Mapping Research Dimensions of IJPER Journal (2008-2024): A Bibliometric Study Using Scopus Data

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ABSTRACT

This bibliometric study assesses the research performance, collaboration patterns, and thematic evolution of the *Indian Journal of Pharmaceutical Education and Research (IJPER)* using Scopus data from 2008-2024. A total of 2,225 publications were analysed to evaluate growth trends, citation impact, authorship productivity, and institutional as well as international contributions. IJPER recorded a steady annual growth rate of 8.76%, with its most productive phase between 2016-2024 contributing 79.51% of total output. Collaborative authorship predominated (Degree of Collaboration=0.953), with three-authored papers accounting for 22.74% of publications. India contributed 1,599 papers (71.88%), followed by Saudi Arabia and Malaysia, indicating IJPER's expanding international visibility. King Faisal University (221 papers) was the top contributing institution, and Nagaraja Sreeharsha was the most prolific author (42 papers). The most cited article (129 citations) focused on plant-based natural gums for novel drug delivery. Frequently used keywords *antioxidant* (62), *validation* (61), *HPLC* (54), and *molecular docking* (42) highlight the journal's emphasis on analytical and formulation research. The study underscores IJPER's growing scholarly influence and its significant role in fostering global collaboration and advancing pharmaceutical sciences.

Keywords: Bibliometric Mapping, Citation Analysis, Degree of Collaboration, Pharmaceutical Sciences, Scientometrics.

INTRODUCTION

The "Indian Journal of Pharmaceutical Education and Research (IJPER)" stands as one of the most reputed and enduring journals in the field of pharmaceutical sciences in India. Established in 1967 and published by the "Association of Pharmaceutical Teachers of India (APTI)", the journal has consistently served as a primary platform for disseminating research related to "pharmaceutical education", "pharmaceutics", "pharmacology", and "pharmaceutical chemistry". Through its regular issues and wide readership, IJPER has significantly contributed to shaping teaching practices, curriculum development, and research culture in Indian pharmacy institutions.

The journal's national prominence makes it a key reflection of India's pharmaceutical education and research landscape (Gupta and Dhawan, 2009). Mapping its bibliometric profile helps trace the evolution of research themes, collaborations, and publication practices over time in literature (Madhu and Kannappanavar,

2020) and (Madhu *et al.*, 2025). Understanding IJPER's trajectory reveals the maturation of the field and its alignment with global trends, thereby contributing to Scientometrics studies on the growth of subject-specific journals in developing research ecosystems. In this context, the present study undertakes a bibliometric analysis of IJPER to evaluate its research productivity, authorship trends, citation impact, influential contributors, and emerging thematic areas. The findings aim to highlight the journal's scholarly significance and its role in advancing pharmaceutical education and research in India.

REVIEW OF LITERATURE

The review of literature is organized into three sections: Journal-level Studies, Institutional and Country-Level Studies, and Domain-Specific Studies, offering a concise overview of publication trends, research productivity, and thematic developments across various domains.

Journal-level Studies

Bansal, (2013) examined bibliometric trends in the *DESIDOC Journal of Library and Information Technology*, revealing that 61.4% of the publications were collaborative, with India contributing 88% of the total output. Dr. B. M. Gupta emerged

as the most prolific author with 26 publications, while 65% of the articles ranged between 6-10 pages. The year 2012 marked the highest number of special issues (five). Kannan and Thanuskodi, (2019) analyzed research trends in the *Library Philosophy and Practice Journal* and reported that the highest number of articles (195; 13.91%) appeared in 2011. Research articles constituted the majority (12,976; 92.51%) of the total publications. Nigeria was the leading contributor with 550 papers (39.23%), and Bhatti R. from Pakistan was identified as the most prolific author with 19 publications Raza and Malik, (2018) conducted a bibliometric analysis of the Journal of Knowledge Management (JKM) covering the period 2009-2016. The study analyzed 508 papers authored by 1,214 researchers from 57 countries and 584 institutions, assessing publication trends, citation impact, and collaboration patterns. The USA and the UK jointly contributed 24.8% of the output, while Lakehead University and McMaster University in Canada were identified as the leading institutions with the most active contributors. Ramalingam *et al.*, (2024) carried out a bibliometric study of the *INSPA Journal* for the period 2019-2024. The findings indicated steady growth in publication output, particularly in 2024, along with a strong pattern of collaborative authorship. Kristu Jayanti College emerged as the top contributing institution, and the study also noted modest international participation.

