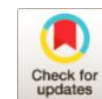




A bibliometric analysis and visualization of the DARU Journal of Pharmaceutical Sciences

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ABSTRACT

A Bibliometric analysis is one of the main methods to evaluate scientific journal performance. The purpose of this study was to investigate the status of bibliometric variables and mapping in DARU Journal of Pharmaceutical Sciences as one of the best scientific journals in Iran. Bibliometric analyses and mapping was performed in a total of 850 published documents between 2000 and 2018 in the DARU Journal of Pharmaceutical Sciences. The data come from the Scopus databases. Bibliometric analyses were done with Microsoft Excel, and journal mapping was done with VOS viewer using bibliographic coupling, co-citation, co-authorship and co-occurrence methods. The annual citation structure of the journal shows that 90% of published documents in this period are cited at least once. The published documents in 2012 and 2013 with more than 1000 citations were the most influential documents. The document entitled "Analysis of the essential oils of two cultivated basil (*Ocimum basilicum* L.) from Iran" by Sajjadi was the highly cited document with 115 citations. In totally, there were 7846 sources that cite the journal publications. Iran, India, and the United States were the three top countries published documents in the journal from 2000 to 2018. Tehran University of Medical Sciences (421), Tabriz University of Medical Sciences (83 documents), and Shahid Beheshti University of Medical Sciences (75) were the most productive institutes. Also, Abdollahi (63), Shafiee (37), Dinarvand (25) and Larijani (25) with the most publications were the most influential authors. The publications and citations of DARU Journal of Pharmaceutical Sciences have a tendency of a progressive increase. This journal has played an important role in publications and advancements of Pharmacy and Pharmaceutical Sciences.

Keywords: Bibliometric Analyses, Visualization, Performance Analysis, Science Mapping

Introduction

In bibliometric analyses, that known as a field of quantitative sciences, research performance is evaluate using methodologies and is widely used in the development of a certain field [1-2]. The level of development of scientific activity is assessable by bibliometric analyses using various indexes [3]. Performance analysis and science mapping are the two

important methods of bibliometric analyses. The performance analysis focus on citation analysis and literature distributions, whereas, mapping focus on direct presentation of information by various visualization methods [4]. Bibliometric studies by the demonstrating of the reliability of scientific results published in journals are essential for those who lead and manage scientific work [3]. Published bibliometric studies have evaluated the different fields' of pharmacology sciences, these studies provide analyses



based on different fields' and some special countries or reigns, and highlighted the bibliometric variables, authorship, and collaboration [5-12]. By the focus of bibliometric studies on individual journals and identifying the some of the most influential factors, the quality of journals can be improving [13]. DARU Journal of Pharmaceutical Sciences, as one of the scientific journals of Tehran University of Medical Science, is an international journal that coverage studies in all areas of drug conception, design, manufacturing, classification and assessment. The first issue of the journal was published in 1991 in the Persian language, followed by adding English abstracts in 1995. The first full English publication of the journal appeared in 1999.

The publication print format of the journal ceased in the end of 2011 and after that has been published via electronic form and as an open access journal was added to Springer BioMed Central in early 2012 [14-17]. DARU Journal of Pharmaceutical Sciences with an impact factor of 2.10 according to 2025 Journal Citation Reports is one of the top and most impactful Iranian journals. To date, there has not been a bibliometric study of papers in DARU Journal of Pharmaceutical Sciences. So, the present study was aimed to the bibliometric analysis and visualization of DARU Journal of Pharmaceutical Sciences including the publication and citation structure, the leading authors, institutions and countries, the most cited articles.

Methods

A bibliometric analysis of DARU Journal of Pharmaceutical Sciences was performed by selecting all published papers in the journal between 2000 and December, 2018. Publication data were downloaded from Scopus into Microsoft Excel file for review and further manipulation. Evacuated information include; type and number of papers, the name of first author, corresponding author name, position and country of origin, number of authors, countries, institutions, and references, and number of times each manuscript had been cited. Papers were excluded if did not have authors' names. Types of including paper were; editorials, letters to the editor, original articles, review articles and notes.

