

# The influence of Iranian scientific journals in disseminating medical information

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**Background:** Scientific journals are the most credible and updated information resources for valid information in the various fields of science and technology. The present study investigates the status of Iranian scientific journals in disseminating medical information to the world of science. **Materials and Methods:** Total 163 Iranian medical journals accredited by national medical journals commission of Iranian ministry of health and medical education were evaluated through a cross-sectional study. The results were represented in descriptive statistics in the form of table and chart. **Results:** The study showed that 89.6% of Iranian medical journals were covered by regional information databases. Web of Science database indexed 22 (13.5%) Iranian journals in the field of medical science. Only six (6.7%) journals were indexed by Medline. Fifty-eight (35.6%) journals were in English, 102 (62.6%) in Persian, and three (1.8%) were bilingual which published their articles both in Persian and English languages. The highest Impact factor belonged to Iranian Journal of Allergy Asthma and Immunology. **Conclusions:** Improving scientific credibility of Iranian scholarly journals and their influence in disseminating medical information calls for a precise scientific and executive administration in publishing standards and also in the quality of content.

**Key words:** Bibliographic databases, biomedical research, information dissemination, knowledge management, periodicals

## INTRODUCTION

Development of countries is dependant upon the role they play in production and application of science and technology.<sup>[1]</sup> As updated sources of knowledge, scholarly journals have significant role in scientific communications. In fact, they are essential for improving research and practice in various fields of science. The most effective tools of disseminating medical knowledge are medical journals indexed by international information databases. Information databases are among the most valid online data resources which cover articles published by scientific journals in various countries. One of the most important international databases is Web of Science (WOS), known as "ISI Web of Science," which referred to the Institute for Scientific Information. WOS is now citation information in sciences, social sciences, arts, and humanities. About 12 800 world leading journals are indexed by this database.<sup>[2]</sup> Medline is the foremost bibliographic database in the field of medical sciences. Currently, Medline encompasses the bibliographic information and abstracts of more than 18 millions articles from approximately 5 516 worldwide journals.<sup>[4]</sup>

In Iran, of the numerous published medical journals, only those confirmed by the "Commission for

Accreditation and Improvement of Iranian Medical Journals" are considered as scientific research journals in the field of medical sciences. This prominence is given by Iranian ministry of health and medical education, deputy of research. The main objectives purposed by this commission are assessing the necessity of publication of a journal, determining or changing publication's level of credit, supervising journals performance, and representing appropriate methods for qualitative promotion of medical journals of the country.<sup>[5]</sup> Investigations on Iranian scientific productions reveal a significant growth in scientific productivity of Iran and Iranian universities in the recent years.<sup>[6-9]</sup> However, various factors are to be considered in order to increase Iranian contribution to the world science. One of these factors is to put endeavor into publishing articles of Iranian researchers in journals indexed by international information databases such as Medline and ISI WOS.<sup>[10]</sup> Indexing scientific documents in information databases is one of the meticulous methods of retrieving scientific information. <sup>[11]</sup> At the moment, the information of more than 300 thousands journal titles from 242 countries is available in Ulrich's Periodicals Directory. Ulrich is a comprehensive information database which covers journals' bibliographic information including title, publisher, international standard serial number (ISSN), publication frequency,

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language, country of publication, postal address and electronic address, price, and the indexing databases.<sup>[12]</sup> Although this is a worldwide covering collection, English language journals are more emphasized. Hence, the bibliographic information of many of Iranian medical journals has not been provided by this database. The present study investigates the influence of Iranian scientific journals in disseminating medical information.

## MATERIALS AND METHODS

This descriptive cross-sectional study was conducted on total 163 journals introduced by the "Commission for Accreditation and Improvement of Iranian Medical Journals" as approved scientific research periodicals in October 2010. The present study evaluated total journals approved as scientific medical journals in a number of databases including ISI WOS, Medline, Embase, Scopus, Biological Abstracts (BA), Chemical Abstracts (CAS), Cumulative Index to Nursing and Allied Health Literature (CINAHL), Index Copernicus (IC), and Index Medicus for Eastern Mediterranean Region (IMEMR).

At the first stage of the study, a list of approved journals by the commission was provided through the official website of Iranian ministry of health and medical education. At the second stage, bibliographic information of each journal such as title, language, frequency, ISSN, publisher, and electronic address of the journals were retrieved through a number of national databases and exclusive websites of Iranian medical universities and journals. In the

subsequent stage, the status of journals was individually evaluated.

