Bibliometric Analysis of Hematology during 2004 -2013

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Abstract

The objective of this study is to be revealed that the growth and development of bibliometric and scientometric research global output of hematology research. Articles are covered in the web of science database wrapper the period from 2004 – 2013 have been considered for the study. Growth of literature year wise, country wise, pattern authorship, most productive authors, bibliographies, ranking of core journals and nature of research have been analyzed.

Keywords

Bibliometric; Scientometric; Web of Science; Hematology; Scientific Output.

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INTRODUCTION

The 20th century may be described as the century of the development of metri sciences. In this century itself there have been the developments of librametrics, bibliometric, scientometric, altmetrics, econometrics, cybermetrics or webometrics [Sen 2004; Ming, 2000], and lastly informatics. The term "bibliometrics" was first used by Pritchard [1969] to replace the name "statistical bibliography" for the growing field of quantitative analysis of bibliographies. For some years, however, both "bibliometry" and "bibliometric" were in vogue. Borgman and Furner (2002) have reviewed the relationship of scholarly communication and bibliometrics. The bibliometric study reveals that careful evaluation of periodical literature by providing a complete picture of core publications of any particular discipline. Bibliometric study is, therefore, being consistently adopted by LIS professionals and researchers to asses and evaluates the scientific output of the published literature on any particular discipline for a explicit period through the application of bibliometric and citation indicators. Moreover, bibliometric studies have been massively useful for librarians in selection and policies of weeding. It serves as a useful tool to the academic community in identifying most popular authors and potential publications. Furthermore it helps in determining the highly cited journals, ranking of prolific authors, authorship pattern, and the impact factor of journals and other significant details of any specific literature under study.

Hematology also spelled Haematology(Greek word haima "blood"), is subdivision of medicine concerned with the study of diagnosis, treatment, and prevention of diseases related to the blood. The American Society of Hematology(ASH) is helping hematologist conquer blood diseases worldwide American Society of Hematology has played an active and vital role in the growth of hematology as a discipline. And has published Blood, the Journal of the American Society of Hematology, which is the most, cited peer-reviewed publication in the field.

NEED FOR THE STUDY

In the recent ten years have witnessed many bibliometric studies in the field of hematology there has been explosive growth and development in hematology. Information explosion or literature growth has become a major challenge for scientist, researchers and scholars because they have to update

with recent development in their respected discipline. Bibliometric techniques are major tools for assessment of research activity.

OBJECTIVES OF THE STUDY

The objectives of the present study were:

1. To reveals the year wise distribution of articles
2. To study the geographical distribution of publications
3. To present the language wise distribution of articles
4. To find out the channels of Communication
5. To determine the research institute of the world
6. To assess the most productive authors
7. To analyze the source wise distribution of articles

RESEARCH METHODOLOGY

The study reveals that the scholarly communication of hematology research from 2004 - 2013 have been taken into consideration for present study. Keeping the objectives of the study in mind, a total number of 2, 50,310 articles published during the stated period the data were downloaded from the ISI web of science for retrieving the data into the database the search term applied was “Hematology” we expected the maximum retrieval of results. A total number of results were downloaded from the ISI web of science each record contains English language abstract and bibliographic information (e.g. author, name of journal, author address).The data thus collected were fed into MS Excel worksheet to process the gathered data for subsequent analysis. The study employed required bibliometric measures to test the validity of the findings.

DATA ANALYSIS AND INTERPRETATION

1. Year Wise Distribution of Articles

Table 1depicts the year wise distribution of papers in the ISI web of Science e-journals consortia. The numbers varied from year to year. The highest number of articles were published in the year 2013 that is 28282 which is (11.30%) of the total publication. The second highest number of articles that is 27145 were published in the year 2007 which constitutes (10.84%) of the total articles, the third highest number of articles that is 26677 were published in the year 2010 which constitutes (10.66%) of the total articles followed by 25984(10.38%) articles were published in the year 2012, 25862(10.33%) articles were published in the year 2008, 25751(10.29%) articles were published in the year 2011, 25263(10.09%)articles were published in the year 2009, 22625(9.04%) articles were published in the year 2006, 22277(8.90%) articles were published in the year 2005, 20444(8.17%) articles were published in the year 2004. It is observed from the total that the quantity of articles published seem to increase every year.