Citation data were obtained from a Scopus search during December 2024, to assess the quality of articles.

All bibliometric information was exported into Microsoft Excel format from the Scopus database and including number of documents, first authors' name, titles, keywords, and types of documents, citations, country, institutions, and other needed bibliometric parameters. The evaluated forms of co-authorship in this study including country co-authorship, institute co-authorship, and author co-authorship. After that, the documents list was sorted according to the studied parameters, the ten top documents according to their total number of citations, 20 top productive authors, country and institutions were ranked and reported.

In this study, number of publications by year, annual citation structure, and 20 most cited documents, Sources that cited the journal publications, countries, institutes and authors are reported in dilates using graph and tables. Also, visualization of similarities (VOS) viewer software was used to data visualization and creation of visualize occurring leading trends of DARU Journal of Pharmaceutical Sciences. The visualization of bibliometric parameters in VOS viewer are based of bibliographic coupling and co-citation analysis.

Results

Publication and Citation Evolution of DARU

DARU Journal of Pharmaceutical Sciences is indexed in Scopus database from 2000. Until December 2018, 850 published documents in the journal were indexed in Scopus. Figure 1 shows the distribution of publications in DARU journal from 2000 to 2018 by year.

The publications of DARU Journal have a tendency of a progressive increase year by year, especially until 2014. The number of publications was increased to 20 documents in 2018 from nine documents in 2000. The largest number of documents (101) was published in the year 2012.

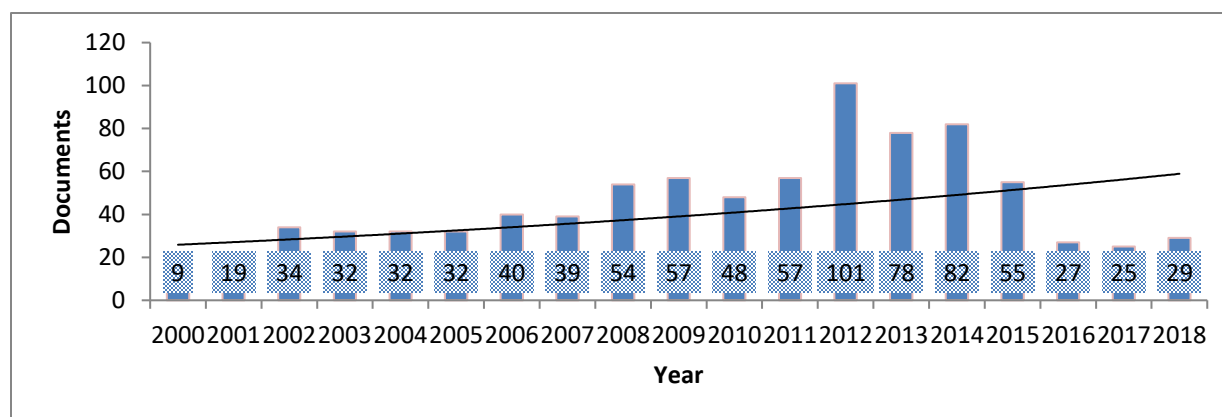


Figure 1. Distribution of publications in DARU by year from 2000 to 2018

Table 1 shows the Annual citation structure of DARU Journal of Pharmaceutical Sciences publications from 2000 to 2018. The published documents in 2012 and 2013 with 2286 citations were the most influential documents. Only one document is cited more than 100 times and nearly 2% of published documents are cited in other papers more than 50 times. Also, during this period around 40% of published documents are cited at least 10 times and 90% are cited at least once. Table 2 lists the top 20 highly cited documents published in DARU journal from 2000 to 2018. The citation counts for these best cited articles ranged from 44 to 115 citations. The top highly cited document is written by Sajjadi.

