REVIEW ARTICLE

Medical Publications: Where Does Bangladesh Stand

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Abstract:

Background: A country's intellectual and academic status can be determined by the quality and quantity of its published scientific articles. Impact Factor (IF) is a widely accepted tool to discern this status. The aim of this review paper is to get an idea about the status of medical publications in Bangladesh.

Methods: Advanced searches were performed to carry out this study. Various National and International databases were used. Literature searches were performed using ISI, Scopus and PubMed (Medline) computer databases.

Results: Though there are 155 medical and dental journals in Bangladesh, only 4 journals from Bangladesh are indexed in the Scopus database (Scientific Bangladesh, 2019). The output of indexed medical journals from Bangladesh is much less than other South Asian countries like India and Pakistan.

Conclusions: Comparing to our two very neighboring countries India and Pakistan, we still lag behind in terms of medical publications let alone other European countries. Government as well as other concerned authorities should come forward to mitigating this disparity.

Keywords: Bangladesh, Impact Factor, Indexed journal, Medical publication.

J Inv Clin Cardiol 2022; 4(1): 31-37

Introduction:

A country's intellectual and academic status can be determined by the quality and quantity of its published scientific articles. Worldwide the quality of medical journals is measured by prestige. It is a vague and a qualitative term that reflects the reputation and popularity of the journal.

Impact Factor (IF) is a widely accepted tool to discern this status. It is a measure of the frequency with which the average article in a journal has been cited in a particular year. It is used to measure the importance or rank of a journal by calculating the times its articles are cited which is an important indicator for evaluating research performance.[1]

The aim of this review paper is to get an idea about the status of medical publications in Bangladesh.

The results from the data analysis are presented in various illustrated charts to show the status of the

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journals listed in the Scopus database at the Bangladesh and South Asian levels.

In spite of the availability of medical journals, the number of indexed journals is very low. An indexed journal is one which has to pass through a review process done by a journal indexer. Though every institution can be an indexer, a trusted and reputable body is more plausible in this regard. There are few journal indexing agencies worldwide: Google Scholar, Scopus, PubMed, EBSCO, IJIFACTOR, EMBASE, DOAJ: Directory of Open Access Journals, ISI Indexing, Medline. These are the most reputed journal indexing agencies where author can check the indexing and apply for it.

Study Methods:

This study is based on Bangladesh Medical Research Publication Database, retrieved from the Bangladesh Medical & Dental Council (BM&DC) website. Advanced searches were performed to carry out this study. Various National and International databases were used. Literature searches were performed using ISI, Scopus and PubMed (Medline) computer databases. Data was then analyzed through MS-Excel. The results from the data analysis are presented in various illustrated charts to show the status of the journals listed in the Scopus database at the Bangladesh and South Asian levels.

Results:

Though there are 155 medical and dental journals in Bangladesh, only 4 journals from Bangladesh are indexed in the Scopus database which means in terms of percentage only 3% journals are indexed.[2]

According to the BM&DC, there are 155 medical and dental journals in Bangladesh. Out of these 155 medical and dental journals, only 12 are dental journals, and the remaining 143 are medical journals.[3]It means that 92% of BM&DC affiliated journals are medical journals.

In most fields, the impact factor of 10 or greater is considered an excellent score while 3 is flagged as good and the average score is less than 1. This is a rule of thumb.[4]

