

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Library Philosophy and Practice (e-journal)

Libraries at University of Nebraska-Lincoln

6-2020

A Scientometrics Analysis of World Vertigo Research Output with the reference of Web of science in 2001-2017

vishakha 21654

Bharathiar University, vishakhasankar@gmail.com

R Sarangapani

Bharathiar University, rspani1967@gmail.com

Follow this and additional works at: <https://digitalcommons.unl.edu/libphilprac>



Part of the [Library and Information Science Commons](#)

vishakha, 21654 and Sarangapani, R, "A Scientometrics Analysis of World Vertigo Research Output with the reference of Web of science in 2001-2017" (2020). *Library Philosophy and Practice (e-journal)*. 4056. <https://digitalcommons.unl.edu/libphilprac/4056>

A Scientometrics Analysis of World Vertigo Research Output with the reference of Web of science in 2001-2017

Vishakha

Research Scholar,

Bharathiar University, Coimbatore- 641046, Tamilnadu, cutevish.93@gmail.com

Dr. R. Sarangapani

Head of Department & Library In-charge, Department of Library and Information Science

Bharathiar University, Coimbatore- 641046, Tamilnadu, rspani1967@gmail.com

Abstract

The study examines world publications on Vertigo research during 2001-2017, Scientometrics techniques are engaged to analyze the publications to identify the trend in publication. The total 7459 articles were taken up for study from Web of Science, a bibliographical and citation database offered by Clarivate Analytics which provides access to quality content. The articles pertaining to the area of vertigo and similar studies i.e. dizziness, Meniere's disease, BBPV and related problems also includes. The result showed that the highest records 685 were published in 2015 and lowest 231 of records were published in 2002. Among all the listed sources 'Article' taken the first position with 6,036 records. The study also found that Cohe B. is active author, contributed above 134 numbers of articles has occupied the first position. The University of Munich was the top most contributed institution on Vertigo research with 266 records from Germany. In present study, Relative Growth Rate and Doubling Time also calculated.

Keyword: *Scientometrics, Vertigo, BBPV, diseases, web of science, double timing and RGR.*

1.0 Introduction

Scientometrics has been studied from several angles. Some of the observations about it are as follows: "Measuring is knowing" - **Heike Kamerlingh Onnes**. "If scientometrics is a mirror of science in action, then scientometricians' particular responsibility is to both polish the mirror and

warn against optical illusions" - **Michel Zitt** "We think of statistics as facts that we discover, not numbers we create" - **Joel Best, Nalimov and Mulchenko (1969)** defined 'Scientometrics' as the application of those quantitative methods which are dealing with the analysis of science viewed as an information process' so, scientometrics is the measurement of science communication and bibliometrics deals with more general information processes.

Vertigo in plain terms is severe dizziness, or giddiness, the feeling that you or your environment seems to be reeling or spinning. It differs from simple dizziness or lightheadedness, in that, the experience is one of being in the illusion of a continuous spinning movement for a long period. If you feel you are spinning that's called subjective vertigo, and the feeling that the area around you is spinning is called objective vertigo (www.practo.com).

The diagnosis of a patient with vertigo or dizziness can almost always be ascertained 80% of the time by taking an accurate history without exception. It is important to ascertain what the patient actually means by 'dizziness'. For some patients, dizziness actually means rotation- either the world is spinning or moving around them or they are spinning or moving around them or they are spinning around in the world. Dizziness is in essence what we call true vertigo, and it is more typical of a peripheral disorder, although central disorders can not be completely eliminated. (Peter C. Weber, 2017)

At any point of time, 1.3 % of Indians suffer from vertigo- an illusion of movement (mostly spinning) caused due to imbalance of the vestibular system- that leads to dizziness and loss of balance in patients, according to study published recently in the journal of the association of Physicians of India. In India, a majority of these patients are in their 50's. Despite the high prevalence of vertigo among patients in India, the nationwide it revealed that a total of 17.3 % of patients had low level of knowledge about this troublesome symptom. Infact, many believed vertigo is a genetic disorder. While 73 % of the participates in the study had average knowledge about vertigo, only nine per cent of patients had a high level of knowledge that could enable them to find a cure. (Anuradha Varanasi, 2017)

