Cumhuriyet Dental Journal

Bibliometric Analysis of Turkey-Affiliated International Publications in Pediatric Dentistry Using RStudio Package: A Cross-Sectional Research

Tülin Taşdemir [1,a,*], Melek Taşsöker [2,b]

[1]Department of Pediatric Dentistry, Faculty of Dentistry, Hacettepe University, Ankara, Turkey
[2]Department of Dentomaxillofacial Radiology, Faculty of Dentistry, Necmettin Erbakan University, Konya, Turkey
*Corresponding author

Research Article

ABSTRACT

Objectives: This study aims to perform a bibliometric analysis of studies published in international journals affiliated with Turkey in the field of pediatric dentistry and to determine the position of Turkish Pediatric Dentistry at the international level.
Materials and Methods: The research was conducted using the 'Web of Science' and 'Scopus' databases. The search was performed by entering the following terms into the databases: 'pediatric dentistry' OR 'paediatric dentistry' OR 'pedodontics' and 'children' AND ('dentistry' OR 'teeth' OR 'tooth' OR 'dental' OR 'caries' OR 'oral health' OR 'oral hygiene'). Subsequently, publications were filtered by selecting 'Turkey' on a country basis. Using the 'bibliometrix' package in RStudio, data obtained from the two databases were merged. The analysis included a total of 1,949 publications. The identified publications were evaluated based on publication years, journals in which they were published, citation counts, authors, affiliated institutions, and preferred keywords. Analyses and visualizations from package in RStudio were utilized.
Results: Turkey's international collaboration rate is 5%. The United States emerges as the most frequent collaboration partner, with the journal *Dental Traumatology* standing out among the sources. Hacettepe University is the most productive institution, with 390 publications. The thematic map reveals that 'pulpotomy,' 'mineral trioxide aggregate,' 'fluoride,' and 'remineralization' are the most actively researched topics.
Conclusions: Based on data from the Web of Science and Scopus databases, there has been a significant scientific productivity in the field of Turkish Pediatric Dentistry between 1984 and 2024. In future studies, the comprehensiveness of the results can be expanded by analyzing different databases.

Keywords: Bibliometrics; pediatric dentistry; Rstudio package; international; Turkish

[a] ✉ dt.tulintasdemir@gmail.com   🆔 0000-0003-4884-4715   [b] ✉ dishekmelek@gmail.com   🆔 0000-0003-2062-5713

Introduction

Scientific progress is achieved through the findings of scientific studies reported in scientific articles.[1] Examining scientific results is a valuable approach for enhancing policy-making and planning, comprehending historical contexts, establishing research priorities, and pinpointing gaps and shortcomings in the production of scientific knowledge.[2] A comprehensive and effective method for analyzing scientific output and gaining insights into the overall state of research is to conduct a thorough evaluation of articles that are indexed in various academic databases. Bibliometrics is a comprehensive analytical approach to literature that delves into the production and standing of publications within a specific research domain, examining both quantitative metrics, such as publication counts and citation rates, and qualitative aspects, such as the impact and relevance of the research.[3,4] During the analysis, we can gather comprehensive information about authors, countries, journals, institutions, keywords, references, and other relevant aspects within the research field.[3] Bibliometric tools like VoSviewer,[5] CiteSpace,[6]

HistCite[7] and R package "bibliometrix"[8] are commonly employed to create visual representations of the findings from literature analyses. This type of analysis can help determine the extent and nature of research conducted by each country, organization, scientific field, and individual. Additionally, citation analysis serves as a crucial indicator in bibliometric research. The number of citations impacts the impact factor of the journal in which the work is published, reflecting the approval, productivity, quality, and reputation of both the article and its authors.[9-11] The most cited articles represent milestones in any field and can significantly influence research and clinical practices. The 100 most cited articles in a field are regarded as the most influential within that domain. Conducting a bibliometric analysis of these influential publications enhances our understanding of research progress and key topics of interest. This type of analysis, which has gained considerable attention in recent years, illustrates the publication trends, scientific developments, and evidence-based practices surrounding a topic over time. Compiling the most cited publications can help physicians

and experts better grasp the nature of that field. Although the total number of citations may not be a conclusive measure of an article's quality, it is often utilized to gauge the article's influence within the scientific community. Generally, higher-quality articles tend to receive significantly more citations than lower-quality ones.[12]

When the dental literature in Turkey is examined, bibliometric analyses of studies published in the fields of orthodontics,[13] endodontics,[14,15] prosthetic dentistry,[16,17] oral and maxillofacial surgery,[18] pediatric dentistry[19] and theses written in some dentistry fields[20,21] are reached. As a result of this examination, no bibliometric analysis of studies published in international journals in the field of pediatric dentistry in Turkey was found. This study aims to perform a bibliometric analysis of studies published in international journals affiliated with Turkey in the field of pediatric dentistry and to determine the position of Turkish Pediatric Dentistry at the international level.

Materials and Methods

Since it is a document review study and not a study conducted on animals or humans, ethics committee approval was not obtained. The research was conducted on November 19, 2024 using the "Web of Science Core Collection" (WoS) and "Scopus" databases. Since the relevant databases are updated daily, analyses were performed only in a single day. The databases were searched by writing "pediatric dentistry" OR "paediatric dentistry" OR "pedodontics" and "children" AND ("dentistry" OR "teeth" OR "tooth" OR "dental" OR "caries" OR "oral health" OR "oral hygiene") (Figure 1). Then, "Turkey" was selected on a country basis and the publications were filtered. In the obtained results, the Rstudio 4.4.2 package program was used to extract common publications both within the databases and between the databases and to analyze the data. The WoS database reached 1787 publications and the Scopus database reached 2816 publications on children's oral and dental health published between 1984 and 2024. After combining the data obtained from the two databases, 903 common publications were removed and 3700 publications were obtained. The obtained articles were then examined and 1751 publications belonging to authors not affiliated with the pediatric dentistry department were excluded from the study. 1949 publications related to children's oral and dental health

published by authors affiliated with the pediatric dentistry department were included in the analysis (Figure 2).