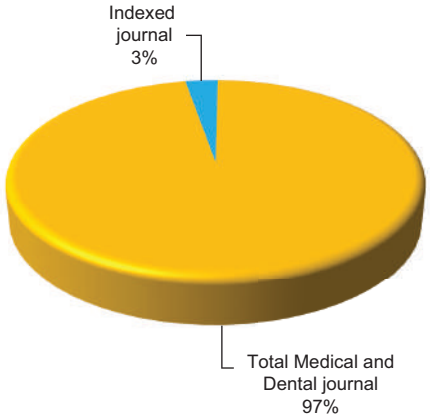

Fig.-1: *The ratio of non-indexed and indexed journals of Bangladesh.*

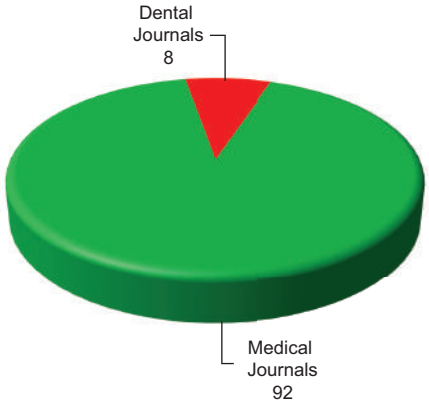

Fig 2: *The ratio of medical and dental journals in Bangladesh.*

Table-I

Medical Journal Bangladesh, Scimago Journal & Country Rank

Title	Type	SJR	H index	Total Docs (2020)	Total Docs (3 years)	Total Refs. (2020)	Total cites (3 years)	Citable docs (3 years)	Cites/Doc. (2 years)	Ref./ Doc. (2020)
Bangladesh Journal of Medical Science	Journal	0.255Q3	10	136	364	3751	223	332	0.68	27.58
Bangladesh Medical Research Council Bulletin	Journal	0.136Q4	19	27	88	576	13	82	0.17	21.33
Journal of Medicine Bangladesh	Journal	0.121Q4	5	30	85	472	18	75	0.24	15.73
Bangladesh Journal of Obstetrics and Gynaecology	Journal		3	40	0	763	0	0	0.00	19.08

In 2018, the authors from Bangladesh published 3135 scientific and technical journal articles. Therefore, in our country 20 articles per million people were published. The corresponding figures for selected countries are: Nepal: 28 articles per million, Vietnam: 45 articles per million, Pakistan: 60 articles per million, Sri Lanka: 64 articles per million, Bhutan: 70 articles per million, India: 100 articles per million, Indonesia: 101 articles per million, Thailand: 182 articles per million, China: 370 articles per million, Malaysia: 750 articles per million, South Korea: 1298 articles per million, Singapore: 1990 articles per million, Australia: 2153 per articles per million. Switzerland has the highest number of articles per million (2508).[5]

It is clearly depicted that the number of indexed medical journals in our country is merely inadequate. In case of India we will get a very different scenario. Among 570 total indexed journals there are 203 medical journals[6]. That means in terms of percentage India has 35.61% medical journals.

In case of Pakistan, despite having less number of medical journals than ours their number of indexed journal is more. Among 97 medical journals they have 6 and 3 indexed journal in PubMed and ISI databases respectively[7].

Table-II

Top ten countries with most research Paper

Country	Document	Citable documents	Citations	Self-Citation	Citations per Document	H index
1.China	788287	744042	971502	512540	1.23	1010
2.United States	766789	624554	933944	412567	1.22	2577
3.United Kingdom	249408	198500	366213	98231	1.47	1618
4.India	217771	191590	165237	69967	0.76	691
5.Germany	216474	174524	266602	77781	1.23	1429
6.Italy	155135	127502	239812	78810	1.55	1135
7.Japan	147341	127408	132663	36591	0.90	1118
8.France	139661	112838	180941	40432	1.30	1286
9.Canada	131684	110247	174238	35780	1.32	1299
10.Russian Federation	129270	119195	75897	32033	0.59	652

(Source: Scimago Journal and Country Rank, retrieved from: https://www.scimagojr.com/countryrank.php)

