

Mapping of Open Access Nephrology Journals - A Guide for Nephrologists

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Abstract

The present analytical study has investigated to identify the research trends of open access scholarly journals showed in the Directory of Open Access Journals (DOAJ). It gives open access to publishing in the area of Nephrology based on the data extracted from DOAJ. Open-access scholarly journals are freely available peer-reviewed publications which will permit the user community to search, read, copy, download, share, print, and link to the full-text research articles through the Internet. Directory of Open Access Journals (DOAJ) was launched in 2003 at Lund University, Sweden with 300 OA Journals but today contains ca. 10000 OA Journals including Science, Technology, Medicine, Social Science and Humanities. The DOAJ has three types of membership such as Publisher, Ordinary member and Sponsor (<https://doaj.org/about>). It is noted that the directory till 5th August 2018 has listed 3,175,734 articles under 11,760 journals across 128 countries, of which 26 (0.22%) journals have been listed under the subject of Nephrology. The results reveal that the huge numbers (57.69%) of the OA Journals in DOAJ are accessible in online or electronic format. A major proportion of 14 journals do not charge any type of article processing charges (APCs). It was found that the major proportion (=34.62%) of journal license was by two licenses namely CC BY-NC-ND and CC BY-NC respectively. Majority of journals published from Switzerland (5 journals), and followed by four journals are published from the United Kingdom. As expected, the major proportion i.e. 73.09% of journals was in the English language of the total open access scholarly journals in the subject of Nephrology. Major frequency of 7 (26.90%) journals is quarterly and followed by frequency of six (23.10%) journals is yearly appeared.

Keywords: Scientometrics; DOAJ; OA; Nephrology; Open access journals; Scholarly journals.

Introduction

In the electronic environment, open access journals are in indistinct which are an essential source of print as well as online information and also append a very precious supplement to scholarly communication. Open access journals are free of cost and we can browse and download in the form of articles, books, and conference papers etc as much as we need and utilize for academic purpose freely and easily without any charge. Nitin Bacchaw (2012) stated that "Open access is related

to free access to read, download, copy, distribute, print, search, or link to the full texts of these articles" and further, Sanjeeva Meghana opined "Open access journals are scholarly journals that are available online to the reader without financial, legal, or technical barriers. Open access journals are called the gold road to open access".

Directory of Open Access Journals (DOAJ) is one of the open access journals directories which was launched in 2003 at Lund University, Sweden with 300 OA Journals but today contains ca.10000 OA



Journals including Science, Technology, Medicine, Social Science and Humanities. DOAJ provides access to quality controlled Open Access Journals in almost all the subjects and it aims to improve the visibility and ease to use the scholarly open access journals so as to encourage the user community and increased usage and impact. The DOAJ has three types of membership such as Publisher, Ordinary member and Sponsor (<https://doaj.org/about>). DOAJ is the category of member scheme organization and the scheme available in three types such as Publisher, Ordinary Member and Sponsor. DOAJ is receiving fund from various research and development funding agencies and they are:

- Open Society Institute <http://www.osi.hu/infoprogram/>
- SPARC <http://www.arl.org/sparc/>
- SPARC Europe <http://www.sparceurope.org/>
- BIBSAM <http://www.kb.se/bibsam/>
- Axiell <http://www.axiell.se/>

Nephrology is one of the emerging thrust areas in the field of medicine which is connected with kidney physiology, kidney disease, the treatment of kidney problems and renal replacement therapy. The word 'Nephrology' which was derived from Greek word 'nephros' means 'kidney', combined with the suffix -logy, means 'the study of' is a specialty of medicine and pediatrics that concerns itself with the kidneys and it is associated with the study of normal kidney function and kidney disease, the preservation of kidney health, and the treatment of kidney disease, from diet and medication to renal replacement therapy (Wikipedia). The term 'nephrology' used for the first time in a conference on 1-4 September 1960 at the "Premier Congress International de Néphrologie" in Evian and Geneva during the first meeting of the International Society of Nephrology (<https://www.science.org.au/>). For naive Nephrologists, nephrology training like internship is provided all over the world particularly, Australia and New Zealand, United Kingdom, United States and even in India to well care and provide good treatment for their patients. The world's first society of nephrology was the French 'Societe de Pathologie Renale'. Its first president was Jean Hamburger, and its first meeting was in Paris in February 1949 (Wikipedia).

As there is no such a study is carried out on publication analysis in Nephrology using Directory of Open Access Journals (DOAJ), this present study

is taken for the purpose of Scientometric analysis. Scientometrics is one of the metric studies which deals with quantitative and qualitative techniques in the field of Library and Information Science. It is purely based on bibliometrics and related other studies such as informetrics, librametrics, webometrics, cybermetrics, and recently altmetrics etc. Scientometrics is the quantitative study of patterns in the scientific literature. This approach can be applied to examine temporal trends in the number of publications on a certain topic; it is used to investigate the spatial distribution of the research attention given to a certain topic; to study the relative number of papers dealing with various research areas; to analyze the research trends and growth of papers; to assess the productivity of researchers and to compare the research performance and diversity of institutions and countries; to document patterns and determinants of the length of peer review processes and to study interdisciplinary collaboration activities. For the present study, Nephrology scholarly and scientific open access journals have been chosen for scientometric analysis which is retrieved from the Directory of Open Access Journals (DOAJ) repository. The study focus the growth level of open access journals on Nephrology discipline, and highlights in terms of country, language, year, journal license, publishers and many more features that are discussed based on research output during the period of study.

Related Work

A number of studies have been carried out both at National and International level as far as the open access journals concerned. Nevertheless, the researcher has sketched only few of the recent significant research for the present study. Te et. al. (2017) investigated under the title of "Charting the Landscape of Open Access Journals in Library and Information Science" to identify the current trends and to understand the characteristics of 65 LIS Open access journals which were collected from the Directory of Open Access Journals (DOAJ) and the Open Access Journal Search Engine (OAJSE). It is found that the salient features differ from LIS OAJ and active journals call for original research papers and other publication forms like commentaries (41.82%), editorials (43.63%), book or product reviews (56.36%), and other features unique to individual journals (60%). It is also noted that 10 of the research journals were unclear owing to the journal's website not clearly stated a preferred style (18.18%).

