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ORIGINAL RESEARCH

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Global trends in pediatric dental general anesthesia services: a bibliometric analysis of the most influential literature

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Abstract

Background: This study aimed to perform a comprehensive bibliometric analysis of the literature on dental general anesthesia (DGA) in pediatric patients. **Methods**: A structured search was conducted in Scopus and Web of Science to identify original research articles and case reports/series related to DGA in children. The final citation rankings were based exclusively on Scopus. Two independent reviewers selected eligible articles. The following bibliometric data were extracted and analyzed: publication trends, citation metrics, influential journals, authors, countries, institutions, keywords, and thematic analysis. Bibliometric mapping and data analysis were conducted using biblioshiny in RStudio 4.4.2. **Results**: This study presents a comprehensive bibliometric analysis of the 100 most-cited articles related to pediatric DGA. Most articles have been published since 2014, with Pediatric Dentistry emerging as the most prolific journal. The USA contributed the highest number of publications and citations. Thematic mapping revealed that the keyword groups "quality of life", "follow up", "pain", "premedication", and "caries recurrence" are currently the most preferred and actively researched topics. **Conclusions**: This analysis highlights a growing emphasis on patient-centered outcomes such as pain management, quality of life, and long-term follow-up. These trends underscore the need for integrated, preventive, and multidisciplinary approaches to ensure sustainable oral health outcomes in children.

Keywords

Bibliometric analysis; Dental general anesthesia; Pediatric dentistry

1. Introduction

Early childhood caries (ECC) remains one of the most prevalent chronic diseases globally, affecting hundreds of millions of children and imposing a substantial psychosocial and economic burden on families and healthcare systems [1–3]. In severe cases, children may require comprehensive dental treatment under dental general anesthesia (DGA), particularly when conventional behavioral management or local anesthesia is not feasible due to age, anxiety, or special healthcare needs [4, 5]. Although DGA is widely used in pediatric dentistry and has been associated with improvements in pain, function, and oral health-related quality of life (OHRQoL), it remains a complex and resource-intensive intervention [6, 7]. The literature also reports concerns related to postoperative morbidity [8, 9], safety [10], and the caries recurrence following treatment [11, 12].

With the increasing use of DGA, the volume of related scientific literature has expanded substantially. In this context, bibliometric analysis provides a systematic approach to evaluate publication trends, identify influential studies, and thematic research areas within a field [13]. Unlike traditional reviews, bibliometric studies apply quantitative methods to examine the structure and evolution of scientific knowledge, offering insights that may inform both research priorities and clinical perspectives [13, 14].

Despite the growing body of literature on pediatric DGA, existing reviews have primarily focused on specific clinical aspects such as OHRQoL [15], effects on dental anxiety [16], and clinical comparisons with sedation techniques [17]. However, a comprehensive, macro-level analysis of the most influential publications in this field is lacking. To the best of our knowledge, no bibliometric study has yet been conducted to systematically and quantitatively map the global landscape of the most-cited pediatric DGA literature.

Therefore, the aim of this study was to perform a comprehensive bibliometric analysis of the top 100 most-cited publications related to pediatric DGA. The analysis focused on key research domains, including clinical outcomes, premedication strategies, safety and morbidity, caries recurrence, and changes in patient quality of life. This study also examines how research priorities within the field have evolved over time, with particular attention to shifts toward patient-centered outcomes and preventive strategies. By identifying influen-

tial publications and thematic trends, this study provides a structured overview of the scientific development of pediatric DGA research and may support clinicians, researchers, and policymakers in guiding future research and evidence-based decision-making.

2. Materials and methods

This is a bibliometric analysis; therefore, ethics approval was not required, as all data were obtained from available published sources.

2.1 Sources/databases and search strategy

For the bibliometric analysis, the Scopus (https://www.scopus.com) and Web of Science Core Collection (WoS-CC, http://www.webofknowledge.com) databases were utilized. Keywords were generated by combining frequently used free-text terms and Medical Subject Headings (MeSH) related to pediatric DGA.

The search strategy included the following terms: ("dentistry" OR "dental" OR "teeth" OR "tooth") AND ("general anesthesia" OR "general anaesthesia" OR "hospital admission") AND ("child" OR "childhood" OR "children" OR "pediatric" OR "paediatric"). The selection was limited to documents categorized as "research articles" or "case report/series".

The search encompassed literature from database inception up to 22 May 2025. The search was restricted to English-language publications. A total of 1655 articles were found in the WoS database, and 3009 in Scopus. To manage duplicate records, datasets from both databases were merged, and duplicate removal was performed computationally using RStudio.