All document types (research articles, reviews, case reports, letters to the editor) were included in the study. No language filtering was performed, studies in all published languages (English, Turkish, Polish, Italian, Croatian, Spanish, and Japanese) were included. Publications are included in Science Citation Index Expanded, Emerging Sources Citation Index, Social Sciences Citation Index, Conference Proceedings Citation Index–Social Science & Humanities, Conference Proceedings Citation Index–Science indexes. The accessed publications were evaluated in terms of publication years, publication type, journals published, number of citations, authors, institutions they are affiliated with, and preferred keywords. Analysis and visualizations of the "biblioshiny" program were used through "bibliometrix" in the Rstudio 4.4.2 package program.

Results

In the literature review, total of 1,949 publications from the international pediatric dentistry departments in Turkey, sourced from the WoS and Scopus databases, spanning the years 1984 to 2024. The first publication was a case report by Özkan et al., published in 1984 in the "Journal of Dentistry for Children" from Istanbul University.[22]

It has been observed that the number of publications has been increasing since 2000. The year with the highest number of publications is 2022 (n=163) (Figure 3a). The highest citation rate per publication is 1.9 in 2020 (Figure 3b). In total, 3236 different authors are included in the publications. 47 publications are single-authored.

1949 publications were published in 398 different journals. "Journal of Clinical Pediatric Dentistry" (n=159), "Dental Traumatology" (n=82), "Journal of Dentistry for Children" (n=78), "European Journal of Paediatric Dentistry" (n=76), "Nigerian Journal of Clinical Practice" (n=66) and "International Journal of Paediatric Dentistry" (n=61) were found to be the journals with the most Turkish-based publications in the field of pediatric dentistry.

Among the authors, Figen Seymen, Betül Kargül and Zafer Çehreli are the authors with the most publications (Figure 4). Hacettepe University is the most productive institution with 390 publications. This ranking is followed by Istanbul, Ege and Marmara Universities (Table 1).
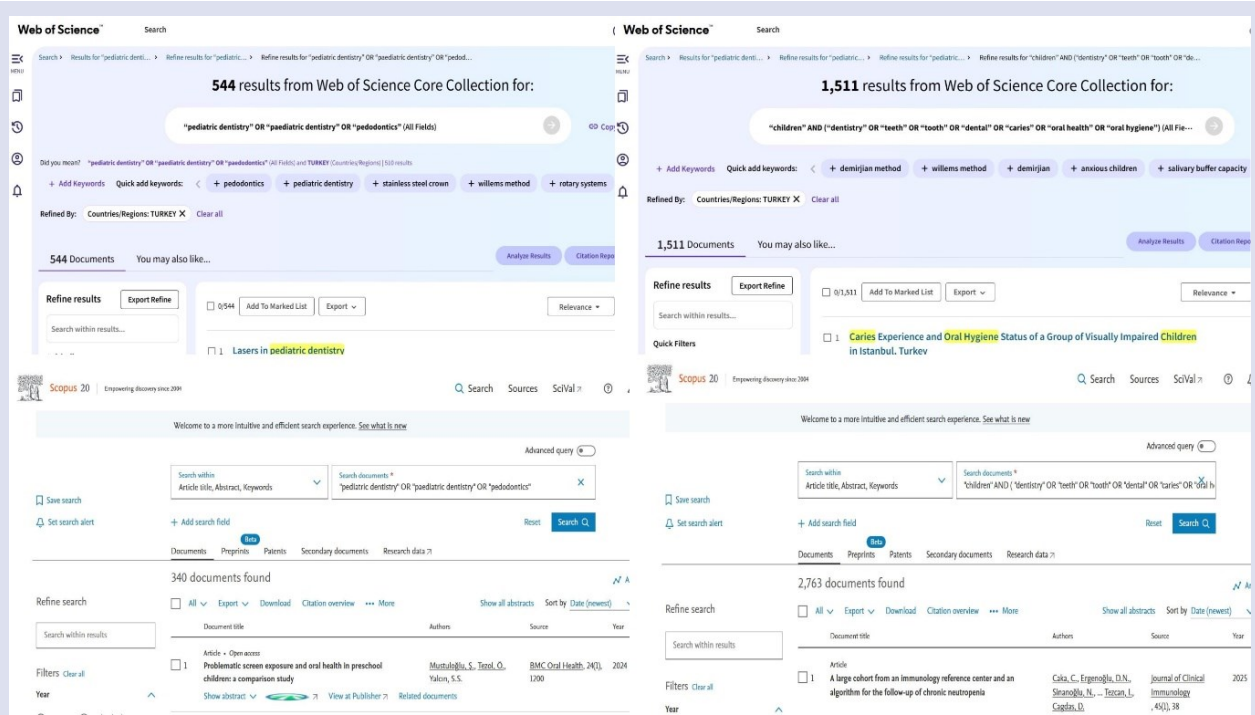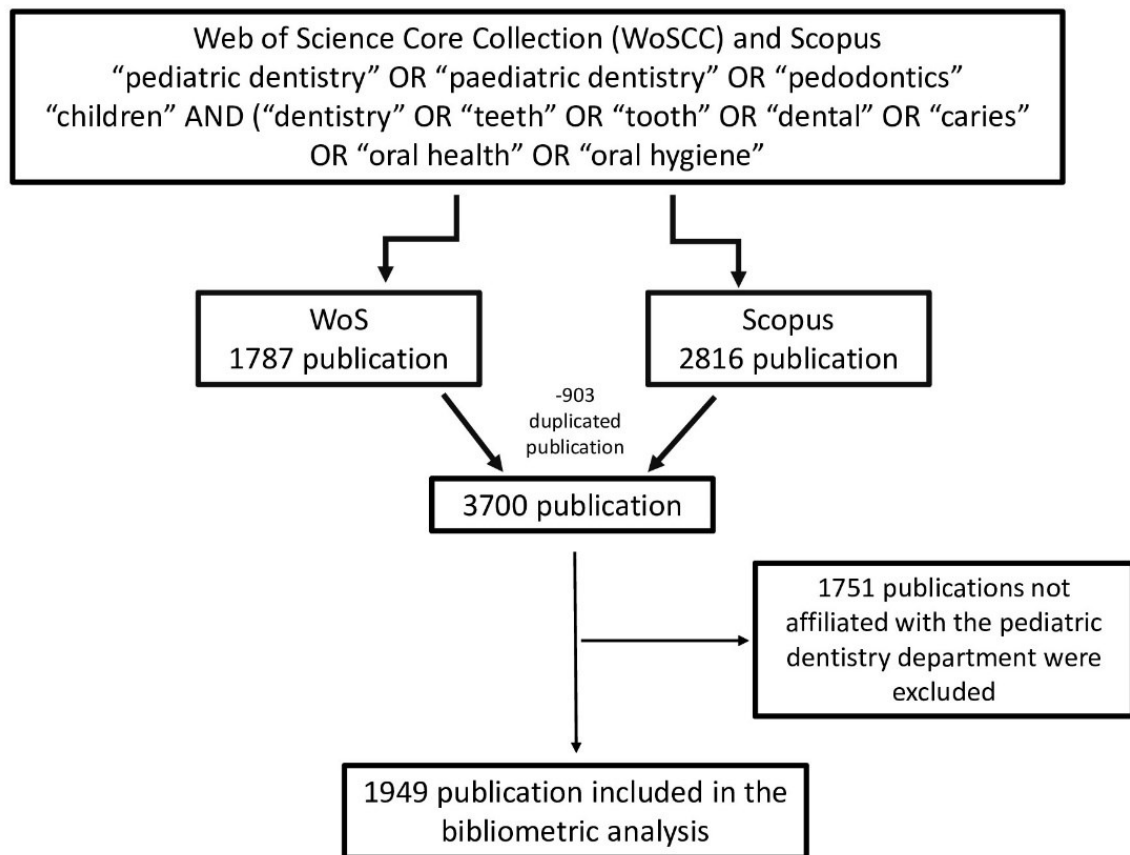
Figure 1. Database searches view