Mondal (2016) reported a study conducted on under the title, 'Open access journals in SAARC countries with special reference to DOAJ-A study' to observe the contribution of SAARC countries in DOAJ. The survey found among the 765 open access journals of SAARC countries during 2002-2013, India produced huge number of OA Journals with a amount of 590 (77.12%).

It is also found that fourteen OA e-Journals into DOAN since 2003 and Pakistan contributed OA e-journals in 2004 and followed by Nepal since 2005. The results showed that there is a rapid growth of adding open access journals between 2009 and 2013. It observed that out of 765 SAARC journals, majority of 33.59% journals were from commercial domain (.com) and 30.19% of the journals from institutional domain (.org).

Sagar and Vaishali (2015) reported about the 54 open access journals in the field of Botany which are available in the Directory of Open Access Journals (DOAJ) directory. This study focused the various parameters such as country wise, language wise, and year wise distribution, Subject Headings, subject keywords, and accessibility of journals during the period between 1933 and 2013. a total number of fifty four journals were found on Botany with eleven languages and as expected English was the dominant. Based on the findings, it was found that the huge number of journals was identified at Brazil which occupies first rank with ten core journals in the discipline of Botany. The next productive country was the United States with five journals and got placed second.

Awasthi and Jaiswal (2015) carried out a study on Library and Information Science field with 72 open access journals which were listed in DOAJ directory. The main aim and objective of this study was to know about the growth of open access journals in DOAJ directory and to investigate the number of foreign journals and languages in DOAJ directory. The research findings showed that fifty percent of the journals achieved as print format in the DOAJ director, and 8.3% online journals and 41.6% were print as well as online journals. It was noted that 87.06% journals were archived till 2013 and shockingly none of the journals were archived in the field of Library Science field during the year 2014. It was measured that 66.6% of the journals were published in English language as expected and in other languages very fewer journals were seen. The majority 30.5% of the journals were from the United States and few journals from other countries. It was also found that only

two journals were published in India such as International Journal of Information Dissemination and Technology published by M.M. University, Mullana-Ambala and International Research: Journal of Library and Information Science both are Indian journals. Out of 72 LIS Journals, 44 journals were interdisciplinary in nature and covered Social Sciences, Humanities and Sciences and computed that Social Science (23.61%) and related disciplines journals, Humanities journals (16.66%) and Science and Technology journals (20.83%).

Nisha and Ahmad (2014) examined a study to identify the status of open access journals in the field of Chemistry through DOAJ database. The main aim of this study was to analyze the contribution of OA Journals in Chemistry discipline which was listed in the DOAJ database. The survey method had been chosen to identify the research trends and growth of open access journals on Chemistry. It found 9804 journals under 124 countries of which 164 (1.67%) journals were identified under the subject of Chemistry till 2014. The results revealed that out of 164 core journals, the majority of 113 journals (68.9%) were under the sub-category of Chemistry general to open access in DOAJ, and the small number of open access journals sub-category was Inorganic Chemistry with 3.04%. It analyzed the country wise distribution of open access journals in Chemistry through DOAJ database and found Egypt was the leading country with 17.68% and got placed first rank and followed by India ranked second with 14.63% of contribution and United States got third rank in the contribution of open access journals in Chemistry with 10.36%.

Similarly study conducted by Satpathy et. al. (2013) under the study entitled, "Open source journals of library and information science: a bibliometric study" to observe the top ten open access journals in LIS during 2011 as appeared in the Scopus database by Elsevier. This research focused how OA Journals fared in prestige, credibility and impact by means of applying statistical tools by way of bibliometric analysis. Based on the analysis, they examined that those open access journals covered research papers published by solo authors and showed high amount of citations per paper and represented a well citation impact on open access journals in the field of Library and Information Science.

Another study carried out by Thavamani (2013) under the title, 'Directory of Open Access Journals: A Bibliometric Study of Library and Information Science' to identify the 151 Library and Information

Science open access journals and their issues, subject, scattering of journals, interdisciplinary aspects, country origin, language wise distribution, year wise distribution, article processing fee (APF) and many more characteristic features were discussed. The required data was gathered from the DOAJ website covering the Library and Information Science journals during 2003-2013. For the purpose of data analysis, a total number of 151 open access journals retrieved in the field of LIS. The results revealed that there was no surprising findings as most of the journals were written by English language and the maximum number of journals were published from the country of United States. It was found that the open access LIS Journals was published by the different kinds of institutions such as Universities, Research institutions, IITs, and NITs etc. based on the findings of the research, Universities occupied first rank with 65 (43.046%) journals published. The study measured article processing fee and identified that the huge number of 139 (92.053%) journals had no publication fee and the remaining seven journals collecting fee.

Obuh and Bozimo (2012) studied under the title, 'Awareness and Use of Open Access Scholarly Publications by LIS Lecturers in Southern Nigeria' to know about the users awareness and usage of academic open access journals by the Library and Information Science (LIS) lectures in Southern Nigeria. The main aim of this research was to identify the Southern Nigerian Library and Information Science (LIS) lectures understanding and knowledge and use of scholarly open access journals. The results found and revealed that the majority of senior and junior Library and Information Science (LIS) lectures in Southern Nigeria had seen a high level usage and knowledge about the open access publications. even though, the authors had suggested and recommended that the effective initiatives should be made in terms of inculcating the understating and awareness of open access publications particularly by way of enabling infrastructure and enacting policies towards open access publications and its achieves.