2.0 Review of Literature

There are many studies on scientometrics in general, but a very less studies are there on health, wellness and related subjects like speech and hearing and its branches. Some of the studies which are relevant for this paper are listed here. B.M. Gupta and Adarsh Bala (2013) have analyzed and

visualized the trends in the growth of research output in Bone Marrow research. Arun Kurana and Madhu Bansal, Jinesh Bansal (2014) has used scientometrics to investigate the scientific research output in the field of Indian Chikungunya Research. Ramin, Gharebaghi, and Heidary (2015) analyzed the scientific research output on Diabetic Retinopathy (DR) to draw overall roadmap of future research strategic planning in the field. Sandhya Dwivedi (2016) examine the mosaic of the literature in the field of global Allergy Research. Bernabo et al., (2016) have carried out a scientometrics research analysis in the field of Reproductive Medicine (RM), which is a rapidly evolving branch Medicine. Dr. R.H. Walmiki (2019) have assessed the scientific research output on Leukemia at global level using scientometric tools.

The reviewed literature search showed that there is no comprehensive scientometric study has been carried out on Indian and global Anthropology research so far.

3.0 Objectives of the study

The main objective of this study is to analyze the Vertigo research output in world during 2001-2017. The study has the following objectives:

- To examine year-wise growth and development of vertigo related literature globally.
- To identify the source-wise research publications in this field.
- To calculate Relative Growth Rate and Doubling time of vertigo reaseach in 2002-2017.
- To identify the Prolific Authors and the most 'Active Author' in vertigo research.
- To examine the subject-wise analysis in vertigo research literature.
- To find out the most published institutions and funding agency in related research.

4.0 Methodology

For collecting data, bibliographic data was retrieved and downloaded from Web of science core collection database using three key words viz. 'vertigo', 'spinning' and 'dizziness' for a period of 17 years i.e. 2001-2017. The search yield 7549 records that dealt with different aspect of vertigo research. All the bibliographic details for each record included document type, title of the paper, author(s) and their affiliation, institutional-wise and subject-wise were retrieved in text file format for further analysis. MS Excel software package were used to analysis the collected data.

5.0 Analysis and Interpretation

5.1 YEAR WISE GROWTH OF PUBLICATION PRODUCTIVITY

After retrieving data from web of science, total 7459 publications selected for analysis during 2001-2017 in field of Vertigo. The Maximum number of records 685 are shown in the year 2015 and followed by 677 in the year 2017, whereas the publication lesser in previous years. The least data accounted 231 and 265 in 2002 and 2003 respectively. It is shown publications have been gradually increasing every year.

Table: 1 Year wise distribution of sample on vertigo 2001 to 2017.

S.no.	Publication year	Record count	% of 7,549	Cumulative no of articles	Cumulative %
1.	2001	297	3.982	297	3.982
2.	2002	231	3.097	528	7.079
3.	2003	265	3.553	793	10.632
4.	2004	290	3.888	1083	14.52
5.	2005	341	4.572	1424	19.092
6.	2006	328	4.397	1752	23.489
7.	2007	347	4.652	2099	28.144
8.	2008	422	5.658	2521	33.799
9.	2009	483	6.475	3004	40.274
10.	2010	440	5.899	3444	46.173
11.	2011	490	6.569	3934	52.742
12.	2012	446	5.979	4380	58.721
13.	2013	547	7.333	4927	66.054
14.	2014	522	6.998	5449	73.052
15.	2015	685	9.184	6134	82.236
16.	2016	648	8.687	6782	90.923
17.	2017	677	9.076	7459	99.999
	TOTAL	7459	100	62738	100

In table 1 shown the year- wise distribution of publications in Vertigo research literature specifically. The number varies from year to year by increasing trend with in 17 years. Out of total 7459 articles, the maximum numbers of articles are in the year 2015, which is 9.184% the total

publications. The minimum number of articles are in the year 2002, which is 3.097% of the total publications.