Institutional and Country-Level Studies

Kappi *et al.*, (2021) evaluated the research productivity of India's top ten pharmacy institutions as ranked by NIRF. Based on 7,172 publications indexed in Scopus, the study identified publication output, preferred journals, citation metrics, and major funding agencies. The Institute of Chemical Technology, Mumbai, ranked first with 2,129 articles. *RSC Advances* was the most productive journal, publishing 217 papers and receiving a total of 2,508 citations. Shen *et al.*, (2023) conducted a large-scale bibliometric analysis of 45,178 documents on Metaverse research from 2012 to 2021. The study revealed a sharp growth in publications, peaking in 2021 with 7,062 papers. Using VOSviewer and CiteSpace, "virtual reality" was identified as the most frequent keyword with 400 links and a Total Link Strength (TLS) of 164,198. The United States and China emerged as the most productive and influential contributors, underscoring their leading roles in advancing global Metaverse research.

Domain-Specific Studies

Sharma *et al.*, (2024) explored bibliometric trends in research on Liquid Crystalline Nanoparticles (LCNs) in transdermal drug delivery, highlighting a growing global interest in this field. A total of 121 articles were analysed, with the *International Journal of Pharmaceutics* leading in publication count (nine articles). The keyword "particle size" was the most frequently occurring term (109 times), emphasizing its significance in formulation studies. China and the United States dominated the research output, indicating strong international leadership in LCN-based therapeutic research. Anthuvan *et al.*, (2025) conducted a bibliometric analysis of 329 publications (2009-2023) focusing on pharmaceutical marketing and branding. The results revealed a post-COVID shift toward AI-driven marketing strategies, digital transformation, and personalized medicine. The *British Medical Journal* (Impact Factor: 7.776) and *BioMed Central* (H-index: 120) were the leading publication sources, with the USA contributing 170 papers. The findings emphasize a growing global focus on digital integration and patient-centered marketing in the pharmaceutical sector. Syarifuddin *et al.*, (2024) performed a bibliometric study of 257 publications (1988-2025) on herbal medicine for periodontal disease using data from the Web of Science Core Collection. The study observed a significant rise in research output after 2016, with China (89 publications) leading, followed by Brazil, India, and the USA. The "*Journal of Ethnopharmacology*" was identified as the top publishing journal, while Sichuan University emerged as the most productive institution.

OBJECTIVES OF THE STUDY

- To analyse the publication trends of research articles in the "Indian Journal of Pharmaceutical Education and Research (IJPER)" from 2008 to 2024.

- To examine authorship patterns and identify leading contributors and collaboration trends.

- To assess the citation impact of published research articles and identify highly cited works.

- To evaluate keyword trends and thematic evolution in pharmaceutical education and research.

- To investigate institutional contributions and research collaborations at national and international levels.

METHODOLOGY

This bibliometric investigation examines research articles published in the "Indian Journal of Pharmaceutical Education and Research (IJPER)" between 2008 and 2024, utilizing data extracted from the Scopus database. To ensure the inclusion of only original research papers, an advanced search query was employed: SRCTYPE(j) AND ISSN(0970-1927) AND PUBYEAR BETWEEN 2008 AND 2024 AND DOCTYPE(ar). The retrieved dataset was manually verified to eliminate duplicate entries and non-research documents that may have been indexed under the same ISSN. Bibliometric parameters, including annual publication trends, citation impact, authorship patterns, and collaboration networks, were analyzed using Microsoft Excel, VOSviewer, and Biblioshiny (R package). These tools facilitated the visualization of co-authorship structures, citation linkages, and keyword co-occurrence patterns.

Although Scopus provides comprehensive and reliable coverage, certain methodological limitations are acknowledged. Articles published prior to 2008 were excluded due to incomplete indexing, and dependence on a single database may have excluded publications available in other sources. Furthermore, self-citations were not filtered, potentially influencing citation impact measures. Despite these constraints, the adopted methodology ensures the reliability, reproducibility, and validity of the findings.

