Journal of Scientometric Research, 2026; 15(2):472-479.
https://www.jscires.org

Research Article

Bibliometric Mapping of Retracted Orthopaedics Publications (1986-2025): Evidence from the Retraction Watch Database

Shivashankarappa Madhu[1,*], Pratiksha C Chandragirivar[2], Anusha Bukkambudi Natraj[3], Usha Shivani Shekharappa[4], Ashwini Kumar Ravi[5]

[1]Department of Library and Information Science, GM Central Library, GM University, Davangere, Karnataka, INDIA.
[2]Department of Pharmaceutics, GM Institute of Pharmaceutical Sciences and Research, Davangere, Karnataka, INDIA.
[3]Department of Pharmacology, GM Institute of Pharmaceutical Sciences and Research, Davangere, Karnataka, INDIA
[4]Department of Library and Information Science, Government First Grade College, Kadugudi, Bengaluru, Karnataka, INDIA.
[5]Department of Library and Information Science, Sahyadri Commerce and Management College, Vidyanagar, Shivamogga, Karnataka, INDIA.

ABSTRACT

This study presents a bibliometric analysis of retracted publications in Orthopaedics using data from the Retraction Watch database. A total of 1,536 records published between 1986-2025 were retrieved, cleaned, with help of Microsoft Excel and examined to assess temporal trends, retraction delays, corrective actions, leading journals and publishers, document types, subject co-associations, quarterly patterns, and geographical distribution. Retractions increased substantially over time, with 58.98% occurring during 2021-2025 and a peak in 2023 (30.66%). Retraction delay analysis showed that 59.64% of publications were withdrawn within two years and 78.65% within five years, indicating more effective post-publication scrutiny. Full retractions accounted for 93.42% of corrective actions. Retractions were concentrated in a limited number of journals and publishers, particularly the Journal of Healthcare Engineering (6.12%), Computational and Mathematical Methods in Medicine (5.66%), Hindawi (28.39%), and Wiley (14.00%). Research articles constituted the largest document type (57.81%), while surgery, rehabilitation, and cellular biology were the leading subject associations. China (44.89%), Japan (9.99%), and the United States (8.74%) emerged as the major contributing countries. The findings suggest that the recent rise in retractions reflects strengthened research integrity practices and increasing transparency in scholarly publishing, highlighting the importance of maintaining the reliability of evidence underpinning orthopaedic research and clinical practice.

Keywords: Bibliometrics Analysis, Orthopaedics Research, Publications Ethics, Research Integrity, Retraction Watch Database, Scholarly Publishing.

Correspondence:
Shivashankarappa Madhu
Department of Library and Information Science, GM Central Library, GM University, Davangere-577006, Karnataka, INDIA.
Email: madhu.rey24@gmail.com

Received: 26-03-2026;
Revised: 06-05-2026;
Accepted: 19-06-2026.

INTRODUCTION

Retractions represent a vital corrective mechanism in scholarly communication, serving to remove or flag published research that contains unreliable data, unethical conduct, or invalid conclusions, thereby preserving the integrity of the scientific record (Retraction Watch, n.d.; Martini, 2016). Although retractions remain relatively rare compared with the volume of scientific output, their frequency has increased markedly across disciplines over recent decades, reflecting heightened scrutiny, improved detection mechanisms, and growing awareness of research integrity issues within the academic community (Grieneisen and Zhang, 2012). In the field of Orthopaedics, systematic reviews have demonstrated a rising incidence of retracted publications, with misconduct such as fraudulent data, plagiarism, and duplicate publication emerging as common underlying causes (Yan *et al.*, 2016). Retracted orthopaedic studies have been noted across diverse journals and countries, underscoring the global scope of the challenge and the necessity for robust ethical standards and training for researchers (Ortega and Delgado-Quirós, 2024; Bar-Ilan and Halevi, 2017). Beyond clinical relevance, retractions can have far-reaching implications, including misleading subsequent research, wasting resources, and eroding public trust in science if flawed findings remain uncorrected in the literature. Addressing these concerns requires a comprehensive understanding of the patterns, causes, and consequences of retracted publications in Orthopaedics and allied domains.