The document entitled “Analysis of the essential oils of two cultivated basil (*Ocimum basilicum* L.) from Iran” received 115 citations. This document, which is published in 2006, Volume 14, Issue 3, proposed to investigate the chemical compositions of the essential oils of *Ocimum basilicum* L. cv. purple and *Ocimum basilicum* L. cv. green by GC-MS. The document

entitled “Screening of antioxidant activity and phenolic content of 24 medicinal plant extracts” ranks second with 80 citations. This document is published by Souri et al at year 2006 and proposed to evaluate the antioxidant activity of methanolic extracts of 24 selected plant seeds or fruits that used as folk remedies and/or food supplements in Iran. The third ranks of highly cited documents, with 71 citations, entitled “Evaluation of antioxidant, anti-inflammatory and lipoxigenase inhibitory activities of the prenylated coumarin umbelliprenin” by Iranshahi et al, and published in 2009. In this document umbelliprenin was examined for in vitro antioxidant activity, in vitro inhibitory activity against lipoxigenase, and in vivo anti-inflammatory activity. In addition, 16 of 20 highly cited documents were original articles and four documents review article. The oldest and recent highly cited documents are published in 2004 and 2014, respectively.

Table1. Annual citation structure of DARU publications from 2000 to 2018

Year	>100	>50	>40	>30	>20	>10	>1	0	TP	h-index	TC	CPP
2018	0	0	0	0	0	0	4	25	29	2	6	0.21
2017	0	0	0	1	0	2	18	4	25	7	137	5.48
2016	0	0	0	0	0	3	15	9	27	6	106	3.93
2015	0	0	0	3	5	12	34	1	55	13	531	9.65
2014	0	1	0	1	10	16	50	4	82	15	759	9.26
2013	0	2	0	5	11	24	33	3	78	19	1012	12.97
2012	0	1	3	6	8	31	50	2	101	19	1274	12.61
2011	0	3	1	0	4	19	30	0	57	14	733	12.86
2010	0	1	0	2	7	15	22	1	48	15	595	12.40
2009	0	2	1	1	3	18	30	2	57	14	656	11.51
2008	0	1	1	2	11	16	20	3	54	17	778	14.41
2007	0	1	1	0	2	12	17	6	39	12	369	9.46
2006	1	2	0	2	5	10	15	5	40	15	630	15.75
2005	0	0	0	2	3	10	16	1	32	12	343	10.72
2004	0	1	1	2	2	6	18	2	32	11	378	11.81
2003	0	0	0	0	4	5	19	4	32	9	254	7.94
2002	0	0	0	0	1	5	22	6	34	7	164	4.82
2001	0	0	0	0	0	4	7	8	19	6	87	4.58
2000	0	0	0	0	0	0	5	4	9	2	7	0.78
Total	1	15	8	27	76	208	425	90	850			
%	0.12	1.76	0.94	3.18	8.94	24.47	50.00	10.59	100.00			

Source: Own elaboration based on Scopus; >_ it is an accumulated value; TC: total citations