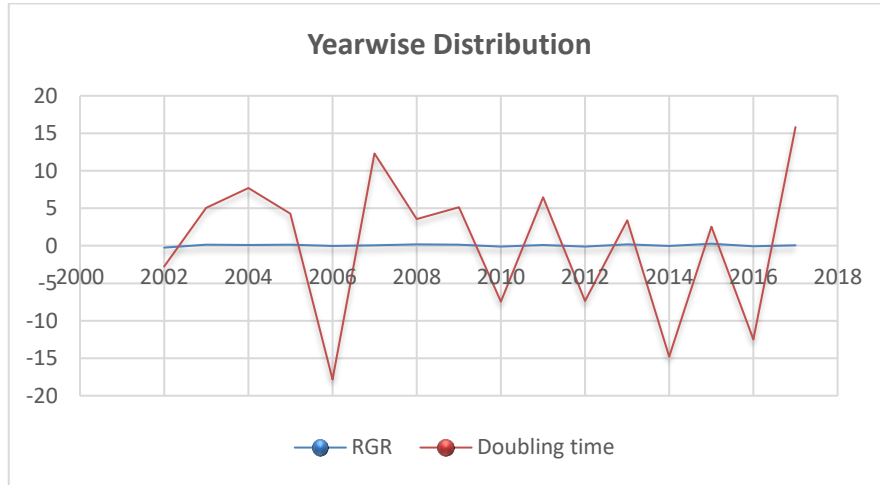


Figure 1: Annual growth of world Vertigo research

In the above figure 1 illustrated the annual growth of publication and cumulative growth curve which is moving upwards in every year. The literature of Vertigo research grew exponentially during the last half century as demonstrated in above figure.

5.2 RELATIVE GROWTH RATE AND DOUBLING TIME OF VERTIGO RESEARCH

The rate of growth in Vertigo research literature is determined by calculating Relative Growth rate and Doubling time of the publications.

Table 2 Showing Relative Growth rate (RGR) & Doubling Time (DT) of Vertigo research.

S.no.	Publication year	Record count	Cumulative no of Articles	W1	W2	R(a)	Mean	Doubling	Mean doubling time
1	2001	297	297						
2	2002	231	528	5.693732	5.442418	-0.25131	0.034538	-2.7575	3.563556
3	2003	265	793	5.442418	5.57973	0.137312		5.046896	
4	2004	290	1083	5.57973	5.669881	0.090151		7.687094	
5	2005	341	1424	5.669881	5.831882	0.162002		4.277737	

6	2006	328	1752	5.831882	5.793014	-0.03887	0.087034	-17.8292	0.787957
7	2007	347	2099	5.793014	5.849325	0.056311		12.30662	
8	2008	422	2521	5.849325	6.045005	0.195681		3.541487	
9	2009	483	3004	6.045005	6.180017	0.135011		5.132902	
10	2010	440	3444	6.180017	6.086775	-0.09324	0.031108	-7.43228	-1.24107
11	2011	490	3934	6.086775	6.194405	0.107631		6.438686	
12	2012	446	4380	6.194405	6.100319	-0.09409		-7.36557	
13	2013	547	4927	6.100319	6.304449	0.20413		3.394898	
14	2014	522	5449	6.304449	6.257668	-0.04678	0.053306	-14.8136	-2.22868
15	2015	685	6134	6.257668	6.529419	0.271751		2.550126	
16	2016	648	6782	6.529419	6.473891	-0.05553		-12.4802	
17	2017	677	7459	6.473891	6.517671	0.043781		15.82894	
	TOTAL	7459	62738			Mean (Ra)=	0.051496	Mean (Dt)=	0.220441

The growth rate of Vertigo research was analysed by relative growth rate (RGR) and doubling time (DT) RGR is a measure to study the increase in number of articles and the Dt is directly related to RGR. It is the time required for article to become double of the existing amount.

RGR is from the rate -0.25131 in 2002 and 0.271751 in 2015. The Mean relative growth for 5 year periods is 2002-05 (0.034538), 2006-09 (0.087034), 2010-13 (0.03110) and 2014-17 (0.053306). The mean Dt for the same periods are as follows: 2002-05, 3.563556; 2006-09, 0.787957; 2010-13, -1.24107 and 2014-17,-2.22868. Next come Relative Growth Rate. The following figure. Figure 2 explains Relative Growth Rate of Vertigo research.