OPEN ACCESS

Manuscript TECHNOMEDIA

DOI: 10.5530/jscires.20260006

Publishing Partner : Manuscript Technomedia. [www.mstechnomedia.com]

REVIEW OF LITERATURE

Previous studies have demonstrated the growing significance of retractions as indicators of research integrity challenges across disciplines and countries. A landmark analysis by Fang *et al*. (2012) showed that most biomedical retractions were attributable to misconduct rather than honest error, highlighting fraud, duplication, and plagiarism as major causes. Subsequent investigations have reported increasing retraction rates across diverse contexts, including India, Kazakhstan, and business research, with fake peer review, data fabrication, plagiarism, and image manipulation emerging as common reasons for withdrawal (Amit *et al*., 2023; Kocyigit *et al*., 2023; Sharma, 2024; Basumatary *et al*., 2025; Gundur *et al*., 2025). Recent evidence has also demonstrated that retracted publications often continue to attract citations after withdrawal, thereby extending their influence on scholarly communication and knowledge dissemination (Devanath *et al*., 2026). Collectively, these studies indicate that retractions are becoming increasingly visible within the scholarly record and reflect broader concerns relating to publication ethics, peer-review integrity, and research governance. However, despite the growing body of literature on retractions, discipline-specific evidence concerning Orthopaedics remains limited. The present study addresses this gap by examining the temporal, institutional, disciplinary, and geographical characteristics of retracted orthopaedic publications using data from the Retraction Watch database.

Objectives of the Study

- To analyse the temporal distribution of retracted publications in Orthopaedics from 1986-2025 in order to identify longitudinal trends in retraction activity.
- To examine the nature and timing of retraction actions, including retraction delays and categories such as corrections and expressions of concern.
- To identify the leading journals and publishers associated with retracted Orthopaedics literature and assess their relative contribution.
- To investigate the distribution of retracted records across document types and their co-associated subject domains to understand disciplinary intersections.
- To identify the major authors and affiliations associated with retracted Orthopaedics.
- To map the geographical participation of countries involved in retracted Orthopaedics publications to reveal global collaboration patterns.

METHODOLOGY

This study employed a quantitative bibliometric approach to examine retracted publications in Orthopaedics using data obtained from the Retraction Watch dataset available through the (https://gitlab.com/crossref/retraction-watch-data) Crossref GitLab repository (Figure 1). Orthopaedics-related records published between 1986 and 2025 were identified using subject-based filtering. Duplicate and irrelevant records were removed, and data were cleaned and standardised in Microsoft Excel to ensure consistency in journal titles, publishers, document types, author names, affiliations, and countries. Retraction delay was calculated as the interval between publication and retraction dates. The final dataset comprised 1,536 records and was analysed using descriptive bibliometric indicators, including frequencies and percentages, to evaluate temporal trends, retraction characteristics, leading journals and publishers, document types, subject associations, major authors and institutions, and geographical distribution patterns.

Ethical Considerations

The study utilised only publicly available secondary data from the Retraction Watch Database and did not involve human participants, personal data, or confidential information. All data were analysed in aggregate form for scholarly purposes, ensuring that no individual authors or institutions were singled out. Proper acknowledgement of the data source was maintained, and the analysis was conducted with the sole intent of understanding retraction patterns to support research integrity and transparency in scientific communication.

RESULTS

Year-wise distribution of publications

Figure 2 exhibits the annual distribution of 1,536 retracted orthopaedic publications from 1986 to 2025, revealing a marked rise in retraction activity over time. Retractions were rare during 1986-2006, accounting for only 21 publications (1.37%), likely reflecting limited mechanisms for detecting research irregularities. A gradual increase was observed between 2007 and 2014 (146 retractions; 9.51%), followed by a substantial rise during 2015-2020 (466 retractions; 30.34%). The most notable surge occurred in 2023, when 471 publications (30.66%) were retracted, exceeding the cumulative total recorded during the first three decades. This increase is likely attributable to enhanced post-publication scrutiny, publisher investigations, and stronger research integrity measures. Although retractions declined in 2024 and 2025, they remained considerably higher than earlier levels. Overall, the concentration of 58.98% of all retractions during 2021-2025 highlights the growing role of scientific self-correction in orthopaedic research.

Retraction Delays in Publication Patterns

Figure 3 depicts the distribution of retraction delays among 1,536 orthopaedic publications, highlighting that most retractions occur relatively soon after publication. Nearly 60% of papers (916; 59.64%) were retracted within the first two years, while over two-thirds (69.60%) were withdrawn within three years and 78.65% within five years. Thereafter, the frequency of retractions declined markedly, with only 10.67% occurring between 5 and 10 years and 9.18% after a decade. Retractions beyond 15 years were uncommon (3.97%), and only three papers (0.20%) were retracted after 23 years or more. This strongly right-skewed pattern suggests that problematic publications are increasingly identified during the early post-publication period, reflecting enhanced editorial oversight, advances in detection technologies, and greater vigilance towards research integrity within the orthopaedic research community.