Table2. Most cited papers in DARU from 2000 to 2018

Rank	Title	First Author	Year	Vol.	Iss.	Pages	Cited	Type
1	Analysis of the essential oils of two cultivated basil (<i>Ocimum basilicum</i> L.) from Iran	Sajjadi S.E.	2006	14	3	128-130	115	Article
2	Screening of antioxidant activity and phenolic content of 24 medicinal plant extracts	Souri E.	2008	16	2	83-87	80	Article
3	Evaluation of antioxidant, anti-inflammatory and lipoxygenase inhibitory activities of the prenylated coumarin umbelliprenin	Iranshahi M.,	2009	17	2	99-103	71	Article
4	Invitro evaluation and optimization of controlled release Floating Drug Delivery System of metformin hydrochloride	Patel A.,	2006	14	2	57-64	70	Article
5	A review on bioadhesive buccal drug delivery systems: Current status of formulation and evaluation methods	Chinna Reddy P.	2011	19	6	385-403	69	Review
6	A systematic review on status of lead pollution and toxicity in Iran: Guidance for preventive measures	Karrari P.,	2012	20	2	1-17		Review
7	Surface modification of PLGA nanoparticles via human serum albumin conjugation for controlled delivery of docetaxel"	Manoochehri S.	2013	21	58	1-10	62	Article
8	Flavone C-glycosides and cucurbitacin glycosides from <i>Citrullus colocynthis</i>	Delazar A.	2006	14	3	109-4	62	Article
9	,"In vitro antiviral effect of ""nanosilver"" on influenza virus"	Mehrbod P.,	2009	17	2	88-93	61	Article
10	A review on phytochemistry and medicinal properties of the genus <i>Achillea</i>	Saeidnia S.,	2011	19	3	173-186	56	Review
11	Hepatoprotective activity of <i>Ficus carica</i> Linn. leaf extract against carbon tetrachloride-induced hepatotoxicity in rats	Krishna Mohan G.,	2007	15	3	162-6	55	Article
12	Antidepressant effects of crocin and its effects on transcript and protein levels of CREB, BDNF, and VGF in rat hippocampus	Vahdati Hassani F.,	2014	22	1	16	54	Article
13	Synthesis and antimicrobial effects of silver nanoparticles produced by chemical reduction method	Kheybari S.	2010	18	3	168-172	54	Article
14	Three-component synthesis of pyrano[2,3-d]-pyrimidine dione derivatives facilitated by sulfonic acid nanoporous silica (SBA-Pr- SO ₃ sub ₃ esub ₃ H) and their docking and urease inhibitory activity	Ziarani G.M.	2013	21	1	3	53	Article
15	Formulation and in vitro characterization of domperidone loaded solid lipid nanoparticles and nanostructured lipid carriers	Thatipamula R.P.	2011	19	1	23-32	51	Article
16	Antinociceptive and anti-inflammatory activity of the seed and root extracts of <i>Ferula gummosa</i> Boiss in mice and rats	Mandegary A.	2004	12	2	58-62	50	Article
17	Protective effect of pretreatment with thymoquinone against Aflatoxin B1 induced liver toxicity in mice	Nili-Ahmadabadi A.	2011	19	4	282-7	46	Article
18	"Two bioactive ferulic acid derivatives from <i>Eremostachys glabra</i> "	Delazar A.	2004	12	2	49-53	46	Article
19	A review on delayed toxic effects of sulfur mustard in Iranian veterans	Mansour Razavi S.	2012	20	1	51	44	Review
20	Antimicrobial activity of Iranian propolis and its chemical composition	Yaghoubi M.J.	2007	15	1	45-8	44	Article

In totally, there were 7846 sources that cite the DARU journal publications. The top sources that cite the publications are presented in table 3 based on journals, countries, authors and institutions.

As shown, DARU journal itself is the first citation source (263), and at the second rank is Iranian Journal of Pharmaceutical Research with (115), following with

International Journal of Pharmacy and Pharmaceutical Sciences (85), Journal of Ethno pharmacology (80) and Molecules (73).

Most of these citation sources journals are connected to Pharmaceutical science. In other hand, these show that DARU journal has played role in publications and advancements of Pharmacy and Pharmaceutical Sciences.

