

## Quantitative and Qualitative Assessment of Persian Medicine Articles Indexed in Pubmed by the End of 2015

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### ABSTRACT

**BACKGROUND AND OBJECTIVE:** Persian (Iranian) medicine is one of the oldest traditional medical science with more than 1000 years of history. Scientometrics studies on the current research achievement of Persian medicine in academic communities are lacking. The aim of this study was analyze some scientific outputs of persian medicine in international journals.

**METHODS:** Documents were collected from Pub Med database with these keywords: “Iranian medicine”, “Persian medicine”, “Iranian traditional medicine” and “Persian traditional medicine”. All data were classified based on type of manuscript, field of study, kind of research, journal type and publication year.

**FINDINGS:** 502 Articles were found up to the end of 2015; 54.3% original articles, 26% review, 13.7% letter to editor, 29% biographical and historical articles. Pharmacological and phytochemical studies were the most published articles (14.7%). Between 139 journals which published these articles, 59% have Impact factor (IF) and highest IF belonged to the Lancet neurol J (23.46). More than one citation was reported in 43.7% of articles and the most citation belong to the one of the published article in year 2012 (23 citation). H-Index of all collected articles was 12.

**CONCLUSION:** The number of published articles in Persian (Iranian) Medicine had significant growth in the last years. But usage of several keywords for Persian traditional medicine, by authors, inhibits aggregation and availability to these. However proposed unique full or abbreviate name be used in all published research document.

**KEY WORDS:** *Persian Medicine, Traditional Medicine, Iranian Medicine, Systematic Review.*

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## Introduction

Due to gradual development of allopathic medicine after the Renaissance, traditional medicine was forgotten and excluded from health systems in many countries, including Iran. World Health Organization paid special attention to the subject of traditional medicine in the world about 35 years ago in order to achieve the goal of "Health for All by the Year 2000" and published strategies related to the development of traditional medicine and how to use it (1) and emphasizes on the implementation of national policies and standards in order to improve the safety and quality of traditional medicine and its integration in the current health care system (3, 2).

Iranian medicine before of neglecting has always been a steady school based on the research and the majority of its stated cases is the results of experiment of hypothesizes by many scientists, owner of Hedayat al-motaalemin about a thousand years ago said: "I say those things in this book that I've tried, but" (4) But nowadays one of the barriers to the development of this medicine is the lack of documentary sources based on modern research that it is clear because of new entering of the field to modern scientific fields (3) But can be stable in the modern health care system over the time such traditional Chinese medicine (5).

In recent years, research on traditional medicine of Iran as a potential to achieve research ideas, had interest between researchers in different disciplines. Today, the foundations of Iranian medicine in countries such as India, Pakistan and some parts of China is the focus of study with other titles such as Greek medicine, But Iranian traditional medicine has recently proposed and complete investigations have not been published in relation to its scientific development according to the standards of the world. Only one study was done during the years 1990- 2011 in the database «Web of Science» using specific keyword of traditional medicine and complementary and with place restrictions in order to consider published articles in the field of complementary therapies and not only traditional medicine by Iranian researchers and finally 288 paper with average growth rate of 53/32 percent has reported (6).

The aim of the present study is to consider published articles with keywords: Iranian medicine in journals indexed in the profile of PubMed- as a database for indexing of English-language journals and articles with scientific credibility in order to assess the success of this new knowledge entered in the new

scientific fields with update standards and to express its strengths and weaknesses.

## Methods

The present study was done as an overview of published articles in PubMed database. Since the objective of this study is to consider introduction rate and presentation of Iranian traditional medicine concepts with the straightforward and defined name of "Iranian medicine", four keywords "Persian Medicine", "Iranian Medicine", "Persian Traditional medicine" and "Iranian Traditional Medicine "were used. Each of the obtained articles was studied and if an article was obtained because of the selected keywords in the article resource without trace or mention of Iranian medicine, were eliminated.

Article information includes: title, year of publication, type of article, methodology, field of study, journal title, being Iranian or non-Iranian journal, Academic Journal ranking, Impact Factor of journals that have these indicators, number of references (Citation) of each article and nationality of authors were obtained. Information was entered in the Excel software and statistical analysis was performed. In some cases in which more than one method or field of study was examined, all have been mentioned.