Retraction Nature

Table 1 presents the nature of corrective actions taken on 1,536 orthopaedic publications. Retractions constitute the vast majority of cases (1,435; 93.42%), indicating that complete withdrawal remains the primary mechanism for addressing serious concerns in the published literature. Expressions of concern (69; 4.49%) and corrections (27; 1.76%) were comparatively infrequent, while reinstatements were rare (5; 0.33%). This pattern suggests that journals tend to favour definitive corrective action when substantial issues affecting the validity, reliability, or integrity of research are identified.

Top Journals

Table 2 highlights the journals with the highest numbers of retracted orthopaedic publications. *The Journal of Healthcare Engineering* (94; 6.12%), *Computational and Mathematical Methods in Medicine* (87; 5.66%), and *BioMed Research International* (71; 4.62%) recorded the largest shares of retractions. The prominence of multidisciplinary and computationally oriented journals suggests that retraction activity has been particularly concentrated in publication outlets subjected to extensive publisher-led investigations and research integrity reviews in recent years. In contrast, core orthopaedic journals contributed comparatively fewer retractions. However, the distribution of 855 retractions (55.66%) across 436 other journals indicates that retractions are not restricted to a small number of outlets but represent a widespread issue across the orthopaedic publishing landscape.

Top Publishers

Table 3 presents the distribution of retracted orthopaedic publications across publishers. Hindawi accounted for the largest share of retractions (436; 28.39%), followed by Wiley (215; 14.00%), Elsevier (156; 10.16%), and Springer (102; 6.64%). While retractions were recorded across a wide range of publishers, a substantial proportion was concentrated among a few major publishing groups. This pattern is likely influenced by both their extensive publication output and recent large-scale research integrity investigations that have led to the identification of problematic articles. Nevertheless, the presence of 264 retractions (17.19%) across 121 other publishers indicates that concerns relating to publication quality and research integrity

Table 1: Nature of retracted publications in Orthopaedics publications.

Retraction Nature	TP	%TP
Correction	27	1.76
Expression of concern	69	4.49
Reinstatement	5	0.33
Retraction	1435	93.42
Grand Total	1536	100.00

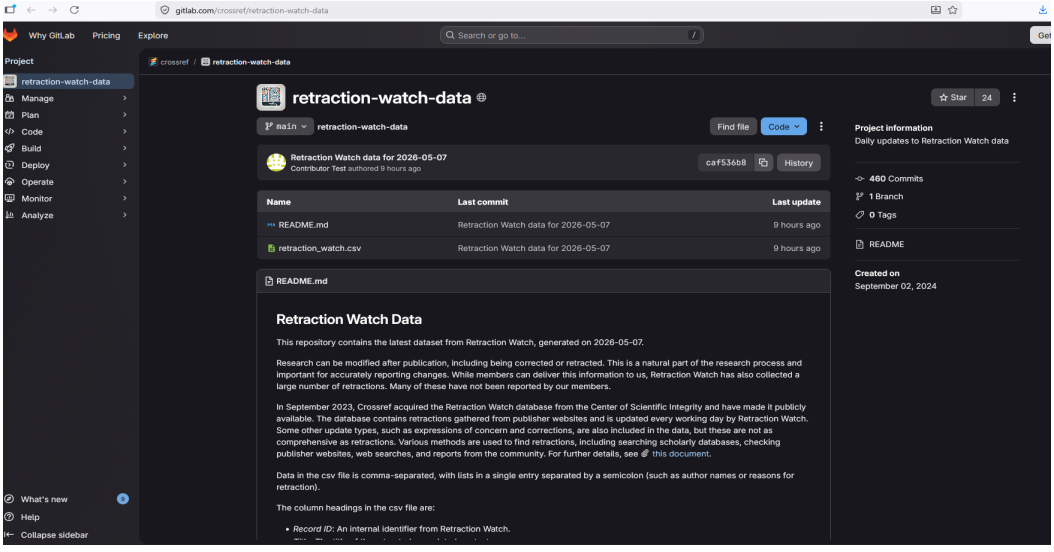

Figure 1: Retraction Watch Data Repository on Croosref GitLab used for Data Retrieval.