Kumar et. al. (2012) made an attempt to measure the open access journals in the field of Agricultural Sciences. The results observed that India had incessantly contributing in open access publications particularly in the agriculture sciences and found India ranked in terms of number of journals in the Directory of Open Access Journals (DOAJ) was 5th and in Directory of Open Access Repositories (OpenDOAR) India had 11th place in the world repository during the research. Similar

studies conducted by different subjects such as Media and Communication (Husain and Nazim, 2013), Choudhary and Khode (2010) investigated with 114 open access academic journals in the area of Computer Science which were collected from DOAJ. The results showed that 21% of the journals were produced from United States whereas only two journals were from India. Aswathy and Gopikuttan (2013) found 79 journals in general physics with 5.63% among twelve divisions. 20 journals were (13.07%) in astronomy and 17 journals found (11.11%) in optics and lights. Maity and Teli (2015) conducted a study to identify maximum productivity in the field of LIS were Information and Communication Technology, followed by Library and society, Library association and then by Management. The least productivity was Altmetric, Webometric, Public library, Special Library, Library classification. Lihitkar and Shalini (2013) carried out an analytical study on open access on Library and Information Science Journals which were retrieved from Directory of Open Access Journals (DOAJ). The results revealed that the major proportions of LIS journals were published in United States and got ranked first and even most of the journals are interdisciplinary scale.

Research Problem

In the electronic era, a number of directories are available on open access journals in the internet such as open DOAR, DOAJ etc. There is several open access movements have been undertaken to support and to use of open access scholarly journals. A good number of studies were carried out in various subjects on the use and utilization of open access journals and their impact, but it is observed that none of the study has been undertaken to examine open access scientific journals in the field of Nephrology Literature as indexed in Directory of Open Access Journals (DOAJ). Nephrology is an area where researchers or scholars are known to identify the current trends and growth level of open access journals publishing. This present research is useful for Library and Information Science (LIS) Professionals, Information Scientists and Nephrologists and related subject professionals to comprehend the different parameters associates with open access academic journals in the field of Nephrology.

Research Questions

Data in the area of Nephrology were gathered directly from Directory of Open Access Journals (DOAJ) website for evaluation through descriptive analysis in terms of subjects and its interest,

characteristics of journals, types of journals license, publication fee, country of publication, journals organization, peer review type and publisher distribution, chronological wise journals etc. based on the research technique, this paper poses and tries to answer five core research questions such as:

1. What are the characteristics of the nephrology publications in DOAJ?
2. What are the most commonly identified subjects on Nephrology in DOAJ?
3. What type of journals license on Nephrology OA Journals?
4. Which language is predominant on Nephrology OA Journals?
5. Which countries are contributed more OA Journals on Nephrology?

Objectives

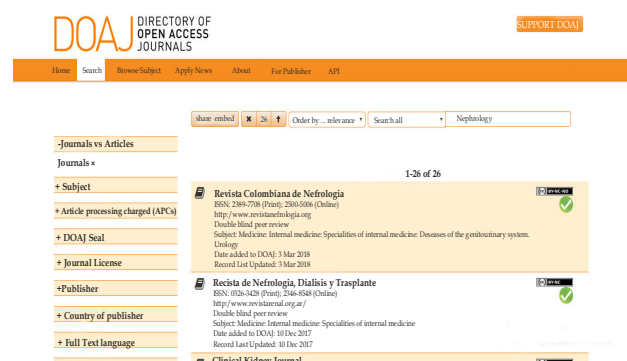
The main purpose of this research is to ascertain number of online open access scholarly and scientific journals in the field of Nephrology appeared in Directory of Open Access Journals (DOAJ) during the period from January 2002 to June 2018 and other objectives were:

- To identify different kinds of format of Open Access Journals on Nephrology
- To know the distribution of DOAJ seal and Article Processing Charges (APCs) in Nephrology
- To examine the kinds of Journal license of Nephrology during the period
- To investigate the ranking of Country-wise Journals on Nephrology
- To find the distribution of Language wise OA Journals on Nephrology
- To analyze the distribution of Peer Review Journals on Nephrology
- To illustrate the chronology wise distribution and
- To point out the Publisher wise distribution during the research period

Material and Methods

In order to measure the research exhaustively, the researcher took survey technique to analyze the level of growth and trends of open access journals

in Nephrology. To execute the above objectives, the required data was gathered from Directory of Open Access Journals (DOAJ) website. It is noted that the directory till August 5, 2018 has listed 3,175,734 articles under 11,760 journals across 128 countries, of which 26 (0.22%) journals have been listed under the subject of Nephrology. The data was collected from January 2002 to August 2018 and except the years from 2004 to 2008 as the data was not available those periods. The analysis was made based on the data with various parameters such as year and country wise distribution, subject coverage, publisher and language wise contribution, journals license, format wise contribution and many more features were discussed.



Source: <https://doaj.org/> accessed on 5.8.18

Scope and Limitations

This descriptive research is limited to Open Access scholarly and scientific journals in the field of Nephrology with only 26 online journals which are listed in the Directory of Open Access Journals (DOAJ) for the present study till the date 5th August 2018. Further, the other research areas or subjects or online and open access journals are not included during this study period.

Analysis and Results

To evaluate the contribution of open access journals in the area of Nephrology appeared in DOAJ, The different kinds of factors such as year and country wise distribution, subject coverage, publisher and language wise contribution, journals license, format wise contribution and many more features were discussed. Based on the retrieved data, findings and discussions have been illustrated below.

Format of Nephrology Journals

Based on the backdrop of the purpose of the present study, the author tried to identify the publishing pattern such as print, online and both of open access scholarly journals on Nephrology during the research period. In this regard, the below

Table 1 fig. 1 indicates that highest numbers (57.69%) of the OA Journals in DOAJ are accessible in online or electronic format and followed by 30.77% of them are both print as well as online journals and the remaining 11.54% of journals are published in print format. the results revealed that most of the journals are published under electronic format on Nephrology which is widely used by the user society.

Table 1: Format of Nephrology Journals.