Data Analysis and Interpretation

Main Information on IJPER Journal

Table 1 reflects the complete overview of the "*IJPER*" journal from 2008 to 2024 encompass 2,225 documents with an annual growth rate of 8.76%, indicating consistent expansion in scholarly output. The average document age of 6.33 years and 4.53 citations per paper suggest sustained relevance and moderate research visibility. A total of 64,923 references, 12,967 Keywords Plus, and 7,054 author keywords reflect the journal's broad thematic coverage and strong engagement with existing literature. With 6,471 contributing authors and an average of 3.98 co-authors per paper, the findings highlight a collaborative research culture, although single-authored works (87) and international collaborations (10.83%) remain limited. Research articles (2,041) dominate the output, followed by review papers (162) and minor contributions such as editorials and letters, confirming IJPER's primary focus on empirical research. Overall, the journal exhibits steady growth, diverse research themes, and increasing collaboration, underscoring its significant role in advancing pharmaceutical education and research in India.

Yearly Productivity of IJPER Journal

Table 2 presents the year-wise publication output and citation impact of the Indian Journal of Pharmaceutical Education and Research (IJPER) from 2008 to 2024, encompassing 2,225 publications that collectively received 10,084 citations. The data reveal a consistent upward trajectory in research productivity, reflecting the journal's expanding scholarly influence within the domain of pharmaceutical sciences. A notable surge in productivity was observed between 2016 and 2024, during which 1,551 papers (79.51%) were published, marking the most prolific phase in the journal's history. The year 2011 recorded the highest citation impact, with 58 papers receiving 1,095 citations, yielding a mean of 18.88 Citations per Paper (CPP) signifying a period of exceptional research visibility and influence. This was followed by another significant peak in 2010, which produced 52 papers that garnered 541 citations (CPP=10.40). Although the journal's publication volume continued to increase, reaching its highest level in 2024 with 272 papers, a decline in CPP (0.54) during recent years can be attributed to the limited citation window for newly published works. Overall, these findings underscore

IJPER's sustained growth, robust publication momentum, and rising international engagement, highlighting its evolving role as a key platform for advancing research and education in the pharmaceutical sciences.

Authorship Pattern of IJPER Journal

Table 3 highlights the author productivity and collaboration analysis of the "IJPER" journal reveals a highly collaborative research environment, with a degree of collaboration of 0.953, indicating that nearly all papers are co-authored (Subramanyam, 1983) and (Kappi *et al.*, 2022). Out of 2,225 total publications, only 4.67% (104) are single-authored papers in entire output and particularly three-authored combinations produced the highest 506 papers (22.74%). Furthermore, between two-six authored papers contributed nearly 86% (1920) of the total publications, showing a high collaboration pattern. The findings suggested that the journal is driven by a core group of collaborative authors, making it ideal for network mapping and analysis of institutional collaboration.

Table 1: Overview statistical data of IJPER Journal.

Description	Results
Main Information About Data	-
Timespan	2008:2024
Sources (Journals, Books, etc.)	1
Documents	2225
Annual Growth Rate %	8.76
Document Average Age	6.33
Average citations per doc	4.532
References	64923
Document Contents	
Keywords Plus (ID)	12967
Author's Keywords (DE)	7054
Authors	
Authors	6471
Authors of single-authored docs	87
Authors Collaboration	-
Single-authored docs	104
Co-Authors per Doc	3.98
International co-authorships %	10.83
Document Types	
Article	2041
Editorial	14
Erratum	1
Letter	3
Note	3
Review	162
Short Survey	1

Table 2: **Yearly productivity and Citation Impact.**

Year	TP	TC	CPP	Year	TP	TC	CPP
2008	71	326	4.59	2017	196	1463	7.46
2009	56	217	3.88	2018	120	711	5.93
2010	52	541	10.40	2019	168	895	5.33
2011	58	1095	18.88	2020	211	976	4.63
2012	58	362	6.24	2021	218	819	3.76
2013	57	259	4.54	2022	218	553	2.54
2014	59	334	5.66	2023	245	303	1.24
2015	45	282	6.27	2024	272	147	0.54
2016	121	801	6.62	Grand Total	2225	10084	

TP: Total Papers; TC: Total Citation; CCP: Citation per Paper.

