

RESEARCH ARTICLE

RESEARCH RESPONSE ON "PEDIATRIC": A SCIENTOMETRIC STUDY ON THE LITERATURE OUTPUT FROM WOS

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ABSTRACT

The hit rate of publications even more grew on the basis of everyday development in each and every department. To study the growth and publication trend in "PEDIATRIC" decided to use scientometric tools. The desired data were downloaded from web of science (WOS) on pediatric. The analysis was based on the year wise growth on publications, publications based on languages, document wise publications and top ten journals; the Lotka's Law has been analyzed. The scope and hypothesis are framed for the present study. The research topic was "Research Response on "Pediatric": A Scientometric Study on the Literature Output from WOS".

Keywords: Scientometric, Pediatric, Hypothesis, WOS, Lotka's Law.

1. INTRODUCTION

The word "Pediatric" derived from two Greek words that are Pais means child and iatros meaning doctor or healer. Pediatric is a division of medicine exclusively for infants, children and also for adolescents up to the age of 18. This pediatric department has been developed only in the mid of 19th century and "Abraham Jacobi (1830-1919) is known as the father of pediatric" (1-3). Scientometric is one of the most significant methods for evaluating the scientific productions. In recent years, Scientometric study has been showing the gradual improvement by using its techniques to scrutinize the research output of researchers and the development of a range of disciplines in sciences. "Modern Scientometrics is mostly based on the work of Eugene Garfield creator and founder of the Science Citation Index and the Institute for Scientific Information (ISI) which is greatly used for Scientometric analysis"(4-5).

2. REVIEW OF RELATED LITERATURE

Elango (2017) the "Science Citation Index-expanded" (Sci-E), in tribology research the science citation index-expanded is used to get back the bibliographic records. A relative funding index, this is a new relative indicator is also introduced in this study. The higher number of cited reference will go to the funded research publications after that international collaborative papers than the papers published through non-funded publications. Comparatively the publications by single authored productivity are lower than non-funded ones. The

funded and non-funded researches do not have any difference in citation impact.

Senthilkumar and Muthukrishnan (2017) analysis of "Scientific publication research productivity" published in the British Journal of Cancer for the period of 11 years from 2005 to 2015. The purpose of using different types of scientometric parameters like; author productivity, country wise distribution, degree of collaboration, annual growth rate, Institution wise distribution, and the research document type are done for analyzing the data. The study concludes with the publications totally 264 issues in the journal and 6818 by records.

Maity and Hatua (2015) Library and Information Science [LIS] gives the importance on research as doctoral level. In the year 1957 the first doctoral degree was given, and then slowly it sped up in the year 1990s. During 1950-2012 according to "INDCAT, Vidyanidhi, Infilbnet and University News databases it was found that about 1058 doctoral thesis have been produced through different universities in India. Current study is an effort in finding the trend in research field of LIS and analyzing the research activity during 1950-2012. This study results declare that 1058 numbers of doctoral thesis awarded in various universities for the past 63 years.

Aswathy and Gopikuttan (2012) in the list of premier journals in the field of space technology, the top positioned journal is "Journal of Spacecraft and Rockets". It is published by American Institute of Aeronautics and Astronautics. This analysis provides the details of bibliometric analysis of the

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the data to be downloaded for the whole required records. Next in the field of record content to be filled as full record and cited references with plain text, at last by clicking sent option the data will be downloaded.

5. RESULTS

5.1.. The analysis of yearwise publications

In the yearwise analysis on pediatric contains the period of 2001 to 2016 the data reveals that 20615 and the following table shows the yearwise publications on pediatric in global level.

Table 1. Year wise productivity

S.No	Year	Records	%	Rank
1	2001	478	2.3	16
2	2002	493	2.4	15
3	2003	546	2.6	14
4	2004	591	2.9	13
5	2005	716	3.5	12
6	2006	839	4.1	11
7	2007	875	4.2	10
8	2008	1105	5.4	9
9	2009	1697	8.2	8
10	2010	1828	8.9	5
11	2011	1950	9.5	3
12	2012	2068	10	1
13	2013	1866	9.1	4
14	2014	1764	8.6	7
15	2015	1995	9.7	2
16	2016	1804	8.8	6
TOTAL		20615	100	

The table 1 indicates that the growth of the publication during the study period are seems to be neither in a firm constant growing trend nor declining trend. It is analyzed that, the year 2012 shows the publications as 2068 records which is holds the first place and the most productive year. The year 2015 took the second place with 1995 publications and the year 2011 holds the third place with 1950 research records.

5.2. The analysis of document wise publications

Totally 20615 research records are published during the study period on pediatric over the world and totally fifteen types of research documents are involved. Out of fifteen types of documents "Article" took the first place with 15913 (77.2%). Second place goes to "Review" document with 1846 (9%), "Editorial Material" document holds the third place with 1196 (5.8%).