## Results

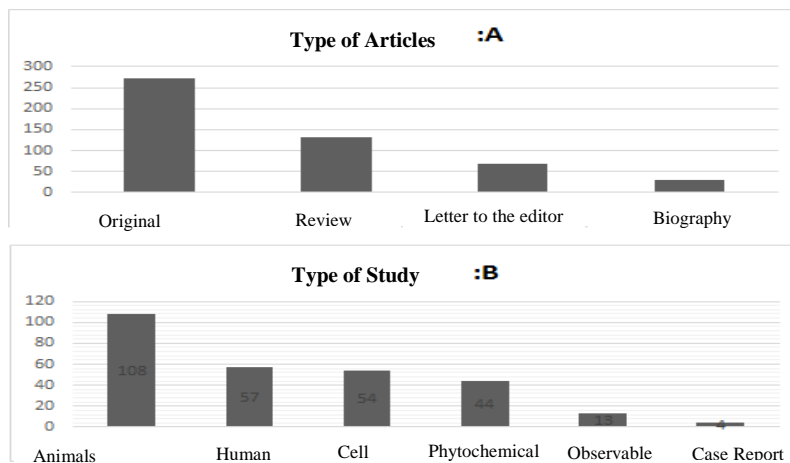
In the search conducted in PubMed database with selected keywords and then removing of irrelevant and duplicate article, 502 articles were extracted. From 502 obtained article 54/3 were original articles (Fig 1A), of these obtained evidence 108 articles were animal study, 57 cases of human intervention (Clinical Trial or Before-After) and 54 cases of laboratory studies on cells or tissues (InVitro study) and in total 45/6 percent of total articles were interventional studies. (Fig 1B).

Pharmacological and phytochemical studies that examined active ingredients and effective mechanisms of a plant or plant products in terms of traditional medicine were 14.7 percent, the field of neurology 14.1 percent, diseases of the Gastrointestinal diseases 11.5 percent and Cardiology 8.9 percent have been accounted for the highest number of papers (Fig 2).

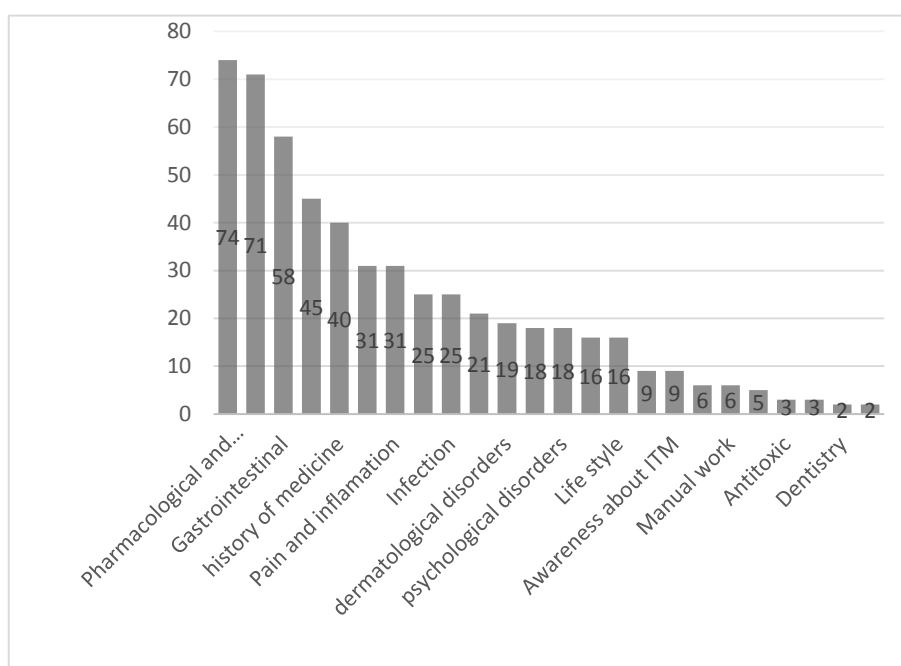
3.1% of the articles considered basic concepts (like nature), 3.3 percent life style and 7/9 percent considered historical aspects of Iranian medicine such as history of diagnosis and treatment and biographies

of leaders and one case was in relation with the a device in the traditional pulse recognition. Among foreign and internal journals respectively J Evid Based Complementary Altern Med (11% of foreign journal

articles and 6 percent of total articles) and Iran Red Crescent Med (16% of the internal journal articles and 2.7 percent of total articles) have published the most Articles.