Table 3: **Authorship Pattern.**

No. of Authors	No. of Publications	% of 2225	Cumulative	Cumulative %	Degree of Collaboration
Author 1	104	4.67	104	4.67	0.953
Author 2	434	19.51	538	24.18	
Author 3	506	22.74	1044	46.92	
Author 4	445	20.00	1489	66.92	
Author 5	328	14.74	1817	81.66	
Author 6	207	9.30	2024	90.96	
Author 7	88	3.96	2112	94.92	
Author 8	39	1.75	2151	96.67	
Author 9	26	1.17	2177	97.84	
Author 10	23	1.03	2200	98.87	
Author 11	14	0.63	2214	99.50	
Author 12	5	0.22	2219	99.73	
Author 13	1	0.04	2220	99.77	
Author 14	1	0.04	2221	99.82	
Author 15	3	0.13	2224	99.95	
Author 16	1	0.04	2225	100.00	
Total	2225	100.00			

Top Authors of IJPER Journal

Table 4 highlights the leading authors contributing to the *"IJPER"* journal. Out of a total of 7,131 authors, only 13 met the threshold with nine or more publications, reflecting a highly selective group of prolific contributors from Saudi Arabia, India, Malaysia, and South Africa. Saudi Arabia leads with seven authors, primarily affiliated with King Faisal University, Taif University, and AlMaarefa University, followed by India with three contributors, while Malaysia and South Africa each have one. Nagaraja Sreeharsha (King Faisal University) is the most productive author with 42 publications, 237 citations, and the highest total link strength (TLS=105), followed by Anroop B. Nair (Malaysia; 26 publications, 265 citations, TLS 52) and Mahesh Attimarad (Saudi Arabia; 20 publications, 215 citations, TLS 49).

Figure 1 illustrates the author collaboration network, revealing two distinct clusters. Cluster 1 (Red) includes Afzal Haq Asif, Mahesh Attimarad, Girish Meravanige, Anroop B. Nair, and Nagaraja Sreeharsha, primarily from King Faisal University, representing a strong collaborative group focused on pharmaceutical formulation and analytical research. Cluster 2 (Green) comprises Abdulhakeem S. Alamri, Majid Alhomrani, Walaa F. Alsanie, and Syed Mohammed Basheeruddin Asdaq, mainly affiliated with Taif and AlMaarefa Universities, emphasizing pharmacological evaluation and toxicity studies. Overall, the analysis underscores Saudi Arabia's leading role, with King Faisal University emerging as a central hub fostering international collaboration within IJPER.

Top Citations of IJPER Journal

Table 5 presents the most highly cited articles published in "*IJPER*" journal. The most cited article, with 131 citations, is authored by Avachat, A. M., Dash, R. R., and Shrotriya, S. N., focusing on plant-based natural gums in novel drug delivery systems (2011). The second most cited article (129 citations) by Mourya, V. K., *et al.*, discusses polymeric micelles for pharmaceutical applications (2011). The third most cited work by Goyal, A., *et al.* (2011) on novel drug delivery systems for herbal drugs has 95 citations. Notably, the majority (8) of the top-cited articles were published around 2011, indicating their lasting influence and relevance. These articles primarily explore advancements in drug delivery and pharmaceutical formulations, underlining the journal's focus on innovative pharmaceutical research.

Top Contributing Affiliations of IJPER Journal

Table 6 highlights the top contributing affiliations to the "*IJPER*" journal. The leading contributor is King Faisal University from Saudi Arabia, with 221 publications, followed by Manipal College of Pharmaceutical Sciences, with 181 publications. Other significant contributors include JSS College of Pharmacy (137 publications), KLE College of Pharmacy (118), and Krupanidhi College of Pharmacy (85). International representation is evident, with institutions like Taif University (71) and King Saud University (53) making notable contributions. Indian institutions such as NITTE (Deemed to be University) (67), Jadavpur University (60), and Birla Institute of Technology (58) also demonstrate a strong presence. Additionally, Noida Institute of Engineering and Technology (Pharmacy Institute) (56), Government College of Pharmacy (54), Annamalai University (52), Jazan University (49), and Columbia Institute of Pharmacy (43) reflect moderate research output. The table underscores the substantial contributions from both Indian and international institutions, highlighting their active engagement in pharmaceutical education and research.

Table 4: Top Contributing Authors with 9 and more papers.