S. No	Format	No of Journals	Percentage
1	Both print and Online	8	30.77
2	Online only	15	57.69
3	Print only	3	11.54
	Total	26	100

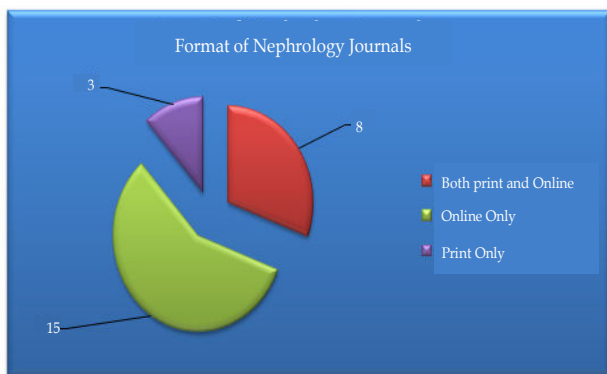


Fig. 1: Format of Nephrology Journals

Distribution of DOAJ Seal and Article Processing Charges (APCs)

Researcher has tried to investigate the contribution of DOAJ seal and Article Processing Charges (APCs) of open access scientific and scholarly journals in Nephrology over the period of research. The DOAJ Seal is, “a mark of certification for open access journals, awarded by DOAJ to journals that achieve a high level of openness, adhere to Best Practice and high publishing standards. To obtain the Seal, the respective journal must fulfill the 7 conditions” which are noticed in the DOAJ website (<https://doaj.org/publishers>). It is inferred from the below table 2 that out of 26 DOAJ open access journals, the majority 23 journals do not have the DOAJ seal and the remaining three journals have the DOAJ seal during the study period.

On the other hand, each journal has to show on its website in terms of charges information for an author to process or publish an article by authors. The processing fee such as Article Processing Charges (APCs), submission charges, page charges,

colour charges etc is required to complete the publication process. In which out of 26 journals, the small number of 12 journals are charging processing fee for publication of journals whereas the remaining major proportion of 14 journals do not charge the any type of article processing charges (APCs) during the study period.

Table 2: Distribution of DOAJ Seal and Article Processing Charges (APCs).

S. No	Type	Yes	No	Total	Total Percentage
1	DOAJ Seal	3	23	26	100
2	Article processing charges (APCs)	12	14	26	100

Journal License of Nephrology

Generally, the journals are permitted to reuse and remixing of content in accordance with a Creative Commons license or other type of license with some rules and regulations. Journals have the various kinds of licenses such as CC By, CC By-NC, CC By-NC-ND, CC By-NC-SA, CC By-ND and CC By-SA and others (<https://doaj.org/application/new>).

Table 3: Journal License of Nephrology.

S. No	Journal license	Total No of License	Total Percentage
1	CC BY-NC-ND	9	34.62
2	CC BY-NC	9	34.62
3	CC BY	7	26.92
4	CC BY-NC-SA	1	3.84
	Total	26	100

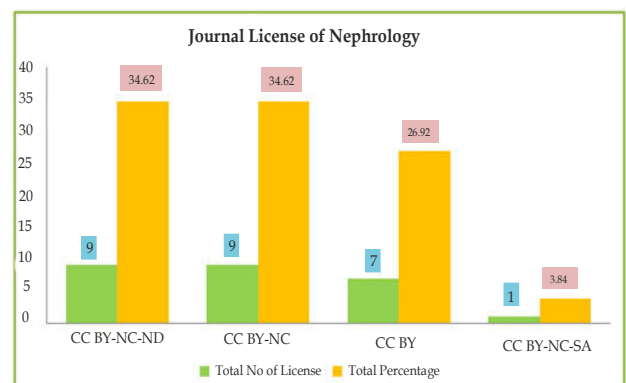


Fig. 2: Journal License of Nephrology.

In this context, the above table 3 and fig. 2 represents that Nephrology journals have the journal license such as, CC By-NC, CC By-NC-ND, CC By, CC By-NC-SA. It was found that the major proportion (=34.62%) of journal license were by two licenses namely CC By-NC-ND and CC By-NC respectively. the remaining CC-By (=26.92%) and CC By-NC-SA with 3.84%.

Table 4: Open Access Journal on Nephrology.

S. No	Title of the Journal	URLs	ISSN/ E-ISSN
1	Revista Colombiana de Nefrología	http://www.revistanefrologia.org	2389-7708 / 2500-5006
2	Revista de Nefrología, Diálisis y Trasplante	http://www.revistarenal.org.ar/	0326-3428 / 2346-8548
3	Clinical Kidney Journal	https://academic.oup.com/ckj	2048-8513
4	Kidney and Blood Pressure Research	http://www.karger.com/kbr	1420-4096 / 1423-0143
5	Enfermería Nefrológica	http://scielo.isciii.es/scielo.php?script=sci_serial&pid=1139-1375&lng=es&ndrm=iso	2254-2884 / 2255-3517
6	Journal of Parathyroid Disease	http://www.jparathyroid.com	2345-6558
7	Nefrología	https://www.journals.elsevier.com/nefrologia/	0211-6995
8	Počki	http://kidneys.zaslavsky.com.ua/	2307-1257 / 2307-1265
9	Kidney International Reports	http://www.journals.elsevier.com/kidney-international-reports/	2468-0249
10	Canadian Journal of Kidney Health and Disease	http://ckj.sagepub.com/	2054-3581
11	Nephron Extra	http://www.karger.com/nne	1664-5529
12	Journal of Nephro pharmacology	http://www.jnephro pharmacology.com	2345-4202
13	Jornal Brasileiro de Nefrologia or Brazilian Journal of Nephrology	http://www.scielo.br/scielo.php?script=sci_serial&pid=0101-2800&lng=en&ndrm=iso	0101-2800 / 2175-8239
14	Kidney Research and Clinical Practice	http://www.journals.elsevier.com/kidney-research-and-clinical-practice/	2211-9132
15	BANTAO Journal	http://www.degruyter.com/view/j/bj	2451-3105
16	Nefrología (English Edition)	https://www.journals.elsevier.com/nefrologia-english-edition/	2013-2514
17	BMC Nephrology	http://bmcnephrol.biomedcentral.com	1471-2369
18	Case Reports in Nephrology	https://www.hindawi.com/journals/crin/	2090-6641 / 2090-665X
19	International Journal of Nephrology	https://www.hindawi.com/journals/ijn/	2090-2158
20	International Journal of Nephrology and Renovascular Disease	http://www.dovepress.com/international-journal-of-nephrology-and-renovascular-disease-journal	1178-7058
21	Journal of Pediatric Nephrology	http://journals.sbm.ac.ir/jpn/	2345-3176
22	Case Reports in Nephrology and Urology	http://www.karger.com/cnd	1664-5510
23	Case Reports in Nephrology and Dialysis	http://www.karger.com/CND	2296-9705
24	Indian Journal of Nephrology	http://indianjnephrol.org/	0971-4065 / 1998-3662
25	Nephrology @ Point of Care	http://journals.sagepub.com/home/NPC	2059-3007
26	European Medical Journal Nephrology	http://emjreviews.com/therapeutic-area/nephrology/	2053-4148

Table 5: Distribution of Journals and Publishers.