2.2 Eligibility criteria and study selection

Following deduplication, a rigorous manual screening of titles, abstracts, and full texts was conducted independently by two researchers. Discrepancies were resolved through discussion and consensus.

The inclusion criteria were as follows:

(1) Original research articles or case reports/series;

(2) Studies explicitly focused on comprehensive dental treatment or dental rehabilitation under general anesthesia;

(3) Pediatric populations (defined as individuals aged 0 to 18 years, including healthy children or those with special healthcare needs);

(4) Studies investigating DGA-specific outcomes (*e.g.*, postoperative morbidity, OHRQoL, repeat DGA rates, or restorative outcomes under DGA).

While some bibliometric assessments exclude case reports to reduce heterogeneity, case reports and case series were included in the present analysis; as they provide important early evidence for identifying rare but serious adverse events and contribute to clinical knowledge in anesthetic practice [18].

The exclusion criteria were:

(1) Studies focusing primarily on adult populations (>18 years);

(2) Studies limited to sedation, premedication or nitrous oxide inhalation without general anesthesia;

(3) General anesthesia studies without a dental context;

(4) Broad pediatric dentistry topics where DGA was not the primary focus;

(5) Educational or administrative surveys unrelated to clinical outcomes.

2.3 Data extraction and bibliometric analysis

After applying the eligibility criteria, the remaining articles were ranked in descending order based on total citation counts in the Scopus database, and the top 100 most-cited articles were selected for analysis.

The final dataset comprising the 100 most-cited articles is presented in **Supplementary Table 1** and was used for subsequent analyses. To provide a concise overview, the top 10 most-cited articles are highlighted in Table 1. While citation counts from both Scopus and WoS-CC are reported for comprehensiveness, all subsequent bibliometric mapping and quantitative network analyses were conducted exclusively using Scopus data due to its broader historical coverage of key pediatric journals. For each article, the following variables were extracted: citation count, publication title, year, journal name and impact factor, authorship details, country, institution, study type and research domain.

The primary outcome of this study was the citation count of each publication, used as an indicator of scientific influence. In cases where articles had equal citation counts, more recent publications were prioritized. If multiple authors were affiliated with the same institution, that institution received a single count. Likewise, when authors reported affiliations in more than one country, each country was counted once per article. To identify the study area, full-text articles were reviewed, and relevant concepts were extracted based on MeSH terms from PubMed. Analysis and visualizations were performed using the "biblioshiny" web interface of the "bibliometrix" package in RStudio 4.4.2. To assess relationships between citation counts, publication years, and journal impact factors, Spearman's rank correlation coefficient was applied due to the non-normal distribution of bibliometric data. A p-value < 0.05 was considered statistically significant.

3. Results

3.1 Citation analysis and journal distribution

The complete list of the top 100 most-cited articles, ranked by their citation counts, is presented in **Supplementary Table 1**. To provide a concise overview, the top 10 most-cited articles from this dataset are detailed in Table 1. The 100 most-cited articles were published between 1972 and 2020, as illustrated in Fig. 1. Eighty-three articles were published between 2000 and 2020, with 2014 having the highest number of top-cited articles (n = 11), followed by 2000 (n = 8), and 2011 (n = 6). The oldest article, authored by Leagault *et al.* [19], was published in the Journal of the Canadian Dental Association in 1972. The most recent article was written by Wang *et al.* [20] published in Biomed Research International, in 2020. The average number of citations per article was

TABLE 1. The top 10 most-cited articles on dental general anesthesia in children.