Table 1: Year Wise Distribution of Articles

Sl. No	Publication Years	Records	%	Cumul-ative
1	2004	20444	8.17	20444
2	2005	22277	8.90	42721
3	2006	22625	9.04	65346
4	2007	27145	10.84	92491
5	2008	25862	10.33	118353
6	2009	25263	10.09	143616
7	2010	26677	10.66	170293
8	2011	25751	10.29	196044
9	2012	25984	10.38	222028
10	2013	28282	11.30	250310
	Total	**250310**	**100.00**	

1.1 Geographical Distribution of Publications

Table 2 depicts that out of the total 250310 articles published by during the period 2004-2013, 93701 papers (37.43%) are contributed from the USA, followed by 24242 articles from Germany(9.68%), 21835 papers from Italy(8.72%), 19234 articles from England(7.68%), 14818 articles from France(5.92%), 14072 articles from Japan(5.62%), 12167 articles from Canada(4.86%), 11183 articles from Netherlands(4.47%), 7740 articles from Peoples R China(3.09%), 7540 articles from Spain(3.01%). 23778 articles from Other Countries(9.50%), USA rank first among the all the countries for the articles contribution.

Table 2:Geographical Distribution of Publications

Sl. No	Countries	Records	%	Cumul-ative
1	USA	93701	37.43	93701
2	GERMANY	24242	9.68	117943
3	ITALY	21835	8.72	139778
4	ENGLAND	19234	7.68	159012
5	FRANCE	14818	5.92	173830
6	JAPAN	14072	5.62	187902

7	CANADA	12167	4.86	200069
8	NETHERLANDS	11183	4.47	211252
9	PEOPLES R CHINA	7740	3.09	218992
10	SPAIN	7540	3.01	226532
11	OTHER COUNTRIES	23778	9.50	250310
	Total	**250310**	**100**	

According to the research output of the world Hematology literature India has got 21st rank (2921 articles).

3 Language Wise Distribution of Articles

Table 3 depicts that out of the total 250310articles published by the period during 2004-2013, 248432 articles were published in English language, 530 articles ware published in Russia, 522 articles Ware published in Italian, followed by others.

Table 3: Language Wise Distribution of Articles

Sl. No	Languages	Records	%	Cumu-lative
1	English	248432	99.2497	248432
2	Russian	530	0.2117	248962
3	Italian	522	0.2085	249484
4	French	442	0.1766	249926
5	German	364	0.1454	250290
6	Estonian	7	0.0028	250297
7	Romanian	4	0.0016	250301
8	Spanish	3	0.0012	250304
9	Welsh	2	0.0008	250306
10	Chinese	1	0.0004	250307
11	Danish	1	0.0004	250308
12	Finnish	1	0.0004	250309
13	Portuguese	1	0.0004	250310
	Total	**250310**	**100**	

4 Channels of Communication

Table 4 indicates the distribution of the total 250310 articles among different channels of communication. It is found that the journals rank first with 123491Meeting Abstract(49.34%) as the major channels of communications, second is Articles with 87603(35.00%), Letters stand with 3rd place that is 14099(5.63) followed by others.

Table 4: Channels of Communication

Sl. No	Document Types	Records	(%	Cumulative
1	Meeting abstract	123491	49.3352	123491
2	Article	87603	34.9978	211094
3	Letter	14099	5.6326	225193
4	Rview	9462	3.7801	234655
5	Editorial material	9430	3.7673	244085
6	Proceedings paper	3916	1.5645	248001
7	Correction	1557	0.6220	249558
8	News item	394	0.1574	249952
9	Biographical item	336	0.1342	250288
10	Reprint	14	0.0056	250302
11	Book review	6	0.0024	250308
12	Meeting summary	1	0.0004	250309
13	Software review	1	0.0004	250310
	Total	**250310**	**100.00**	

5 Research Institutes of the World

Table 5 depicts that out of the total 250310 articles retrieved during the period 2004-2013, 4422 papers are contributed from Harvard university, followed by 3354 articles from Mayo Clinic, 3022 articles from University of Texas MD Anderson Cancer Center, 2792 from Dana-Farber Cancer Institute, 2606 articles from University of Washington, 2576 articles from University of Pennsylvania, 2514 articles from University Hospital, 2337 articles from University Minnesota, 2147 articles from University of Texas, 2118 articles from Duke University,222422articles from various other institutions.