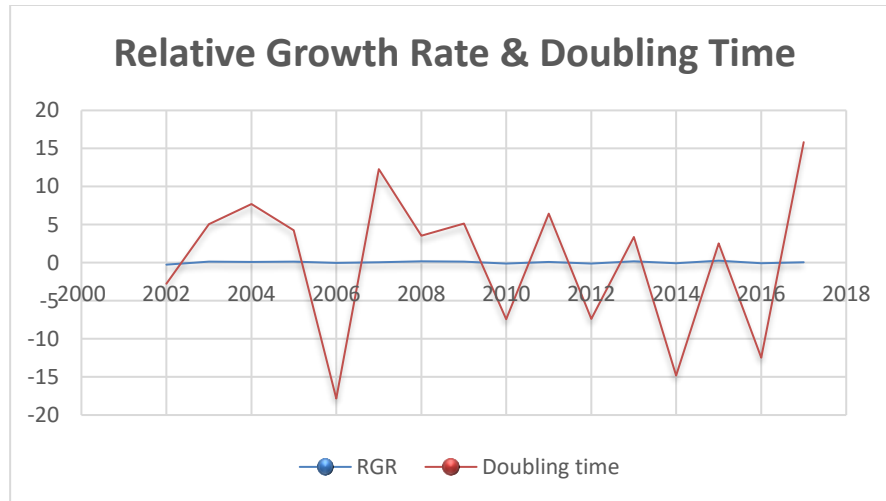


Figure: 2 Relative Growth Rate & Doubling Time of vertigo

A cursory glance at the above is enough to drive home the fact that the growth rate of publication increased in 2002 to 2003. Then it decreased in 2006 (-0.03887), 2010 (-0.09324) and 2012(-0.09409) as well as 2014 (-0.04678) and 2016 (-0.05553) are negative growth rate.

The doubling time for publication of all sources of Vertigo research publications has increased from -2.75 in 2002 to 4.27 in 2005. Then it decreased in 2006 (-17.82), 2010 (-7.43), 2014 (14.81) as well as 2016 (-12.48) which negative trend. It increased 15.13 in 2017.

5.3 MOST PRODUCTIVE AUTHORS

In this present table enumerates the top 10 prolific authors in Vertigo research based on their highest publications over the period of 10 years.

Table 3 Details of top 15 Authors who contribute in Vertigo research.

S.No.	Authors	Records	%	Ranking
1	COHE, B.	134	1.706	1ST
2	BUTTNER, U.	107	1.363	2ND
3	STRUPP, M.	105	1.337	3RD
4	BRAATEN, D.	74	0.942	4TH
5	GOEBEL, J.	70	0.891	5TH
6	HIGHTEIN, S.M.	64	0.815	6TH
7	RAMAT, S.	55	0700	7TH

8	CACACE, A.	55	0.700	7TH
9	HAJAK, G.	52	0.662	8TH
10	KLEINJUNG, T.	50	0.637	9TH
11	LANGGUTH, B.	48	0.611	10TH
12	LEIGH, R.J.	47	0.598	11TH
13	MOLLER, A.R.	46	0.586	12TH
14	KAMINSKI, H.J.	44	0.560	13TH
15	MINOR, L.B.	42	0.535	14TH

Taken into account the number of article published, Cohe, B. (134 papers), Buttner, U. (107 papers), Strupp, M. (105 papers), Braaten, D. (74 papers), Goebel, J. (70 papers), Hightein, S.M. (64 papers), Ramat, S.(55 papers), Cacace, A. (55 papers), Hajak, G. (52 papers), Kleinjung, T. (50 papers), Langguth, B. (48 papers), Leigh, R.J. (47 papers), Moller, A.R. (46 papers), Kaminski, H.J. (44 papers) and Minor, L.B. (42 papers).



Figure 3: Most productive authors

5.4 SOURCE- WISE DISTRIBUTION

The purpose of the source wise distribution of publications to know the type of documents related to databases on vertigo research in 2001 to 2017. In table 3 given the details of major document types. The total is 23 types of document but for analysis major 9 types of documents taken which is given below.

Table: 4 Details of Major Document Types to related databases on vertigo research.

S. No.	Document types	Record count	% of 7,459	Cumulative no. of articles	Cumulative % of articles
1	JOURNAL ARTICLE	6,036	80.92	6036	80.92
2	REVIEW	460	6.16	6496	87.08
3	PROCEEDINGS PAPER	279	3.74	6775	90.82
4	EDITORIAL MATERIAL	220	2.94	6995	93.76
5	MEETING ABSTRACT	216	2.89	7211	95.65
6	LETTER	160	2.14	7371	98.79
7	BOOK REVIEW	65	0.87	7436	99.66
8	BOOK CHAPTER	16	0.21	7452	99.87
9	NEWS ITEM	7	0.13	7459	99.99
	TOTAL	7459	100	63231	100