Rank	Article	Number of citations	
		Scopus	Wos-CC
1	Almeida AG, Roseman MM, Sheff M, Huntington N, Hughes CV. Future caries susceptibility in children with early childhood caries following treatment under general anesthesia. Pediatr Dent. 2000 Jul-Aug; 22(4): 302–306.	174	-
2	Lee HH, Milgrom P, Starks H, Burke W. Trends in death associated with pediatric dental sedation and general anesthesia. Paediatr Anaesth. 2013 Aug; 23(8): 741–746.	127	101
3	Sheta SA, Al-Sarheed MA, Abdelhalim AA. Intranasal dexmedetomidine vs midazolam for premedication in children undergoing complete dental rehabilitation: a double-blinded randomized controlled trial. Paediatr Anaesth. 2014 Feb; 24(2): 181–189.	125	112
4	Eidelman E, Faibis S, Peretz B. A comparison of restorations for children with early childhood caries treated under general anesthesia or conscious sedation. Pediatr Dent. 2000 Jan-Feb; 22(1): 33–37.	124	-
5	Anderson HK, Drummond BK, Thomson WM. Changes in aspects of children's oral-health-related quality of life following dental treatment under general anaesthesia. Int J Paediatr Dent. 2004 Sep; 14(5): 317–325.	115	-
6	Acs G, Pretzer S, Foley M, Ng MW. Perceived outcomes and parental satisfaction following dental rehabilitation under general anesthesia. Pediatr Dent. 2001 Sep-Oct; 23(5): 419–423.	111	-
7	Malden PE, Thomson WM, Jokovic A, Locker D. Changes in parent-assessed oral health-related quality of life among young children following dental treatment under general anaesthetic. Community Dent Oral Epidemiol. 2008 Apr; 36(2): 108–117.	110	97
8	Thomas CW, Primosch RE. Changes in incremental weight and well-being of children with rampant caries following complete dental rehabilitation. Pediatr Dent. 2002 Mar-Apr; 24(2): 109–113.	107	-
9	Tate AR, Ng MW, Needleman HL, Acs G. Failure rates of restorative procedures following dental rehabilitation under general anesthesia. Pediatr Dent. 2002 Jan-Feb; 24(1): 69–71.	105	-
10	Abu-Shahwan I, Chowdary K. Ketamine is effective in decreasing the incidence of emergence agitation in children undergoing dental repair under sevoflurane general anesthesia. Paediatr Anaesth. 2007 Sep; 17(9): 846–850.	99	76

Wos-CC: Web of Science Core Collection.

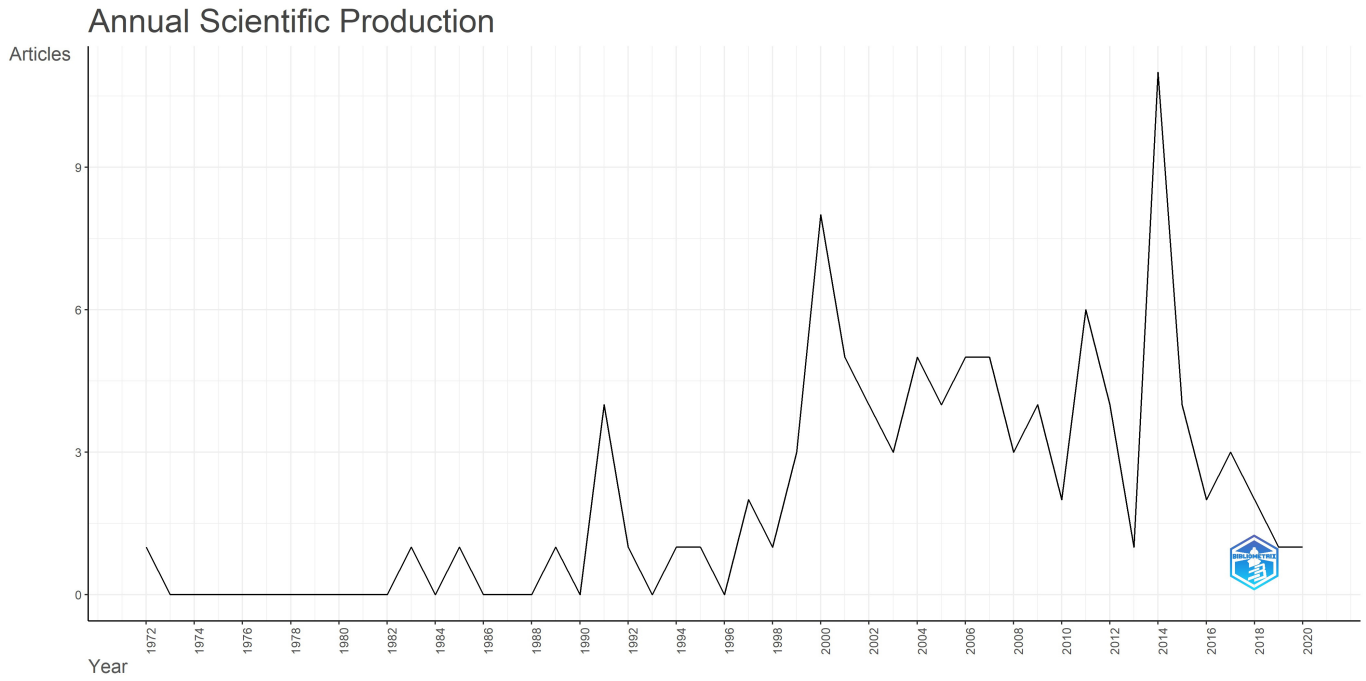

FIGURE 1. Annual distribution of the 100 most cited articles on dental general anesthesia in children. This figure was generated using the "biblioshiny" web interface of the "bibliometrix" package in RStudio 4.4.2.

