



RESEARCH ARTICLE

EXPLORING AUTHORSHIP TRENDS AND PUBLICATION GROWTH OF INSTITUTE OF MENTAL HEALTH AND NEUROSCIENCES (IMHANS) KOZHICODE: A SCIENTOMETRIC STUDY

Aswin, K. P.,

Librarian, Institute of Mental Health and Neurosciences (IMHANS), Kozhikode

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ABSTRACT

The study examined the authorship trend and publication growth of the Institute of Mental Health and Neurosciences (IMHANS) between 2010 and 2022. The data for the analysis were collected from the annual reports of IMHANS. The findings reveal that IMHANS faculty members and scientists contributed to 114 published documents, with research articles comprising the majority at 74.6%. These publications gained 843 citations; each paper received 7.39 citations on average. Most IMHANS research publications are published in joint authorship (93.9%); out of the 114 publications analyzed, only 7 (6.1%) were authored by a single individual. Psychiatric Social Work, Psychiatry, Pediatrics, and Psychology were identified as the most preferred subjects for publishing articles. The faculty members of IMHANS predominantly opt for Indian journals as their preferred choice for publishing their articles, and the Indian Journal of Psychiatry stands out as the most frequently chosen journal among the selection options. The degree of collaboration is 0.93.

Key words: *Scientometrics, Publication Productivity, Mental Health Research, IMHANS.*

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INTRODUCTION

The scientometric analysis of publication is a quantitative approach to studying scientific literature. According to Bornmann and Leydesdorff (2014), scientometric analysis involves systematically analyzing bibliometric data to gain insights into scientific research's structure, development, and impact. The main goal of the scientometric study is to understand the patterns, trends, and relationships within the scholarly publications of a particular field or discipline. By examining the bibliographic data associated with publications, researchers can extract valuable information about scientific knowledge's dissemination, impact, and evolution. Scientometric analysis typically begins by collecting a dataset of publications from a specific domain or research area. This dataset can be obtained from various sources, such as academic databases, digital libraries, or citation indexes. Once the dataset is assembled, researchers can apply different analytical techniques to explore and interpret the data.

INSTITUTE OF MENTAL HEALTH AND NEUROSCIENCES (IMHANS)

The Institute of Mental Health and Neurosciences (IMHANS) is a renowned mental health research institute in Kerala. It was established at Govt. Mental Health Centre Campus, Kozhikode, in the year 1984-85, as per the G.O (MS) No.299/82/HD dt.4.12.82, registered (Reg.No.157/1983) as a society under the Madras Registration Act XXI of 1860 on 8.6.83.

***Corresponding Author:** **Aswin, K. P.,**
Librarian, Institute of Mental Health and Neurosciences (IMHANS), Kozhikode

The institute operated from the GMHC premises for over three decades until 2015, when it was relocated to a new building within the Government Medical College campus, Kozhikode. The institute is affiliated with the Kerala University of Health Sciences (KUHS) and offers Ph.D., and MPhil, programs in clinical psychology, psychiatric social work, and PBDPN program in psychiatric nursing.

REVIEW OF RELATED LITERATURE

In the study by Varghese and Rajan (2009), a detailed analysis was performed on 632 publications published by scientists affiliated with the Rajiv Gandhi Centre for Biotechnology (RGCB) from 1995-2000. The findings indicated that 2005-2006 was the most productive year, with 112 publications. Notably, shared authorship accounted for 86.67% of the contributions in these papers. The degree of collaboration of journal articles authored by scientists reached a maximum of 100% in 1999-2000. Vivekanandhan and Bathri Narayanan (2014) investigated authorship trends and collaborative research within Bharathiyar University from 2009 to 2013. They examined the dataset comprising 1576 articles sourced from the Scopus database. The findings show the dominance of joint authorship; most research publications (98.86%) associated with Bharathiyar University published collaboratively, and the average degree of collaboration is 0.99. The study also analyzed the year-wise publication, subject-wise publication, document type, affiliation-based publication, and authorship pattern. Devi and Lekshmi (2014) checked the researchers' scientific preferences at the Jawaharlal Nehru Tropical Botanic Garden and Research Institute (JNTBGRI). Botany was the most prevalent subject area, accounting for 383 articles, followed by Conservation Biology secured the second position. Most of the researchers at JNTBGRI choose Indian journals for publishing their research outputs, and the Journal of Economic Taxonomic Botany