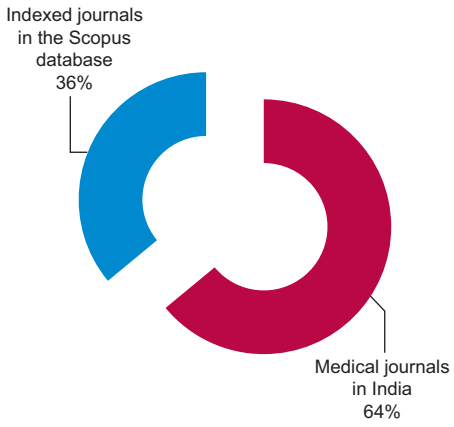

Fig.-3: *The ratio of indexed medical journals in India.*

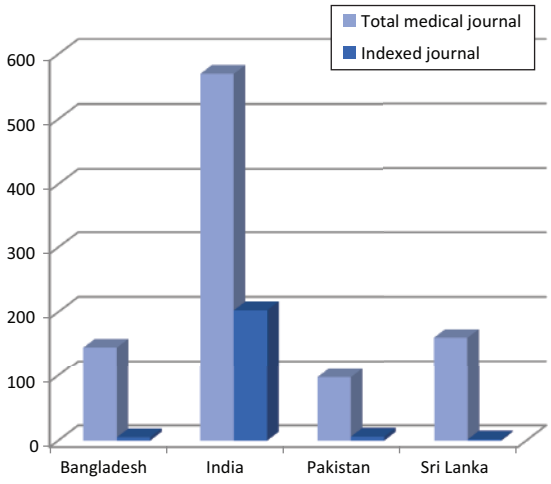

Fig.-4: *Comparative picture of indexed medical journals in South Asian countries.*

Discussion:

In this era of globalization, it's of highly significance to share knowledge and identify novel solutions to locally important problems. Research can serve that purpose conscientiously. The main goal of most medical journals is to improve medical care by publishing sound scientific articles (both research and practice papers) and focusing on topics that are of great importance to its readership. Secondary journalistic goals include improving the impact factor and breaking latest medical news[8].

From earlier discussion it has been noticed that the output of indexed medical journals from Bangladesh is much less than other South Asian countries like India (203) and Pakistan (9). In Pakistan, the total number of medical journals is less than ours, but the number of indexed journals is more. Their total number of medical journals is 97. Of these, journals indexed to the PubMed database are 6 and in the ISI database are 3[7]. On the other hand, Sri Lanka, a South Asian country, has more medical journals than us, but Scopus journals have less than us. Among 160 journals only 2 journals are indexed in the Scopus database[9]. But apart from the impact factor there are many more indicators to be considered.

Being the main scientific core of the societies, it's the duty of the universities to perform a great portion of research work which is supposed to be handled by the faculties and the students. But unfortunately, it has been found that the faculty members are mostly busy with education rather than with research activities. So, mainly in the developing countries research activities are not adequate at the university level[10]. Without involving the students into research activities, it is impossible to incur and maintain a national level development as students play a major role in the development of a country as future researchers[11,12]. Through different studies it was found that most of the medical students, due to some existing barriers, are not willing to carry out research. Those barriers include the lack of information access, language difficulties, administrative regulations, insufficient budgets as well as the lack of knowledge on how to write formal research proposals[13,14,15].

Another important barrier that we found through this extensive review of literatures is the lack of time. Due to lack of time many researchers, as they claimed, couldn't publish enough research works.[16,17] The other main reasons claimed by many respondents included self-reported limited skills in English or in writing, limited submission skill, and difficulty in initiating writing. Limited skill and lack of merely increase the difficulties. It was found that this combination decreased the chance of publishing in a high-impact journals[18]. As there is greater interest in publishing results which will have immediate effects, negative results are often difficult to publish.[19] But as an international initiative has been taken to prevent this publication bias[20], this barrier is losing its power to impede the publishing in high impact-journals. On the other hand, Knowledge gathered from negative results may also be useful in achieving good non-deleterious patient care [21].

Another significant barrier is lack of funding. It has been seen that over decades low-budget assignment on publication is becoming a growing problem[22,23]. According to Pavia et al., publishing in high- and low-impact journals is also dependent of financial resources[18].

