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**Tendências e Perspectivas Mundiais Sobre Colagem de Fragmento Dental
de 1988 a 2023 – Uma Revisão Bibliométrica**

Florianópolis

2024

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de 1988 a 2023 – Uma Revisão Bibliométrica**

Trabalho de Conclusão submetido ao curso de Graduação em Odontologia do Centro de Ciências da Saúde da Universidade Federal de Santa Catarina como requisito parcial para a obtenção do título de Cirurgiã-Dentista.

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Este Trabalho de Conclusão de Curso foi julgado adequado para obtenção do título de
cirurgiã-dentista e aprovado em sua forma final pelo Curso de Odontologia da UFSC.

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RESUMO

A colagem do fragmento dental é considerada uma das principais condutas para reabilitar dentes traumatizados. Esse procedimento garante excelentes resultados estéticos, morfológicos e funcionais. O objetivo desse estudo foi realizar uma análise bibliométrica sobre colagem de fragmento dental em odontologia. A busca foi realizada em dezembro de 2023 na base de dados *Web of Science Core Collection*. Conferências e editoriais foram excluídos. Dois pesquisadores selecionaram os artigos e extraíram: número e densidade de citações, ano de publicação, periódico, fator de impacto, desenho de estudo, temáticas (tipo de fratura, objetivo do estudo, faixa etária), país e continente, instituição, autores e palavras-chave. Redes colaborativas foram geradas no software *VOSviewer*. A relação entre os dados foi determinada pela correlação de *Spearman*. A busca resultou em 288 artigos, dos quais 120 foram incluídos. O artigo mais citado somou 159 citações. Os estudos foram publicados entre 1988 e 2023, com maior frequência em 2008 (n=10). O periódico mais prevalente foi a *Dental Traumatology* (n=54). Relato de caso (n=60) foi o desenho de estudo mais frequente. A maioria dos estudos tiveram como objetivo o acompanhamento de casos clínicos (n=67) e o maior número de fraturas relatadas foi do tipo coronal (n=91). Os pacientes jovens foram os mais afetados entre os estudos selecionados (n=45). Tewari N foi o autor com o maior número de artigos (n=6). A Universidade de Brasília (n=5) destacou-se. O país mais prevalente foi o Brasil (n=28) e a Ásia foi o continente mais frequente (n=50). O *VOSviewer* demonstrou uma interação entre os autores. Observou-se correlação positiva fraca entre o número de citações e fator de impacto dos periódicos ($p < 0,05$). A técnica de colagem de fragmentos em dentes traumatizados vem sendo estudada a 36 anos. Observa-se que os estudos dessa técnica são baseados principalmente em relatos de caso, descrevendo o acompanhamento do caso em pacientes jovens. O Brasil se destacou nessa área, sendo o país com o maior número de publicações, e a Universidade de Brasília foi a instituição mais proeminente nesse campo de estudo. Sugere-se a realização de estudos de intervenção e revisões sistemáticas. Além disso recomenda-se mais estudos em continentes como África, Oceania e América do Norte, todas com poucos estudos sobre a temática.

Palavras-chave: Colagem De Fragmento Dental, Trauma Dental, Revisão Bibliométrica.

ABSTRACT

Dental fragment reattachment is considered one of the main approaches to rehabilitate traumatized teeth. This procedure ensures excellent aesthetic, morphological, and functional outcomes. The aim of this study was to perform a bibliometric analysis on dental fragment bonding in dentistry. The search was conducted in December 2023 in the Web of Science Core Collection database. Conferences and editorials were excluded. Two researchers selected the articles and extracted: number and density of citations, year of publication, journal, impact factor, study design, themes (type of fracture, study objective, age group), country and continent, institution, authors, and keywords. Collaborative networks were generated using VOSviewer software. The relationship between the data was determined by Spearman correlation. The search resulted in 288 articles, of which 120 were included. The most cited article totaled 159 citations. Studies were published between 1988 and 2023, with the highest frequency in 2008 (n=10). The most prevalent journal was Dental Traumatology (n=54). Case report (n=60) was the most frequent study design. The majority of studies aimed at clinical case follow-up (n=67) and the most reported fractures were coronal (n=91). Young patients were the most affected among the selected studies (n=45). Tewari N was the author with the highest number of articles (n=6). The University of Brasília (n=5) stood out. Brazil was the most prevalent country (n=28), and Asia was the most frequent continent (n=50). VOSviewer demonstrated interaction among the authors. A weak positive correlation was observed between the number of citations and the impact factor of journals ($p < 0.05$). The technique of dental fragment reattachment in traumatized teeth has been studied for 36 years. It is observed that studies of this technique are mainly based on case reports, describing case follow-up in young patients. Brazil stood out in this area, being the country with the highest number of publications, and the University of Brasília was the most prominent institution in this field of study. Intervention studies and systematic reviews are recommended. Additionally, more studies in continents such as Africa, Oceania, and North America are recommended, all with few studies on the topic.

Keywords: Fragment reattachment, dental trauma, bibliometric review

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LISTA DE ABREVIATURAS E SIGLAS

VOSviewer - *Visualization of Similarities Viewer*

WOS-CC - *Web of Science Core Collection*

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1. INTRODUÇÃO

O trauma dental é caracterizado por lesões nos dentes e nas estruturas associadas, como resultado de um impacto físico que podem ser causados por uma variedade de situações. Normalmente, as lesões estão associadas a acidentes automobilísticos, quedas da própria altura, esportes de contato e brincadeiras infantis (Bagis B *et al.*, 2011). Estima-se que cerca de 80% das lesões dentárias traumáticas ocorrem antes dos 20 anos de idade. (Saikiran KV *et al.*, 2022). Na dentição decídua, aproximadamente um terço das crianças sofrem com essa condição, enquanto na dentição permanente essa condição afeta cerca de um quarto das crianças em idade escolar. (Petti S *et al.*, 2018). Os dentes mais afetados em ambas as dentições são os incisivos centrais superiores, devido posição frontal vulnerável (Vignesh R *et al.*, 2019; Lam R *et al.*, 2016). As lesões traumáticas podem ser representadas por fraturas dentárias, luxações, avulsão e injúrias aos tecidos de suporte. Contudo, observa-se maior frequência clínica para fraturas da estrutura dental (Bourguignon C *et al.*, 2020). Em relação aos tecidos acometidos e a extensão da fratura o trauma pode comprometer somente a porção coronal ou coronorradicular. As fraturas coronais representam situações clínicas corriqueiras. No entanto, as fraturas coronorradiculares são menos comuns, ocorrendo em cerca de 0,3% a 5% dos casos, e exigem tratamento multidisciplinar (Taguchi CM *et al.*, 2015).