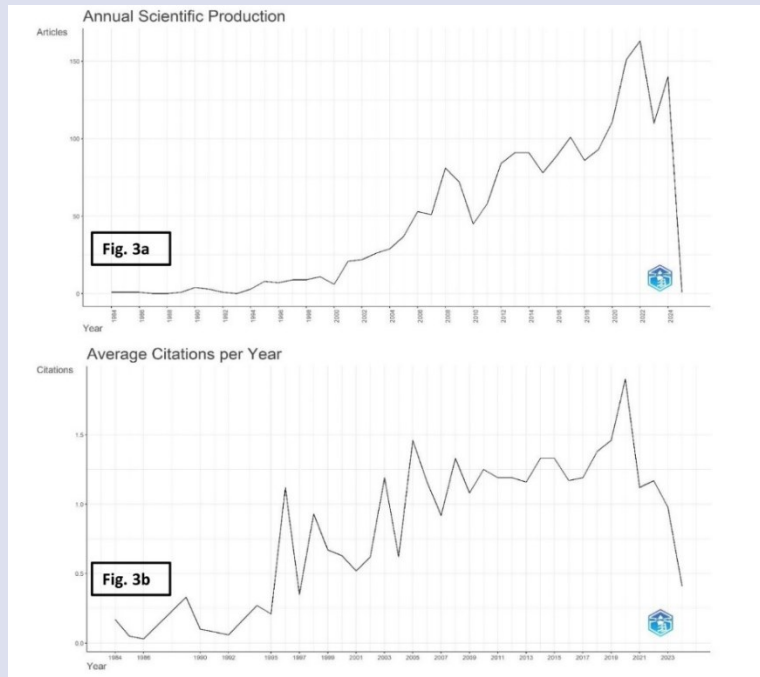*Figure 2. Flow chart of literature review*

Figure 3. Distribution of publications and citations by year Fig. 3a. Distribution of the number of publications by year Fig. 3b. Distribution of citation numbers by year
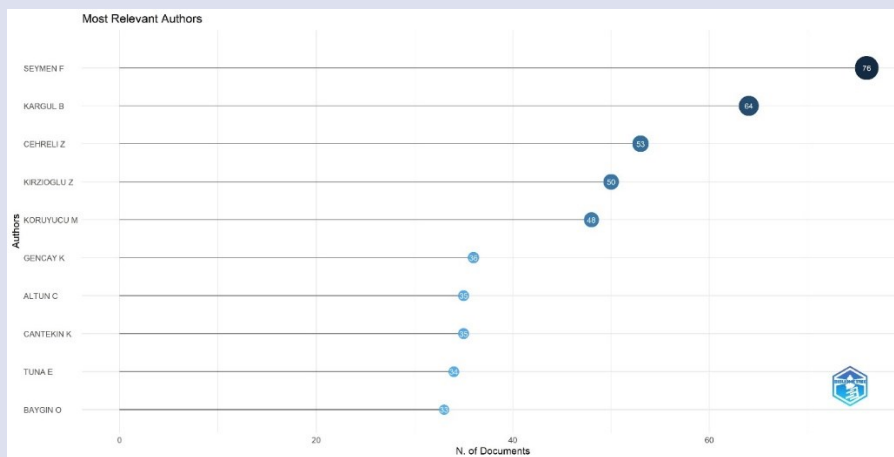

Figure 4. Examining the top 10 authors with the most publications

Table 1. Distribution of publications according to affiliated institutions

Affiliated Institution	Number of Publications
Hacettepe University	390
Istanbul University	371
Ege University	308
Marmara University	285
Ankara University	231
Gazi University	213
Erciyes University	174
Ataturk University	155
19 May University	151
Yeditepe University	135

*For all authors, their institutions are added to the list as numerical values.

When the most cited publications were examined, it was concluded that the 2020 Dental Trauma Guide received the most citations. The top 10 most cited publications are listed in Table 2. The most cited articles cover a diverse range of topics in dental research. Key areas include traumatic dental injuries, which focus on effective management strategies, and dental implantology, highlighting advancements in restorative practices. Endodontics and regeneration address innovative treatments for necrotic teeth, while public health and pediatric dentistry emphasize preventive measures for younger populations. Finally, the exploration of genetic factors in dental health reflects an interest in how genetics influence oral conditions (Table 2).