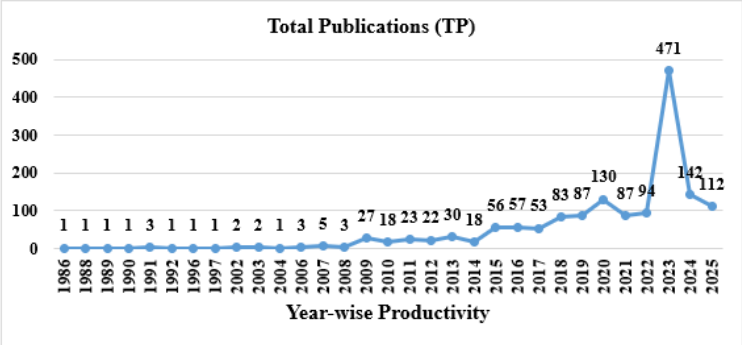

Figure 2: Year-Wise Distribution of Publications.

Table 2: Top Journals with Retracted Orthopaedics Publications.

Journal	TP	%TP
Journal of Healthcare Engineering	94	6.12
Computational and Mathematical Methods in Medicine	87	5.66
BioMed Research International	71	4.62
Cochrane Database of Systematic Reviews	62	4.04
International Wound Journal	61	3.97
Evidence-Based Complementary and Alternative Medicine	52	3.39
Cureus	29	1.89
Contrast Media and Molecular Imaging	27	1.76
Journal of Orthopaedic Surgery and Research	24	1.56
Applied Bionics and Biomechanics	20	1.30
Computational Intelligence and Neuroscience	20	1.30
Emergency Medicine International	18	1.17
Journal of Clinical Anesthesia	18	1.17
European Review for Medical and Pharmacological Sciences	16	1.04
Clinical Oral Implants Research	15	0.98
Bioscience Reports	14	0.91
Neurology	14	0.91
PLoS One	14	0.91
Bone	13	0.85
Journal of Bone and Mineral Research: The Official Journal of the American Society for Bone and Mineral Research	12	0.78
Other 436 Journals	855	55.66
Grand Total	1536	100.00

extend across the broader orthopaedic publishing ecosystem rather than being confined to specific publishers.

Document Types

Table 4 indicates that retractions in orthopaedics are predominantly associated with research articles (888; 57.81%), followed by clinical studies (238; 15.49%), highlighting the greater exposure of original investigations to scrutiny and potential research integrity concerns. Meta-analyses (111; 7.23%) and review articles (92; 5.99%) also represent notable proportions, suggesting that issues extend beyond primary research to evidence synthesis, where inaccuracies may have wider implications for clinical decision-making. In contrast, case reports, conference papers, and other document types contributed relatively few retractions. Overall, the findings demonstrate that retractions are concentrated within the core evidence-generating literature that underpins orthopaedic research and practice.

Quartile Patterns

Table 5 presents the quartile distribution of 1,536 retracted orthopaedic publications, revealing a relatively balanced pattern throughout the year. Although Qtr3 recorded the highest number of retractions (409; 26.63%), the differences across quarters were modest, with Qtr1, Qtr4, and Qtr2 contributing comparable shares. The absence of pronounced seasonal variation suggests that retraction decisions are driven primarily by the completion of editorial investigations and research integrity assessments rather than by cyclical publishing patterns, resulting in a consistent rate of corrective actions across the year.

Co-associated Subjects

Table 6 illustrates the multidisciplinary nature of retracted orthopaedic publications through 3,367 subject co-assignments. While Medicine-Surgery (411; 12.21%) and Rehabilitation/Therapy (314; 9.33%) represent the core clinical domains, substantial associations with Cellular Biology, Genetics, Biochemistry, Pharmacology, Neurology, and Radiology highlight the increasing integration of orthopaedics with basic, translational, and diagnostic sciences. The presence of retractions across a broad range of subjects, including technology-related fields and 57 additional disciplines (706; 20.97%), suggests that research integrity challenges are not confined to traditional orthopaedic practice but extend across the wider interdisciplinary networks that support contemporary musculoskeletal.

Table 3: Top publishers with Retracted Orthopaedics Publications.