## RESULTS

The results showed that the majority of Iranian medical journals were indexed by regional information databases and websites including IC and IMEMR. According to Figure 1, 146 journals, i.e., 89.6% of total journals under investigation, were indexed by IndexCopernicus and 99 (60.7%) journals were covered by IMEMR. Only few journals were indexed by prominent information databases such as ISI WOS and Medline. Urology Journal; Iranian Biomedical Journal; Archives of Iranian Medicine; Iranian Journal of Allergy, Asthma and Immunology; Iranian Journal of Immunology; and Iranian Journal of Kidney Diseases were the six Iranian journals indexed by Medline—the most important medical information database—at the time of the study. Moreover, 22 (13.5%) journals were indexed by ISI WOS. Investigating other information databases, the following data were attained: 51 (31.3%) journals indexed by Scopus, 45 (27.6%) journals by Embase, 11 (6.7%) journals by CINAHL, and 36 (22.1%) journals were indexed by CAS. Among all, Daru journal published by Tehran University of Medical Sciences was the only journal indexed by BA. Fifty-eight (35.6%) journals were in English, 102 (62.6%) were in Persian, and three (1.8%) journals were bilingual which published their articles both in Persian and English languages.

Figure 2 demonstrates the publication frequency of Iranian scientific journals in medical sciences. The publication

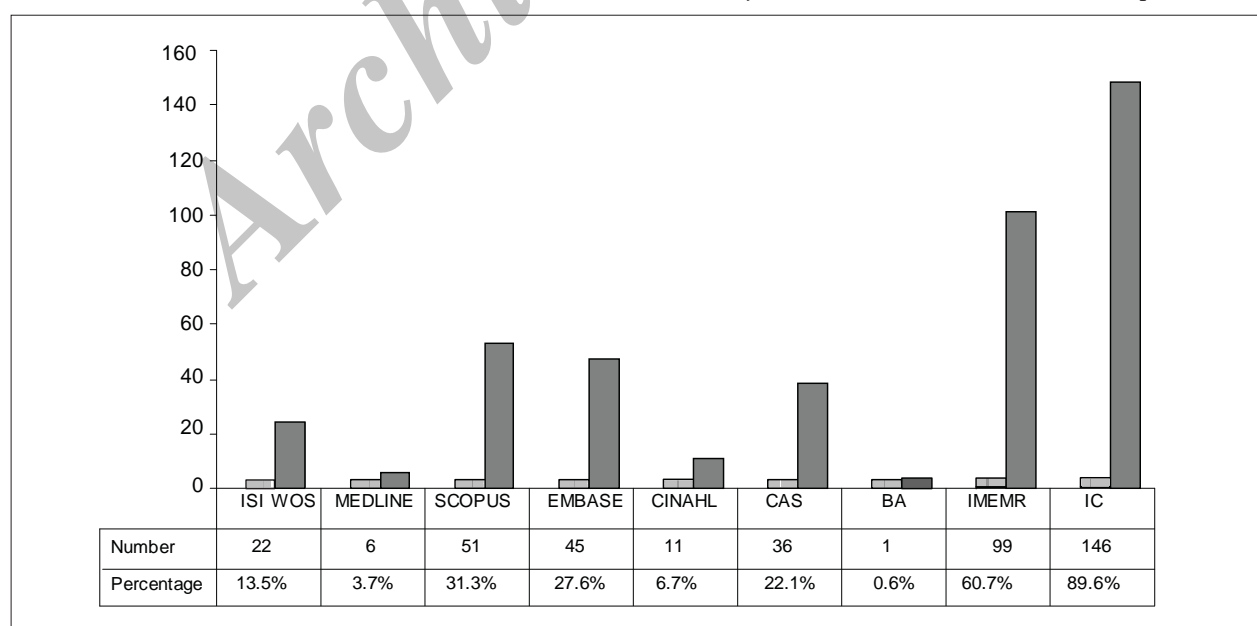
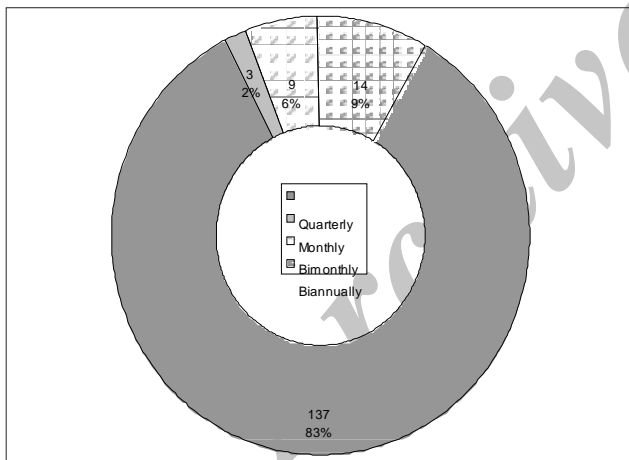


