medline coverage. (17) A study from 2008 (18) compares PubMed, Scopus, Web of Science, and Google Scholar and concludes "PubMed and Google Scholar are accessed for free. Scopus offers about 20% more coverage than Web of Science, whereas Google Scholar offers results of inconsistent accuracy. PubMed remains an optimal tool in biomedical electronic research. Scopus covers a wider journal range but it is currently limited to recent articles (published after 1995) compared with Web of Science.

Embase's comprehensive journal and conference coverage, together with in-depth drug indexing and daily updates, supports tracking and precise retrieval of drug and disease information. From preclinical study to the search for important toxicological information, Embase offers the confidence and tools you need to capture the most relevant and up-to-date biomedical study research.(19) If you're searching MEDLINE, you're only seeing part of the picture. Embase holds millions of indexed records from thousands of active, authoritative journals, including all of MEDLINE as well as 5 million+ records and 2,000 biomedical journals not currently covered by MEDLINE.(20) About 30% of journals that may be searched through EMBASE also appear in MEDLINE; however, EMBASE has a more European emphasis than MEDLINE and includes more non-English language biomedical journals than MEDLINE.

The above discussion raises an important question, which indexation should be considered best and most valid? How to compare the quality of articles published in journals indexed with different indexation services? Medical council of India (MCI) guidelines also recommend indexed publications for teaching faculty in medical colleges, but doesn't specify the indexation database. In the beginning when publication was introduced as a criteria for Promotions, it was mentioned that publication should be in Index Medicus/National journal. Subsequent amendments state that publication should be in indexed/national journals (21) and the word 'Index Medicus' has been omitted.

Consequently many more authors would be publishing than ever before.(22) But these are being published in Journals with serious ethical and scientific issues such as publishing the articles within a week, high publication fees which ranges from INR 500-5000 per author, publishing 100-150 articles per issue which will raise a question on authenticity of peer

evaluation, and indexing in new indexation services other than Pub Med, SCOPUS or EMBASE.

Selection of high quality journal becomes a difficult decision for the authors as there is no clarity on the issue. Is it mandatory to publish only in the journals indexed in PubMed/Medline? Is it appropriate to make submissions to journals having a high impact factor although they are not indexed with PubMed/MedLine.

Another important question would be, whether publishing in Pubmed indexed journals highlight the issue of a particular region, say for e.g. dengue or Kyasanur forest disease. These are regional problems and the criteria should be to publish in Indian journals rather than worrying about indexation and impact factor. Why should a research done in the Indian context with relevance to the Indian population be published in a journal not available to most of the readers and libraries in India, as most of the database are subscription based expect PubMed. An article by Dev Kumar R. Sahu,(23) questions the importance of indexation in Indian context.

Recently due to internet revolution, many indexation services have come up. These include DOAJ, Genamics Journal Seek, Hinari, Index Copernicus, Open J Gate, Pro Quest, SCOLAR, and Ulrich's International Periodical Directory etc and also bibliometric values such as ICV value, SCImago journal rank have come up. Are these indexations services equally relevant? Whether a journal indexed with any of these databases be considered "indexed".

It is good to publish in journals indexed in highly rated indexing database as well as those with high IF, however, the value should be placed on quality evaluation, local relevance, timely publication, comments after publication and peer review processes. These are some questions that need deliberations. Associations of editors of medical journals such as International Committee of Medical Journal Editors (ICMJE) or a regulating body such as MCI could play a pivotal role in such discussion.

#### Limitations of the study

The limitation of the study is the study was conducted in only two medical colleges and no statistical analysis was carried out in the present study, more studies regarding opinion of authors regarding submitting of a research paper should be done in many other medical colleges and the data should be analyzed like that of a meta analysis.

#### Conclusion

The knowledge regarding quality of a journal, particularly to that of indexation and impact factor of a journal is grossly inadequate among the doctors. Necessary steps should be taken by editorial board of reputed journals and associations such as ICMJE and regulatory authority such as MCI to spread the knowledge about quality of a journal.

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