Sl. No.	Author	TP	TC	TLS
1	Nagaraja Sreeharsha King Faisal University, Al-Ahsa, Saudi Arabia	42	237	105
2	Anroop B. Nair School of Pharmacy, Management and Science University, Seksyen, Selangor, Shah Alam, Malaysia	26	265	52
3	Mahesh Attimarad King Faisal University, Al-Ahsa, Saudi Arabia	20	215	49
4	Panchaxari Mallappa Dandagi KLE Academy of Higher Education and Research, Karnataka, Belagavi, India	18	143	0
5	Katharigatta Venugopala Narayanaswamy Durban University of Technology, Durban, South Africa	18	219	40
6	Raman Dang Krupanidhi College of Pharmacy, Karnataka, Bangalore, India	14	31	0
7	Syed Mohammed Basheeruddin Asdaq AlMaarefa University, Riyadh, Saudi Arabia	13	10	48
8	Girish Meravanige King Faisal University, Al-Ahsa, Saudi Arabia	12	38	33
9	Shiv Shankar Shukla Columbia Institute of Pharmacy, Chhattisgarh, Raipur, India	10	21	0
10	Abdulhakeem S. Alamri Taif University, Taif, Saudi Arabia	9	6	36
11	Majid Alhomrani Taif University, Taif, Saudi Arabia	9	6	36
12	Walaa F. Alsanie Taif University, Taif, Saudi Arabia	9	6	36
13	Afzal Haq Asif King Faisal University, Al-Ahsa, Saudi Arabia	9	17	21

TP: Total Papers; TC: Total Citation; TLS: Total Link Strength.

Top Contributing Countries of IJPER Journal

Table 7 presents the country-wise research contributions to the *"IJPER"* journal. Out of 81 contributing countries, only ten met the minimum threshold of 24 or more publications, demonstrating the journal's expanding international reach. India emerged as the leading contributor with 1,599 publications, accounting for the majority of research output and underscoring its pivotal role in advancing pharmaceutical education and research. Saudi Arabia followed with 194 publications and the highest total link strength (TLS=170), indicating strong international collaboration and co-authorship networks. China (121 publications) and Turkey (114 publications) also made significant contributions, reflecting their growing engagement in pharmaceutical research. Meanwhile, Malaysia (79), Egypt (45), the United States (28), South Africa (27), Pakistan (25), and South Korea (24) exhibited active participation, highlighting IJPER's appeal across diverse regions.

Figure 2 illustrates the international collaboration network among these contributing countries, categorized into three major clusters. Cluster 1 (Red) includes China, India, Malaysia, South Korea, and the United States, representing the strongest collaborative network led by India's dominant contribution. Cluster 2 (Green) comprises Egypt, Saudi Arabia, and South Africa, reflecting active regional cooperation and strengthening academic ties within the Middle Eastern and African regions. Cluster 3 (Blue) includes Pakistan and Turkey, signifying emerging research collaborations. Collectively, these findings highlight India's central role in global scholarly exchange, supported by increasing international partnerships that enhance IJPER's academic visibility and global research impact.
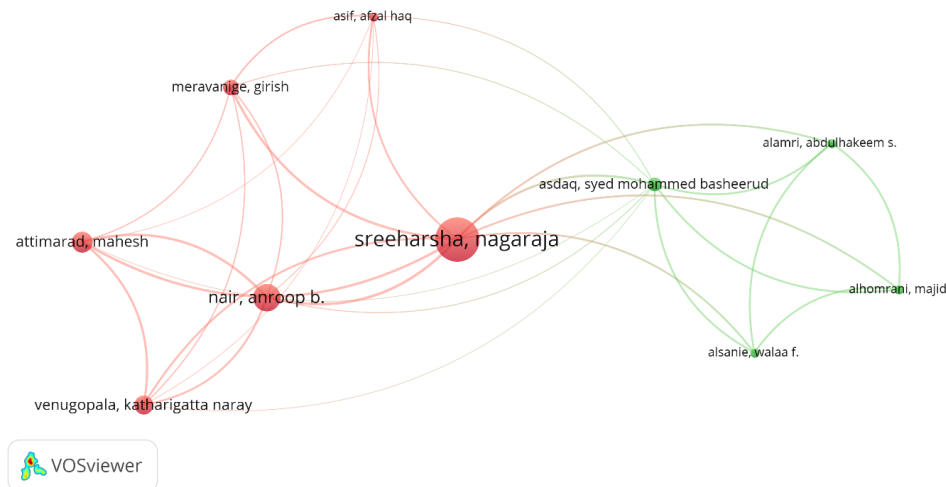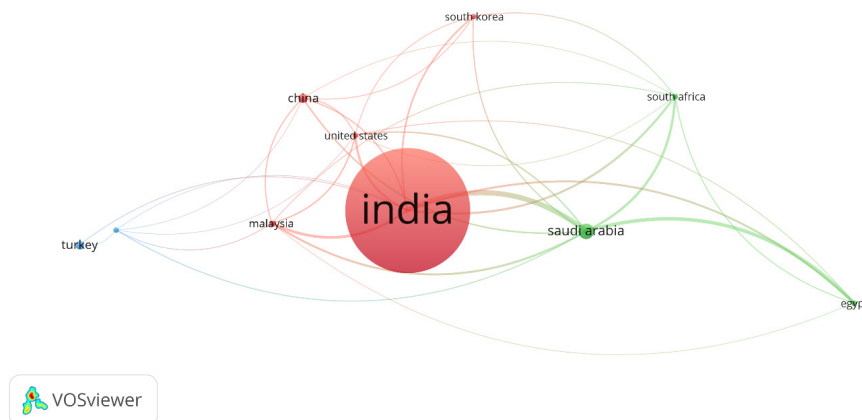