Além de afetar a saúde bucal, o trauma dental tem um impacto significativo na vida psicológica, social e emocional do paciente e de seus familiares, exigindo atenção imediata (Arhakis A *et al.*, 2017). Para o cirurgião dentista, escolher o tratamento restaurador estético adequado para um dente fraturado é um desafio significativo. Existem várias opções disponíveis, cada uma com suas próprias indicações e benefícios. Alguns dos tratamentos comuns incluem: colagem de fragmento dental, restaurações diretas com resina composta e restaurações indiretas (facetadas ou coroas totais) (Qin M., 2021).

Quando o fragmento dentário está em boas condições (hidratado e com ampla estrutura), a colagem do mesmo costuma representar a melhor opção. Essa é uma técnica simples e conservadora, preservando ao máximo a estrutura dental (Garcia FCP *et al.*, 2018). O resultado estético, morfológico e funcional geralmente é satisfatório na maioria dos casos. Além disso, a colagem é um procedimento rápido e de baixo custo em comparação com outras opções de

tratamento restaurador (Garcia FCP *et al.*, 2018). Para colar um fragmento dentário, há várias técnicas e materiais adesivos disponíveis, assim como diferentes métodos de reinserção. Essas escolhas dependem da extensão da fratura e do estado do fragmento (de Sousa APBR *et al.*, 2018). Quando o fragmento for encontrado e apresenta boas condições essa técnica é amplamente recomendada para casos de fratura dental. Ela tem sido objeto de estudo e pesquisa há mais de 30 anos, com um foco constante no aprimoramento do tratamento clínico (Capp CI *et al.*, 2009). O passo a passo da técnica de colagem de fragmento coronário pode ser observada no protocolo fotográfico a seguir:

Figura 1 - Dente com fratura coronária e fragmento dental



Fonte: Elaborado pela autora (2024)

Figura 2 - Confeção da guia em resina acrílica



Fonte: Elaborado pela autora (2024)

Figura 3 - Condicionamento ácido do dente



Fonte: Elaborado pela autora (2024)

Figura 4 - Condicionamento ácido do fragmento



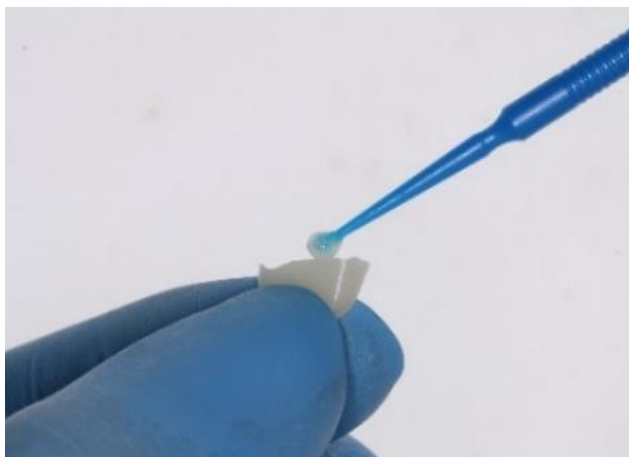
Fonte: Elaborado pela autora (2024)

Figura 5 - Aplicação de primer e adesivo no dente



Fonte: Elaborado pela autora (2024)

Figura 6 - Aplicação de primer e adesivo no fragmento



Fonte: Elaborado pela autora (2024)

Figura 7 - Aplicação de resina composta de dentina no dente



Fonte: Elaborado pela autora (2024)

Figura 8 - Guia em posição e fotopolimerização



Fonte: Elaborado pela autora (2024)

Figura 9 - Polimento final



Fonte: Elaborado pela autora (2024)

Figura 10 - Resultado após a colagem de fragmento dental



Fonte: Elaborado pela autora (2024)

As análises bibliométricas desempenham um papel fundamental na avaliação e compreensão da produção científica e acadêmica em diversas áreas do conhecimento com elas temos a possibilidade de indicar o estado científico da temática que está sendo estudada, assim, novos caminhos de pesquisas podem ser traçados (Rocha *et al.*, 2022). Alguns pontos importantes dessas análises são: medição da produção científica, identificação de tendências, avaliação de impacto, colaboração e redes de pesquisa e planejamento estratégico. Na literatura, podemos identificar diversas revisões bibliométricas envolvendo trauma dental e suas consequências (Huang JW *et al.*, 2023; Kramer PF *et al.*, 2016; Abdou A *et al.*, 2023). Contudo, nenhum estudo bibliométrico foi realizado sobre a colagem de fragmento dental até o presente momento, mesmo essa sendo uma temática estudada a mais de 30 anos e com altos índices de sucesso. Assim, esse estudo tem como objetivo avaliar a evolução, o estado científico e as futuras tendências de pesquisas sobre a colagem de fragmento dental através de uma revisão bibliométrica.

2. OBJETIVOS

2.1 OBJETIVO GERAL

Avaliar os artigos sobre colagem de fragmento dental disponíveis na literatura através de uma análise bibliométrica.

2.2 OBJETIVOS ESPECÍFICOS

- a) Avaliar o número de citações dos artigos na base de dados web of Science Core Collection;
- b) Determinar os autores mais recorrentes no mundo para essa temática;
- c) Avaliar as instituições que mais pesquisaram sobre colagem de fragmento;
- d) Avaliar os países e continentes que mais pesquisaram sobre a temática;
- e) Observar as palavras-chave mais recorrentes;
- f) Avaliar as revistas que mais publicaram sobre colagem de fragmento;
- g) Analisar os desenhos de estudos e as temáticas de maior frequência.

3. ARTIGO

Este trabalho encontra-se nas normas da revista "*Dental Traumatology*" onde ele será submetido.