Table3. Sources that cite DARU publications

Rank	Journal	TP	Country	TP	Author	TP	Institute	TP
1	Daru Journal Of Pharmaceutical Sciences	263	Iran	2664	Abdollahi, M.	135	Tehran University of Medical Sciences	864
2	Iranian Journal Of Pharmaceutical Research	115	India	1299	Foroumadi, A.	60	Mashhad University of Medical Sciences	315
3	International Journal Of Pharmacy And Pharmaceutical Sciences	85	China	615	Shafiee, A.,	59	Tabriz University of Medical Sciences	279
4	Journal Of Ethnopharmacology	80	US	598	Hosseinzadeh, H.	46	Shahid Beheshti University of Medical Sciences	235
5	Molecules	73	Egypt	284	Delazar, A.	44	Islamic Azad University	187
6	Journal Of Essential Oil Bearing Plants	72	Pakistan	256	Miri, R.	44	Shiraz University of Medical Sciences	182
7	International Journal Of Pharmaceutics	70	UK	249	Saeidnia, S.	42	Isfahan University of Medical Sciences	151
8	Iranian Journal Of Basic Medical Sciences	65	Brazil	236	Sarker, S.D.	42	University of Tehran	140
9	International Journal Of Biological Macromolecules	59	Turkey	216	Nahar, L.	39	Drug Applied Research Center, Tabriz University of Medical Sciences	136
10	Asian Journal Of Pharmaceutical And Clinical Research	57	Italy	206	Sahebkar, A.	38	Iran University of Medical Sciences	119
11	Research In Pharmaceutical Sciences	54	Saudi Arabia	174	Iranshahi, M.	36	Kerman University of Medical Sciences	105
12	Plos One	43	Malaysia	169	Baeeri, M.	34	Mazandaran University of Medical Sciences	93
13	Biomedicine And Pharmacotherapy	42	South Korea	167	Dinarvand, R.	33	Baqiyatallah University of Medical Sciences	91
14	AAPS Pharmscitech	40	Germany	155	Larijani, B.	32	Kermanshah University of Medical Sciences	83
15	Industrial Crops And Products	40	Spain	147	Gohari, A.R.	31	National Research Centre	82
16	Journal Of Medicinal Plants	40	Australia	136	Amin, G.	30	University of Tabriz	75
17	Drug Development And Industrial Pharmacy	39	Canada	118	Boskabady, M.H.	30	Ministry of Education China	72
18	Advanced Pharmaceutical Bulletin	37	France	111	Amini, M.	29	Cairo University	71
19	International Journal Of Nanomedicine	37	Poland	104	Nazemiyeh, H.	29	Ahvaz Jundishapur University of Medical Sciences	70
20	Biomed Research International	36	Portugal	88	Khanavi, M.	27	Tarbiat Modares University	68

TP: total paper

Leading Countries, Institutes and Authors of DARU Publications

Many countries, institutes and authors are active in publishing documents in DARU journal. Table 4 lists the most productive countries, institutes and authors. There is a total of 58 countries published documents in DARU journal between 2000 and 2018.

Iran is the productive country with 698 documents. India with 66 documents and the United States with 26 documents are at the second and third ranks. Overall, 90% of the total publications were contributed by these three countries.

Among the most productive institutes, Tehran University of Medical Sciences (421), Tabriz University of Medical Sciences (83), and Shahid Beheshti University of Medical Sciences (75) were the top three productive institutes, while around 60% of the publications were contributed by these three institutes. Of the most productive authors, Abdollahi with 63 documents, Shafiee with 37 documents, Dinarvand with 25 documents and Larijani with 25 documents have the most publications in DARU journal from 2000 to 2018. There are nine authors that contribute at least 20 documents, and written around 30% of published documents in this journal.

DARU journal mapping by VOS viewer software

In this section, the results of mapping obtained from VOS viewer are considered. The bibliographic couplings of the most productive authors that publish in DARU journal are presented in figure 2. The software divides authors into six clusters with different colors. The size of the node represents the number of publications and the line between them represents the coupling and joint references. The thicker line shows more coupling and joint references between two authors. As shown, Abdollahi with 24 link has the must number of coupling and joint references with other authors, followed by Amin (19 link), Dinarvand (17 link), Shafiee (15 link), Larijani (11 link) and Mojtahedzadeh (11 link).

In totally, there are a total of 59169 authors cited by DARU journal publications. The co-citation network of the top-20 related authors cited by the journal publications are presented in figure 3. As for the co-citation, Abdollahi with 427 citations and 20 link ranks first author. Following Abdollahi are Larijani with 185

citations and Shafiee with 164 citations in second and third ranks.