Figure 1: Top Collaborative Authors.

Figure 2: Top Collaborative Countries.

Table 5: Top Cited Papers.

Authors	Title of Manuscript	Year of Publication	No. of Citations
Avachat, A. M., Dash, R. R., and Shrotriya, S. N.	Recent investigations of plant based natural gums, mucilages and resins in novel drug delivery systems	2011	131
Mourya, V. K., Inamdar, N., Nawale, R. B., and Kulthe, S. S.	Polymeric micelles: General considerations and their applications	2011	129
Goyal, A., Kumar, S., Nagpal, M., Singh, I., and Arora, S.	Potential of novel drug delivery systems for herbal drugs	2011	95
Yadav, A. M. M. S., Murthy, M. S., Shete, A. S., and Sakhare, S.	Stability aspects of liposomes	2011	80
Sharma, R., Walker, R. B., and Pathak, K.	Evaluation of the kinetics and mechanism of drug release from econazole nitrate nanosponge loaded carbapol hydrogel	2011	75
Nayak, A. K., and Pal, D.	Tamarind seed polysaccharide: An emerging excipient for pharmaceutical use	2017	74
Mitkari, B. V., Korde, S. A., Mahadik, K. R., and Kokare, C. R.	Formulation and evaluation of topical liposomal gel for fluconazole	2010	72
Mishra, R and Amin, A	Formulation and characterization of rapidly dissolving films of cetirizine hydrochloride using pullulan as a film-forming agent	2011	65
Rana, A. C., and Gulliya, B.	Chemistry and pharmacology of flavonoids-a review	2019	59
Rengasamy, G., Jebaraj, D. M., Veeraraghavan, V. P., and Krishna, S.	Characterization, partial purification of alkaline protease from intestinal waste of scomberomorus guttatus and production of laundry detergent with alkaline protease additive	2016	57
Grampurohit, N., Ravikumar, P., and Mallya, R.	Microemulsions for topical use- A review	2011	56
Gaba, M., and Dhingra, N.	Microwave chemistry: General features and applications	2011	54
Choi, Y., Wang, J., Zhu, Y., and Lai, W. F.	Students' perception and expectation towards pharmacy education: A qualitative study of pharmacy students in a developing country	2021	49
Mohanambal, E.	Formulation and evaluation of pH-triggered in situ gelling system of levofloxacin	2010	48
Jacob, S., Nair, A. B., and Morsy, M. A.	Dose Conversion Between Animals and Humans: A Practical Solution	2022	47