Turkey's cooperation with other countries is 5%. The countries with the most cooperation are the United States (n=46 publications), Brazil (n=14 publications), the United Kingdom (n=11 publications) and Italy (n=8 publications), respectively (Figure 5).

The three field plot used in bibliometric analysis is a type of graph consisting of three main columns, which allows easier examination of the relationship between the columns. According to the findings of the three field plot in Figure 6, which shows the relationships between authors and journals that collaborate across countries in the data set, it is seen that the most effective authors in cross-country collaboration are Figen Seymen, Zafer Cehreli, Betul Kargul and Mine Koruyucu. When the sources show that the country with the most collaboration is the United States, it is seen that the Dental Traumatology journal stands out.

3368 keywords were used in 1949 publications. The most preferred keywords are "children" (n=178), "dental care (n=135)", "pediatric dentistry" (n=98), "primary teeth" (n=94) and "oral health" (n=92) (Figure 7). Additionally, which keywords are preferred together and which topics are studied are shown in Figure 8. Figure 8 shows the relationship between research topics intuitively. The size of nodes can reflect the frequency of keywords: the higher the frequency of the keyword, the larger the size of the node. Line thickness is proportional to the closeness of the links between two keywords, the thicker the line between two words, the closer the relationship.

Figure 9 shows the thematic analysis of 1949 publications. In the thematic map, it can be seen that the keyword group "pulpotomy", "mineral trioxide aggregate", "primary molar" and the keyword group "fluoride" and "remineralization" are currently the most preferred and the most studied active topics. However, although there are publications on the subjects of "amelogenesis imperfecta", "enamel" and "dental materials", it is noteworthy that they are less studied subjects than other subjects.

Table 2. Review of the 10 most cited publications

Referance	Publication name	Source	Number of citations	Year of publication
Bourguignon C et al.[23]	"International Association of Dental Traumatology guidelines for the management of traumatic dental injuries: 1. Fractures and luxations"	Dental Traumatology	246	2020
Oshida Y et al.[24]	"Dental implant systems"	International Journal of Moleculer Sciences	178	2010
Cehreli ZC et al.[25]	"Regenerative endodontic treatment (revascularization) of immature necrotic molars medicated with calcium hydroxide: a case series"	Journal of Endodontics	172	2011
Ayhan H et al.[26]	"The effect of nursing or rampant caries on height, body weight and head circumference"	Journal of Clinical Pediatric Dentistry	161	1996
Onçag O et al.[27]	"Comparison of antibacterial and toxic effects of various root canal irrigants"	International Endodontic Journal	149	2003
Day PF et al.[28]	"International Association of Dental Traumatology guidelines for the management of traumatic dental injuries: 3. Injuries in the primary dentition"	Dental Traumatology	142	2020
Bezgin T et al.[29]	"Efficacy of platelet-rich plasma as a scaffold in regenerative endodontic treatment"	Journal of Endodontics	140	2015
Sen Tunc E et al.[30]	"Dental age assessment using Demirjian's method on northern Turkish children"	Forensic Science International	128	2008
Jeremias F et al.[31]	"Genes expressed in dental enamel development are associated with molar-incisor hypomineralization"	Archieves of Oral Biology	126	2013
Patir A et al.[32]	"Enamel formation genes are associated with high caries experience in Turkish children"	Caries Research	116	2008

Figure 5. International cooperation map

Figure 6. Three field plot with countries-authors-sources
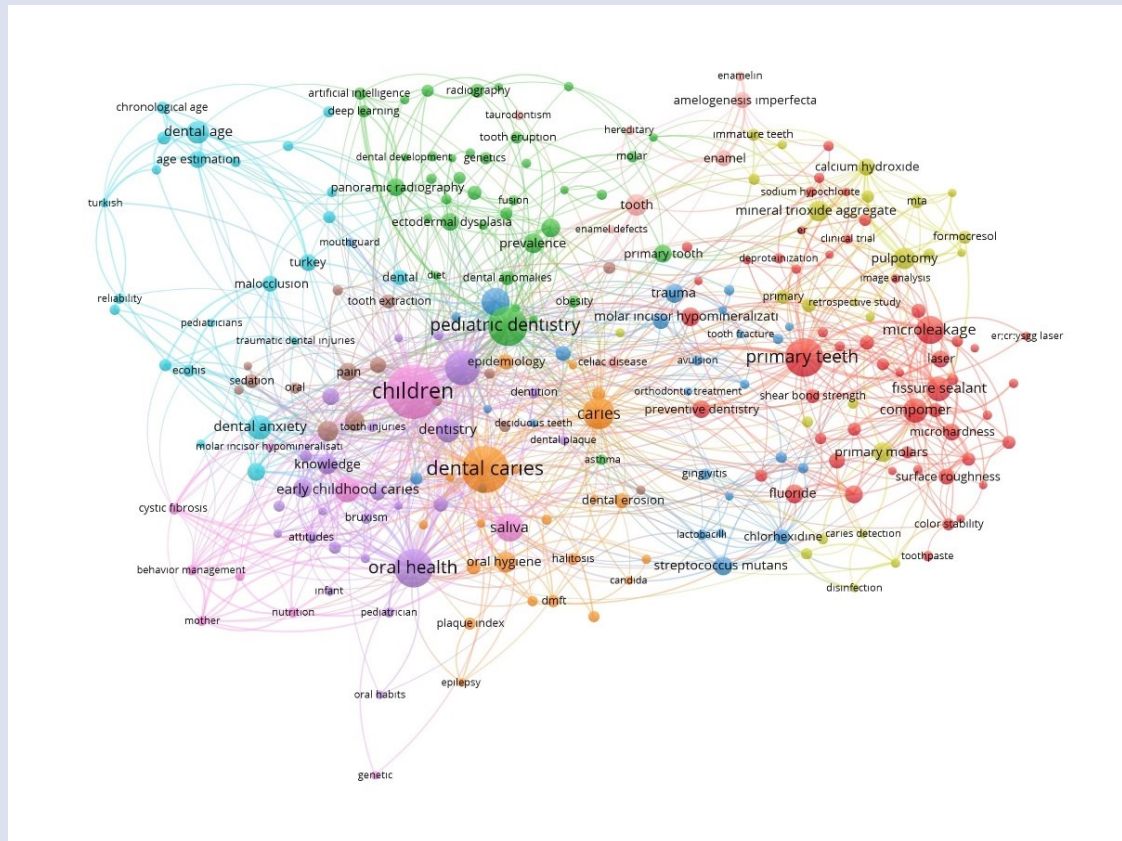