S. No	Title of the Journal	Name of the Publisher	Location	H-Index
1	Revista Colombiana de Nefrología (H)	Asociación Colombiana de Nefrología e Hipertensión Arterial	USA	NA
2	Revista de Nefrología, Diálisis y Trasplante (Q)	Asociación Regional de Diálisis y Trasplantes Renales de Capital Federal Provincia de Buenos Aires	Argentina	NA
3	Clinical Kidney Journal (Bi-m)	Oxford University Press	UK	25
4	Kidney and Blood Pressure Research (BI-M)	S. Karger AG	Switzerland	44
5	Enfermería Nefrológica (Q)	Sociedad Espanola de Enfermeria Nefrologica	Spain	7
6	Journal of Parathyroid Disease (H)	Nickan Research Institute	Iran	NA
7	Nefrología (bi-m)	Grupo Aula Medica S.A.	Spain	30
8	Počki (Q)	Publishing House Zaslavsky	Ukraine	NA
9	Kidney International Reports (BI-M)	Elsevier	USA	5
10	Canadian Journal of Kidney Health and Disease (Y)	SAGE Publications Ltd	USA	9
11	Nephron Extra 3/Y	S. Karger AG	Switzerland	3
12	Journal of Nephro pharmacology (H)	Nickan Research Institute	Iran	NA
13	Jornal Brasileiro de Nefrologia or Brazilian Journal of Nephrology (Q)	Sociedade Brasileira de Nefrologia	Brazil	18
14	Kidney Research and Clinical Practice (Q)	Elsevier Korea	South Korea	10
15	BANTAO Journal (H)	Macedonian Society of Nephrology, Dialysis, Transplantation and Artificial Organs	Poland	2
16	Nefrología (English Edition) (bi-m)	Elsevier	Spain	NA
17	BMC Nephrology (y)	BioMed Central	UK	39
18	Case Reports in Nephrology 3/y	S. Karger AG	Switzerland	3
19	International Journal of Nephrology (y)	Hindawi Publishing Co	Egypt	21
20	International Journal of Nephrology and Renovascular Disease (y)	Dove Medical Press Ltd.	New Zealand	17
21	Journal of Pediatric Nephrology (q)	Iranian Society of Pediatric Nephrology	Iran	NA
22	Case Reports in Nephrology and Urology 3/yly	S. Karger AG	Switzerland	NA
23	Case Reports in Nephrology and Dialysis 3/yly	S. Karger AG	Switzerland	3
24	Indian Journal of Nephrology (q)	Medknow Publications	India	16
25	Nephrology @ Point of Care (y)	SAGE Publications Ltd	UK	NA
26	European Medical Journal Nephrology (y)	European Medical Group	UK	NA

Open Access Journal on Nephrology

Table 4 represents the availability of open access scholarly journals on Nephrology in DOAJ website. It contains name of the journal, URLs and their ISSN/E-ISSN numbers are listed.

Distribution of Journals, H-index and their Publishers

The below table 5 represents the detailed distribution of journals on Nephrology and their frequency, h-index, publishers and their location. It is evaluated and found that out of twenty six journals of Nephrology, the majority of journals published from Switzerland (5 journals), and followed by four journals are published from United Kingdom, three journals each were from United States, Iran, and Spain respectively. It is also found the least number of one journal each from Argentina, Brazil, Egypt, India, New Zealand, Poland, South Korea, and Ukraine respectively. Based on the analysis, h-index has been taken into account for the purpose of evaluation, and measured. In this context, the highest number of 44 h-index has Kidney and Blood Pressure Research (BI-M) published by S. Karger AG from Switzerland, and followed by 39 h-index BMC Nephrology (yearly), published by BioMed Central from UK and ranked second and he third productive h-index 30 with Nefrología (bi-m) Grupo Aula Medica S.A. from Spain and the least number of h-index i.e. 2 by BANTAO Journal (H), Macedonian Society of Nephrology, Dialysis, Transplantation and Artificial Organs from Poland among the 26 journals.

Ranking of Country-Wise Journals on Nephrology

Table 6 and Fig. 3 represents the rank wise contribution on Nephrology open access scientific journals was analyzed and found based on the data that the huge number of 5 (19.23%) open access journals were published from Switzerland for the benefit of user community and got ranked first, and followed by the next country is United States which produces 4 journals (15.37%) on Nephrology who claimed second rank. The third productive journals 3 (11.56%) in each from three countries such as United States, Spain and Iran were identified and placed third and followed by the fourth rank has occupied by 8 journals (each 1 journal) from Argentina, Brazil, Egypt, India, Libya, New Zealand, South Korea and Ukraine. It was identified that among the 26 journals, India got placed fourth as it has published only one journals. It is very clear that most of the eight journals were found from individual countries in the field of Nephrology.

Table 6: Country-Wise Journals on Nephrology.