Table 2. Document wise publications

Sl.No	Document Type	Records	%
1	Article	15913	77.2
2	Review	1846	9
3	Editorial Material	1196	5.8
4	Article : Proceedings Paper	747	3.6
5	Meeting Abstract	608	2.9
6	Letter	153	0.7
7	Book Review	31	0.2
8	News Item	29	0.1
9	Biographical-Item	26	0.1
10	Reprint	26	0.1
11	Correction	24	0.1
12	Review: Book Chapter	10	0
13	Article: Book Chapter	4	0
14	Article: Retracted Publication	1	0
15	Poetry	1	0
TOTAL		20615	

5.3. The analysis of language wise publications

The following table-3 denotes that totally nineteen languages were involved towards the publication of 20615 research records on "Pediatric", in which the language "English" plays the major role in publishing 19425 (94.2%) records and holds the first place among all the other 18 languages. The second place holds by "Spanish" language with 361 (1.8%) records and the third place took by the language of "German" with 341(1.7%) research records.

Table 3 – Analysis of Language wise publications

S. No.	Language	Records	%
1	English	19425	94.2
2	Spanish	361	1.8
3	German	341	1.7
4	French	339	1.6
5	Portuguese	61	0.3
6	Turkish	34	0.2
7	Italian	13	0.1
8	Croatian	9	0
9	Korean	9	0
10	Russian	6	0
11	Polish	5	0
12	Hungarian	3	0
13	Icelandic	2	0
14	Slovene	2	0
15	Arabic	1	0
16	Czech	1	0
17	Georgian	1	0
18	Japanese	1	0
19	Serbian	1	0
Total		20615	

5.4. The analysis of journal wise publications

The following table 4 shows the leading top ten journals are identified, in which the journal “Pediatrics” holds the first place with 4083 research records. The journal entitled as “Journal of pediatric infectious” took the second place with 385 publications. Third place took by the journal called “Circulation” with 324 records. The journal named “Pediatric critical care medicine” with 300 records, “Journal of urology” with 254 records, “Clinical pediatric” with 214 records, “Pediatric infectious disease journal” with 194 records, “Archives de pediatric” with 183 records, “Pediatric blood & cancer” with 171, “Monatsschrift kinderheilkunde” with 169 records placed 4th, 5th, 6th, 7th, 8th, 9th and 10th respectively.

Table 4 – Analysis of Journal wise publications

S. No.	Journal	Records
1	Pediatrics	4083
2	Journal of pediatric infectious	385
3	Circulation	324
4	Pediatric critical care medicine	300
5	Journal of urology	254
6	Clinical pediatric	214
7	Pediatric infectious disease journal	194
8	Archives de pediatric	183
9	Pediatric blood & cancer	171
10	Monatsschrift kinderheilkunde	169

5.5. The analysis of country wise publications

The following table – 5 indicates the country wise publications in which the “United States of America” stands first in publishing most number of research records on “Pediatric” with 11754, secondly “Canada” holds the place with 1636 records. Third place took by “United Kingdom” with 827 research records.

Table 5. Analysis of Country wise publications

S.No	Country	Records
1	United States	11754
2	Canada	1636
3	United Kingdom	827
4	Germany	703
5	France	698
6	Italy	674
7	Australia	527
8	Netherlands	503
9	Spain	418

Table 6. Application of Lotka's Law

No. of contribution (x)	No. of contributors (y)	$\Sigma x = \log x$	$\Sigma y = \log y$	x ²	XY	y/ Σy	$\Sigma (y/\Sigma y)$	1/x ⁿ	Fe=C(1/x ⁿ)	CT	D
1	50421	0.000	10.828	0.000	0.000	0.761	0.761	1.000	0.6100	0.61	-0.151
2	8791	0.693	9.081	0.480	6.295	0.133	0.894	0.250	0.1525	0.8	-0.131
3	3077	1.099	8.032	1.207	8.824	0.046	0.940	0.111	0.0678	0.8	-0.110
4	1471	1.386	7.294	1.922	10.111	0.022	0.962	0.063	0.0381	0.9	-0.094
5	771	1.609	6.648	2.590	10.699	0.012	0.974	0.040	0.0244	0.9	-0.081
6	527	1.792	6.267	3.210	11.229	0.008	0.982	0.028	0.0169	0.9	-0.072
7	333	1.946	5.808	3.787	11.302	0.005	0.987	0.020	0.0124	0.9	-0.065
8	229	2.079	5.434	4.324	11.299	0.003	0.990	0.016	0.0095	0.9	-0.059
9	159	2.197	5.069	4.828	11.138	0.002	0.993	0.012	0.0075	0.9	-0.053
10	106	2.303	4.663	5.302	10.738	0.002	0.994	0.010	0.0061	0.9	-0.049
11	86	2.398	4.454	5.750	10.681	0.001	0.996	0.008	0.0050	1.0	-0.045
12	58	2.485	4.060	6.175	10.090	0.001	0.996	0.007	0.0042	1.0	-0.042
13	41	2.565	3.714	6.579	9.525	0.001	0.997	0.006	0.0036	1.0	-0.039
14	45	2.639	3.807	6.965	10.046	0.001	0.998	0.005	0.0031	1.0	-0.036
15	30	2.708	3.401	7.334	9.211	0.000	0.998	0.004	0.0027	1.0	-0.034
16	15	2.773	2.708	7.687	7.508	0.000	0.998	0.004	0.0024	1.0	-0.032
17	14	2.833	2.639	8.027	7.477	0.000	0.999	0.003	0.0021	1.0	-0.030
18	14	2.890	2.639	8.354	7.628	0.000	0.999	0.003	0.0019	1.0	-0.028
19	13	2.944	2.565	8.670	7.552	0.000	0.999	0.003	0.0017	1.0	-0.027