claims the first rank with the most significant number of articles, totaling 50 (9.11%). During 2010, the collaboration coefficient for journal articles was 0.7541, marking the highest value from 2001 to 2010. The study of Gopikuttan (2014) is based on the research output of the University of Kerala, which analyzed the publication types, year-wise publication, citation, publication distribution, prominent authors, authorship patterns, and the articles that garnered the highest citations. Web of Science was used for data collection, and 1068 articles were analyzed. The outcomes underscore the University of Kerala's noteworthy research productivity, signifying its global recognition on the international stage. Sudhier and Dileep Kumar (2020) used scientometric approaches to analyze Web of Science data from 2004 to 2013 in an investigation of biochemistry research in India. The paper examined the growth of biochemistry research in India and discovered that it is progressively rising, with an average annual growth rate of 36.84 percent. The study also looked at the subject profile of biochemistry research, international collaboration, authorship distribution, and degree of collaboration.

METHODOLOGY

The methodology approached in this study is bibliometric analysis, and the data for the analysis were taken from the annual report of IMHANS from 2010-2022. The articles' Bibliographic information was collected using the faculty's Google Scholar profiles. The data collected for the investigation were fed into MS Excel and analyzed as per the objectives of the study.

Objectives of the Study: This research focuses on achieving the following objectives.

1. To know the year-wise distribution of publications and citation
2. To identify various types of publications
3. To find out the subject distribution of the article
4. To find out the top productive journals
5. To find out the Degree of Collaboration
6. To find out the Authorship pattern

Year-Wise Publication and Citations: Table 1 illustrates the year-wise publication and citation. In total, 114 documents were obtained from the annual report of IMHANS for 2010-2022. It is shown that IMHANS published the greatest number of documents in 2017. 22 (19.3%) documents were published in 2017. 2013 was the less productive year; only 1 (0.9%) document was published 2013. Table 2. Displays the year-wise distribution of citations. IMHANS received a total of 843 citations during the study period. The maximum number of citations, 187 (22.2%), was obtained in the year 2017, while the lowest number of citations, 1 (0.1%) and 0 (0.0%), were obtained in the years 2013 and 2022.

Publication types: Table 3. Present the distribution of various types of publications. The analysis of various documents reveals that 74 % or 85 papers are the kind of research articles that constitute the majority of the contribution. Letter to the editor and book chapter come in second with 9 (8%) contributions each. It is found that there are 5 (4%) conference proceedings from 2010 to 2022. Case reports, clinical briefs, commentaries, and scientific letters also contributed during the study.

Subject-Wise Publication: The subject-wise categorization of the publications from IMHANS provides that Psychiatric Social work has the highest number of publications, 24 (21.1%). It secures the first position, while Psychiatry possesses the second position with 23 (20.2%) documents. From Table 4, it can be shown that Mental health-related subjects such as Psychiatric Social Work and Psychiatry have a greater number of contributions. The category Pediatrics, Psychology, General Medicine, Psychiatric Nursing, and Neuroscience has 18(15.8%), 13(11.4%), 11(9.6%), 10(8.8%), and 8 (7.0%) publication, respectively. Public Health has 7 (6.1%) publications, the least number of contributions.

Most Productive Source Journal: In mental health and research, some journals are frequently referred to by mental health students, faculty, and researchers because of the close relationship between the journal's subjects and the area of research work.