Publisher	TP	%TP
Hindawi	436	28.39
Wiley	215	14.00
Elsevier	156	10.16
Springer	102	6.64
SAGE Publications	38	2.47
Wolters Kluwer - Lippincott Williams and Wilkins	35	2.28
Spandidos	33	2.15
Springer - Biomed Central (BMC)	33	2.15
Taylor and Francis	32	2.08
Cureus (Part of Springer Nature as of December 2022)	28	1.82
Springer - Nature Publishing Group	26	1.69
BioMed Central (BMC)	21	1.37
Oxford University Press	17	1.11
Verduci Editore	16	1.04
American Academy of Neurology	14	0.91
BMJ Publishing	14	0.91
PLoS	14	0.91
Portland Press	14	0.91
Taylor and Francis - Dove Press	14	0.91
Wolters Kluwer	14	0.91
Other 121 Publishers	264	17.19
Grand Total	1536	100.00

Table 4: Document Types of Retracted Orthopaedics Publications.

Document Type	TP	%TP
Research Article	888	57.81
Clinical Study	238	15.49
Meta-Analysis	111	7.23
Review Article	92	5.99
Case Report	51	3.32
Conference Abstract/Paper	30	1.95
Review Article; Revision	29	1.89
Case Report; Letter	16	1.04
Clinical Study; Research Article	14	0.91
Commentary/Editorial; Letter	10	0.65
Article in Press; Clinical Study	8	0.52
Meta-Analysis; Review Article	7	0.46
Commentary/Editorial	6	0.39
Letter	6	0.39
Clinical Study; Letter	4	0.26
Letter; Research Article	4	0.26
Article in Press; Research Article	3	0.20
Book Chapter/Reference Work	2	0.13
Case Report; Review Article;	2	0.13
Letter; Review Article	2	0.13
Other 13 document type	13	0.85
Grand Total	1536	100.00

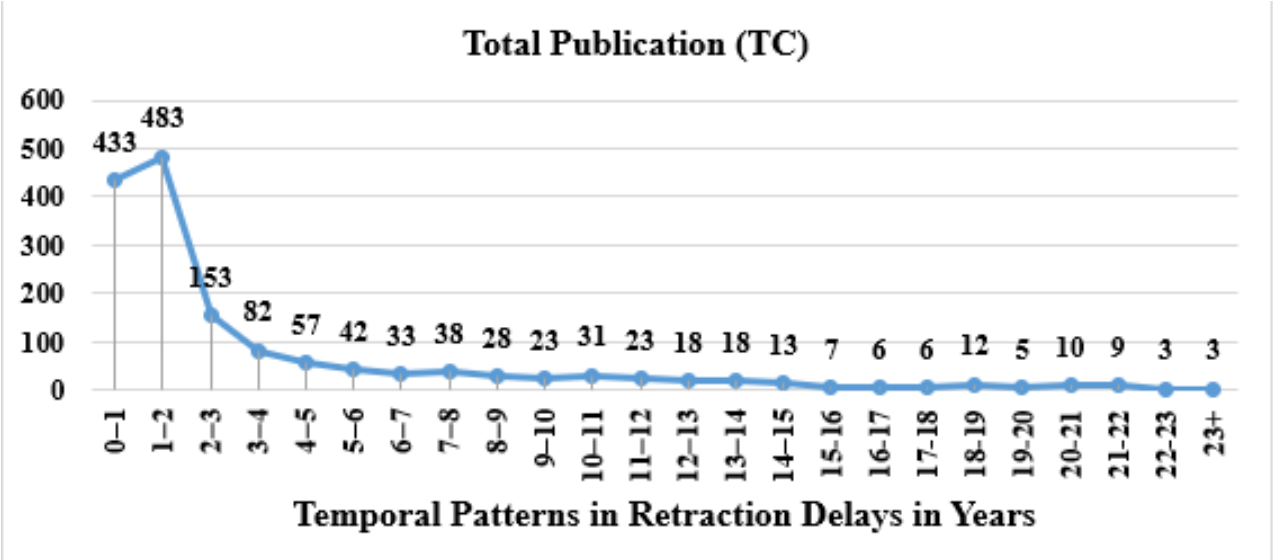

Figure 3: Retraction Delays of Publications.

Table 5: Quartile Distribution of Retracted Orthopaedics Publications.

Quartile	TP	%TP
Qtr1	393	25.59
Qtr2	353	22.98
Qtr3	409	26.63
Qtr4	381	24.80
Grand Total	1536	100.00

Table 6: Co-associated Subjects with Retracted Orthopaedic Publications.