Top Keywords Referred In IJPER Journal

Table 8 presents the most frequently occurring keywords and their thematic distribution. The leading terms were *antioxidant* (62), validation (61), HPLC (54), and molecular docking (42), which demonstrates a strong research orientation toward antioxidant studies, analytical validation, and computational drug design. Furthermore, Figure 3 illustrates keyword frequencies and the clustering of terms into five thematic groups represented by distinct colours. Cluster 1 (Red) highlights biological activity and molecular interaction studies, including anti-inflammatory (25), antioxidant activity (27), COVID-19 (25), docking (25), and molecular docking (42). Cluster 2 (Green) focuses on antioxidant (62), apoptosis (30), cytotoxicity (29), and oxidative stress (39), signifying research on cellular mechanisms and oxidative damage. Cluster 3 (Blue), comprising chitosan (27), nanoparticles (26), optimization (23), and pharmacokinetics (24), represents formulation and nanotechnology-based delivery research. Cluster 4 (Yellow) includes HPLC (54), HPTLC (29), RP-HPLC (32), and validation (61), emphasizing analytical method development and quality control. Cluster 5 (Purple), with bioavailability (26) and solubility (26), highlights studies improving drug absorption and physicochemical properties. Collectively, these findings illustrate an integrated research focus combining biological evaluation, analytical validation, and computational modelling within pharmaceutical sciences.

DISCUSSION

The bibliometric assessment of the Indian Journal of Pharmaceutical Education and Research (IJPER) from 2008 to 2024 demonstrates its evolution into a leading platform for scholarly communication in pharmaceutical sciences. A total of 2,225 publications were analyzed, reflecting an annual growth rate of 8.76%. The journal exhibits consistent research productivity and academic influence, with an average document age of 6.33 years and 4.53 citations per paper. The corpus comprises 64,923 references, 12,967 Keywords Plus, and 7,054 author keywords, reflecting broad thematic coverage and multidisciplinary engagement.

Table 6: Top Contributed Affiliations.

Top Affiliation	No of Publication
King Faisal University	221
Manipal College of Pharmaceutical Sciences	181
JSS College of Pharmacy	137
KLE College of Pharmacy	118
Krupanidhi college of pharmacy	85
TAIF University	71
NITTE (Deemed to be University)	67
Jadavpur University	60
Birla institute of technology	58
Noida Institute of Engineering and Technology	56
Government College of Pharmacy	54
King Saud University	53
Annamalai University	52
Jazan University	49
Columbia Institute of Pharmacy	43

A total of 6,471 authors contributed to IJPER, averaging 3.98 co-authors per paper, which indicates a strong collaborative culture. However, single-authored papers account for only 4.67%, and international collaboration remains modest at 10.83%. Year-wise analysis reveals a significant rise in output between 2016 and 2024, contributing 1,551 papers (79.51%)-the journal's most productive phase. The highest citation impact occurred in 2011, with 58 papers receiving 1,095 citations (CPP=18.88), followed by 2010 (52 papers; CPP=10.40). Although publication output peaked in 2024 (272 papers), a decline in citation impact (CPP=0.54) is attributed to limited citation exposure for recent works.

Authorship analysis confirms a highly collaborative environment, with a degree of collaboration of 0.953, indicating that nearly all publications are co-authored. Three-author papers predominate (22.74%), consistent with Subramanyam's (1983) principle of collaboration intensity. Among 7,131 contributors, only 13 authors produced nine or more papers. Saudi Arabia leads with seven prolific contributors, primarily from King Faisal University, Taif University, and AlMaarefa University. The most productive author, Nagaraja Sreeharsha (King Faisal University), published 42 papers with 237 citations (TLS=105), followed by Anroop B. Nair (26 papers, 265 citations) and Mahesh Attimarad (20 papers, 215 citations). Co-authorship mapping reveals two major clusters: one centered on formulation and analytical research, and another focused on pharmacological and toxicity studies, highlighting strong institutional collaboration within Saudi Arabia.

Citation analysis identifies Avachat *et al.*, (2011) on natural gums in drug delivery (131 citations) as the most influential paper, followed by Mourya *et al.*, (2011) and Goyal *et al.* (2011). Institutionally, King Faisal University (221 papers), Manipal College of Pharmaceutical Sciences (181), and JSS College of Pharmacy (137) lead the output. India dominates with 1,599 publications (71.88%), followed by Saudi Arabia (194), China

Table 7: Top Contributed Countries with 24 and more paper.