Table 1. Year-wise Publication productivity

S.No	Year	No. of Publication	%	Cumulative Publication	Cumulative %
1	2010	6	5.26	6	5.3
2	2011	4	3.5	10	8.8
3	2012	3	2.6	13	11.4
4	2013	1	0.9	14	12.3
5	2014	7	6.1	21	18.4
6	2015	7	6.1	28	24.6
7	2016	8	7.0	36	31.6
8	2017	22	19.3	58	50.9
9	2018	13	11.4	71	62.3
10	2019	10	8.8	81	71.1
11	2020	8	7.0	89	78.1
12	2021	13	11.4	102	89.5
13	2022	12	10.5	114	100
	Total	114	100		

Table 2. Year-wise Citation

S. No	Year	No. of citation	%	Cumulative citations	Cumulative %
1	2010	131	15.5	131	15.5
2	2011	58	6.9	189	22.4
3	2012	26	3.1	215	25.5
4	2013	1	0.1	216	25.6
5	2014	140	16.6	356	42.2
6	2015	92	10.9	448	53.1
7	2016	71	8.4	519	61.6
8	2017	187	22.2	706	83.7
9	2018	36	4.3	742	88.0
10	2019	61	7.2	803	95.3
11	2020	15	1.8	818	97.0
12	2021	25	3.0	843	100
13	2022	0	0.0	843	100
	Total	843	100		

Table 3. Publication Type

S.No	Type	Number	%	Cumulative No	Cumulative %
1	Research Article	85	74.6	85	74.6
2	Book Chapter	9	7.9	94	82.5
3	Letter to Editor	9	7.9	103	90.4
4	Conference Proceedings	5	4.4	108	94.7
5	Case Report	3	2.6	111	97.4
6	Clinical Brief	1	0.9	112	98.2
7	Commentary	1	0.9	113	99.1
8	Scientific Letter	1	0.9	114	100
	Total	114			

Table 4. Subject-wise distribution

S.No	Subject	No. of Publication	%	Cumulative Publication	Cumulative %
1	General Medicine	11	9.6	11	9.6
2	Neuroscience	8	7.0	19	16.7
3	Pediatrics	18	15.8	37	32.5
4	Psychiatric Nursing	10	8.8	47	41.2
5	Psychiatric Social Work	24	21.1	71	62.3
6	Psychiatry	23	20.2	94	82.5
7	Psychology	13	11.4	107	93.9
8	Public Health	7	6.1	114	100
	Total	114(100%)	100		

Table 5. Ranking of Top 10 Source Journals

S. No.	Rank	Name of the Journal	No of Article	Publishing Country	WoS	IF
1	1	Indian Journal of Psychiatry	10	India	Yes	2.983
2	2	Indian Journal of Pediatrics	9	India	Yes	5.319
3	3	Indian Journal of Social Psychiatry	8	India	No	-
4	4	Indian Pediatrics	6	India	Yes	3.839
5	4	Journal Of Psychosocial Rehabilitation and Mental Health	6	India	No	-
6	4	Open Journal of Psychiatry & Allied Sciences	6	India	No	-
7	5	Indian Journal of Psychological Medicine	5	India	Yes	0.567
8	6	Kerala Journal of Psychiatry	3	India	No	-
9	7	Asian Journal of Psychiatry	2	Netherlands	Yes	13.89
10	7	The International Journal of Indian Psychology	2	India	No	-

*IF=Impact Factor *WoS= Web of Science

These journals are highly cited and very impactful on a specific subject. These journals always contain more relevant articles on a particular subject. The Indian Journal of Psychiatry by the Indian Psychiatric Society published a maximum number of articles, coming in the first position with 10 articles. Indian Journal of Pediatrics, an international journal by Dr. K.C. Chaudhuri Foundation, with 9 articles having an impact factor of 5.319, and Indian Journal of Social Psychiatry by The Indian Association for Social Psychiatry (IASP) with 8 articles, come in second and third position. Indian Pediatrics by the Indian Academy of Pediatrics (IAP), Journal of Psychosocial Rehabilitation and Mental Health, and Open Journal of Psychiatry & Allied Sciences secure the fourth position with 6 articles each. Indian Journal of Psychological Medicine, with 5 articles, and Kerala Journal of Psychiatry, with 3 articles, comes in fifth and sixth. Asian Journal of Psychiatry and The International Journal of Indian Psychology secured the seventh position with 2 articles. There are 50 journals in the eighth position with 1 article each.