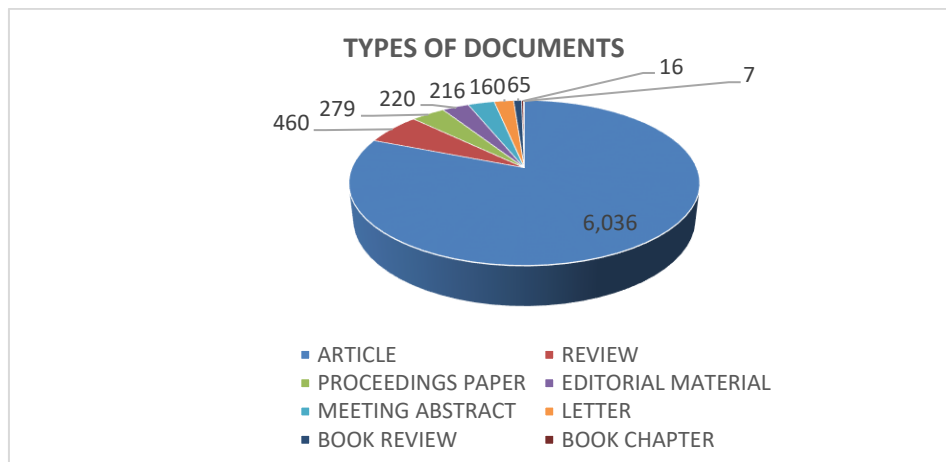


Figure 4: Source-wise Distribution of Vertigo research.

From the study, it has been observed that a total of 7459 publications have come out on Vertigo research during the period of study 2001- 2017. It could be deduced from the analysis that out of the various sources of research on Vertigo literature the journal articles occupy the first rank, followed by reviews. In general, most of the scientists preferred publication of journal articles. It is mostly due to the reason that publication of research article is a matter of prestige as it helps in dissemination of knowledge at international level and makes the writer known to one and all to their peer in the field and also to the seeker of knowledge. That is the major reason for publishing research papers by Vertigo scientists in related journals particularly the journals of high reputation.

5.5 CATEGORIES OF SCIENTIFIC INSTITUTIONS

There is many institutes carry Vertigo research under different disciplines. These institutions include classified Vertigo related research universities; research Institutes, hospitals and other institutions. First, let us take the productivity of Vertigo universities.

5.5.1 Productivity of Universities

Most productive Universities are listed in the table shows the most publishing 15 universities across the world.

Table: 5 Details of University who enhanced research related to Vertigo.

S. no.	Organizations	Record count	%	Country
1	UNIVERSITY OF MUNICH	266	14.316	GERMANY
2	JOHNS HOPKINS UNIVERSITY	176	9.472	USA
3	UNIVERSITY OF CALIFORNIA SYSTEM	167	8.988	CALIFORNIA
4	HARVARD UNIVERSITY	155	8.342	USA
5	SEOUL NATIONAL UNIVERSITY	142	7.642	SOUTH KOREA
6	VA BOSTON HEALTHCARE SYSTEM	115	6.189	USA
7	PENNSYLVANIA COMMONWEALTH SYSTEM	105	5.651	USA
8	UNIVERSITY OF LONDON	98	5.274	ENGLAND
9	CHARITE MEDICAL UNIVERSITY OF BERLIN	96	5.166	GERMANY
10	FREE UNIVERSITY OF BERLIN	96	5.166	GERMANY
11	HUMBOLDT UNIVERSITY OF BERLIN	96	5.166	GERMANY
12	UNIVERSITY OF SYDNEY	89	4.790	AUSTRELIA
13	UNIVERSITY OF PITTSBURGH	89	4.790	USA
14	ASSISTANCE PUBLIQUE HOPITAUX PARIS APHP	84	4.520	FRANCE
15	UNIVERSITY OF CALIFORNIA LOS ANGELES	84	4.520	CALIFORNIA

University of Munich, Germany occupies the 1st rank in order by contributing 266 of the total publications of the specified universities over the study period. It followed by Johns Hopkins University with 176 publications, University of California System has 167 publications, Harvard University has 155 publications, Seoul National University has 142 publications, VA Boston Healthcare System has 115 publications, Pennsylvania Commonwealth System has 105

publications, and University of London has 98 publications, Charite Medical University of Berlin has 96 publications, Free University of Berlin has 96 publications, Humboldt University of Berlin contributed 96 publication, University of Sydney has 89 publications, University of Pittsburgh has 89 publications and University of California Los Angeles has 84 publications.

5.5.2 Productivity of Funding Agencies

Table 5 shows the leading research institutes, and the number of research papers they published. These institutions not only conducted research in Vertigo research but also in subjects connected with vertigo.