56.66. The most-cited article, published in 2000 by Almeida *et al.* [21] in Pediatric Dentistry, had 174 citations and assessed the susceptibility of children to the future development of caries following comprehensive treatment for early childhood caries under DGA. The least-cited article received 31 citations. A total of 100 most-cited articles were published across 37 different journals, all in English. Among these journals, 20 published only one top-cited article, while eight published two. The remaining nine journals, each publishing at least three top-cited articles, are presented in Table 2. Pediatric Dentistry had the highest number of top-cited articles (n = 16), followed by the International Journal of Paediatric Dentistry (n = 13) and Pediatric Anesthesia (n = 9).

TABLE 2. Distribution of journals publishing three or more of the top 100 most-cited articles on pediatric dental general anesthesia.

Journals	Number of articles
Pediatric Dentistry	16
International Journal of Paediatric Dentistry	13
Pediatric Anesthesia	9
British Dental Journal	8
Anesthesia Progress	4
BMC Oral Health	4
Journal of Clinical Pediatric Dentistry	4
ASDC Journal of Dentistry for Children	3
Journal of Dentistry for Children	3

To evaluate relationships between citation counts and publication characteristics, Spearman's rank correlation coefficient was used. A statistically significant negative correlation was observed between citation counts and publication year ($rs = -0.250$, $p = 0.014$). No significant correlation was found between citation counts and journal impact factor ($rs = -0.034$, $p = 0.741$), nor between the publication year and impact factor ($rs = 0.149$, $p = 0.148$).

3.2 Author, institution, and geographical contributions

A total of 324 authors contributed to the 100 most-cited articles, including two single-authored publications. Regardless of their authorship position, the most frequently cited authors were Thomson WM, followed by Weinstein P, Amin MS and Hosey MT. Examples of their highly cited collaborative works include the studies by Anderson *et al.* [22], Berkowitz *et al.* [23], Amin *et al.* [24] and Hosey *et al.* [25]. The contributing countries were determined based on the affiliations of all authors. Overall, the articles originated from 20 different countries. The United States contributed the highest number of publications (n = 26) and total citations (n = 1141), followed by the United Kingdom and Canada. Authors and countries contributing at least three top-cited articles are presented in Table 3. The most productive institutions, each with at least four publications, are listed in Table 4. The University of Washington had the highest number of contributions, followed by the University of Glasgow and Toronto.

TABLE 3. Most prolific authors and contributing countries associated with three or more of the top 100 most-cited articles on pediatric dental general anesthesia.

	Number of articles	Number of citations (Scopus)
Authors		
Thomson WM	4	333
Weinstein P	4	292
Amin M	4	219
Hosey MT	5	219
Roelofse J	3	147
Harrison M	3	142
Kilpatrick N	3	139
Yiu CKY	3	126
Chen Y	3	122
Country*		
USA	26	1141
United Kingdom	20	589
Canada	10	305
China	6	203
Australia	4	43
New Zealand	4	223
Saudi Arabia	4	195
Turkey	3	31

**Country counts are based on affiliations. Each country was counted once per article, even if multiple authors shared the same country.*

TABLE 4. Most productive institutions contributing four or more of the top 100 most-cited articles on pediatric dental general anesthesia.

Institutions*	Number of articles
University of Washington, USA	9
University of Glasgow, UK	9
University of Toronto, Canada	6
University of British Columbia, Canada	5
University of Manitoba, Canada	5
Dresden University of Technology, Germany	4
University of Hong Kong, China	4
University of Otago, New Zealand	4

**Institution counts are based on all authors' affiliations. Each institution was counted once per article, regardless of the number of authors.*

3.3 Keyword evolution and thematic analysis

A total of 149 different keywords were identified across the included publications. The most frequently occurring keywords were “general anesthesia” (n = 11), “early childhood caries” (n = 8), “children” (n = 7), “anesthesia” (n = 6), “child” (n = 6), “quality of life” (n = 5) (Fig. 2).

Thematic analysis is presented in Fig. 3. The keyword groups “quality of life”, “follow up”, “pain”, “premedication” and “caries recurrence”, were identified as prominent and actively studied topics. “Dental care for children”, “general anesthesia”, “dental caries” are situated in the lower development features but higher relevance, suggesting they are fundamental and well-established topics with high importance. However, although there are publications on the subjects of “emergence delirium”, “emergence agitation”, it is noteworthy that they are less studied subjects than other subjects.