Country-Wise Analysis of Journals: The journals are analyzed according to their country of origin. The list of countries is very few, as 8 countries published 60 journals. Out of the 8 countries, India ranks first (Table 6). From Table 5, it has been observed that India is the most productive country, with 38 journals (54.67%). USA secured the second rank with 9 journals (15.0%). The UK is third with 8 journals (13.3%). Netherlands, South Africa, South Korea, Switzerland, and Germany are in the fourth position with 1 journal (1.7%) each.

Authorship Pattern: Table 7 illustrate the distribution of the authorship pattern of IMHANS faculties. The findings reveal that most publications (93.9%) affiliated with IMHANS have joint authorship. Out of the 114 publications analyzed, only 7 (6.1%) were authored by a single individual.

Additionally, 16 publications (14.0%) were written collaboratively by two authors, while 30 (26.3%) involved three authors, indicating the dominance of three-authored articles. Moreover, four authors authored 25 publications (21.9%), and 17 (14.9%) involved five authors. Finally, 19 publications (16.7%) had more than five authors. Figure 2 visualizes the co-author's network of published articles affiliated with IMHANS during the study period (2010 to 2022). The nodes represent authors, and Different colors represent different research groups.

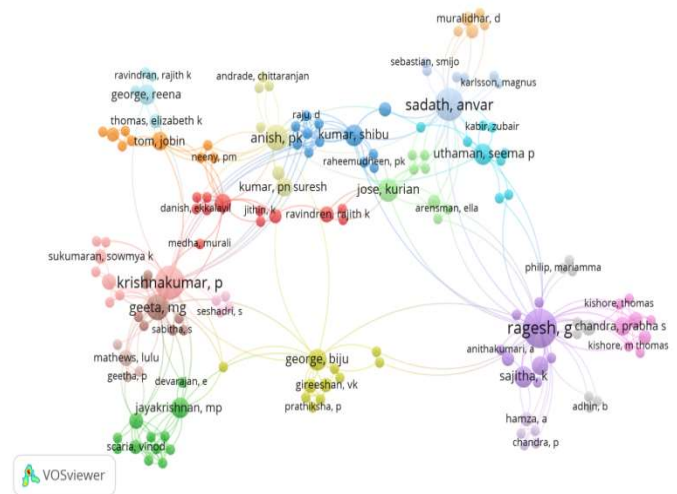


Figure 1. Co-authorship Network

Degree of Collaboration: The formula developed by Subramanyam (1983) and used by Prabahar and Radhakrishnan (2020) has been

Table 6. Country-wise analysis of the journal

S.No	Country	No. of Journals	%	Cumulative No. of Journal	Cumulative %
1	India	38	63.3	38	63.3
2	USA	9	15.0	47	78.3
3	UK	8	13.3	55	91.7
4	Netherlands	1	1.7	56	93.3
5	South Africa	1	1.7	57	95.0
6	South Korea	1	1.7	58	96.7
7	Switzerland	1	1.7	59	98.3
8	Germany	1	1.7	60	100
	Total	60	100		

Table 7. Authorship Pattern

S. No	No. of author	Number	%	Cumulative No	Cumulative %
1	Single author	7	6.1	7	6.1
2	Two authors	16	14.0	23	20.2
3	Three authors	30	26.3	53	46.5
4	Four authors	25	21.9	78	68.4
5	Five authors	17	14.9	95	83.3
6	More than five author	19	16.7	114	100
	Total	114			

Table 8. Authorship Distribution

S. No	Authorship Distribution	Number
1	Single Authored papers	7
2	Co-authoredPapers	107
3	Total Publication	114
4	Total Authors	237