**Figure 1. A: A Statistical Analysis of type of articles, B: Statistical analysis of methodology of original articles (including studies that have used several methods)**



**Figure 2. Statistical analysis of investigated subdirectories of Medical Sciences in published articles**

Among the 139 journal publishing in the field of Iranian medicine 82 journal (59 percent) had Impact Factor (IF) and 57 journals (41%) were without IF (Fig. 3A). Highest Impact Factor was allocated with Lancet Neurol journal that have IF equal 23/46 and published the related paper in 2002. Years of 2015 and 2014 respectively with 148 and 131 articles (Figure 3B) and foreign journals by 2.1 times compared to internal journals have the largest number of published

papers and the average growth rate of articles in the period 2011 to 2015 was 57 percent.

-Relation between Body Humors and Hypercholesterolemia: An Iranian Traditional Medicine Perspective Based on the Teaching of Avicenna. (Iran Red Crescent Med J/2012)

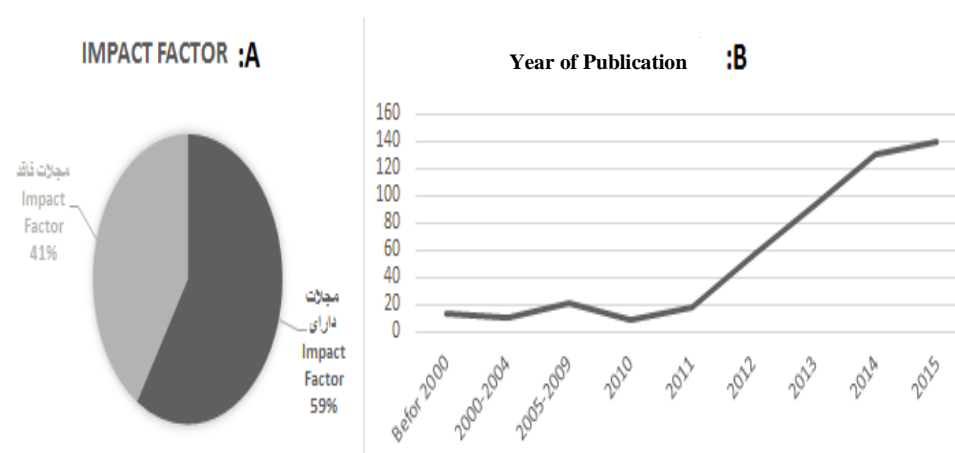
-Herbal medicines for the management of irritable bowel syndrome: a comprehensive review. (World J Gastroenterol./ 2012)

With assessment of the amount of citations to articles based on PubMed database, of total articles, 198 articles (39/4 percent) lacked the citation that were generally related to articles published in recent 2 years and 85 articles (16/9 percent) were referred once. The amount of citations to articles was 2/12 on average and the highest average citation rate was equal to 23 times for two following article:

-Relation between Body Humors and Hypercholesterolemia: An Iranian Traditional Medicine Perspective Based on the Teaching of Avicenna. (Iran Red Crescent Med J / 2012)

- Herbal medicines for the management of irritable bowel syndrome: a comprehensive review. (World J Gastroenterol./ 2012)

As well as H-Index of above indexed articles is equal 12, which was calculated manually, means that 12 articles have been referenced equal to or more than 12 times. In this search, Mohammad Kamali Nejad with 39 articles Arman Zargaran with 31 articles had the highest number of publications and finally 95/2% of article authors were Iranian and in 4/8% of article authors were non-Iranian.