**Global trends and perspectives on dental fragment reattachment from 1988 to 2023 – a
bibliometric review**

Short running title: Bibliometric Analysis: Dental fragment reattachment

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Conflict of Interest Statement

The authors have no conflicts of interest to declare.

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Global trends and perspectives on dental fragment reattachment from 1988 to 2023 – a bibliometric review

Abstract

Fragment reattachment in traumatic injuries represents excellent aesthetic, morphological, and functional outcomes. The objective of this study was to conduct a bibliometric analysis on dental fragment reattachment in traumatic injuries. The search was performed in December 2023 in the Web of Science Core Collection database. Conferences were excluded. Two researchers selected the articles and extracted the main characteristics of the studies. Collaborative networks were generated using Vosviewer software. The relationship between the data was determined by Spearman correlation. The search resulted in 288 articles, of which 120 were included. The most cited article totaled 159 citations. The studies were published between 1988 and 2023. The standout journal was Dental Traumatology (n=54). Case reports (n=60) were the most frequent study design. Most studies aimed at monitoring clinical cases (n=67), and the most reported type of fracture was coronal (n=91). Young patients were the most affected among the selected studies (n=45). Tewari N was the author with the highest number of articles (n=6). The University of Brasília (n=5) stood out. The most prevalent country was Brazil (n=28), and Asia was the most frequent continent (n=50). VOSviewer demonstrated interaction among authors. The technique of fragment reattachment in traumatized teeth has been studied for 36 years. It is observed that studies on this technique are mainly based on case reports, describing case follow-up in young patients. Brazil stood out in this area, being the country with the highest number of publications, and the University of Brasília was the most prominent institution in this field of study. Intervention studies and systematic reviews are suggested. Furthermore, more studies are recommended in continents such as Africa, Oceania, and North America, all of which have few studies on the topic.

Keywords: Fragment reattachment, dental trauma, Bibliometric Analysis.

Introduction

Dental trauma is characterized by injuries to dental tissues and/or associated structures as a result of physical impact. This condition is typically associated with car accidents, falls from height, contact sports, and childhood play.¹ It is estimated that nearly 80% of dental injuries occur before the age of 20.² In primary dentition, approximately one-third of children experience this condition, while in permanent dentition, about one-quarter of children are affected.³ The upper central incisors are the most affected teeth due to their vulnerable frontal position.^{4,5}

Regarding the affected tissues and the extent of the fracture, trauma can involve only the coronal portion or extend to the coronoradicular area. Coronary fractures represent the most common clinical scenario, while coronoradicular fractures are less frequent, occurring in about 0.3% to 5% of cases, and requiring multidisciplinary treatment.⁶ In addition to affecting oral health, dental trauma has a significant impact on the psychological, social, and emotional aspects of the patient and their families, requiring immediate attention.⁷ For the dentist, choosing the appropriate aesthetic restorative treatment for a fractured tooth is a significant challenge. There are several options available. Some common treatments include dental fragment reattachment, direct composite resin restorations, and indirect restorations (veneers and full crowns).⁸

When the dental fragment is in good condition (hydrated and with sufficient structure), reattachment it back usually represents the best option for rehabilitating traumatized teeth. This is a simple and conservative technique, preserving the dental structure to the maximum extent possible.⁹ The aesthetic, morphological, and functional outcomes are generally satisfactory in most cases. Additionally, fragment reattachment is a quick and cost-effective procedure compared to other restorative treatment options.⁹ To reattachment a dental fragment, there are various techniques and adhesive materials available, as well as different reattachment methods. The choice of material and technique depends on the extent of the fracture and the condition of the fragment.¹⁰

Bibliometric analyses play a fundamental role in assessing and understanding scientific and academic production in various fields of knowledge, indicating the scientific state and assisting in the determination of new paths that can be traced.¹¹ In the

literature, we can identify several bibliometric reviews related to dental trauma and its consequences.^{12,13,14} However, no bibliometric study has been conducted on dental fragment reattachment to date, even though it has been a topic studied for over 30 years with high rates of clinical success. Therefore, this study aims to evaluate the evolution, scientific status, and future research trends regarding dental fragment reattachment through a bibliometric review.

Methodology

A bibliographic search was conducted to identify studies on dental fragment reattachment in traumatized teeth. The included studies were published until December 18, 2023. No restrictions were applied regarding language or year of publication. The database used in the bibliographic search was the Web of Science - Core Collection (WoSCC). The following search strategy was used: *ALL= ("Bonding of fractured tooth" OR "Reattachment of Fractured Tooth" OR "Reattachment fractured segment technique" OR "dental reattachment" OR "fragment reattachment" OR "fragments reattachment" OR "segment reattachment" OR "segments reattachment" OR "autologous reattachment" OR "reattachment technique" OR "reattachment techniques" OR "crown fragment" OR "crown fragments" OR "crown segment" OR "crown segments" OR "fractured crown")*.

The article selection process was independently conducted by two researchers (JM & AOR). A third author (MC) was consulted in case of any discrepancies during the selection process. Inclusion of an article was only done when the reviewers reached a consensus regarding any discrepancies. Studies were excluded based on the following exclusion criteria: (1) publications that were not research articles (conference papers or editorials); (2) publications not related to dentistry; (3) dental publications that were not related to the topic. Reviews and research studies that evaluated or described the technique of fragment reattachment in traumatized teeth were included.

The following data were obtained for each article: number and density of citations, year of publication, scientific journal, impact factor (2022) (Journal Citation Reports), study design, themes (main study objective, type of fracture, and age group), country and continent, institution (based on the corresponding author), authors, number of authors, and keywords.

Study designs were classified as: case report, case series, clinical study, laboratory study, observational study, literature review, and systematic review. Regarding themes, articles were grouped into three categories: (1) Type of fracture addressed: coronal fracture or coronoradicular fracture. (2) Main study objective: case follow-up, evaluation of pulpal condition, evaluation of fracture resistance of previously reinserted fragment, clinical evaluation of the fragment, evaluation and comparison between different techniques and materials used for fragment bonding, evaluation of dentist knowledge about fragment reattachment, type of guide used for fragment reinsertion, protocols available in the literature for restoring fractured teeth. (3) Patient age: young patients (under 18 years old) and adult patients (18 years old or older).