In one of the studies author[24] concluded that there are mainly four factors that can be considered as keys to research, i.e. consideration of intrinsic factors like motivation, facilitating the growth of talents, financial factors and use of information systems. Through different studies it has been found that the whole procedure from proposal to publishing is unnecessarily time consuming. So, it has become a necessity to revamp the structure and procedures of universities and their research centers. Moreover, the experiences of the research center managers can be used for the improvement of the bureaucratic procedures in the approval of research proposals.[25]

In a study by Ibrahim Abushouk *et al.*,[26] the inadequate understanding of the statistical concepts and lack of skill in scientific writing were the barriers to research. By Siemens *et al.*,[27] inadequate knowledge and training in research were the barriers to research in students. In a study by Bocar,[28] the lack of skill in analyzing and interpreting the results was one of the obstacles to research in the majority of students.

Ashrafi-Rizi *et al.*[29] mentioned students' inadequate skill and knowledge of research methodology among the main personal barriers to research. This finding was consistent with the body of other research findings.[30-34] However, it was different from the findings of Abedini *et al.*,[35] concerning the research skills in

their target population. It seems that the difference lies in the fact that in the research by Abedini *et al*.,[35] the target population was faculty members, whereas in this research, it was students. Students' knowledge of research technique can be improved by including research methodology courses at various university levels and holding regular practical workshops. Joibari and Sanagoo[36] have mentioned research methodology in the students' curriculum as a top priority.

According to Dadipoor *et al*.[37], university students rated high workload and intensive courses among the key barriers to research. This finding is consistent with that of the studies by Anbari and Jadidi,[37] Ashtyani and Shamsi,[38] Poornaseri *et al*.,[39] Kharraz *et al*.,[40] Russell *et al*.,[41] and Oliveira *et al*.[42] Medical students' tremendous workload in clinics during their education, as well as their rigorous courses, naturally limit their research efforts, even when research facilities are available. A study by Edwards[43] also showed that intensive courses are among the main barriers to research activities. To remove this research barrier, Houlden *et al*.,[44] recommended the introduction of summer research courses in the students' curriculum. The experience of the undergraduate research committee in Saudi Arabia in providing national and international research opportunities to undergraduate students during the summers of 2010–2013 with significant qualitative (learning) and quantitative (publication) outcomes can be considered as one of the successful examples in this regard.[45]

The role of a mentor in the journey of research is inexplicable. Mentoring can assist mentees in securing research time and resources, facilitating the writing process, improving writing abilities, and assisting in additional publications and research funding as part of their research goals[46]. Mentorship also helps expand academic prospects, and speeds up the development of academic and professional skills for mentees[47].

Professional scientific conferences can be a place to hone the research skills of a researcher. Sharing personal experiences and ideas on research can help anybody to upgrade their skill significantly. The oral, poster presentations and even the feedbacks from the audience can shape the very way of the writing process[48]. Formal training or seminars on time management, stress management, scientific writing, and effective communication would be also beneficial. For example, during scientific writing training, the practice of writing, the requirement of regular literature reading, and instructor comments will help one's writing skills and increase confidence in continuing to write[49].

Adopting an iterative process to enhance the writing quality can be a useful idea whereby a creator creates an outline or first draft and after that refines the draft over time. The layout and ensuing drafts will frequently advantage from talks and input from other individuals of the group.[50]

Undoubtedly, we need to put more emphasis on the quality of published articles, not just the number of publications. Medical and research institutions should come forward to train up new researchers, organizing seminars, symposiums and workshops to produce more skillful research personnel.

Conclusion:

In spite of all the drawbacks many researchers and scholars are still trying to increase the overall quality of medical journals and research articles. Government and other concerned authorities like

Bangladesh Medical & Dental Council, Bangladesh Medical Research Council, Bangladesh Medical Association should come forward in this regard and incorporate policies into their plan to develop the skill of the writers and scholars so that they become efficient to write articles maintaining international standard.

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