Figure 1: The frequency of Iranian medical journals in the information databases

**Table 1: Iranian Medical Journals indexed by ISI Web of Science**

Journal Title	ISSN	Publisher	Publication Frequency	Impact Factor 2009
Iranian Journal of Allergy Asthma and Immunology	1735-1502	Tehran University of Medical Sciences	Quarterly	0.968
Archives of Iranian Medicine I.R.	1029-2977	Academy of Medical Sciences of the Iran	Bimonthly	0.874
Hepatitis Monthly	1735-143X	BAQIYATALLAH Research Center	Quarterly	0.716
DARU	1560-8115	Tehran University of Medical Sciences	Quarterly	0.372
Iranian Journal of Arthropod-Borne Diseases	1735-7179	Tehran University of Medical Sciences	Biannually	0.353
Iranian Journal of Public Health	0304-4556	Tehran University of Medical Sciences	Quarterly	0.244
Iranian Journal of Pharmaceutical Research	1735-0328	Shaheed Beheshti Univ Med Sciences	Quarterly	0.235
International Journal of Fertility and Sterility	2008-076X	Royan Institute	Quarterly	0.219
Iranian Journal of Reproductive Medicine Medical	1680-6433	Shaheed Sadoughi University of Sciences	Quarterly	0.183
Iranian Journal of Pediatrics	2008-2142	Tehran University of Medical Sciences	Quarterly	0.131
Iranian Journal of Radiation Research	1728-4554	Novin Medical Radiation Institute	Quarterly	0.125
Iranian Red Crescent Medical Journal	1561-4395	Iranian Hospital - Dubai	Bimonthly	0.071
Iranian Biomedical Journal	1028-852X	Pasteur Institute of Iran	Quarterly	-
Iranian Journal of Basic Medical Sciences	2008-3866	Mashhad University of Medical Sciences	Quarterly	-
Iranian Journal of Environmental Health Science and Engineering	1735-1979	Tehran University of Medical Sciences	Quarterly	-
Iranian Journal of Immunology	1735-367X	Shiraz University of Medical Sciences	Quarterly	
- Iranian Journal of Ophthalmology	1735 - 4153	Iranian Society of Ophthalmology	Quarterly	
- Iranian Journal of Parasitology	1735-7020	Tehran University of Medical Sciences	Quarterly	
- Iranian Journal of Radiology	1735-1065	Tehran University of Medical Sciences	Quarterly	
- Journal of Research in Medical Sciences	1735-1995	Isfahan University of Medical Sciences	Bimonthly	
- Urology Journal	1735546X	Shaheed Beheshti Univ Med Sciences	Quarterly	
- Yakhteh Medical Journal	1561-4921	Royan Institute	Quarterly	

**Figure 2: Publication frequency of Iranian medical journals**

frequency of 83% of the journals was quarterly. Other journals published their articles on monthly, bimonthly, or biannually basis.

Table 1 shows the Iranian medical journals indexed by ISI WOS. Tehran University of Medical Sciences published 36.4% of total 22 Iranian medical journals indexed by ISI WOS. The highest Impact factor of these journals belonged to Iranian Journal of Allergy Asthma and Immunology which was 0.968 according to the Journal Citation Report (JCR) Science Edition 2009.

## DISCUSSION

The number of indexed articles in prominent information databases published by a country plays an important role in determining the contribution of that country to the world science production.<sup>[10]</sup> One of the most significant criteria of the majority of international university ranking systems is the number of institution's published articles indexed in ISI WOS.<sup>[11]</sup>

Most of Iranian researchers demand to submit their articles to the domestic scientific journals for publication.<sup>[13]</sup> According to the present study, only few numbers of Iranian medical journals are getting indexed by international information databases. Indexing Iranian scientific journals in prominent information databases is an effective approach to increase Iran's contribution to global scientific productivity.<sup>[13]</sup> Improving the indexing status of these journals in the international information databases will lead to enhance the number of journals' audience, journals' visibility and impact, and the rate of citations to the journals.