Figure 7. Word cloud of publications

Figure 8. Authors' keywords visualization map (keyword threshold = 5; 244 out of 3368 keywords displayed). Each color represents different co-occurrence patterns based on multiple keywords from the dataset.
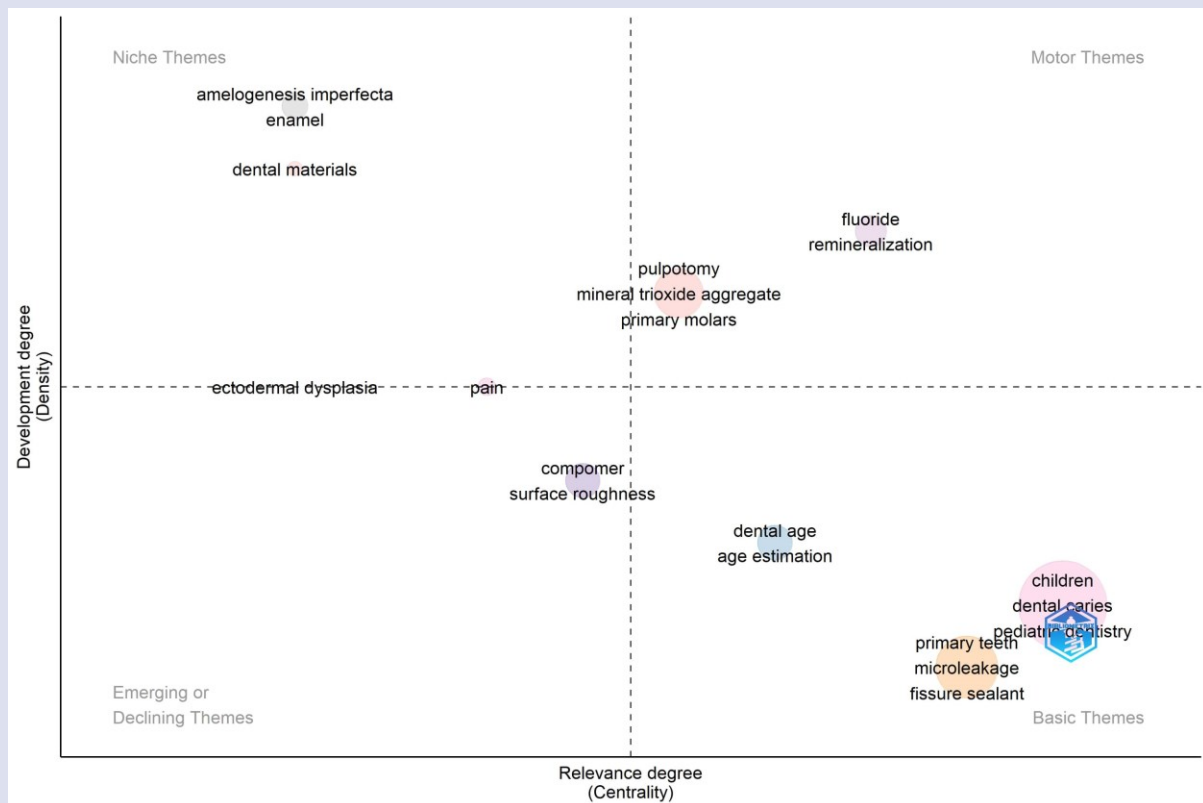

Figure 9. Thematic map of publications

Discussion

Health sciences are making progress and changes in the way they produce, use and interpret information. Therefore, professionals must constantly try to keep up with the latest developments. A large body of scientific research has been made available, helping to disseminate the results obtained. Bibliometric analyzes are widely used to measure the scientific impact of any scientific publication. As a result of the bibliometric analysis, it can be seen what the level of the selected subject is at the international level or on a country basis, and areas where there is a trend and need to be studied more can be revealed. These results shed light on future studies.

The 1949 publications in the field of Turkish Pediatric Dentistry between 1984 and 2024 are important indicators of increasing academic productivity at the national level and contribution to the international literature. The increase in the number of publications, especially since 2000, indicates that the field has gained a rising momentum in Turkey. However, the highest rate per citation in 2020 (1.9) indicates the potential for an increase in the academic impact of the studies conducted in recent years. The thematic analysis results show that Turkish researchers focus on active topics of global interest such as "pulpotomy", "mineral trioxide aggregate" and "fluoride". However, less studied themes such as "amelogenesis imperfecta" and "dental materials" offer opportunities for future specialization in different subjects. In addition, when we look at the most cited studies, it is seen that field-oriented journals such as Dental Traumatology stand out, and the publications in these journals are internationally recognized. However, the fact that Turkey's international collaboration rate remains at a low level of 5% reveals that the field needs to be improved in terms of internationalization. The limited number of collaborations with countries such as the United States, Brazil and the United Kingdom indicate that these relations should be further expanded in the future. The limited number of authors who are effective in cross-country collaboration suggests that new initiatives are needed to expand these collaboration networks.

When the dental literature in Turkey is examined, it is seen that bibliometric analyses have been performed in the fields of orthodontics,[13] endodontics,[14,15] prosthodontics,[16,17] oral and maxillofacial surgery,[18] pediatric dentistry[19] and theses[20,21] in some fields of dentistry. Considering the publication dates of the publications, it is seen that bibliometric analysis in Turkey has come to the forefront in 2020 and after. These analyses show that the number of Turkish publications in international journals has increased from past to present. The reasons for this increase are likely to be easier access to journals with the development of technology, easier cooperation between countries, and changing academic promotion criteria in Turkey. In the literature review, no bibliometric analysis was found in the field of pediatric dentistry in Turkey.