4. Discussion

4.1 Methodological trends and publication patterns

The inclusion of a study among the most-cited articles highlights its academic and clinical significance. This bibliometric analysis illustrates the evolution of research themes in DGA, with a focus on clinical outcomes, behavioral management strategies, and public health concerns. Regarding study design, most publications relied on observational approaches, whereas studies investigating premedication strategies more frequently employed randomized controlled trial (RCT) designs.

A statistically significant negative correlation observed between publication year, and citation counts reflects a well-known phenomenon, time-dependent citation bias. This phenomenon occurs because older publications inherently accumulate higher citation frequencies due to their extended duration of exposure within the scientific literature. Therefore, citation frequency should be viewed as an indicator of historical scholarly impact rather than a direct measure of current clinical superiority.

Most of the highly cited articles (n = 83) were published between 2000 and 2020, indicating a notable rise in scholarly interest in DGA. This trend is not merely a byproduct of time but likely reflects the growing clinical reliance on DGA in response to increasing treatment needs among children. Supporting this, previous studies have reported substantial increases in pediatric DGA. For instance, Broomhead *et al.* [26] reported a 24% rise in hospital-based tooth extractions among young children in England, attributed to limited access to dental care. Similarly, in Australia, DGA has become one of the most common reasons for preventable hospitalization in children [27].

Articles with over 100 citations are generally regarded as highly influential in shaping both research directions and clinical practices. The most cited article by Almeida *et al.* [21] in 2000, focused on long term caries susceptibility following DGA, whereas the second article by Lee *et al.* [28] in 2013, emphasized mortality risks associated with pediatric dental sedation and DGA. Together, these studies highlight a dual focus in the literature: clinical effectiveness of DGA, and patient safety.

Another noteworthy finding was the substantial scientific influence of case-based studies. Although big-data bibliometric analyses often favor large-scale observational studies or RCTs,

FIGURE 2. Keyword co-occurrence network of the top 100 most-cited articles on pediatric dental general anesthesia, visualizing the most frequently used author keywords. The network was generated using the “biblioshiny” web interface of the “bibliometrix” package in RStudio 4.4.2.

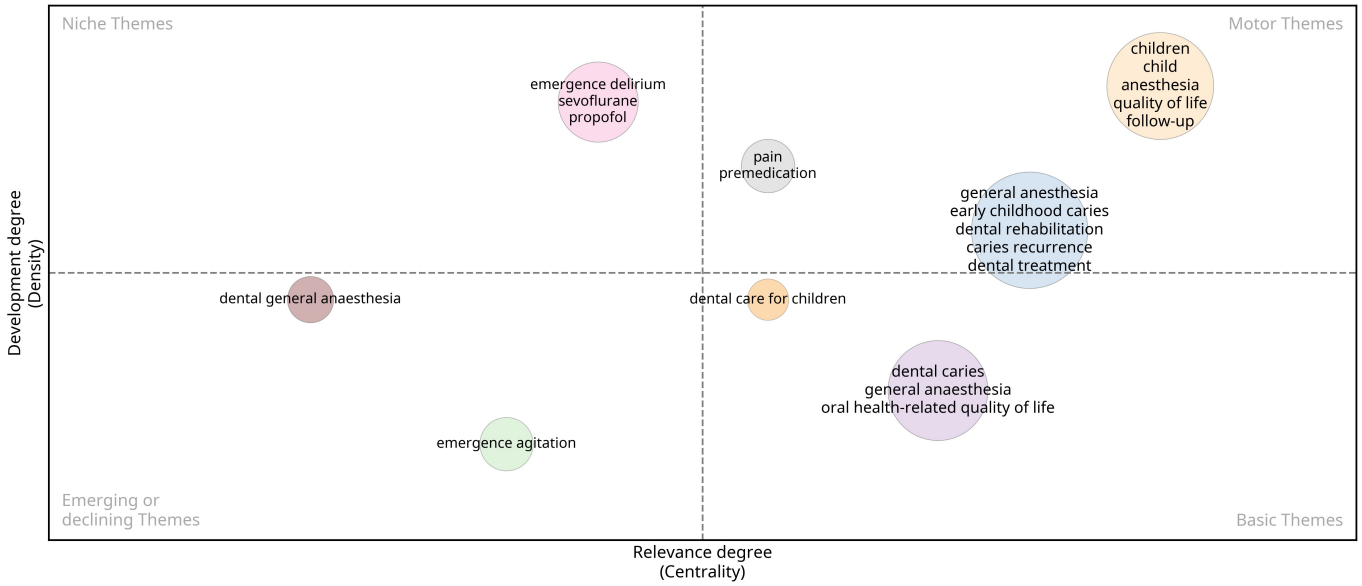

FIGURE 3. Thematic map illustrating the development and relevance of key research topics within the top 100 most-cited articles on pediatric dental general anesthesia. The map was generated using the "biblioshiny" web interface of the "bibliometrix" package in RStudio 4.4.2.

our results demonstrate that well-documented case series can have a lasting impact on the field, particularly in relation to patient safety. For instance, the closed-claim analysis on anesthetic morbidity and mortality, ranked as the 22nd most-cited article in the dataset [29]. In areas such as anesthesia safety, where randomized trials are ethically difficult to conduct, case reports and case series provide essential early evidence guiding clinical awareness and safety protocols [18].