Table 5: Research Institutes of the World

Sl. No	Institutes/Organizations	Records	%	Cumul -ative
1	Harvard University	4422	1.77	4422
2	Mayo Clinic	3354	1.34	7776
3	University Of Texas Md Anderson Cancer Center	3022	1.21	10798
4	Dana-Farber Cancer Institute	2792	1.12	13590
5	University Of washington	2606	1.04	16196
6	University Of Pennsylvania	2576	1.03	18772
7	University Hospital	2514	1.00	21286
8	University Minnesota	2337	0.93	23623
9	University Of Texas	2147	0.86	25770
10	Duke University	2118	0.85	27888
11	Other Organizations	222422	88.86	250310
	Total	**250310**	**100.00**	

6 Most Productive Authors

Table 6 gives ranked list of the most prolific authors. A total of 100000 authors have contributed 250310

articles over the period of ten year (2004-2013). It observed that Martinelli G has contributed maximum number of papers,i.e.778 papers (0.31%), followed by Baccarani M with 775 papers(0.31), Anderson K.C with 740 papers (0.30)%, Kantrrajian H with 694 papers(0.28), Kantarjian H.M with 672 papers(0.27%), O'Brien S with 624 papers(0.25%), Socie G with 609 papers(0.24%), Cortes J with 606 papers(0.24%), Mohty M with 600 papers(0.24%), Kim H J With 597 Papers(0.24%)other authors with 243615 papers(97.33%).

Table 6: Most Productive Authors

Sl. No	Authors	Records	%	Cumulative
1	Martinelli G	778	0.31	778
2	Baccarani M	775	0.31	1553
3	Anderson Kc	740	0.30	2293
4	Kantarjian H	694	0.28	2987
5	Kantarjian Hm	672	0.27	3659
6	O'brien S	624	0.25	4283
7	Socie G	609	0.24	4892
8	Cortes J	606	0.24	5498
9	Mohty M	600	0.24	6098
10	Kim Hj	597	0.24	6695
11	Others Authors	243615	97.33	250310
	Total	**250310**	**100.00**	

7 Source wise Distribution of articles

Table 7 indicates that out of total 250310 articles published from the year 2004-2013. The journal Blood ranks first with 63891 articles publications, Bone Marrow Transplantation ranks second with 14190 articles and Haematologica the Hematology journal stands third in terms of publications with 12090 articles followed other sources as shown in the following.

Table 7: Source wise Distribution of articles

Sl. No	Source Titles	Records	%	Cumul-ative
1	Blood	63891	25.52	63891
2	Bone Marrow Transplantation	14190	5.67	78081
3	Haematologica The Hematology Journal	12090	4.83	90171
4	Transfusion	11721	4.68	101892
5	Journal of Thrombosis and Haemostasis	10965	4.38	112857
6	Pediatric Blood Cancer	10782	4.31	123639
7	Arteriosclerosis Thrombosis and Vascular Biology	7727	3.09	131366
8	Vox Sanguinis	7282	2.91	138648
9	British Journal of Haematology	7126	2.85	145774
10	Biology of Blood And Marrow Transplantation	6442	2.57	152216
11	Others Source Titles	98094	39.19	250310
	Totle	**250310**	**100.00**	

CONCLUSION

The present study reveals that the highest number of articles have appeared in the area of hematology. The study concerns about the bibliometric analysis of world hematology research as reported in the ISI web of science database. The study shows that hematology research in the global. The highest number of articles were published in the year 2013 that is 28,282 which is (11.30%) of the total publication. The more distribution of publications was contributed from the USA that is 93701(37.43%). Though authors from the USA have contributed highest number of papers. The maximum number of publications of an author in the field to communicate their research works and English was the most predominant language in which 99.41 percentages of the articles were published. The study will also useful to understand the growth and development of hematology research in the world.

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