The study showed that the majority of Iranian scientific journals approved by "Commission for Accreditation and Improvement of Iranian Medical Journals" are supported and published by Iranian universities. Accordingly,

improving research policies of Iranian medical universities in the field of scientific publication are of great importance in enhancing domestic scientific journals.

The findings demonstrated that most scientific journals in Iran were published in Persian language, whereas English was the language of the majority of Iranian medical journals indexed by ISI WOS and Medline. It seems that even those few numbers of national journals indexed by top ranked information databases played an important role in the ascending trend of knowledge production of Iran in the recent years. Disseminating research outputs in an international language would attract more audiences from all over the world. The fact is that the most preferred language of highly ranked databases is English.<sup>[14]</sup> One of the essential features considered by ISI for journal inclusion is using English language preferably for articles' full text or at least for full bibliographic information, so they could be more understandable to researchers around the world.<sup>[15]</sup> Almost 92% of articles indexed by Medline database are published in English.<sup>[4]</sup>

Based on the results, the frequency of Iranian scientific journals was mainly biannually and quarterly. Only 11 journals are published on a monthly or bimonthly basis. However, rapid publication is a critical factor in preserving the interest of readers in biomedical sciences.<sup>[2]</sup>

It is necessary for editors to consider key publication elements announced by international information databases for journal assessment and inclusion. Journal evaluation process for inclusion in ISI is enduringly performed. Journals could be included in ISI databases only if they keep their standards. Several qualitative and quantitative factors are considered for journal inclusion by ISI. Regular and timely publishing of issues, choosing an adequate and precise journal title, providing expressive titles and abstracts for papers, providing the full text in English or at least for article bibliographic information, the number of citations to the journal, specialized review procedure, and scientific content of articles are amongst the effective factors concerned in assessment criteria of this information database.<sup>[15]</sup> The decision to index a journal for Medline is made by National Library of Medicine (NLM) director based on the considerations of both scientific policy and scientific quality. The Literature Selection Technical Review Committee in NLM is responsible to review journal titles and appraise the quality of their contents. Some critical elements that would be considered by the committee are scope and coverage (mainly core biomedical subjects), quality of content (validity, importance, originality, and contribution to the field), quality of editorial work (the article selection methods, devotion to ethical guidelines, disclosing financial conflicts of interest, punctual correction

of errata, appropriate retractions, opportunity for comments, and oppositions), production quality (quality of the layout, printing, graphics, and illustrations), audience (various groups of health professionals), types of content (original research, clinical observations, critical reviews, statistical compilations, case reports with discussions), English-language abstract, and geographic coverage (not being published for a local audience).<sup>[16]</sup>

According to the results, only few numbers of Iranian medical journals were indexed by international information databases. It seems that lack of timely publication and subject specialty in the majority of Iranian medical journals are the main causes for not getting indexed by such databases. Regular publishing of journal's issues is an essential factor for journal inclusion by information databases.<sup>[17]</sup> In other words, journal issues should be published exactly on its predetermined schedule and subject specialty. The ability to publish a journal on time demonstrates the presence of required manuscripts' survival of the publication.<sup>[18]</sup>

Poor scientific quality, lack of expertise and interest of editors, inadequate editorial policies and management, inexperienced reviewers, and insufficient funding are among major causes that prevent indexing scholarly journals in global prestigious databases such as Medline and WOS.<sup>[19,20]</sup>

## CONCLUSIONS

Improving scientific credibility of Iranian scholarly journals calls for a precise scientific and executive administration in publishing standards and also in the quality of content. The following practical approaches would improve the influence of Iranian scholarly journals in disseminating medical information to the world of science:

Regular publishing; applying English language; increasing the publication frequency of journals; boosting the number of articles in each issue; representing variety of articles including original, review, and short articles; subject specialty; choosing an adequate and precise journal title; improving the quality of content as well as layout, printing, graphics, and illustrations; enhancing quality of editorial work, especially in article selection methods, appropriate retractions, opportunity for comments and oppositions, devotion to ethical guidelines, and disclosing financial conflicts of interest; improving the indexing status of Iranian medical journals in the international information databases and enhancing research policies of Iranian medical universities in the field of scientific publication.



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