To determine the trend and characteristics of studies over the years, an individual analysis of the main study characteristics was conducted at four time points: 1988-1999, 2000-2011, 2012-2023, and all years (1988-2023), with the selection criterion being the number of publications. The data collected for this analysis were: Continent, country, institution, journal, study objective, study design, and author.

The included articles were entered into VOSViewer software (version 1.6.18) (<https://www.vosviewer.com/>) to generate graphical representations demonstrating collaboration between authors and between keywords. Words associated with larger focuses indicate higher occurrence. Words associated with focuses of the same color and interconnected by networks indicate greater collaboration between the selected studies. The statistical software SPSS for Windows (SPSS, version 24.0; IBM, Armonk USA Corp) was used to investigate the correlation between the number of citations and the year of publication and the impact factor of the journal. The Kolmogorov-Smirnov test was performed to check the normality of the data distribution. However, as they exhibited a non-normal distribution, the Spearman correlation test was used.

Results

A total of 288 records were identified in the bibliographic search. Titles, abstracts, and, when necessary, full texts were read for inclusion. After verification and reading, 120 articles were included for bibliometric analysis. Two conferences were excluded among the articles, and the remaining (n=166) were excluded for not addressing the study's proposed objective. The 120 included articles were listed and can be observed in Supplementary Table 1.

The selected articles received a total of 1,718 citations in WoSCC. Of these, 673 represented self-citations (39.17%). The average number of citations over the years was 14.31. The most cited article in WoSCC was "Management of complicated crown-root fracture by extra-oral fragment reattachment and intentional reimplantation with 2 years review," published in Contemporary Clinical Dentistry. It was written by Vignesh, R et al with 159 citations. Besides having the highest number of citations, this article also obtained the highest citation density (31.80). According to Spearman correlation, a weak positive correlation was observed between the number of citations and the journal's impact factor ($\rho = .205$; $p < 0.05$), and a strong negative correlation was observed between the number of citations and the year of publication ($\rho = -.709$; $p < 0.001$).

The articles were published between 1988 and 2023, totaling 36 years since the first publication, indicating that this is a classic theme in dentistry. The oldest article, from 1988, was written by Liwe, Vp, entitled: "Re-attachment of original tooth fragment to a fractured crown – case report." The highest number of publications was in the year 2008, with 10 articles published. Figure 1 shows the distribution of the number of publications over the years.

In Table 1, the most frequent journals that published articles on dental fragment reattachment and their respective impact factors are listed. The most prominent journal was Dental Traumatology ($n=54$; 777 citations), followed by Operative Dentistry ($n=12$; 281 citations), and Quintessence International ($n=8$; 139 citations). According to the Journal Citation Reports, the journals with the highest IF in 2022 linked to this study were Journal of Clinical Periodontology (IF 6.7), Polymer Composites (IF 5.2), and Journal of Prosthetic Dentistry (IF 4.6). Each of these journals contributed with one article.

The majority of articles were case reports ($n=60$), followed by laboratory studies ($n=40$), literature reviews ($n=6$), observational studies ($n=6$), systematic reviews ($n=4$), clinical studies ($n=2$), and case series ($n=2$). Regarding the study objectives, the following themes were identified: case follow-up ($n=67$), evaluation and comparison of different techniques and materials used for fragment reattachment ($n=25$), fragment evaluation ($n=10$), evaluation of fracture resistance of previously reinserted fragment ($n=10$), protocols available in the literature for restoring fractured teeth ($n=5$), evaluation of pulp condition ($n=1$), assessment of dentist knowledge about fragment bonding ($n=1$), and guide used for fragment reinsertion ($n=1$). In addition to the main study objective, the type of fracture was observed, with a predominance of crown fractures ($n=91$), followed

by coronoradicular fractures (n=24). Articles that could identify the patient's age (n=75) were also divided into young patients (n=45), adult patients (n=24), and adult/young patients (n=6). Studies where classification was not described were disregarded. To better analyze trends regarding the types of fractures, the data was cross-referenced and can be observed in Figure 2.

A total of 26 countries contributing to articles related to dental fragment reattachment were identified. Considering the number of publications per country, the most prevalent were: Brazil (n=28), India (n=20), Turkey (n=17), and Italy (n=15). Among the continents with the most articles (Figure 3), Asia stood out (n=50), followed by Europe (n=34), and South America (n=28). The global distribution of publications can be observed in Figure 3.

A total of 73 distinct institutions were identified among the corresponding authors of the included studies. The institution with the highest number of publications was the University of Brasília (n=5). The top 10 institutions in terms of the number of articles can be observed in Table 2. Whenever there was a tie between institutions, the tiebreaker criterion was the number of citations for those institutions.

Regarding the number of authors identified in the articles, it was observed that the number ranged from 1 to 8 authors. However, the most common number of authors per article was four (n=27). The author with the highest number of published articles was Tewari N (n=6). Collaboration and the main groups of authors can be observed in Figure 4. Table 3 shows the top 10 authors with the highest number of publications.

A total of 320 author keywords were identified. The most prevalent keyword was "fragment reattachment" (n=39), followed by "reattachment" (28 occurrences), "dental trauma" (n=27), "teeth" (n=26), and "strength" (n=23). The most prevalent keywords (5 or more occurrences) and the collaboration relationships between them can be observed in Figure 5.

Table 4 shows the performance of the main characteristics of the articles over the years. It was observed that the journal "Dental Traumatology" and the theme "case follow-up" predominated in all periods. However, the other data underwent modifications over the years.

Discussion

Dental trauma is an injury caused to the teeth and associated tissues resulting from physical impact.¹⁵ Dental trauma is considered a public health issue due to its high

frequency and significant impact on the quality of life of patients, especially among young individuals, with prevalence rates ranging from 7.4% to 58%.^{5,9} According to the literature, this is the first study to analyze global research on dental fragment reattachment. Studies reporting on dental fragment reattachment have mainly been based on case reports, typically emphasizing case follow-up and crown fractures, with a higher incidence in young patients.