20	12	2.996	2.485	8.974	7.444	0.000	0.999	0.003	0.0015	1.0	-0.026
21	9	3.045	2.197	9.269	6.689	0.000	0.999	0.002	0.0014	1.0	-0.024
22	10	3.091	2.303	9.555	7.117	0.000	1.000	0.002	0.0013	1.0	-0.023
23	6	3.135	1.792	9.831	5.618	0.000	1.000	0.002	0.0012	1.0	-0.022
25	5	3.219	1.609	10.361	5.181	0.000	1.000	0.002	0.0010	1.0	-0.021
26	7	3.258	1.946	10.615	6.340	0.000	1.000	0.001	0.0009	1.0	-0.020
27	5	3.296	1.609	10.863	5.304	0.000	1.000	0.001	0.0008	1.0	-0.020
28	5	3.332	1.609	11.104	5.363	0.000	1.000	0.001	0.0008	1.0	-0.019
29	4	3.367	1.386	11.339	4.668	0.000	1.000	0.001	0.0007	1.0	-0.018
30	3	3.401	1.099	11.568	3.737	0.000	1.000	0.001	0.0007	1.0	-0.018
31	4	3.434	1.386	11.792	4.761	0.000	1.000	0.001	0.0006	1.0	-0.017
32	3	3.466	1.099	12.011	3.808	0.000	1.000	0.001	0.0006	1.0	-0.017
33	2	3.497	0.693	12.226	2.424	0.000	1.000	0.001	0.0006	1.0	-0.016
34	1	3.526	0.000	12.435	0.000	0.000	1.000	0.001	0.0005	1.0	-0.016
35	4	3.555	1.386	12.640	4.929	0.000	1.000	0.001	0.0005	1.0	-0.015
36	1	3.584	0.000	12.842	0.000	0.000	1.000	0.001	0.0005	1.0	-0.015
38	1	3.638	0.000	13.232	0.000	0.000	1.000	0.001	0.0004	1.0	-0.014
39	1	3.664	0.000	13.422	0.000	0.000	1.000	0.001	0.0004	1.0	-0.014
42	1	3.738	0.000	13.970	0.000	0.000	1.000	0.001	0.0003	1.0	-0.014
50	2	3.912	0.693	15.304	2.712	0.000	1.000	0.000	0.0002	1.0	-0.013
52	1	3.951	0.000	15.612	0.000	0.000	1.000	0.000	0.0002	1.0	-0.013
97	1	4.575	0.000	20.928	0.000	0.000	1.000	0.000	0.0001	1.0	-0.013
Total	66289	116.02	122.40	363.08	247.45	1.000	40.46	1.62	1.0		

5.6. Application of Lotka's Law

It was identified that the value of n in pediatric research output in global is 2.86, the Lotka's law, finding was $n = 2$ while the outcome of Lotka's law result in our study was found to be 2.86. Hence the present analysis invalidates the Lotka's results. So that based on the observation the Lotka's Law will not fit in to the authors' productivity of this study.

The hypothesis framed as H_0 - "No significant relationship between the Lotka's Law and the author productivity".

6. CONCLUSION

In this study during the year 2001 to 2016 the total research records were 20615. It is observed that in the analysis of yearwise publications the year 2012 shows the publications as 2068 records which is holds the first place and the most productive year. The year 2015 took the second place with 1995 publications and the year 2011 holds the third place with 1950 research records. In the analysis of document wise publications, out of fifteen types of documents "Article" took the first place with 15913 (77.2%). Second place goes to "Review" document with 1846 (9%), "Editorial Material" document holds the third place with 1196 (5.8%). In the language wise analysis language "English" plays the major role in publishing 19425 (94.2%) records and holds the first place among all the other 18 languages. The second place holds by "Spanish" language with 361 (1.8%) records and the third place took by the language of "German" with 341(1.7%) research

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