Hence, one comes across research studies in Vertigo research one hand as well as its related subjects. Such subjects are Otorhinolaryngology, Neurosciences Neurology, Surgery, General Internal Medicine, Research Experimental Medicine, Psychiatry, Pharmacology Pharmacy, Audiology Speech Language Pathology etc.

Table: 6 Details about on Funding Agency for research on related to vertigo.

S.no.	Details of funding Agency	Record	%
1	NIDCD NIH HHS	116	24.369
2	MEDICAL RESEARCH COUNCIL	63	13.235
3	NATIONAL NATURAL SCIENCE FOUNDATION OF CHINA	49	10.294
4	GERMAN FEDERAL MINISTRY OF EDUCATION AND RESEARCH	41	8.613
5	NIH	39	8.193
6	NATIONAL INSTITUTES OF HEALTH	35	7.352
7	NIA NIH HHS	19	3.991
8	NATIONAL INSTITUTE OFN DEAFNESS ANDOTHER COMMUNICATION DISORDERS	17	3.571
9	NIH NIDCD	16	3.361
10	NCRR NIH HHS	15	3.151
11	GARNETT PASSE AND RODNEY WILLIANMS MEMORIAL FOUNDATION	15	3.151
12	HERTIE FOUNDATION	14	2.941
13	SWISS NATIONAL SCIENCE FOUNDATON	13	2.731
14	GERMAN FEDERAL MINISTRY OF EDUCATION AND RESEARCH BMBF	12	2.521
15	NATONAL SCIENCE COUNCIL TAIPEI TAIWAN	12	2.521

In Table 6 given the funding agency in that maximum article is NIDCD NIH HHS contributed 116 papers, Medical Research Council has 63 papers, National Natural Science Foundation of China has 49 papers, German Federal Ministry of Education and Research has 41 papers, NIH has 39 papers, National Institutes of Health has 35 papers, NIA NIH HHS has 19 papers, National Institute of Deafness and other Communication Disorders has 17 papers, NIH NIDCD has 16 papers, NCCR NIH HHS has 15 papers, Garnett Passé and Rodney Williams Memorial Foundation has 15 papers, Hertie Foundation has 14 papers, Swiss National Science Foundation has 13 papers, German Federal Ministry of Education and Research has 12 papers and National Science Council Taipei Taiwan has 12 papers etc.

5.6 SUBJECT WISE ANALYSIS OF VERTIGO RESEARCH

The main purpose of analysing subject-wise vertigo research is to identify the performance of vertigo research. Hence, the subject-wise analysis is an important aspect of discussion. In the following table shown, the overall research publication in the field of Vertigo has been classified under 25 major areas.

Table 7 Showing Subject- wise Distribution of Publications on Vertigo research.

S. no.	Details of research areas	Record	%
1	OTORHINOLARYNGOLOGY	2860	38.343
2	NEUROSCIENCES NEUROLOGY	2698	36.171
3	SURGERY	627	8.406
4	GENERAL INTERNAL MEDICINE	545	7.307
5	RESEARCH EXPERIMENTAL MEDICINE	345	4.625
6	PSYCHIATRY	283	3.794
7	PHARMACOLOGY PHARMACY	177	2.373
8	AUDIOLOGY SPEECH LANGUAGE PATHOLOGY	172	2.306
9	PEDIATRICS	150	2.011
10	REHABILITATION	148	1.984
11	RADIOLOGY NUCLEAR MEDICINE MEDICAL IMAGING	144	1.931
12	CARDIOVASCULAR SYSTEM CARDIOLOGY	135	1.810
13	SCIENCE TECHNOLOGY OTHER TOPICS	125	1.676
14	PUBLIC ENVIRONMENTAL OCCUPATIONAL HEALTH	96	1.287
15	EMERGENCY MEDICINE	93	1.247
16	GERIATRICS GERONTOLOGY	75	1.005

17	SPORT SCIENCES	74	0.992
18	OPHTHALMOLOGY	71	0.952
19	PSYCHOLOGY	71	0.952
20	LITERATURE	67	0.898
21	ORTHOPEDICS	66	0.885
22	DENTISTRY ORAL SURGERY MEDICINE	60	0.804
23	ENGINEERING	57	0.764
24	ONCOLOGY	52	0.697
25	ZOOLOGY	49	0.657

Out of the total research output, publications in the general category of ‘Otorhinolaryngology’ registered 38.343 percent. It received more attention than the research in other specialities which has the direct implication on the Vertigo research.