Subject	No. of Count	Percentage
(HSC) Medicine - Surgery	411	12.21
(HSC) Medicine - Rehabilitation/ Therapy	314	9.33
(BLS) Biology - Cellular	250	7.43
(BLS) Genetics	195	5.79
(HSC) Medicine - Pharmacology	172	5.11
(BLS) Biochemistry	165	4.90
(HSC) Medicine - Neurology	151	4.48
(HSC) Radiology/Imaging	137	4.07
(HSC) Medicine - Oncology	110	3.27
(B/T) Technology	98	2.91
(HSC) Medicine - Geriatric	88	2.61
(HSC) Medicine - Anesthesia/ Anaesthesia	86	2.55
(BLS) Biology - Cancer	84	2.49
(BLS) Biology - Molecular	83	2.47
(HSC) Medicine - Alternative	66	1.96
(HSC) Medicine - Pediatrics	55	1.63
(HSC) Medicine - Immunology	54	1.60
(HSC) Medicine - Cardiovascular	51	1.51
(HSC) Medicine - Sports	46	1.37
(BLS) Anatomy/Physiology	45	1.34
Other 57 subjects	706	20.97
Grand Total	3367	100.00

Top Countries

Table 7 presents the country-wise distribution of 1,762 author affiliations associated with retracted orthopaedic publications, revealing a marked geographical concentration. China accounted for the largest share (791; 44.89%), followed by Japan (176; 9.99%) and the United States (154; 8.74%), while India and the United Kingdom also contributed notable proportions. Although retractions were identified across a broad range of countries, their concentration in major research-producing nations likely reflects both higher publication output and greater exposure to post-publication scrutiny. The distribution of affiliations across 49 additional countries further indicates that research integrity challenges in orthopaedics are a global concern rather than being restricted to specific regions.

Table 7: Top Countries Involved in Retracted Orthopaedic Publications.

Counties	No. of Count	Percentage
China	791	44.89
Japan	176	9.99
United States	154	8.74
India	78	4.43
United Kingdom	57	3.23
Spain	41	2.33
Italy	36	2.04
Germany	33	1.87
South Korea	33	1.87
Canada	29	1.65
Australia	28	1.59
Saudi Arabia	28	1.59
Iran	25	1.42
Russia	25	1.42
Egypt	18	1.02
Netherlands	15	0.85
Turkey	14	0.79
Romania	10	0.57
Brazil	9	0.51
France	9	0.51
Other 49 Countries	153	8.68
Grand Total	1762	100.00

Top Authors in Retracted Orthopaedic Publications

Table 8 highlights a notable concentration of retracted Orthopaedic publications among a small group of researchers. Yoshihiro Sato (TP-88) and Jun Iwamoto (TP-75) accounted for the highest numbers of retractions, followed by Jose Luis Calvo-Guirado (TP-25), Hideo Matsumoto (TP-24), and Hironobu Ueshima (TP-23). Several other authors from Japan, the United States, South Korea, Italy, and Spain also featured prominently among the top contributors. The predominance of authors affiliated with Japanese institutions suggests a degree of regional clustering; however, these findings should be interpreted cautiously, as high retraction counts may reflect both publication volume and the outcomes of investigations into specific research programmes or collaborative networks. Overall, the concentration of retractions among a limited number of researchers indicates that individual cases can substantially influence the retraction landscape within orthopaedic research.

Table 8: Top 10 Authors.

Sl. No.	Authors	Affiliation	TP
1.	Yoshihiro Sato	Mitate Hospital, Tagawa, Japan	88
2.	Jun Iwamoto	Keio University School of Medicine, Japan	75
3.	Jose Luis Calvo-Guirado	University of Murcia, Spain	25
4.	Hideo Matsumoto	Mitate Hospital, Fukuoka, Japan	24
5.	Hironobu Ueshima	Showa University Hospital, Tokyo, Japan	23
6.	James K Yeh	State University of New York at Stony Brook, USA	17
7.	Kotaro Oizumi	Futase Social Insurance Hospital, Iizuka, Japan	17
8.	Young Hak Roh	Ewha Womans University College of Medicine, South Korea	15
9.	Scott S Reuben	Baystate Medical Center, Massachusetts, USA	13
10.	Bernardino Saccomanni	Gabriele d'Annunzio University, Italy	10

Table 9: Top 10 Affiliation.