Figure 4 shows the Co-citation network of sources cited by DARU journal publications. There are 8582 sources that cited by DARU journal publications. As it can be seen from figure 4, the Daru Journal of Pharmaceutical itself with 419 citations, is the first source that cited by the journal publications. The second position is International Journal of Pharmaceutics with 322 citations following with Phytochemistry with 187 citations as third source.

The more frequently keywords mapping of DARU journal publications is constructed by VOSviewer using co-occurrence technique and is shown in figure 6. There are a total of 9320 keywords extracted from the journal publications that more frequent keywords for mapping based on co-occurrence technique roles. As it can be seen from figure 5, 36 keywords are divided into three clusters with three different colors. The keywords with the same color belong to a cluster represent they have a closer relationship and similar research filed.

Table4. Top twenty most prolific countries, Institutes and Authors of DARU Publications

Rank	Country	TP (%)	Institute	TP (%)	Author	TP (%)
1	Iran	698 (82.11)	Tehran University of Medical Sciences	421 (49.52)	Abdollahi, M.	63 (7.41)
2	India	66 (7.76)	Tabriz University of Medical Sciences	83 (9.76)	Shafiee, A.	37 (4.35)
3	United States	26 (3.05)	Shahid Beheshti University of Medical Sciences	75 (8.82)	Dinarvand, R.	25 (2.94)
4	United Kingdom	18 (2.11)	Islamic Azad University	64 (8)	Larijani, B.	25 (2.94)
5	Canada	15(1.76)	Isfahan University of Medical Sciences	50 (5.88)	Foroumadi, A.	23 (2.70)
6	China	11 (1.29)	Mashhad University of Medical Sciences	49 (5.76)	Amini, M.	22 (2.58)
7	Pakistan	11 (1.29)	University of Tehran	40 (4.70)	Mojtahedzadeh, M.	22 (2.58)
8	Australia	10 (1.17)	Shiraz University of Medical Sciences	35 (4.11)	Amanlou, M.	22 (2.47)
9	Japan	8 (0.94)	Kerman University of Medical Sciences	32 (3.76)	Saeidnia, S.	20 (2.35)
10	South Korea	8 (0.94)	Pasteur Institute of Iran	30 (3.52)	Amin, G.	17 (2)
11	Bangladesh	7 (0.82)	Iran University of Medical Sciences	25 (2.94)	Gilani, K.	16 (1.88)
12	Brazil	7 (0.82)	Mazandaran University of Medical Sciences	19 (2.23)	Rouini, M.R.	16 (1.88)
13	Italy	7 (0.82)	Ahvaz Jundishapur University of Medical Sciences	19 (2.23)	Gohari, A.R.	15 (1.76)
14	Turkey	7 (0.82)	Iranian Ministry of Health and Medical Education	18 (2.11)	Heshmat, R.	15 (1.76)
15	Germany	6 (0.70)	Tarbiat Modares University	16 (1.88)	Nikfar, S.	14 (1.64)
16	Malaysia	5 (0.58)	Baqiyatallah University of Medical Sciences	15 (1.76)	Hadiakhoondi, A.	13 (1.52)
17	Sweden	5 (0.58)	Babol University of Medical Sciences	15 (1.76)	Ostad, S.N.	13 (1.52)
18	Thailand	5 (0.58)	Iranian Academic Center for Education, Culture and Research	14 (1.64)	Atyabi, F.	12 (1.41)
19	Greece	4 (0.47)	University of Social Welfare and Rehabilitation Sciences	13 (1.52)	Khalili, H.	12 (1.29)
20	Russian	4 (0.47)	University of Tabriz	11 (1.29)	Najafi, A.	12 (1.29)