The most cited article was "Management of complicated crown-root fracture by extra-oral fragment reattachment and intentional reimplantation with 2 years review" written by Vignesh R et al, published in 2019. Despite being a recent publication, it was the most cited. It was likely highlighted for employing a technique involving: 1) minimally invasive extraction of the tooth to be restored, 2) scraping of the tooth and bone socket surfaces to remove any granulation tissue, and 3) preparation of the fractured surfaces and bonding of the crown and root fragments with adhesive cement. Due to its complex clinical approach, the article received over 100 citations. An article with over 100 citations can be considered a classic within a specific subject area.¹⁶

The most common study design found was the case report, which is not surprising, especially in cases of dental trauma. Because it is an emergency clinical situation and sporadically encountered in practice, the case report is the most appropriate study in these situations, as it allows for detailed monitoring of patient progress. The most explored theme was case follow-up, reflecting the high success rate of treatments performed with fragment reattachment.⁵ Although randomized clinical trials are considered the gold standard in dentistry to support clinical decisions, minimizing bias and providing robust scientific evidence on the efficacy and safety of dental treatments, they may not always be feasible or ethical, especially in emergency situations such as dental trauma. In such cases, observational studies and case reports play a crucial role in providing valuable insights into treatment outcomes and guiding clinical practice.¹⁷ The scarcity of these studies in the context of dental trauma can be attributed to the difficulty in standardizing patients who have suffered some type of dental trauma and require emergency care. Initiatives that promote the conduct of randomized clinical trials in this area, as well as the implementation of multicenter studies with resource and knowledge sharing, could be encouraged. Additionally, it is essential for dental professionals to be aware of the importance of their involvement in clinical research, aiming to contribute to scientific advancement related to dental fragment bonding.

When it comes to patient age, the majority of "case report" studies show a higher incidence of trauma in individuals under 18 years old. This incidence can be attributed to various factors. In this age group, young individuals are more active and engaged in sports and recreational activities that increase the risk of dental injuries.¹⁸ The lack of experience and motor skills can also contribute to a higher number of accidents resulting in dental trauma in children and adolescents. These factors combined help explain the higher prevalence of trauma in patients under 18 years old, as observed in various studies.^{4,5}

The year 2008 recorded the highest number of publications on dental fragment reattachment. This increase may be associated with the evolution of adhesive dentistry and the growing trend of minimal intervention and preservation of dental tissue. The minimal intervention approach emphasizes the preservation of natural dental tissues, promoting less invasive treatments whenever possible.¹⁹ Dental fragment reattachment fits into this context, as it allows for the restoration of fractured teeth in a conservative manner, preserving the original dental structure as much as possible. This approach has been increasingly valued by professionals and patients alike, driving interest and research in this area.^{20,19}

The journal *Dental Traumatology* stood out as the most prolific publisher on the topic throughout all the years covered by the study, reflecting its prominent position among leading research journals, as well as other bibliometric studies.^{21,13} This prominence is attributed to its significant influence in the field of dental research. As the official publication of the International Association of Dental Traumatology and the Academy of Sports Dentistry, *Dental Traumatology* covers a wide range of topics related to dental trauma, including epidemiology, diagnosis, aesthetics and prosthetics, evidence, and prevention. In addition to encompassing various types of studies, such as review articles, case reports, and brief communications that present methods and clinical techniques relevant to the topic.²²

Brazil stood out as the country with the highest number of published works on fragment reattachment, consistent with its prominence in other bibliometric studies.^{21,23} Brazil is one of the most cited countries in high-quality dental research. This is due to the commitment and qualifications of professionals in the field, as well as government incentives through research funding.²⁴ Demonstrating the increase in investments in Brazil, a bibliometric review showed that among studies published in an international journal, the majority were funded by Brazilian government entities such as CAPES (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior). These efforts

contribute to Brazil's international prominence, although the country still faces challenges and limitations in this field.²⁵

Brazil also stood out among institutions, with four universities among the top 10, highlighting the University of Brasília in first place in the number of published articles. The second country that stood out in research on fragment reattachment was India, the home country of the first and third authors who published the most on the subject. Additionally, this aligns with another bibliometric review where India ranked among the top 10 countries in terms of publications²⁴, confirming its prominence in the availability of adequate resources and infrastructure, along with an active scientific community and a large number of teaching and research institutions dedicated to dentistry. Asia was the continent with the highest number of published articles, which is aligned with the geographical distribution of the most prevalent countries, such as India and Turkey.

The top three most productive authors focused their efforts on key themes related to dental fragment reattachment: crown fractures and evaluation and comparison of different techniques and materials used, highlighting the ongoing pursuit of optimizing the effectiveness and longevity of the procedure. The authors with the highest number of articles, Tewari N, Garcia FCP, and Mathur VP, mainly dedicated themselves to laboratory studies. Tewari N and Mathur FCP, representing India, contributed to their country being the second with the most publications among the articles studied. Meanwhile, Garcia FCP's contributions helped Brazil secure the top position.

The article provides a global bibliometric analysis without year restrictions, which expands the scope of the research and allows for a comprehensive view of the topic at hand. Including data from different time periods without year restrictions can provide a historical perspective and identify trends over time. However, a significant limitation is the use of only one database to collect information. Nevertheless, this is a widely recommended and used database for bibliometric analyses.^{23,24}

This bibliometric review presented the current landscape and trends in research related to fragment reattachment in traumatized teeth, highlighting a greater research interest in Asia. However, Brazil is the country with the highest number of cited articles, followed by India. Most of the works consisted of case reports with follow-up to assess treatment success and clinical protocol description. Historically, there has been a highlight over the decades for Dental Traumatology as the most frequent journal. With this study, the scientific progress of the theme of fragment bonding in traumatized teeth becomes clear, and it suggests the conduct of more systematic reviews and clinical studies. Due to

limited involvement in publications, there is encouragement for studies with this theme in countries in Africa, Oceania, and North America.

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Supplementary Tables

Supplementary Table 1. Articles included for analysis in this bibliometric review.