S. No	Country of publisher	Frequency	Percentage	Rank
1	Switzerland	5	19.23	I
2	UK	4	15.37	II
3	Iran	3	11.56	III
4	United States	3	11.56	III
5	Spain	3	11.56	III
6	Argentina	1	3.84	IV
7	Brazil	1	3.84	IV
8	Egypt	1	3.84	IV
9	India	1	3.84	IV
10	Libya	1	3.84	IV
11	New Zealand	1	3.84	IV
12	South Korea	1	3.84	IV
13	Ukraine	1	3.84	IV
	Total	26	100	

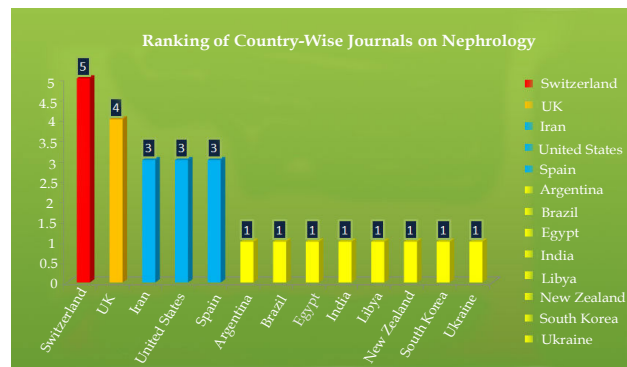


Fig. 3: Ranking of Country-Wise Journals on Nephrology

Languages Wise Distribution of Journals on Nephrology

In order to discover the language wise distribution of journals on Nephrology, the below Table 7 and Fig. 4 shows that the major proportion i.e. 73.09% of journals is the well-known language of the total open access scholarly journals in the subject of Nephrology that have seen in DOAJ during the research period. On the other hand, Spanish and Castilian languages with 4 journals representing 15.39% of the total open access scholarly journals in Nephrology are the next popular language. This is followed by the Ukrainian, Russian and Portuguese languages that constitute three journals each and contribute 3.84% each in open access scholarly journals in Nephrology and it was noticed that the remaining three journals not only those languages but also English language too are available full text scholarly publications in the field of Nephrology journals.

Table 7: Languages Wise Distribution.

S. No	Languages	No of Journals	Percentage
1	English	19	73.09
2	Spanish and Castilian	4	15.39
3	Ukrainian	1	3.84
4	Russian	1	3.84
5	Portuguese	1	3.84
	Total	26	100

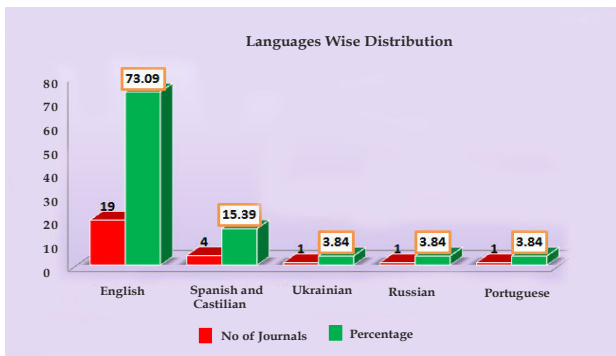


Fig. 4: Languages Wise Distribution

Frequency of Nephrology Journals

It is observed from the below table 8 that the frequency of Nephrology open access journals collected from the DOAJ directory.

Table 8: Distribution of Frequency wise Journals on Nephrology.

S. No	Frequency	No of Journals	Percentage
1	Monthly	0	0
2	Bi-monthly	5	19.23
3	Quarterly	7	26.90
4	Half-yearly	4	15.39
5	Annually	6	23.10
6	Yearly three times	4	15.39
	Total	26	100

Researcher has analyzed the frequency wise distribution in the field of Nephrology and it is inferred from the above table that the major frequency of 7 (26.90%) journals is quarterly and followed by frequency of six (23.10%) journals is yearly appeared. The frequency of five (19.23%) journals of Nephrology and the frequency of 4 (15.39%) journals is half-yearly and yearly three times published respectively. It is examined that the frequency of monthly journals are not found among the core journals of Nephrology.

Distribution of Peer Review Journals on Nephrology

Scholarly Journal articles have been reviewed under Blind peer review, Double blind peer review, Peer review and Open peer review and other types.

Based on the below table, in Nephrology journals research, the majority (53.85%) of journals were under Blind peer review and followed by 30.77% of the journals were under Double blind peer review and 11.54% of them were under peer review and only 3.84% i.e. only one journal comes under open peer review.

Table 9: Distribution of Peer Review Journals on Nephrology.

S. No	Peer review	Frequency	Percentage
1	Blind peer review	14	53.85
2	Double blind peer review	8	30.77
3	Peer review	3	11.54
4	Open peer review	1	3.84
	Total	26	100

Distribution of Subject Headings on Nephrology Journals

Table 10 indicates the contribution of subject headings in the field of Nephrology as appeared in the DOAJ. A total number of 26 Nephrology journal and their relevant subject headings are listed below.

Ranking Analysis of Subject Headings on Nephrology Journals

A total number of 26 journals covered in the field of Nephrology based on their subject headings coverage during the research. It was examined that the highest coverage of subject headings is Nephrology and Kidney diseases consisting 30.77% and 23.10% respectively. On the other hand, the amount of subject headings concentrated on Medicine, Clinical physiology, Pediatric, Acute kidney injury, and Chronic kidney disease (3.84%) which were accounted to 1 each. The major count of subjects of Nephrology was measured to 8 journals and has occupied first rank and followed by Kidney diseases consists of 6 journals got placed second. it is very clear that core concentration of Nephrology journals are Nephrology and Kidney diseases (Table 11 and Fig. 5).

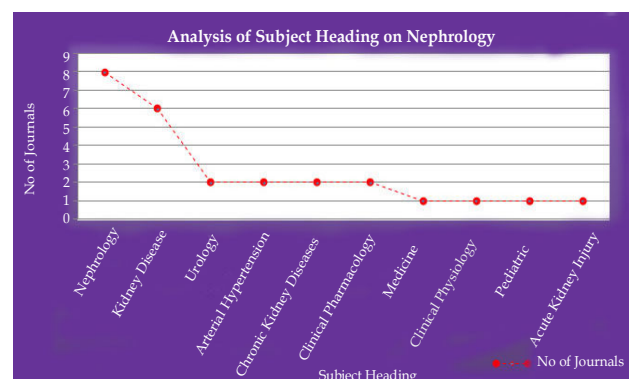


Fig. 5: Analysis of Subject Headings on Nephrology.

Table 10: Distribution of Subject Headings on Nephrology Journals.