Ranking second in order is Neurosciences Neurology which Comprises 36.171percent of the total Vertigo Publications. After that Surgery has 627 records (8.406 percent), General Internal Medicine has 545 records (7.307 percent), Research Experimental Medicine has 345 records (4.625 percent), Psychiatry has 283 records (3.794 percent), Pharmacology Pharmacy has 177 records (2.373 records), Audiology Speech Language Pathology has 172 records (2.306 records), Paediatrics has 150 records (2.011 percent), Rehabilitation has 148 records (1.984 percent), Radiology Nuclear Medicine Medical Imaging has 144 records (1.931 percent), Cardiovascular System Cardiology has 135 records (1.810 percent), Technology Other Topics have 125 records (1.676 percent), Public Environmental Occupational Health has 96 records (1.287 percent), Emergency Medicine has 93 records (1.247 percent), Gerontology has 75 records (1.005 percent), Sport Sciences has 74 records (0.992 percent), Ophthalmology has 71 records (0.952 percent), Psychology has 71 records (0.952 percent), Literature has 67 records (0.898 percent), Orthopaedics has 66 records (0.885 percent), Dentistry Oral Surgery Medicine has 60 records (0.804 percent), Engineering has 57 records (0.764 percent), Oncology has 52 records (0.697 percent) and Zoology has 49 records (0.657 percent).

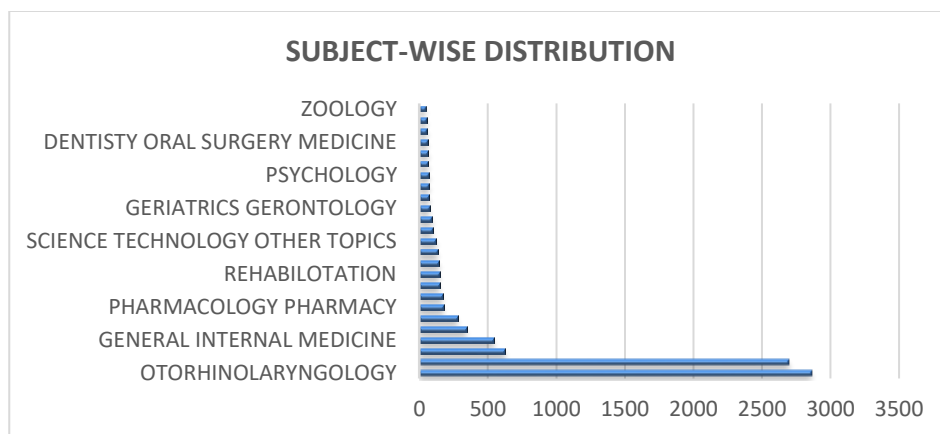


Figure 5: Subject-wise Distribution

Table 6 and figure 5 represent the subject-wise distribution of articles in major branches of Vertigo research for the period 2001-2017. So far, 134 areas have been identified as subjects which come under the head Vertigo Research. Out of the 134 the most important fields are Otorhinolaryngology after that Neurosciences Neurology, Surgery, General Internal Medicine, Research Experimental Medicine, Psychiatry, Pharmacology Pharmacy, Audiology Speech Language Pathology, Paediatrics, Rehabilitation are the main subjects. Others are Radiology Nuclear Medicine Medical Imaging, Cardiovascular System Cardiology, Public Environmental Occupational Health, Emergency Medicine, Geriatrics Gerontology, Sport Sciences, Ophthalmology, Psychology, Literature, Orthopaedics, Dentistry Oral Surgery Medicine, Engineering, Oncology and Zoology etc.

6.0 Conclusion

The study intended to find out the global publication pattern and growth in Vertigo research literature. Based on this study the following results are concluded; the research productivity of Vertigo literature increases year by year. Out of total 7459 records, the maximum numbers of article are in 2015 with 685 articles, which is 9.184% of the total publication. The minimum in 2002 with 231 articles, which is 3.097% of the total publication. The 'Article' is dominating source of document comparatively other forms. English is most used language of research communication because it is widely recognized all over the world. It is found that the mean growth rate is 0.051496 and the mean doubling time for the research output on research is 0.220441. It is seen that there is a general progressive increase in the number of publication of literature on Vertigo research.