Autores	Year	Title	Citation	Citation density
Vignesh, R; et al	2019	Management of complicated crown-root fracture by extra-oral fragment reattachment and intentional reimplantation with 2 years review	159	31,80
Reis, A; et al.	2001	Re-attachment of anterior fractured teeth: Fracture strength using different techniques	83	3,61
Reis, A; et al.	2004	Reattachment of fractured teeth: A review of literature regarding techniques and materials	79	3,95
Cavalleri,G; et al	1995	Reattachment of fractured teeth: A review of literature regarding techniques and materials	62	2,14
Macedo, GV; et al	2008	Reattachment of anterior teeth fragments: A conservative approach	54	3,38
Andreasen, FM; et al	1992	Treatment of crown fractured incisors with laminate veneer restorations - an experimental study	50	1,56

Rappelli, G; et al	2002	Clinical procedures for the immediate reattachment of a tooth fragment	49	2,23
Reis, A; et al	2002	Re-attachment of anterior fractured teeth: Fracture strength using different materials	46	2,09
Andreasen , FM; et al	1993	Bonding of enamel-dentin crown fragments after crown fracture - an experimental-study using bonding agents	45	1,45
Farik, B; et al	1999	Drying and rewetting anterior crown fragments prior to bonding	41	1,64
Farik, B; et al	1999	Fracture strength of intact and fragment-bonded teeth at various velocities of the applied force	39	1,56
Chu, FCS; et al	2000	Clinical considerations for reattachment of tooth fragments	38	1,58
Yilmaz, Y; et al	2008	Evaluation of success in the reattachment of coronal fractures	38	2,38
Öz, IA;	2006	Multidisciplinary approach to the rehabilitation of a crown-root fracture with original fragment for immediate esthetics:: a case report with 4-year follow-up	33	1,83
Pagliarini, A; et al	2000	Crown fractures: Effectiveness of current enamel-dentin adhesives in reattachment of fractured fragments	32	1,33
Maia, EAV; et al	2003	Tooth fragment reattachment:: Fundamentals of the technique and two case reports	31	1,48
Pusman, E; et al	2010	Fracture resistance of tooth fragment reattachment: effects of different preparation techniques and adhesive materials	30	2,14
De Santis, R; et al	2001	Mechanical strength of tooth fragment reattachment	26	1,13
Sengun, A; et al	2003	Shear bond strengths of tooth fragments reattached or restored	25	1,19
Bruschi-Alonso, RC; et al	2010	Reattachment of anterior fractured teeth: effect of materials and techniques on impact strength	25	1,79
Capp, CI; et al	2009	Reattachment of rehydrated dental fragment using two techniques	25	1,67
Loguercio, AD; et al	2004	Effect of fractured or sectioned fragments on the fracture strength of different reattachment techniques	24	1,20
Chazine, M; et al	2011	Evaluation of the fracture resistance of reattached incisal fragments using different materials and techniques	23	1,77
Trushkowsky , RD	1998	Esthetic, biologic and restorative considerations in coronal segment reattachment for a fractured tooth: A clinical report	23	0,88

Garcia, FCP; et al	2018	Tooth fragment reattachment techniquesA systematic review	22	3,67
Turgut, MD; et al	2004	Multiple complicated crown-root fracture of a permanent incisor	21	1,05
Yilmaz, Y; et al	2010	Evaluation of tooth-fragment reattachment: a clinical and laboratory study	21	1,50
Stellini, E; et al	2008	Fracture strength of tooth fragment reattachments with postpone bevel and overcontour reconstruction	21	1,31
Eichelsbacher, F;	2009	Periodontal status of teeth with crown-root fractures: results two years after adhesive fragment reattachment	20	1,33
Nogueira, GD; et al	2002	Reattachment of an autogenous tooth fragment in a fracture with biologic width violation: A case report	20	0,91
Spinas, E; et al.	2004	Longevity of composite restorations of traumatically injured teeth	19	0,95
Filippi, C; et al	2008	Practicability of a tooth rescue concept - the use of a tooth rescue box	18	1,13
de Sousa, APBR; et al	2018	In vitro tooth reattachment techniques: A systematic review	18	3,00
Toshihiro, K; et al	2005	Rehydration of crown fragment 1 year after reattachment: a case report	17	0,89
Saito, CTMH; et al	2009	Management of a complicated crown-root fracture using adhesive fragment reattachment and orthodontic extrusion	17	1,13
Liew, VP; et al	1988	Re-attachment of original tooth fragment to a fractured crown - case-report	16	0,44
Güngör, HC; et al	2007	A retrospective evaluation of crown-fractured permanent teeth treated in a pediatric dentistry clinic	14	0,82
Andreasen, JO; et al	2001	Adhesive dentistry applied to the treatment of traumatic dental injuries	14	0,61
Poubel, DLN; et al	2017	Effect of dehydration and rehydration intervals on fracture resistance of reattached tooth fragments using a multimode adhesive	14	2,00
Eden, E; et al	2007	Reattachment of subgingivally fractured central incisor with an open apex	13	0,76
Brambilla, GPM; et al	2007	Fractured incisors:: a judicious restorative approach -: part 1	13	0,76
El-Kemary, BM; et al	2021	Role of nano-zirconia in the mechanical properties improvement of resin cement used for tooth fragment reattachment	12	4,00
Sharma, D; et al	2011	Multidisciplinary approach to the rehabilitation of a tooth with two trauma episodes: systematic review and report of a case	12	0,92

Shirani, F; et al	2012	Hydration and Dehydration Periods of Crown Fragments Prior to Reattachment	12	1,00
Vâlceanu, AS; et al	2008	Multidisciplinary approach of complicated crown fractures of both superior central incisors:: a case report	12	0,75
Bissinger, R; et al	2021	Treatment outcomes after uncomplicated and complicated crown fractures in permanent teeth	12	4,00
Cengiz, SB; et al	2005	Adhesive fragment reattachment after orthodontic extrusion: a case report	11	0,58
Pasini, S; et al	2006	Surgical removal and immediate reattachment of coronal fragment embedded in lip	10	0,56
Robertson, A; et al	1998	Pulp reactions to restoration of experimentally induced crown fractures	10	0,38
Loquercio, AD; et al	2008	Performance of techniques used for reattachment of endodontically treated crown fractured teeth	10	0,63
de Alcantara, CEP; et al	2010	Combined technique with dentin post reinforcement and original fragment reattachment for the esthetic recovery of a fractured anterior tooth: a case report	10	0,71
Sharmin, DD; et al	2013	Evaluation of the effect of storage medium on fragment reattachment	9	0,82
Dogan, MC; et al	2013	Adhesive tooth fragment reattachment with intentional replantation: 36-month follow-up	9	0,82
Taguchi, CMC; et al	2015	Tooth Fragment Reattachment: A Case Report	9	1,00
Khandelwal, P; et al	2021	Fragment reattachment after complicated crown-root fractures of anterior teeth: A systematic review	8	2,67
Madhubala, A; et al	2019	Comparative evaluation of fracture resistance using two rehydration protocols for fragment reattachment in uncomplicated crown fractures	8	1,60
Iseri, U; et al	2011	Clinical management of a fractured anterior tooth with reattachment technique: a case report with an 8-year follow up	8	0,62
Marincák, D; et al	2021	Conservative Treatment of Complicated Crown Fracture and Crown-Root Fracture of Young Permanent Incisor-A Case Report with 24-Month Follow-Up	8	2,67
Naudi, AB; et al	2008	Tooth fragment reattachment in multiple complicated permanent incisor crown-root fractures - a report of two cases	8	0,50
Alvares, I; et al	2007	Silicone index: An alternative approach for tooth fragment reattachment	8	0,47
Naudi, AB; et al	2007	Tooth fragment reattachment after retrieval from the lower lip - a case report	7	0,41