S. No	Title of the Journal	Subject Headings
1	Revista Colombiana de Nefrología	Nephrology
2	Revista de Nefrología, Diálisis y Trasplante	Nephrology
3	Clinical Kidney Journal	Nephrology
4	Kidney and Blood Pressure Research	Nephrology
5	Enfermería Nefrológica	Nephrology, Kidney diseases
6	Journal of Parathyroid Disease	Clinical pharmacology
7	Nefrología	Arterial hypertension
8	Počki	Urology, Nephrology
9	Kidney International Reports	Acute kidney injury, Chronic kidney disease
10	Canadian Journal of Kidney Health and Disease	Kidney disease
11	Nephron Extra	Nephrology, Clinical physiology
12	Journal of Nephro pharmacology	Nephrology, Pharmacology
13	Jornal Brasileiro de Nefrologia or Brazilian Journal of Nephrology	Nephrology, Kidney diseases
14	Kidney Research and Clinical Practice	Chronic kidney diseases
15	BANTAO Journal	Medicine
16	Nefrología (English Edition)	Arterial hypertension
17	BMC Nephrology	Nephrology, Kidney disorders
18	Case Reports in Nephrology	Nephrology, Kidney diseases
19	International Journal of Nephrology	Nephrology, Kidney diseases
20	International Journal of Nephrology and Renovascular Disease	Kidney disease, Kidney transplant
21	Journal of Pediatric Nephrology	Pediatric, Nephrology
22	Case Reports in Nephrology and Urology	Nephrology, Urology
23	Case Reports in Nephrology and Dialysis	Nephrology
24	Indian Journal of Nephrology	Nephrology
25	Nephrology @ Point of Care	Nephrology
26	European Medical Journal Nephrology	Nephrology, chronic kidney disease

Table 11: Analysis of Subject Headings on Nephrology Journals.

S. No	Subject Headings	No of Journals	Percentage	Rank
1	Nephrology	8	30.77	I
2	Kidney diseases	6	23.10	II
3	Urology	2	7.69	III
4	Arterial hypertension	2	7.69	III
5	Chronic kidney diseases	2	7.69	III
6	Clinical pharmacology	2	7.69	III
7	Medicine	1	3.84	IV
8	Clinical physiology	1	3.84	IV
9	Pediatric	1	3.84	IV
10	Acute kidney injury, Chronic kidney disease	1	3.84	IV
	Total	26	100	

Table 12: Subject Keywords of Open Access Journals on Nephrology.

S. No	Title	Keywords
1	Revista Colombiana de Nefrología	nephrology, arterial hypertension, nephritis, vasculitis, renal transplant
2	Revista de Nefrología, Diálisis y Trasplante	nephrology, renal dialysis, renal trasplant, chronic kidney disease
3	Clinical Kidney Journal	nephrology, translational research, clinical education, transplantation
4	Kidney and Blood Pressure Research	nephrology, cardiovascular disease, transplantation, dialysis, kidney, hypertension
5	Enfermería Nefrológica	Nephrology, Kidney diseases, Nurses
6	Journal of Parathyroid Disease	clinical pharmacology, thyroid disease, nephrology, endocrinology
7	Nefrología	arterial hypertension, dialysis and kidney transplants, nephrology
8	Počki	urology, nephrology, urinary system pathology, treatment of urinary system diseases, chronic urinary disease, infection in the urinary system
9	Kidney International Reports	acute kidney injury, chronic kidney disease, dialysis, end-stage renal disease, transplantation, acid-base fluid and electrolyte disorders
10	Canadian Journal of Kidney Health and Disease	kidney disease, dialysis, transplantation, organ donation
11	Nephron Extra	nephrology, clinical physiology, fluid and electrolyte homeostasis, urinary tract function
12	Journal of Nephro pharmacology	nephrology, pharmacology
13	Jornal Brasileiro de Nefrologia or Brazilian Journal of Nephrology	nephrology, kidney diseases
14	Kidney Research and Clinical Practice	kidney, chronic kidney disease, hemodialysis, peritoneal dialysis, kidney transplantation, nephrology
15	BANTAO Journal	medicine, internal medicine, urology, nephrology
16	Nefrología (English Edition)	arterial hypertension, dialysis and kidney transplants, nephrology
17	BMC Nephrology	nephrology, kidney disorders
18	Case Reports in Nephrology	nephrology, kidney diseases
19	International Journal of Nephrology	nephrology, kidney diseases, kidney
20	International Journal of Nephrology and Renovascular Disease	kidney disease, renovascular disease, dialysis, kidney transplant
21	Journal of Pediatric Nephrology	pediatric, nephrology, dialysis, kidney transplantation, acid-base disturbances
22	Case Reports in Nephrology and Urology	nephrology, urology
23	Case Reports in Nephrology and Dialysis	nephrology, dialysis
24	Indian Journal of Nephrology	Nephrology
25	Nephrology @ Point of Care	Nephrology
26	European Medical Journal Nephrology	nephrology, chronic kidney disease, diabetic nephropathy

Source: <https://doaj.org/>

Subject Keywords of Open Access Journals on Nephrology

It is inferred from the below table 12 that shows the constructive relevant subject keywords for searching in each open access academic journals in the discipline of Nephrology. it is lucidly indicated that these keywords will the user society to search the respective journals what they need and also users would not waste their time by browsing broad term based keywords.

Chronology Wise Distribution

Table 13 indicates the year wise productivity of Nephrology journals which are available in DOAJ. This analysis shows that the level of growth and development in the field of Nephrology for period from January 2002 to June 2018 and noted that there is no journal uploaded between 2004 and 2008. Table 13 and Fig. 6 pointed out that the major proportion of 6 (23.07%) journals were found during 2016 and the small proportion of only one (3.84%) journal each were found in different period (2002, 2003, and 2009). during the research period, the trend line analysis technique was employed using MS Excel and measurement of exponential growth rate of y value is $3.4375e^{-0.106x}$ and R^2 value is 0.3294. The result indicates that the open access scholarly journals of Nephrology growth was fluctuation trend during the research. It was also measured the cumulative number of journals as well as cumulative percentage produced from the data on Nephrology open access journals which were retrieved from DOAJ from the year 2002 to 2018.