**Figure 3. A: Statistical analysis of Iranian medicine journals publishing papers with IF and journals without this academic rank, B: Statistical analysis of Iranian medicine articles published in different years**

## Discussion

Investigation on published articles in scientific journals indexed in PubMed database showed that so far studies are scientific and have been done based on appropriate documents and evidence-based medicine in subdirectories of medical sciences with Iranian medicine approach, and has been published in acceptable journals with scientific validity. However, the studies that were based solely on aspects of phytochemical or new plant based treatment and with a source of Iranian medicine in ideas and it's doing it were excluded from this study.

According to the reports of World Health Organization quantity, quality, safety and effectiveness of available data in traditional medicine has distance from essential criteria for support and universal use due to lack of documentation by standard research (7) and one of the necessities for the inevitable scientific progress is review, monitoring and assessing the current situation and its comparison with the past. For this reason, special studies are performed to assess the published books and articles in each field as one of the

most important indicators for the development of scientific disciplines (8).

Osareh and colleagues in a paper with reviewing 2695 documents in the field of basic sciences and interdisciplinary medicine in Medline database by the end of 2004, showed a significant increase in Iranian scientific productions at the international level (9). In the field of dentistry among neighboring countries, Iran after Turkey had second rank of the region in this regard in 2011 in accordance with articles published in PubMed database by the end of 2011. (10). In addition, the quantitative and qualitative indices of published papers were compared in the field of parasitology in Iran and Turkey until 2011, and the number of articles, citations and their publishing journals have been investigated (11).

Also in the field of sport sciences published articles since 1994- 2013 in the database of Web of Science, 302 documents with an average citation per paper 5/02 and H-Index 20 have been reported (12). Already several studies investigated Chinese medicine publications. For example, review of Traditional

Chinese Medicine articles from 1964 to 2008 indexed in MEDLINE with a total of 34528 articles, has shown a significant growth in clinical studies (13) and in another study, China with 35% and America with 19% had the first and second rank in presentation of traditional Chinese medicine, respectively (14).

In a similar study in the field of traditional Chinese medicine, 42192 documents from 1995 to 2014 were indexed in Pub Med and it is interesting that only about half of the articles have been published in English (15). According to conducted studies in the field of Chinese medicine it should be noted that Iranian medicine is in the first and has a long way to entering complementary medicine in the world.

The present study shows that the number of published articles in the last 4 years had a significant increase that can play an important role in documentation and providing this knowledge in modern science. Evaluation of organizational affiliation of authors suggest that much of this achievement is the result of efforts of assistants and specialist of traditional medicine and pharmacy colleges. The important point is accepting the words of Iranian medicine together with other complementary therapies such as Chinese medicine by some international researchers that represents the global attitude is change in the field (18-16). The number of clinical papers of Iranian medicine have increased significantly in recent years, as of 57 published clinical study, 27 cases (47%) were published in 2015. by comparing of H-Index of obtained documents as an important indicator of the survey with other disciplines (nursing, 19, 17 sports science, anatomy 16), it seems that published documents in traditional medicine are in relative appropriate status (13).

Another interesting point is that with a great emphasis of Iranian medicine leaders on lifestyle modification, 3.3% of all articles investigated this field and fundamental studies on specific concepts such as the nature known as the main factors is the difference in attitude and performance of Iranian medicine with conventional medicine are common and studies with the aim of Iranian medicine as a tool are very little and only include 1.3% of the obtained papers.

Despite the relative growth of original articles, 13.1% of the total articles have published as letters to the editor, which can be a sign of Iran's capacity to provide new points. However, almost all schools of traditional medicine are known with the specified name in the world -TCM traditional Chinese medicine, Kampo Japanese medicine, TKM Korean medicine and TVM Vietnam medicine (19) - Iranian traditional medicine has not had a unit name and according to some periods of growth and development in Greece is known with Greek medicine (20).

This study was conducted to search articles as Iranian medicine, therefore the related articles from other titles such as Islamic medicine or name of medicine leaders such as Ibn Sina and Razi have not been entered into results. Therefore, it is recommended that related organizations to select common keywords and announce in order to facilitate the possibility of tracking of enormous research achievements and growing Iranian medicine in the future.

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