However its relative growth rate has shown a decaling trend which means the rate of increase is low in terms of proportion and this has been highlighted by doubling time for publications, which is more than the relative growth of total scientific publication. It shows a declining trend, and doubling time for publication reflects an increasing trend. The author “Cohe, B” is an active author of vertigo research. Collaborative authors contributed more articles compared to single authored contributions. The institutions “University of Munich” and “Johns Hopkins University” are found to be the most productive institutions. The publication of data shows that the Vertigo research publication during 2001-2017 cover all these subject areas. The total number of publications stands at 7459 during the period under study 2001-2017. They had been published under different heads in the relevant publications. Subject-wise, ‘Otorhinolaryngology’ occupies the prime position with 2860 publications (38.343% of the total).

References

- Jeyshankar and Rameshbabu (2013). —Scientometric Analysis of Leukemia Research Output (1960-2011): An Indian Perspective. *Asia Pacific Journal of Library and Information Science*. 3 (2), 1-15.
- Omwoyo et al. (2004). A comparative study of the literature on HIV/AIDS in Kenya and Uganda: A bibliometric study, *Library & Information Science Research*, 26 (4), 434-447.
- Gupta, Adarsh Bala & Har Kaur. (2011). Mapping of AIDS/HIV Research in India: A Scientometrics Analysis of Publications Output during 1999–2008, *Collnet Journal of Scientometrics and Information Management*, 5 (25), 185-203.
- Rabindra K. Maharana, (2014) "Malaria research in India during 2003-2012: a bibliometric analysis", *Collection Building*, 33 (2), 53-59.
- Cesar et al. (2002). Bibliometric analysis of aids literature in central Africa, *Scientometrics*, 54 (2), 309-317.
- Gupta B.M., Ritu Gupta and Ahmed. M. (2014). —Mouth Cancer Research: A Quantitative Analysis of World Publications, 2003-12. *DESIDOC Journal of Library & Information Technology*, 34 (3), 232-240.
- Gupta BM, Bala A (2013), Bone Marrow Research in India: A Scientometric Study, 2003-12. *Journal of Bone Marrow Research*, 1 (1), 1-6.

- Gupta, B.M.; Kaur, H. and Kshitig, A. (2011) Dementia Research in India: A Scientometric Research output during 2002–011. *Annals of Library and Information Studies*, 59 (4), 280-288.
- Gupta BM, Bala A. (2013). Parkinson's disease in India: An analysis of publications output during 2002-2011. *International Journal of Nutrition, Pharmacology, Neurological Diseases*, 3 (3), 254-262.
- Gian Singh, Moin Ahmad, Mohammad Nazim, (2008) "A bibliometric study of *Embelia ribes*", *Library Review*, 57 (4), 289-297.
- Chitra, V, Jeysankar, R and Abu, K.S (2014). Lung Cancer Research in G7 and BRIC Countries: A Comparative Analysis by Scientometric Method, *International Journal of Advanced Library and Information Science*, 2 (1), 72-81.
- Masahiro Abe, (2014). Bench Work for Targeted Therapy to the Microenvironment of Myeloma Bone Disease, *Clinical Lymphoma, Myeloma & Leukemia*, 14 (1), 8-9.
- McCloskey EV. (2004) Bone Disease. In Gharton G, Durie Brian GM, Samson D (Eds). *Multiple Myeloma and Related Disorders*. London: Arnold.
- Adesina, O. A., & Opesade, A. O. (2018). Bibliometric Analysis of Sickle Cell Anaemia Literature on Nigeria Listed in Pubmed between 2006 and 2016. *Library Philosophy and Practice* (e-journal). Retrieved from <http://digitalcommons.unl.edu/libphilprac>
- Christensen J.A. & Sigelman (1985). L. Accrediting Knowledge: Journal Structure and Citation Impact in Social Science. *Social Science Quarterly*, 66, 975.
- De Solla Price, D. J. (1969). Citations of literature. *Actacytologic*, 13 (10), 544.
- Deep Kumar Kirtania. (2018). Bibliometric Study of Indian Open Access Social Science Literature. *Library Philosophy and Practice*.
- Devarajan, G. & Vijayalakshmi, V. (1982). Applied Economics Dissertation: A Citation Study. *IASLIC Bulletin*, 27(1), 19-22.
- www.practo.com/health-wiki/vertigo-dizziness-symptom-and-treatment/35/article
- www.theweek.in/content/archival/news/sci-tech/vertigo-balance-india