Sl. No.	Country	TP	TC	TLS
1	India	1599	7566	163
2	Saudi Arabia	194	621	170
3	China	121	260	23
4	Turkey	114	823	3
5	Malaysia	79	419	52
6	Egypt	45	253	55
7	United States	28	82	36
8	South Africa	27	284	41
9	Pakistan	25	86	9
10	South Korea	24	65	18

TP: Total Papers; TC: Total Citation; TLS: Total Link Strength.
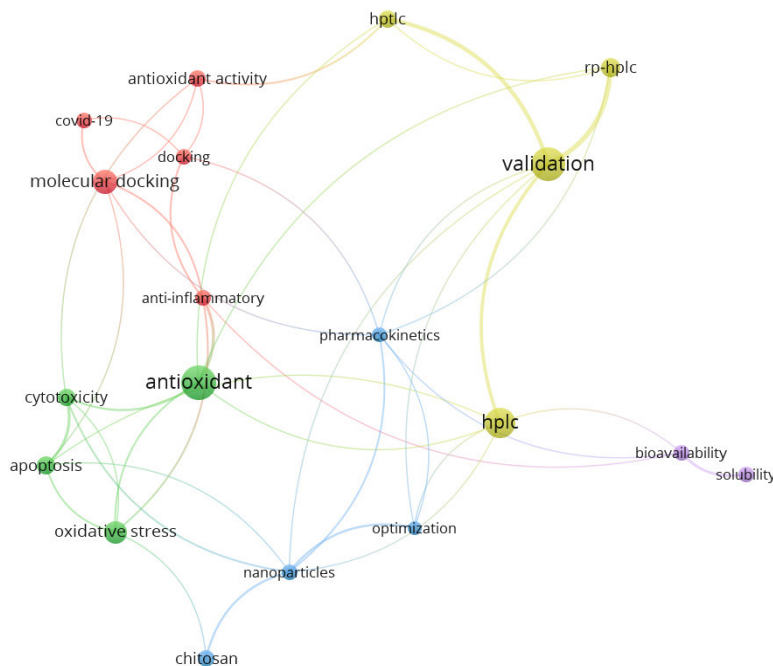
Figure 3: Top Indexed Keywords.

Table 8: Top Keywords.

Sl. No.	Keyword	Occurrences
1	Antioxidant	62
2	Validation	61
3	Hplc	54
4	Molecular Docking	42
5	Oxidative Stress	39
6	Pharmacy Education	35
7	Rp-Hplc	32
8	Apoptosis	30
9	Cytotoxicity	29
10	Hptlc	29
11	Antioxidant Activity	27
12	Chitosan	27
13	Bioavailability	26
14	Nanoparticles	26
15	Solubility	26
16	Anti-Inflammatory	25
17	Covid-19	25
18	Docking	25
19	Pharmacokinetics	24
20	Optimization	23

(121), Turkey (114), and Malaysia (79), demonstrating IJPER's expanding international participation.

Keyword analysis highlights frequent terms such as antioxidant, validation, HPLC, and molecular docking, revealing the journal's focus on analytical chemistry, natural products, and computational drug design. Overall, IJPER's progressive growth, strong collaborative structure, and increasing global engagement underscore its evolving role as a prominent and influential journal advancing pharmaceutical education and research.

CONCLUSION

The bibliometric analysis of the Indian Journal of Pharmaceutical Education and Research (IJPER) from 2008 to 2024 highlights its significant progress from a national academic outlet to a globally visible journal in pharmaceutical sciences. The steady rise in publication output, particularly during 2016-2024, and strong collaborative authorship patterns underscore its expanding research influence and institutional engagement. High citation peaks in 2010 and 2011 reflect the journal's historical impact on formulation and drug delivery research, while the dominance of multi-authored papers indicates a robust culture of collective scientific inquiry.

In contrast, the declining citation impact in recent years and limited international collaboration suggest the need for broader global engagement and diversification of authorship. Although India remains the leading contributor, accounting for 71.88% of total publications, the journal's growing participation from Saudi Arabia, Malaysia, and China signals an encouraging shift toward internationalization. To further enhance its global standing, IJPER should strengthen transnational research collaborations, encourage cutting-edge thematic contributions, and integrate emerging areas such as nanomedicine, pharmacogenomics, and digital health. Overall, IJPER continues to play a pivotal role in

advancing pharmaceutical education and research, balancing its strong regional foundation with an expanding global presence.

ABBREVIATIONS

TP: Total Papers; **TC:** Total Citation; **CCP:** Citation per Paper; **DC:** Degree of Collaboration; **TLS:** Total Link Strength; **IJPER:** Indian Journal of Pharmaceutical Education and Research, **SA:** Single Author.

CONFLICT OF INTEREST

The authors declared that there is no conflict of Interest

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