Sl. No.	Affiliation	TP
1.	Keio University School of Medicine, Japan	71
2.	Mitate Hospital, Japan	57
3.	University of Murcia, Spain	23
4.	McMaster University, Canada	21
5.	Showa University Hospital, Japan	21
6.	Hirosaki University School of Medicine, Japan	20
7.	Futase Social Insurance Hospital, Japan	18
8.	Kurume University School of Medicine, Japan	17
9.	Seoul National University College of Medicine, South Korea	16
10.	Winthrop-University Hospital, USA	16

Top Affiliations in Retracted Orthopaedics Publications

Table 9 identifies the leading institutional affiliations associated with retracted orthopaedic publications. Keio University School of Medicine (TP-71) and Mitate Hospital (TP-57), both in Japan, recorded the highest numbers of retractions, followed by the University of Murcia (Spain) (TP-23), McMaster University (Canada) (TP-21), and Showa University Hospital (Japan) (TP-21). The prominence of several Japanese institutions mirrors the author-level findings and suggests that specific research groups or institutional networks have had a disproportionate influence on the retraction landscape. However, the presence of institutions from Europe, North America, and Asia also demonstrates that retractions are a global phenomenon, reflecting broader challenges related to research integrity and publication quality across the international orthopaedic research community.

DISCUSSION

The findings reveal a substantial transformation in the retraction landscape of orthopaedic research, characterised by a marked concentration of retractions in recent years. Although only 21 retractions (1.37%) were recorded between 1986 and 2006, the period 2021-2025 accounted for 906 cases (58.98%), including a notable peak of 471 retractions (30.66%) in 2023 alone. This sharp increase is more likely attributable to strengthened editorial oversight, publisher-led investigations, advances in plagiarism and image-integrity detection technologies, and growing emphasis on research integrity than to a sudden increase in research misconduct alone. Retraction delay patterns further support this interpretation, with 59.64% of articles retracted within two years of publication and 78.65% within five years, indicating increasingly efficient identification and correction of problematic research. The predominance of full retractions (93.42%) over corrections and expressions of concern also suggests a preference for decisive corrective action when the reliability of published findings is compromised.

The concentration of retractions among a limited number of publishers, authors, and institutions highlights the influence of large-scale investigations and recurring concerns within particular research networks. Hindawi (28.39%), Wiley (14.00%), and Elsevier (10.16%) accounted for a substantial proportion of retractions; however, more than half of all cases were distributed across 436 journals, demonstrating that research integrity challenges are not confined to a small number of publication outlets. Similarly, China accounted for 44.89% of author affiliations linked to retracted publications, followed by Japan (9.99%) and the United States (8.74%), suggesting that retraction patterns may be influenced by publication volume, research expansion, and increased scrutiny within highly productive scientific systems. The multidisciplinary distribution of retracted publications across surgery, rehabilitation, genetics, cellular biology, pharmacology, and related fields further illustrates that

integrity concerns extend across both clinical and translational dimensions of orthopaedic research.

Particularly noteworthy is the finding that research articles (57.81%) and clinical studies (15.49%) constituted the majority of retracted publications, while meta-analyses (7.23%) and review articles (5.99%) also accounted for a meaningful proportion. Given the influential role of these study types in evidence synthesis and clinical decision-making, the consequences of retractions may extend beyond the scholarly record and affect healthcare practice. Collectively, the findings suggest that the recent growth in retractions reflects increasing transparency, accountability, and effectiveness of scientific self-correction mechanisms, while simultaneously highlighting the need for continued strengthening of research governance, ethical oversight, and quality assurance within orthopaedic research.

CONCLUSION

This bibliometric assessment provides evidence that the retraction landscape in orthopaedic research has undergone a significant transformation over the past decade. The concentration of retractions in recent years, coupled with shorter retraction delays, suggests that the scholarly community has become increasingly effective in identifying and correcting problematic publications. Rather than viewing retractions solely as indicators of research failure, they may also be interpreted as manifestations of a more transparent and accountable scientific system.

The findings further reveal that retractions are dispersed across diverse journals, publishers, countries, institutions, and subject areas, highlighting the complex and multidisciplinary nature of research integrity challenges within orthopaedics. The occurrence of retractions among clinical studies, research articles, meta-analyses, and review papers is particularly noteworthy because of their potential influence on evidence synthesis and clinical practice. As orthopaedic research continues to expand globally, sustained attention to ethical conduct, methodological rigour, editorial quality control, and post-publication review will be essential to ensure the reliability of the scientific record and maintain confidence in the evidence underpinning patient care.