TP: total paper

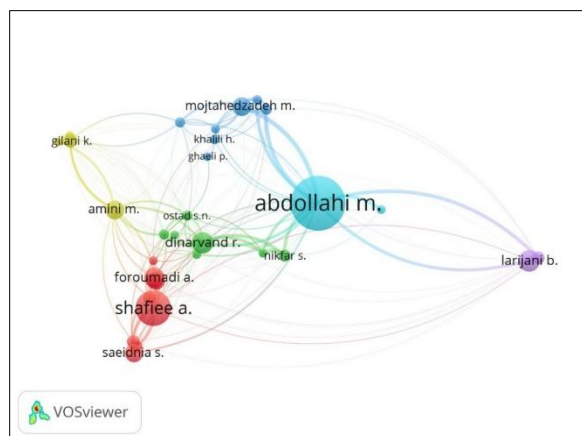


Figure 2. Bibliographic coupling of the most productive authors that publish in DARU journal

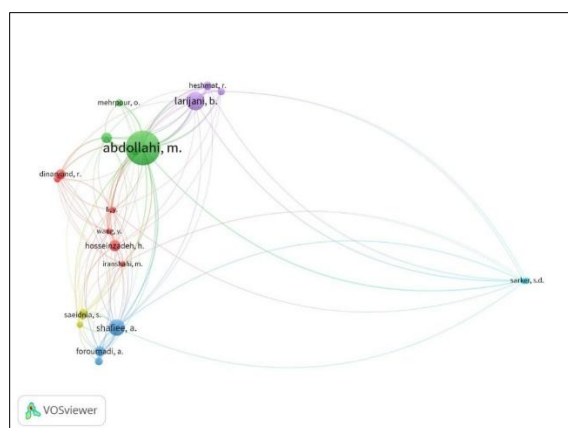


Figure 3. Co-citation network of authors cited by DARU journal publications

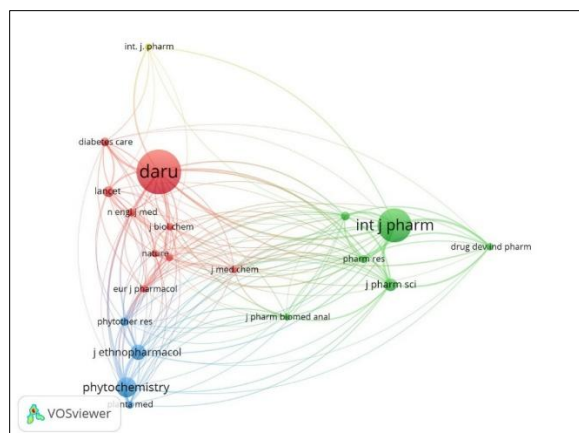


Figure 4. Co-citation network of sources cited by DARU journal publications

The first cluster with red color include 14 keywords that Drug structure, Drug effects, Drug release, Drug formulation, Drug synthesis, and Drug delivery system were the top frequently use keywords. This cluster can be named as Pharmaceutical studies. In the second

cluster in green color, there are 12 keywords that due of the presence of rat, mouse, animal model, animal tissue, animal cell, animal experiment and nonhuman as the main keywords, can be named as animal studies. Also, the third cluster included 10 keywords in blue color. This cluster can be named as clinical studies, because clinical trial, clinical article, major clinical study, randomized controlled trial, human, male, female, and adult are the most important use keywords.

The mapping of country co-authorship, as one of the most extensive and practical way of scientific cooperation, is presented in figure 6. As it can be seen from the figure, Iran represents the core of the DARU journal country co-authorship network. Iran had the most cooperation with United States, United Kingdom, and Canada respectively.

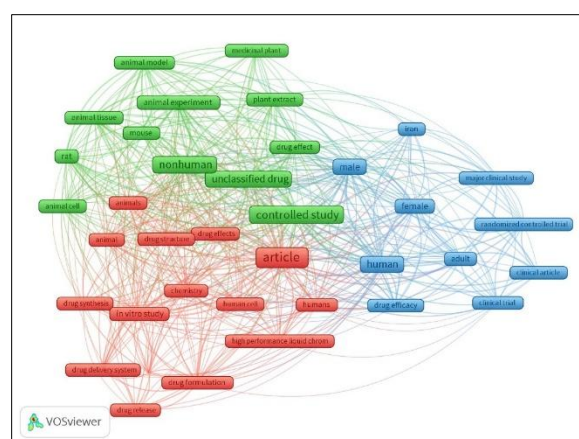


Figure 5. Keywords co-occurrence visualization network of DARU journal publications