4.2 Geographical patterns and institutional dominance

The United States produced the highest number of top-cited articles, followed by the United Kingdom. However, relative to population size, the UK's contribution appears comparatively greater. This may be partly explained by structural differences in healthcare system. The centralized nature of the UK's National Health Service (NHS) facilitates systematic data collection and supports population-level dental public health strategies. In contrast, the US healthcare system is more fragmented, with research often driven by academic centers or regional clinical demands. Overall, these findings suggest how national healthcare policies and funding structures influence research priorities [30].

4.3 Clinical themes and research clusters

The thematic mapping analysis identified "caries recurrence", "premedication", "pain" and "quality of life" as prominent research clusters within the DGA literature. Among these, several studies have addressed the long-term sustainability of DGA outcomes, particularly the recurrence of ECC [31–33]. Notably, Almeida *et al.* [21] reported that 79% of ECC patients required additional restorative treatment, and 17% underwent repeat DGA within two years. Studies focusing on postoperative care remain relatively limited; however, available evidence suggests that factors such as parental oral hygiene compliance and adjunctive measures, including povidone-iodine application, may influence long-term outcome [34, 35].

There is a growing emphasis on patient-centered outcomes, particularly OHRQoL following treatment under DGA [22]. Beyond clinical success, DGA research increasingly explores the broader psychosocial impact on families, including parental satisfaction and decision-making processes [36, 37].

In addition, safety related clusters such as "emergence delirium", "emergence agitation", and "anesthesia complications" underscore a dual narrative in the field: maximizing restorative benefits while rigorously mitigating perioperative risks [28, 38]. Premedication strategies also remain a major research focus, with numerous randomized trials evaluating agents like midazolam, dexmedetomidine, and ketamine to optimize anxiety control and induction quality [39]. Additionally, the literature addresses broader public health concerns, including cost-effectiveness, service accessibility, and inequalities in care for underserved populations or children with special health care needs [40, 41].

4.4 Strengths and limitations

This study has several strengths. First, it employs a systematic and transparent methodology with clearly defined inclusion and exclusion criteria. Second, the combined use of the WoS-CC and Scopus databases allowed broader coverage of the literature and reduced the risk of omitting influential publications.

However, certain limitations should be considered. The searches were limited to English-language publications. In addition, citation counts differ significantly between databases. For example, although WoS-CC provides long-standing historical coverage, some influential journals such as Pediatric Dentistry were indexed only after 2004. Consequently, highly cited articles such as Almeida *et al.* [21], are absent from

the WoS database. Although Scopus data were used for our primary mapping, database variations remain a methodological limitation of bibliometric studies. Finally, citation frequency primarily reflects scholarly attention rather than the methodological quality or contemporary clinical validity of individual studies.

5. Conclusions

This bibliometric analysis demonstrates the growing body of research on pediatric DGA and highlights key thematic trends within the literature. While DGA provides substantial improvements in oral health-related quality for children requiring extensive dental treatment, the literature also emphasizes important concerns related to treatment sustainability, including caries recurrence and repeat DGA procedures.

ABBREVIATIONS

DGA, Dental General Anesthesia; WoS-CC, Web of Science Core Collection; OHRQoL, Oral Health-Related Quality of Life; RCTs, Randomized Controlled Trials; ECC, early childhood caries; UK, United Kingdom; USA, United States of America; MeSH, Medical Subject Headings; NHS, National Health Service.

AVAILABILITY OF DATA AND MATERIALS

The datasets analyzed during the current bibliometric study are derived from publicly accessible sources. Further information is available from the corresponding author on reasonable request.

AUTHOR CONTRIBUTIONS

TT and EB—designed the research study, performed the research, analyzed the data, and wrote the manuscript. Both authors contributed to editorial changes in the manuscript and have read and approved the final version.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Not applicable.

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Not applicable.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

SUPPLEMENTARY MATERIAL

Supplementary material associated with this article can be found, in the online version, at https://oss.jocpd.com/files/article/2095392149249900544/attachment/Supplementary%20material.docx.