ABBREVIATIONS

TP: Total Publications; **%TP:** Percentage of Total Publications; **Crossref:** Cross-Reference Digital Object Identifier Registration Agency; **GitLab:** Git-Based Collaborative Development Platform; **Microsoft Excel:** Spreadsheet Software Developed by Microsoft; **Qtr:** Quartile; **HSC:** Health Sciences Category; **BLS:** Biological and Life Sciences; **B/T:** Business and Technology; **USA:** United States of America; **PLoS ONE:** Public Library of Science ONE.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

REFERENCES

Bar-Ilan, J., & Halevi, G. (2017). Post retraction citations in context: a case study. *Scientometrics*, *113*(1), 547-565. https://doi.org/10.1007/s11192-017-2242-0

Basumatary, B., Sinha, M. K., Kumar, V., & Verma, M. K. (2025). Retractions in Indian Business Research: A Closer Look at Trends, Reasons and Impacts of Retracted Articles. *DESIDOC Journal of Library and Information Technology*, *45*(2), 131-140. https://doi.org/10.14429/djlit.45.2.20357

Devanath, P. R., & Rupesh Kumar, A. (2026). Citation dynamics and altmetric trends of retracted publications in Indian-funded research: pre and post retraction analysis. *Scientometrics*. https://doi.org/10.1007/s11192-025-05527-4

Fang, F. C., Steen, R. G., & Casadevall, A. (2012). Misconduct accounts for the majority of retracted scientific publications. *Proceedings of the National Academy of Sciences*, *109*(42), 17028-17033. https://doi.org/10.1073/pnas.1212247109

Grieneisen, M. L., & Zhang, M. (2012). A Comprehensive Survey of Retracted Articles from the Scholarly Literature. *PLoS One*, *7*(10), 441-18. https://doi.org/10.1371/journal.pone.0044118

Gundur, B. N., & Sampath Kumar, B. T. (2025). Trajectory of Research Retractions by Indian Scholars : Trends, Causes and Ethical Imperatives. *Journal of Data Science, Informetrics, and Citation Studies*, *4*(2), 257-262. https://doi.org/10.5530/jcitation.20250207

Kocyigit, B. F., Zhaksylyk, A., Akyol, A., & Yessirkepov, M. (2023). Characteristics of Retracted Publications From Kazakhstan: An Analysis Using the Retraction Watch Database. *Journal of Korean Medical Science*, *38*(46), 1-11. https://doi.org/10.3346/jkms.2023.38.e390

Kumar, A., & Siwach, A. K. (2023). Analysis of Retracted Publications by Indian Authors due to Falsification or Fabrication of Data. *Kelpro Bulletin*, *27*(2), 29-44.

Martini, B. (2016). The Data Revolution. Big Data, Open Data, Data Infrastructures and Their Consequences. *Regional Studies*, *50*(3). https://doi.org/10.1080/00343404.2015.1107987

Ortega, J. L., & Delgado-Quirós, L. (2024). The indexation of retracted literature in seven principal scholarly databases: a coverage comparison of dimensions, OpenAlex, PubMed, Scilit, Scopus, The Lens and Web of Science. *Scientometrics*, *129*(7), 3769-3785. https://doi.org/10.1007/s11192-024-05034-y

Retraction Watch. (n.d.). Retrieved February 4, 2026, from https://retractionwatch.com/

Sharma, K. (2024). Over two decades of scientific misconduct in India: Retraction reasons and journal quality among inter-country and intra-country institutional collaboration. *Scientometrics*, *129*(12), 7735-7757. https://doi.org/10.1007/s11192-024-05192-z

Yan, J., MacDonald, A., Baisi, L.-P., Evaniew, N., Bhandari, M., & Ghert, M. (2016). Retractions in orthopaedic research: A systematic review. *Bone & Joint Research*, *5*(6), 263-268. https://doi.org/10.1302/2046-3758.56.BJR-2016-0047

Cite this article: Madhu S, Chandragirivar PC, Natraj AB, Shekharappa US, Ravi AK. Bibliometric Mapping of Retracted Orthopaedics Publications (1986-2025): Evidence from the Retraction Watch Database. J Scientometric Res. 2026;15(2):472-9.