In recent years, bibliographic databases have become increasingly important as they provide essential publication metadata and bibliometric indicators used for research evaluation and everyday academic tasks. Among the most recognized are WoS and Scopus, both of which offer extensive data for various purposes, including literature reviews and citation analysis. While WoS and Scopus share some common data, such as core journal articles and citation information, they are not entirely inclusive of one another. Each database has its unique strengths and coverage areas, which can lead to different citation metrics and bibliometric analyses. This distinction is crucial for researchers who aim to obtain a comprehensive understanding of their field and to accurately assess the reach and influence of their work. Consequently, many scholars and institutions find value in utilizing both databases to ensure a thorough and nuanced approach to research evaluation.[33] For this reason, WoS and Scopus databases were used in our study in order to reach more publications by minimizing data loss.

In our study, we conducted a bibliometric analysis using RStudio and the R bibliometrix package, enhanced by the Biblioshiny plugin. This tool generates research outputs that help analyze various aspects of scientific production, including identifying the most prolific authors, frequently used keywords, popular journals, and cross-country collaborations related to the chosen research topic.[34] One of the important reasons why R programming language was preferred in the study is that it enables analysis by combining data from multiple databases, as seen in this study. Other reasons for choosing R are that it makes data analysis easier and faster, visualizations and data are clearer, there are many features that can be used for analysis, Biblioshiny's web interface is constantly updated and open access.

Co-authorship analysis explores the interactions among academics within a research field. Since co-authorship represents a formal mode of intellectual collaboration, it is essential to understand how these partnerships influence research dynamics and knowledge development.[35,36] Scholars engage with one another, considering factors such as their affiliations and countries. Collaborative efforts among researchers can enhance the quality of research; for instance, input from diverse scholars can provide greater clarity and deeper insights.[37] In this context, collaborating academics create a network that can advance research initiatives. For instance, analysis can reveal clusters of research among scholars in a specific region, providing insights that can encourage and justify new studies in underrepresented areas. Additionally, this analysis enables the mapping of collaborations over time, allowing researchers to observe the progression of intellectual growth within collaborative networks and facilitating connections between emerging scholars and established or trending figures in the field.[38] Upon examining the triple area graph, we observe that various authors have engaged in international interactions over time, reinforcing the significance of collaboration in research. It is gratifying to recognize the value of such cooperation.

Turkey's current collaboration rate in pediatric dentistry stands at a mere 5%, a figure that highlights the

urgent need for enhanced international cooperation. To address this issue, several strategies can be implemented. Establishing partnerships with leading dental schools and clinics worldwide could facilitate knowledge exchange and professional training programs. Encouraging joint research projects focused on pediatric dentistry may lead to shared innovations and findings that benefit both local and international communities. Additionally, creating professional networks would allow dental practitioners to connect with their counterparts abroad, sharing best practices and case studies. Continuing education opportunities, such as workshops and seminars featuring international experts, could further enhance the skills of local professionals. Government support for international collaboration initiatives, including funding for exchange programs, is also crucial. Participation in international conferences can foster networking opportunities, while telemedicine initiatives can enable Turkish dentists to consult with specialists globally, thereby improving care quality. Finally, public awareness campaigns about the significance of pediatric dental care could attract international interest and collaboration in community outreach efforts. By implementing these strategies, Turkey can significantly improve its collaboration in pediatric dentistry, ultimately benefiting the health of its younger population.

Citation analysis is a key method in science mapping based on the idea that citations reflect intellectual connections between publications, as one work cites another.[39] Through this analysis, a publication's impact is assessed based on the total number of citations it garners, enabling the identification of the most influential works within a particular research area. Citations serve as the most straightforward and objective indicator of the influence of publications within a research field.[40,41] Consequently, by analyzing citations, one can identify the most influential works within a research area to gain insights into the intellectual dynamics of that field; thus, we focused our examination on the publications with the highest citation counts.

Evaluating the titles of the most cited publications in Table 2 reveals several key themes in dental research. A notable focus is on traumatic dental injuries, with two publications dedicated to guidelines from the International Association of Dental Traumatology. This underscores the importance of standardized protocols for managing dental emergencies, particularly concerning fractures and luxations, as well as injuries in primary dentition. Additionally, the inclusion of a publication on "Dental implant systems" highlights the ongoing interest in implant technology, a critical area in restorative dentistry. The theme of endodontics and regeneration is also prominent, with multiple entries discussing regenerative endodontic treatments for immature necrotic teeth, indicating a growing emphasis on innovative healing techniques, such as the use of calcium hydroxide and platelet-rich plasma. Furthermore, public health concerns are addressed through studies that examine the effects of nursing and rampant caries on

children's growth metrics, along with dental age assessment methods in specific populations, such as northern Turkish children.

Genetic factors in dental health are explored as well, with two publications investigating the genetic basis of conditions like molar-incisor hypomineralization and caries experience, suggesting an increasing recognition of genetics' role in dental health and disease susceptibility. Lastly, research comparing the antibacterial and toxic effects of various root canal irrigants points to an ongoing evaluation of treatment modalities aimed at enhancing patient outcomes in endodontic therapy. Overall, these titles reflect a diverse range of interests in dentistry, emphasizing trauma management, endodontic regeneration, pediatric health, and the genetic underpinnings of dental conditions, all crucial for advancing clinical practices and improving patient care.

The findings indicate that the number of publications in the field of pediatric dentistry in Turkey has been steadily increasing over the years. To further enhance this growth, it is essential to continue promoting additional research efforts. Given Turkey's international economic standing, there should be an increase in financial support for these studies to foster continued advancement in the field.