REFERENCES

[1] Benzian H, Watt R, Makino Y, Stauf N, Varenne B. WHO calls to end the global crisis of oral health. The Lancet. 2022; 400: 1909–1910.

[2] Peres MA, Macpherson LMD, Weyant RJ, Daly B, Venturelli R, Mathur MR, *et al*. Oral diseases: a global public health challenge. The Lancet. 2019; 394: 249–260.

[3] Rashewsky S, Parameswaran A, Sloane C, Ferguson F, Epstein R. Time and cost analysis: pediatric dental rehabilitation with general anesthesia in the office and the hospital settings. Anesthesia Progress. 2012; 59: 147–153.

[4] Meyer BD, Lee JY, Thikkurissy S, Casamassimo PS, Vann WF. An algorithm-based approach for behavior and disease management in children. Pediatric Dentistry. 2018; 40: 89–92.

[5] Policy on the use of deep sedation and general anesthesia in the pediatric dental office. Pediatric Dentistry. 2016; 38: 94–95.

[6] Špiljak B, Brailo V, Janković B, Gabrić D, Lozić M, Stambolija V, *et al*. Satisfaction of parents and caregivers with dental treatment of children under general anesthesia in a day care surgery setting. Acta Stomatologica Croatica. 2022; 56: 376–386.

[7] Acs G, Pretzer S, Foley M, Ng MW. Perceived outcomes and parental satisfaction following dental rehabilitation under general anesthesia. Pediatric Dentistry. 2001; 23: 419–423.

[8] Needleman HL, Harpavat S, Wu S, Allred EN, Berde C. Postoperative pain and other sequelae of dental rehabilitations performed on children under general anesthesia. Pediatric Dentistry. 2008; 30: 111–121.

[9] Farsi N, Ba'akdah R, Boker A, Almushayt A. Postoperative complications of pediatric dental general anesthesia procedure provided in Jeddah hospitals, Saudi Arabia. BMC Oral Health. 2009; 9: 6.

[10] Roberts GJ, Mokhtar SM, Lucas VS, Mason C. Deaths associated with GA for dentistry 1948–2016: the evolution of a policy for general anaesthesia (GA) for dental treatment. Heliyon. 2020; 6: e02671.

[11] Yazdanbakhsh E, Bohlouli B, Patterson S, Amin M. Patterns and potential risk factors for repeated dental general anesthesia in pediatric patients in Alberta, Canada. Pediatric Dentistry. 2025; 47: 342–349.

[12] Li JY, He SY, Wang PX, Dai SS, Zhang SQ, Li ZY, *et al.* Incidence and risk factors of unplanned retreatment following dental general anesthesia in children with severe early childhood caries. Frontiers in Pediatrics. 2023; 11: 1163368.

[13] Donthu N, Kumar S, Mukherjee D, Pandey N, Lim WM. How to conduct a bibliometric analysis: an overview and guidelines. Journal of Business Research. 2021; 133: 285–296.

[14] Aria M, Cuccurullo C. *bibliometrix*: an R-tool for comprehensive science mapping analysis. Journal of Informetrics. 2017; 11: 959–975.

[15] Knapp R, Gilchrist F, Rodd HD, Marshman Z. Change in children's oral health-related quality of life following dental treatment under general anaesthesia for the management of dental caries: a systematic review. International Journal of Paediatric Dentistry. 2017; 27: 302–312.

[16] Keykha E, Hajisadeghi S, Heidari MT. The effect of dental rehabilitation under general anesthesia on dental anxiety in children: a systematic review and meta-analysis. BMC Oral Health. 2025; 25: 1953.

[17] Ashley PF, Williams CECS, Moles DR, Parry J. Sedation versus general anaesthesia for provision of dental treatment to patients younger than 18 years. Cochrane Database of Systematic Reviews. 2015; 2015: CD006334.

[18] Vandenbroucke JP. In defense of case reports and case series. Annals of Internal Medicine. 2001; 134: 330–334.

[19] Leagault JV, Diner MH, Auger R. Dental treatment of children in a general anaesthesia clinic: review of 300 cases. Journal of the Canadian Dental Association. 1972; 38: 221–224.

[20] Wang L, Huang L, Zhang T, Peng W. Comparison of intranasal

dexmedetomidine and oral midazolam for premedication in pediatric dental patients under general anesthesia: a randomised clinical trial. BioMed Research International. 2020; 2020: 5142913.

[21] Almeida AG, Roseman MM, Sheff M, Huntington N, Hughes CV. Future caries susceptibility in children with early childhood caries following treatment under general anesthesia. Pediatric Dentistry. 2000; 22: 302–306.