Shirani, F; et al	2013	Preservation of coronal tooth fragments prior to reattachment	6	0,55
Wang, J; et al	2010	Multidisciplinary Treatment of a Complicated Crown-root Fracture	6	0,43
Altun, C; et al	2008	Combined technique with glass-fibre-reinforced composite post and original fragment in restoration of traumatized anterior teeth - a case report	6	0,38
Brambilla, GPM; et al	2007	Fractured incisors: a judicious restorative approach -: part 2	6	0,35
Tonini, R; et al	2017	An Innovative Method for Fragment Reattachment after Complicated Crown Fracture	6	0,86
Fennis, WMM; et al	2009	Fracture resistance of reattached incisor fragments with mini fibre-reinforced composite anchors	6	0,40
Scholtes, E; et al	2018	Combined orthodontic, surgical, and restorative approach to treat a complicated crown-root fracture in a maxillary central incisor	6	1,00
Oliveira, GMS; et al	2010	Crown fragment reattachment: report of an extensive case with intra-canal anchorage	6	0,43
Lise, DP; et al	2012	Tooth Fragment Reattachment: The Natural Restoration	6	0,50
Palma-Dibb, RG; et al	2004	Autogenous tooth fragment reattachment - Association of periodontal surgery and endodontic and restorative procedures: A case report	6	0,30
de Castro, JCM; et al	2011	Multidisciplinary approach for the treatment of a complicated crown-root fracture in a young patient: A case report	6	0,46
Durkan, RK; et al	2008	The restoration of a maxillary central incisor fracture with the original crown fragment using a glass fiber-reinforced post: a clinical report	5	0,31
Stojanac, I; et al	2013	Crown reattachment with complicated chisel-type fracture using fiber-reinforced post	5	0,45
Khatod, S; et al	2020	Reattachment of complex tooth fracture: A boon in dentistry	4	1,00
Grossmann, Y; et al	2006	A conservative approach for the management of a crown-root fracture	4	0,22
Soliman, S; et al	2020	Long-term outcome of adhesive fragment reattachment in crown-root fractured teeth	4	1,00
Martos, J; et al	2017	Management of an uncomplicated crown fracture by reattaching the fractured fragmentCase report	4	0,57
Ferraz, JAB; et al	2011	Treatment of oblique crown fractures in maxillary premolars using adhesive tooth	4	0,31

		fragment reattachment: 19 years of follow up		
Karre, D; et al	2018	Conservative Vertical Groove Technique for Tooth Rehabilitation: 3-Year Follow-Up	3	0,50
Brambilla, GPM; et al	2007	Fractured incisors:: a judicious restorative approach -: part 3	3	0,18
Stellini, E; et al	2012	Experimental evaluation of two methodologies for the restoration of crown fracture in permanent anterior teeth	3	0,25
Stellini, E; et al	2010	Tooth fragment reattachment through the use of a nanofilled composite resin	3	0,21
Sarapultseva, M; et al	2019	Long-term results of crown fragment reattachment techniques for fractured anterior teeth: A retrospective case-control study	3	0,60
Jardim, PD; et al	2010	Rehabilitation to crown-root fracture by fragment reattachment with resin-modified glass ionomer cement and composite resin restoration	3	0,21
Reston, EG; et al	2014	10-year Follow-up of Natural Crown Bonding After Tooth Fracture	3	0,30
Fatima, S; et al	2021	Minimal intervention treatment of crown-root fracture in a mature permanent tooth by MTA pulpotomy and Fragment Reattachment: A Case Report	2	0,67
Tewari, N; et al	2022	Comparison of three protocols for the management of re-fracture of teeth with uncomplicated crown fractures	2	1,00
Chaurasia, B; et al	2023	Evaluation of two rehydration protocols for fractured tooth fragments for characteristics of penetration of resin tags using confocal laser scanning microscopy	2	2,00
AlQhtani, FA; et al	2020	Reattachment of a Dehydrated Tooth Fragment Using Retentive Screws	2	0,50
Oh, S; et al	2019	Long-term Follow-up of Complicated Crown Fracture With Fragment Reattachment: Two Case Reports	2	0,40
Panchal, D; et al	2019	A case report of uncomplicated crown fracture: tooth fragment reattachment	2	0,40
Caldari, M; et al	2006	Single-session treatment of a major complication of dens invaginatus: A case report	2	0,11
Pereira, RV; et al	2023	Fragment reattachment or direct restoration? An in vitro study	2	2,00
Alves, MD; et al	2021	Multidisciplinary Approach to Complicated Crown-root Fracture Treatment: A Case Report	2	0,67
Garg, A; et al	2023	Effect of Adhesive Materials in Re-Attachment of Crown and Crown-Root	1	1,00