Similar to how an article's keywords can signify its core content, the frequency of occurrence and co-occurrence can also indicate the themes emphasized within a specific area.[42] The more two keywords are found together, the closer the relationship between them. To uncover the structure and evolution of research areas, several common word analysis techniques, including cluster analysis and social network analysis, have been utilized based on a common word matrix. These methods assist researchers in gaining an overall understanding of a particular field. Consequently, it is crucial for assessing the significance of an academic discipline.[42,43] In our keyword analysis, it is seen that some topics remain in the background and are less studied. Therefore, the remaining research areas need to be investigated further.

Limitations

Although an extensive literature review was conducted using two different databases in our study, some publications may not have been reached. When the files of different databases were combined, some data losses such as the number of individual citations of the authors, cooperation between institutions within the country, and the open access nature of the publications were not included in these findings.

While our study involved an extensive literature review using two different databases, it's worth noting that some publications may have been inadvertently overlooked. This possibility could introduce certain gaps in the data, particularly in areas such as individual citations, institutional cooperation within the country, and the open-access status of publications. The absence of these data points may subtly influence the overall findings, potentially leading to an incomplete representation of the research landscape in the

field. For example, not capturing the number of citations might limit our ability to fully assess the impact and relevance of specific studies, while missing collaboration data could diminish our understanding of the interdisciplinary partnerships that are essential for advancing pediatric dentistry. Acknowledging these limitations allows us to recognize areas for improvement and encourages future research to adopt more comprehensive approaches, ensuring that the full spectrum of available literature is considered.

To mitigate these issues, several solutions can be proposed. First, expanding the search to include additional databases or grey literature sources could enhance the comprehensiveness of the review. Utilizing citation-tracking tools may also help in identifying overlooked studies and their impact. Furthermore, conducting a follow-up survey or interviews with key researchers and institutions could provide insights into unpublished data and foster a better understanding of collaboration dynamics. Lastly, establishing a system for regular updates and reviews of the literature could ensure that future analyses remain current and inclusive, thereby improving the overall robustness of the research outcomes. By addressing these data losses proactively, the study can achieve a more accurate and representative understanding of the pediatric dentistry landscape.

Conclusions

Studies conducted in the field of Turkish Pediatric Dentistry between 1984 and 2024 have demonstrated significant advancements in scientific productivity and impact. An analysis of a total of 1,949 publications reveals that Hacettepe University is the most productive institution, while Figen Seymen, Zafer Cehreli, and Betul Kargul are identified as the most influential authors. The majority of publications focus on active themes such as 'pulpotomy,' 'mineral trioxide aggregate,' 'fluoride,' and 'remineralization'; however, it has been noted that the rate of international collaboration is limited to just 5%. These findings indicate a need for the field to enhance international collaborations and thematic diversity. Future studies could broaden the scope of these results by analyzing additional databases.

Acknowledgements

Conflicts of Interest Statement

No conflict of interest was declared by the authors.

Authorship Contributions

Concept: T.T., M.T., Design T.T., M.T., Data Collection or Processing: T.T., M.T., Analysis or Interpretation: T.T., M.T., Literature Search: T.T., M.T., Writing: T.T., M.T.

References

1. Nieri M, Saletta D, Guidi L, Buti J, Franceschi D, Mauro S, Pini-Prato G: Citation classics in periodontology: a controlled study. J Clin Periodontol 2007;34:349-358.
2. Bazrafshan A, Mostafavi E: A scientometric overview of 36 years of scientific productivity by pasteur institute of Iran in ISI SCIE. JHA 2011.
3. Ke L, Lu C, Shen R, Lu T, Ma B, Hua Y: Knowledge Mapping of Drug-Induced Liver Injury: A Scientometric Investigation (2010-2019). Front Pharmacol 2020;11:842.
4. Wang B, Xing D, Zhu Y, Dong S, Zhao B: The State of Exosomes Research: A Global Visualized Analysis. Biomed Res Int 2019; 2019:1495130.
5. Yeung AWK, Tzvetkov NT, Balacheva AA, Georgieva MG, Gan RY, Jozwik A, Pyzel B, Horbańczuk JO, Novellino E, Durazzo A, Lucarini M, Camilli E, Souto EB, Atanasov AG, Santini A: Lignans: Quantitative Analysis of the Research Literature. Front Pharmacol 2020;11:37.
6. Synnestvedt MB, Chen C, Holmes JH: CiteSpace II: visualization and knowledge discovery in bibliographic databases. AMIA Annu Symp Proc 2005;2005:724-8.
7. Lu C, Liu M, Shang W, Yuan Y, Li M, Deng X, Li H, Yang K: Knowledge Mapping of Angelica sinensis (Oliv.) Diels (Danggui) Research: A Scientometric Study. Front Pharmacol 2020;11:294.
8. Li C, Ojeda-Thies C, Renz N, Margaryan D, Perka C, Trampuz A: The global state of clinical research and trends in periprosthetic joint infection: A bibliometric analysis. Int J Infect Dis 2020;96:696-709.
9. Joyce CW, Kelly JC, Carroll SM: The 100 top-cited classic papers in hand surgery. J Plast Surg Hand Surg 2014;48:227-233.
10. Moed HF: New developments in the use of citation analysis in research evaluation. Arch Immunol Ther Exp (Warsz) 2009;57:13-18.
11. Paladugu R, Schein M, Gardezi S, Wise L: One hundred citation classics in general surgical journals. World J Surg 2002;26:1099-1105.
12. Bornmann L, Daniel HD: What do citation counts measure? A review of studies on citing behavior. J Doc 2008, 64:45-80.
13. Dinç G, Ciğerim SÇ: A Bibliometric Analysis of Orthodontics Articles in Periodical Dentistry Journals in Türkiye: A Cross-Sectional Research. Turkiye Klinikleri J Dental Sci 2024;30.
14. Kaşıkçı S, Şirinoğlu E: Publication Trends In Fracture Resistance Research Of Endodontically Treated Teeth: A Bibliometric Analysis Of The Last 5 Years. J Int Dent Sci 2024;10:72-77.
15. Özdemir O: A Bibliometric Analysis of Endodontic Researches in Turkish database "TRDIZIN". Unika J Health Sci 2024.
16. Değirmenci K: Bibliometric Analysis of the Publications Accepted from Turkey in International Esthetic Dentistry Journals. BAUN Health Sci J 2021;10:267-273.
17. Meriç G, Ozan O: A Bibliometric Analysis of Publications from Turkey in Prosthetic Dentistry in International Literature. Turkiye Klinikleri J Dental Sci 2012;18:23-27.
18. Tümer MK: A Bibliometric Analysis in the Literature on Distraction Osteogenesis Applied in the Oral and Maxillofacial Regions (1992–2020). ADO J Clin Sci 2022;11:238-244.
19. Kaya MS: Bibliometric analysis of journal articles indexed in TR Index published with a pediatric dentist author: A snapshot of 21th Century. Medicine 2020;9:901-906.
20. Kiki A, Erdem R, Bircan HB, Tunca MY, Uçkan M, Usanmaz Ş, Genç YS: Bibliometric Analysis of Orthodontic Theses in Turkey. Unika J Health Sci 2024;4:812-823.