[22] Anderson HK, Drummond BK, Thomson WM. Changes in aspects of children's oral-health-related quality of life following dental treatment under general anaesthesia. International Journal of Paediatric Dentistry. 2004; 14: 317–325.

[23] Berkowitz RJ, Moss M, Billings RJ, Weinstein P. Clinical outcomes for nursing caries treated using general anesthesia. ASDC Journal of Dentistry for Children. 1997; 64: 210–211, 228.

[24] Amin MS, Harrison RL, Weinstein P. A qualitative look at parents' experience of their child's dental general anaesthesia. International Journal of Paediatric Dentistry. 2006; 16: 309–319.

[25] Hosey MT, Macpherson LMD, Adair P, Tochel C, Burnside G, Pine C. Dental anxiety, distress at induction and postoperative morbidity in children undergoing tooth extraction using general anaesthesia. British Dental Journal. 2006; 200: 39–43, discussion 27, quiz 50.

[26] Broomhead T, Rodd HD, Baker SR, Jones K, Davies G, White S, *et al.* A rapid review of variation in the use of dental general anaesthetics in children. British Dental Journal. 2020; 229: 31–39.

[27] Chrisopoulos S, Harford J, Ellershaw A. Oral health and dental care in Australia: key facts and figures 2015. (Cat. no. DEN 229). Canberra: AIHW. 2016.

[28] Lee HH, Milgrom P, Starks H, Burke W. Trends in death associated with pediatric dental sedation and general anesthesia. Paediatric Anaesthesia. 2013; 23: 741–746.

[29] Jastak JT, Peskin RM. Major morbidity or mortality from office anesthetic procedures: a closed-claim analysis of 13 cases. Anesthesia Progress. 1991; 38: 39–44.

[30] Tom J, Thikkurissy S, Agarwal R. The path to safety in dental anesthesia. Current Anesthesiology Reports. 2024; 14: 318–329.

[31] Amin M, Nouri R, ElSalhy M, Shah P, Azarpazhooh A. Caries recurrence after treatment under general anaesthesia for early childhood caries: a retrospective cohort study. European Archives of Paediatric Dentistry. 2015; 16: 325–331.

[32] Amin MS, Bedard D, Gamble J. Early childhood caries: recurrence after comprehensive dental treatment under general anaesthesia. European Archives of Paediatric Dentistry. 2010; 11: 269–273.

[33] Foster T, Perinpanayagam H, Pfaffenbach A, Certo M. Recurrence of early childhood caries after comprehensive treatment with general anesthesia and follow-up. Journal of Dentistry for Children. 2006; 73: 25–30.

[34] Amin MS, Harrison RL, Benton TS, Roberts M, Weinstein P. Effect of povidone-iodine on Streptococcus mutans in children with extensive dental caries. Pediatric Dentistry. 2004; 26: 5–10.

[35] Amin MS, Harrison RL. A conceptual model of parental behavior change following a child's dental general anesthesia procedure. Pediatric Dentistry. 2007; 29: 278–286.

[36] Malden PE, Thomson WM, Jokovic A, Locker D. Changes in parent-assessed oral health-related quality of life among young children following dental treatment under general anaesthetic. Community Dentistry and Oral Epidemiology. 2008; 36: 108–117.

[37] Klaassen MA, Veerkamp JSJ, Hoogstraten J. Young children's oral health-related quality of life and dental fear after treatment under general anaesthesia: a randomized controlled trial. European Journal of Oral Sciences. 2009; 117: 273–278.

[38] Atan S, Ashley P, Gilthorpe MS, Scheer B, Mason C, Roberts G. Morbidity following dental treatment of children under intubation general anaesthesia in a day-stay unit. International Journal of Paediatric Dentistry. 2004; 14: 9–16.

[39] Kawai M, Kurata S, Sanuki T, Mishima G, Kiriishi K, Watanabe T, *et al*. The effect of midazolam administration for the prevention of emergence agitation in pediatric patients with extreme fear and non-cooperation undergoing dental treatment under sevoflurane anesthesia, a double-blind, randomized study. Drug Design, Development and Therapy. 2019; 13: 1729–1737.

[40] Lee JY, Vann WF, Roberts MW. A cost analysis of treating pediatric dental patients using general anesthesia versus conscious sedation. Pediatric Dentistry. 2000; 22: 27–32.

[41] Kanellis MJ, Damiano PC, Momany ET. Medicaid costs associated with the hospitalization of young children for restorative dental treatment under general anesthesia. Journal of Public Health Dentistry. 2000; 60: 28–32.

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