Table 13: Chronology wise distribution.

S. No	Year	No of Journals	Cum Journals	Percentage	Cum. Percentage
1	2018	1	1	3.84	3.84
2	2017	5	6	19.23	23.07
3	2016	6	12	23.07	46.14
4	2015	2	14	7.69	53.83
5	2014	2	16	7.69	61.52
6	2013	3	19	11.55	73.07
7	2012	1	20	3.84	76.91
8	2011	1	21	3.84	80.75
9	2010	2	23	7.69	88.44
10	2009	1	24	3.84	92.28
11	2003	1	25	3.84	96.12
12	2002	1	26	3.84	100
Total		26		100	

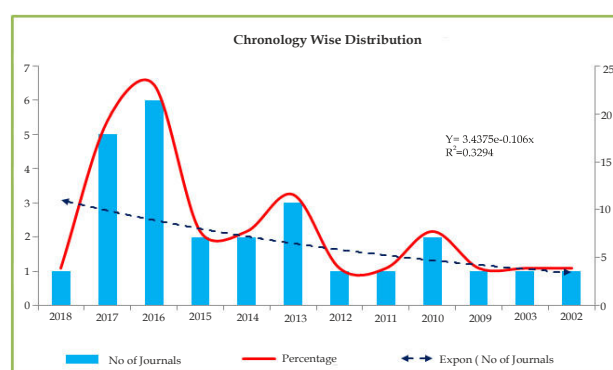


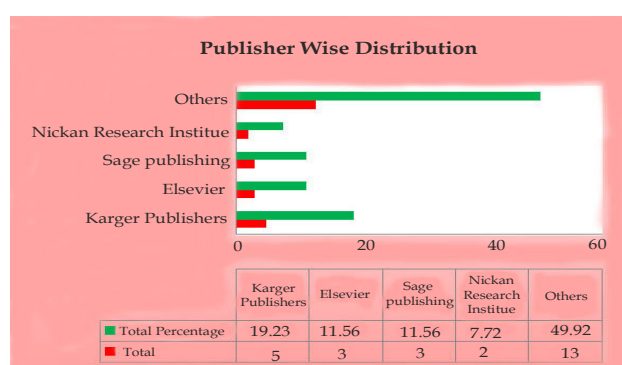
Fig. 6: Chronology wise distribution.

Ranking of Publisher Wise Distribution

It is seen from Table 14 and Fig. 7 that shows the ranking of publisher wise distribution of open access journals on Nephrology over the research period. It is found that seventeen publishers with different countries involved to publish twenty six Nephrology open access scientific journals and identified the huge number of journals (5, 19.23%) are published by Karger publishers from Switzerland and ranked first among 26 open access journals of DOAJ. Elsevier as well as SAGE Publications are placed second with 11.56% respectively and followed by Nickan Research Institute is occupied third rank with 7.72%. it is noticed that the thirteen single journals published only one (3.84%) journal each over the study period in the field of Nephrology.

Table 14: Ranking of Publisher wise distribution.

S. No	Publisher	Total	Total percentage
1	Karger Publishers	5	19.23
2	Elsevier	3	11.56
3	SAGE Publishing	3	11.56
4	Nickan Research Institute	2	7.72
5	Hindawi Limited	1	3.84
6	Wolters Kluwer Medknow Publications	1	3.84
7	Spanish Society of Nephrology	1	3.84
8	Sociedade Brasileira de Nefrologia	1	3.84
9	Asociación Colombiana de Nefrología e Hipertensión Arterial	1	3.84
10	Iranian Society of Pediatric Nephrology	1	3.84
11	BioMed Central	1	3.84
12	Dove Medical Press Ltd	1	3.84
13	Grupo Aula Medica S.A	1	3.84
14	European Medical Group	1	3.84
15	Oxford University Press	1	3.84
16	Macedonian Society of Nephrology	1	3.84
17	Publishing House Zaslavsky	1	3.84
	Total	26	100

**Fig. 7:** Publisher Wise Distribution

Findings, Discussion and Further Research on Nephrology

By and large, scholarly or academic journals are originally established to serve as a tool for communication for academicians, researchers, eminent scholars, information scientists etc. scholarly open access journals help the researcher to observe the gradual increase or decrease of the growth of scientific publications in a particular discipline/subject. Those scholarly journals are also helping to researcher to predict in which year more number of scientific publications were published on a particular discipline.

Open access journals (OAJ) and the open access publishing (OAP) is gaining momentum throughout the globe. The open access journals are indicator to identify the scholarly publications and research articles that might be measured as exponential

growth rate irrespective of subject differences since the Budapest Open Access Initiative as reported by Rabiya et. al. (2017) and then the health and medicine journals had seen the same trend and the growth rate of the journals vary from 200% to 350% within fifteen years, and also noted that presently 50% (75) countries of the world publish open access journals in the field of health and medicine. but, one of the recent studies done by Velmurugan (2018) in this field using scientometric indices showed that 108 countries collaborated on Nephrology research during 2011-2016, and found out of 108 countries, USA had ranked first with 32.2% and followed by Italy has occupied the second place. Hence, the findings revealed that the level of growth rate has been increasing every year at a substantial rate. As Nephrology is the branch of Medicine and one of the emerging thrust areas in the field of medical Science which is connected with kidney physiology, kidney disease, the treatment of kidney problems and renal replacement therapy. For naive Nephrologists, nephrology training like internship is provided all over the world particularly, Australia and New Zealand, United Kingdom, United States and even in India to well care and provide good treatment for their patients. This current research will help not only naive Nephrologists but also to policy decision makers to take necessary steps in order to identify the relevant journals in the field of medicine particularly Nephrology domain.

Further Research on Nephrology

The present study is significantly highlighted the

statistical and quantitative techniques of the only 26 Nephrology open access journals which is widely used throughout the globe. In future, the research might be taken into more attention on Nephrology open access journals to quality control metrics such as Journal Citation Reports (JCR), Impact Factor (IF), H-Index, G-Index, i10-index of authors to identify the quality of journals on Nephrology research in terms of the open access scholarly and scientific journals.

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