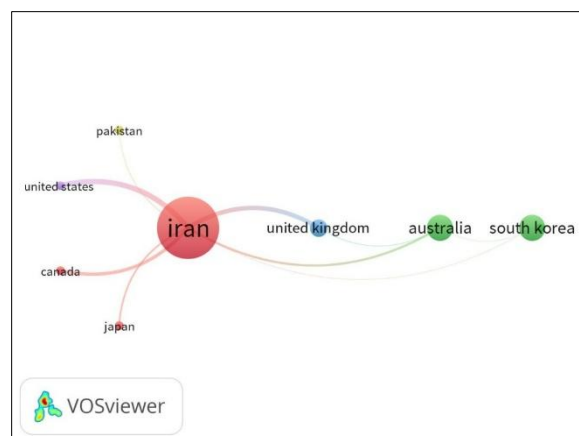


Figure 6. Country co-authorship network of DARU journal publications

Discussion

This study provided a comprehensive bibliometric overview and visualization of DARU Journal of Pharmaceutical Sciences publications. According to the findings, the publications and citations of the journal

have a tendency of a progressive increase year by year, especially between 2011 and 2015. Iran and Tehran University of Medical Sciences were the most productive country and institute, respectively. The most frequently used keywords, denotes the pharmaceutical sciences as the core topic of the journal. Also, Iran, India, and the United States were the most productive countries, Abdollahi was the most productive authors and document entitled "Analysis of the essential oils of two cultivated basil (*Ocimum basilicum* L.) from Iran" written by Sajjadi and colleagues is the top highly cited document. Bibliometric indicators of DARU Journal indicated that DARU is an important journal in the field of pharmacy and Pharmaceutical Sciences and has attracted more and more attention from researchers.

Based on our study findings, the number of DARU journal publications has increased significantly over the years. Since the journal began in 1991 in the Persian, and 1999 in English language, academic and research institutions within Iran were limited, and low number of publications was due to limitation in technology advances as geographical problem. During the past two decades, research in Iran has seen increased funding and emphasis, and following the increase in the number of academic and research institutions along with advances in technology (phone, email, and communication networks), the capacity for publication output has been rising.

Other finding was that the total number of citations is related to 2012 and 2013 publications, although, most of the best cited articles were written between the years 2006 and 2009. This conflict is explainable by the fact that the number of higher publications between 2012 and 2014 compare to other time periods. In the other hand, these findings support the reported beliefs in previous paper, those shows that longer publishing period is an important factor to achieve more citations and highest citation count per year often occurs 3–10 years after publication [18]. So, it is predictable that published articles of DARU journal in the recent years receive more citations in the future.

Citation analysis is known as one of the important method to measure journals scientific impact. In the present study, DARU journal itself is the first citation source. Even though journals self-citations may provide a citation count boost but it can raise the concerns and doubts of potential citation misconduct for the journals [19]. In the case of DARU journal, the journal self-citations (about 3.3%) shows that this journal did not follow this policy for citation count boost.

In the section of country co-authorship analysis in DARU journal, Iran is the main country and had the most cooperation with United States, United Kingdom, and Canada. These findings support the fact that the large general population, large scientific society and abundant availability in financial resources in these three country [20-21], make a great interest for authors from

other countries with lower levels of scientific publishing activity to share their investigates with researcher and scientists from these countries.

In Conclusion, this study presents an overview of the DARU Journal of Pharmaceutical Sciences publications. These show that the journal is an important indexed journal in the field of Pharmacy and Pharmaceutical Sciences and has played an important role in publications and advancements in this field. Also, our study findings provides useful insights for the journal's editorial board to follow the influential role of the journal, and for authors who want to publish their research in the field of Pharmaceutical Sciences in the future.

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