Table 9. Highest citation received articles

S. No.	Journal bibliographic details	Total citation received
1	Kumar et al. (2015).Risk factors for suicide in elderly in comparison to younger age groups. <i>Indian journal of psychiatry</i> , 57(3), 249.	72
2	Sadath et al. (2017). Do stress and support matter for caring? The role of perceived stress and social support on expressed emotion of carers of persons with first episode psychosis. <i>Asian Journal of Psychiatry</i> , 25, 163-168.	57
3	Krishnakumar et al. (2014).Prevalence and spectrum of sexual abuse among adolescents in Kerala, South India. <i>The Indian Journal of Pediatrics</i> , 81, 770-774.	47
4	Jayakrishnan and Krishnakumar (2010).Clinical profile of acute disseminated encephalomyelitis in children. <i>Journal of Pediatric Neurosciences</i> , 5(2), 111.	45
5	Ayrolimeethal et al. (2014). Psychiatric morbidity among prisoners. <i>Indian journal of psychiatry</i> , 56(2), 150.	38
6	Lally et al. (2014). Neonatal encephalopathic cerebral injury in South India assessed by perinatal magnetic resonance biomarkers and early childhood neurodevelopmental outcome. <i>PLoS One</i> , 9(2), e87874.	36
7	(Krishnakumar et al.).Temperamental traits associated with conversion disorder. <i>Indian Pediatr</i> , 43(10), 895-899.	36
8	Ragesh et al. (2017). Occupational stress among police personnel in India. <i>Open Journal of Psychiatry & Allied Sciences</i> , 8(2), 148-152.	36
9	Geeta et al. (2010). Management of pain in leukemic children using the WHO analgesic ladder. <i>The Indian Journal of Pediatrics</i> , 77, 665-668.	33
10	Kumar et al. (2016).Olanzapine has better efficacy compared to risperidone for treatment of negative symptoms in schizophrenia. <i>Indian journal of psychiatry</i> , 58(3), 311.	33

adopted to calculate the degree of collaboration in this research. It can be expressed mathematically as:

$$c = \frac{Nm}{Nm+Ns} \quad (1)$$

The degree of collaboration in a discipline is denoted by C. Nm indicates the number of multi-authored papers published in a particular subject within a year. And Ns represents the number of single-authored articles published within the same year.

Hence, the Degree of Collaboration for the period 2010- 2022 is calculated using Equation 1 as:

$$c = \frac{Nm}{Nm + Ns}$$

$$DC = 107/107+7$$

$$DC \text{ for the period } 2010- 2022 = 0.93$$

Articles of Highest Citation Received: Table 9 contains a list of highly cited articles. Specifically, the table includes articles that received more than 30 citations during the study period. There was a total of 10 such articles that met this criterion.

The bibliographical details with the total citation received are included in table 8. According to Table 9, the article with the high citation, 72, is authored by Dr. P. K. Anish of Psychiatry, followed by the article by Dr. Anvar Sadath of the Department of Psychiatric social work, which received 57 citations. Dr. P. Krishnakumar got 47 citations for his publication in the third rank.

FINDINGS AND CONCLUSIONS

The study was conducted to examine IMHANS's publication productivity. 114 documents were published during the period 2010-2022, and it has been discovered that the coverage of publications from IMHANS was lesser in the beginning. Still, despite ups and downs in a few years, it is progressively increasing, and 2017 is the year with many publications. More articles are being published in journals from India, the United States, and the United Kingdom, and *Indian Journal of Psychiatry* tops the list with the greatest number of articles 10. It is followed by *Indian Journal of Pediatrics* with 9 articles. The faculties of IMHANS prefer mostly Indian journals to publish their research outputs. The impact factors of the top ten most productive journals range from 13.89 to 0.567, and India is first

among the countries of origin of the top preferred journals, with the Netherlands ranking second. The authorship pattern of papers published by IMHANS faculties members indicates that multi-authored articles are more than single-authored papers. The majority of the papers had three authors. The findings of this study highlight the importance of assessing publication productivity as a crucial aspect of evaluating research impact and identifying areas for further development. By employing scientometric methods, researchers and policymakers can make informed decisions, foster collaborations, and allocate resources effectively to enhance the productivity and competitiveness of the scientific landscape. Ultimately, this research advances knowledge and innovation in various fields by quantitatively assessing publication productivity.

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