21. Demirbağ S: Bibliometric Review of Graduate Thesis on Child Quality of Life. IAAOJ, 9:197-209.

22. Ozkan S, Ucok Z, Alagöl F: Dental manifestations of familial hypophosphatemic vitamin-D-resistant rickets: report of case. ASDC J Dent Child 1984;51:448-450.

23. Bourguignon C, Cohenca N, Lauridsen E, Flores MT, O'Connell AC, Day PF, Tsilingaridis G, Abbott PV, Fouad AF, Hicks L, Andreasen JO, Cehreli ZC, Harlamb S, Kahler B, Oginni A, Semper M, Levin L: International Association of Dental Traumatology guidelines for the management of traumatic dental injuries: 1. Fractures and luxations. Dent Traumatol 2020;36:314-330.

24. Oshida Y, Tuna EB, Aktören O, Gençay K: Dental implant systems. Int J Mol Sci 2010;11:1580-1678.

25. Cehreli ZC, Isbitiren B, Sara S, Erbas G: Regenerative endodontic treatment (revascularization) of immature necrotic molars medicated with calcium hydroxide: a case series. J Endod 2011;37:1327-30.

26. Ayhan H, Suskan E, Yildirim S: The effect of nursing or rampant caries on height, body weight and head circumference. J Clin Pediatr Dent 1996;20:209-212.

27. Önçağ Ö, Hoşgör M, Hilmioğlu S, Zekioğlu O, Eronat C, Burhanoğlu D: Comparison of antibacterial and toxic effects of various root canal irrigants. International endodontic journal 2003;36:423-432.

28. Day PF, Flores MT, O'Connell AC, Abbott PV, Tsilingaridis G, Fouad AF, Cohenca N, Lauridsen E, Bourguignon C, Hicks L, Andreasen JO, Cehreli ZC, Harlamb S, Kahler B, Oginni A, Semper M, Levin L: International Association of Dental Traumatology guidelines for the management of traumatic dental injuries: 3. Injuries in the primary dentition. Dent Traumatol 2020;36:343-359.

29. Bezgin T, Yilmaz AD, Celik BN, Kolsuz ME, Sonmez H: Efficacy of platelet-rich plasma as a scaffold in regenerative endodontic treatment. J Endod 2015;41:36-44.

30. Tunc ES, Koyuturk AE: Dental age assessment using Demirjian's method on northern Turkish children. Forensic Sci Int 2008;175:23-36.

31. Jeremias F, Koruyucu M, Küchler EC, Bayram M, Tuna EB, Deeley K, Pierri RA, Souza JF, Fragelli CM, Paschoal MA, Gencay K, Seymen F, Caminaga RM, dos Santos-Pinto L, Vieira AR: Genes expressed in dental enamel development are associated with molar-incisor hypomineralization. Arch Oral Biol 2013;58:1434-1442.

32. Patir A, Seymen F, Yildirim M, Deeley K, Cooper ME, Marazita ML, Vieira AR: Enamel formation genes are associated with high caries experience in Turkish children. Caries Res 2008;42:394-400.

33. Zhu J, Liu W: A tale of two databases: the use of Web of Science and Scopus in academic papers. Scientometrics 2020;123:321-335.

34. Ab Rashid MF: How to Conduct a Bibliometric Analysis using R Packages: A Comprehensive Guidelines. JTHCA 2023:24-39.

35. Cisneros L, Ibanescu M, Keen C, Lobato-Calleros O, Niebla-Zatarain J: Bibliometric study of family business succession between 1939 and 2017: mapping and analyzing authors' networks. Scientometrics 2018;117:919-951.

36. Acedo FJ, Barroso C, Casanueva C, Galán JL: Co-authorship in management and organizational studies: An empirical and network analysis. JMS 2006;43:957-983.

37. Tahamtan I, Safipour Afshar A, Ahamdzadeh K: Factors affecting number of citations: a comprehensive review of the literature. Scientometrics 2016;107:1195-1225.

38. Donthu N, Kumar S, Mukherjee D, Pandey N, Lim WM: How to conduct a bibliometric analysis: An overview and guidelines. J Bus Res 2021;133:285-296.

39. Appio FP, Cesaroni F, Di Minin A: Visualizing the structure and bridges of the intellectual property management and strategy literature: a document co-citation analysis. Scientometrics 2014;101:623-661.

40. Stremersch S, Verniers I, Verhoef PC: The quest for citations: Drivers of article impact. J Mark 2007;71:171-193.

41. Pieters R, Baumgartner H: Who talks to whom? Intra-and interdisciplinary communication of economics journals. J Econ Lit 2002;40:483-509.

42. Zong Q-J, Shen H-Z, Yuan Q-J, Hu X-W, Hou Z-P, Deng S-G: Doctoral dissertations of Library and Information Science in China: A co-word analysis. Scientometrics 2013;94:781-799.

43. Musgrove P, Binns R, Page-Kennedy T, Thelwall M: A method for identifying clusters in sets of interlinking Web spaces. Scientometrics 2003;58:657-672.