		Fractures of Permanent Maxillary Anterior Tooth: A Computational Study		
Chandran, R; et al	2020	Comparative evaluation of fracture resistance of incisor fragments using simple, bevel, internal groove preparation designs and reattached with nanocomposites: An in vitro study	1	0,25
Kulkarni, VK; et al	2013	Biological Restoration in a Young Patient with a Complicated Crown Root Fracture with an Autogenous Tooth Fragment	1	0,09
Lokade, A; et al	2022	Comparative evaluation of fragment reattachment protocols for the management of teeth with crown-root fractures	1	0,50
Bagis, B; et al	2011	Complicated Subgingivally Fractured Central and Lateral Incisors: Case Report	1	0,08
Tsurumachi, T; et al	2008	Use of a crown fragment to establish favorable temporary crown	1	0,06
Szmidt, M; et al	2017	Direct Resin Composite Restoration of Maxillary Central Incisors with Fractured Tooth Fragment Reattachment: Case Report	1	0,14
Gunwal, MK; et al	2021	Knowledge, awareness and perception amongst dental practitioners towards natural tooth fragment reattachment procedures in clinical practice-A cross-sectional survey	1	0,33
Mathu-Muju, K ; et al	2009	Multidisciplinary trauma management: a case report	1	0,07
Maia, GB; et al	2020	Reattachment of fractured teeth using a multimode adhesive: Effect of different rewetting solutions and immersion time	1	0,25
Martins, AV; et al	2018	Conservative Treatment of a Complicated Crown-root Fracture Using Adhesive Fragment Reattachment and Composite Resin Restoration: Two Year Follow-up	1	0,17
Martos, J; et al	2018	Natural Crown Bonding of Anterior Fractured Teeth at Different Levels of Complexity: A 14-Month Follow-up	1	0,17
Kiran, SMS; et al	2022	Interdisciplinary Management of Teeth With a Complicated Crown Fracture: A Case Report With Follow-Up Checklist	0	0,00
Mankar, N; et al	2022	Adhesive Reattachment in Fractured Maxillary Premolars: A Case Report	0	0,00
Naidu, SS; et al	2022	Comparative evaluation of fracture strength recovery of anterior tooth fragment reattachment using different methods and bonding systems: An in vitro study	0	0,00
Sreen, D; et al	2022	Comparative evaluation of the force required to fracture coronal segments reattached using different methods	0	0,00
Jhunjhunwal a, G; et al	2023	Comparative evaluation of three materials used for fragment reattachment in	0	0,00

		uncomplicated crown fracture-An in vitro study using bovine teeth		
Lakshmaiah, D; et al	2023	Management of Complex Crown Fractures: A Case Series	0	0,00
Aharonian, S; et al	2023	Comparing fracture resistance on bovine incisors restored by tooth fragment reattachment versus direct composite restoration techniques	0	0,00
Arias, Z; et al	2023	Reattachment of Fractured Tooth Fragment by Multidisciplinary Treatment Approach	0	0,00
Alkhuwaiter, SS; et al	2023	A Case Report of Different Management Protocols for Uncomplicated Crown Fracture in Young Permanent Teeth; Fragment Reattachment vs. Resin Restoration	0	0,00
Tuzuner, T; et al	2016	Storing Tooth Segments for Optimal Esthetics	0	0,00
Çaliskan, MK; et al	2011	Reattachment of endodontically treated lateral incisor with supragingivally complicated crown fracture using fiber-reinforced post	0	0,00
Yikilgan, I; et al	2017	Efficacy of Palatal Applications on Fracture Resistance of Reattached Maxillary Central Incisors: An In Vitro Study	0	0,00
Milena, GD; et al	2020	Treatment of complicated crown root fracture with reattachment of the tooth fragment. A case report	0	0,00

Tables

Table 1. Top 10 journals with the highest number of publications.

Source Title	Number of papers	Number of citations	Impact factor
Dental Traumatology	54	777	2.5
Operative Dentistry	12	281	2.2
Quintessence international	8	139	1.9
Journal Of Esthetic and Restorative Dentistry	4	71	3.2
Journal Of Dentistry	3	26	4.4
International Dental Journal	3	22	3.3
Cureus Journal of Medical Science	3	2	1.2
Contemporary Clinical Dentistry	2	160	1.2
Australian Dental Journal	2	22	2.1
European Journal of Paediatric Dentistry	2	6	3.6

Table 2. Top institutions associated with fragment reattachment publications.

Institution	Country	Number of papers	Number of citations
University of Brasilia	Brazil	5	57
University of São Paulo	Brazil	4	139
University of Copenhagen	Denmark	3	125
Hacettepe University	Turkey	3	65
University of North Carolina	USA	3	61
Federal University of Santa Catarina	Brazil	3	46
University of Padua	Italy	3	27
Private Practice	Italy	3	22
All India Institute of Medical Sciences (AIIMS)	India	3	12
University of west Santa Catarina	Brazil	2	103

Table 3. Top 10 authors with the most papers.

Authors	Number of papers	Number of citations	H-Index
Tewari N	6	14	10
Garcia FCP	5	57	14
Mathur VP	5	13	13
Poubel DLN	5	57	4
Loguercio AD	5	242	57
Reis A	5	242	58
Munksgaard EC	5	185	32
Bansal K	4	12	11
Altay N	4	76	11
Rahul M	3	5	6

Table 4. Fragment reattachment over time

Período	1988-1999 (n=8)	2000-2011 (n=58)	2012-2023 (n=54)	All Years (n=120)
Author	Andreasen FM (n=3)	Loguercio AD (n=5) Reis A (n=5)	Tewari N (n=6)	Tewari N (n=6)
Institution	University of Copenhagen (n=3)	University of São Paulo (n=4)	University of Brasilia (n=5)	University of Brasilia (n=5)
Source Title	Dental traumatology (n=4)	Dental traumatology (n=31)	Dental traumatology (n=19)	Dental Traumatology (n=54)

Country	Denmark (n=4)	Brazil (n=16)	India (n=19)	Brazil (n=28)
Continent	Europe (n=6)	Asia (n=20)	Asia (n=30)	Asia (n=50)
Article Type	Laboratorial (n=5)	Case Report (n=31)	Case Report (n=26)	Case Report (n=60)
Objetivo do estudo	Acompanhamen o do caso (n=3)	Acompanhamen o do caso (n=35)	Acompanhamen to do caso (n=29)	Acompanhamen to do caso (n=67)
Times Cited	286	1054	378	1718

Figure 1. Distribution of the number of publications and citations over the years.

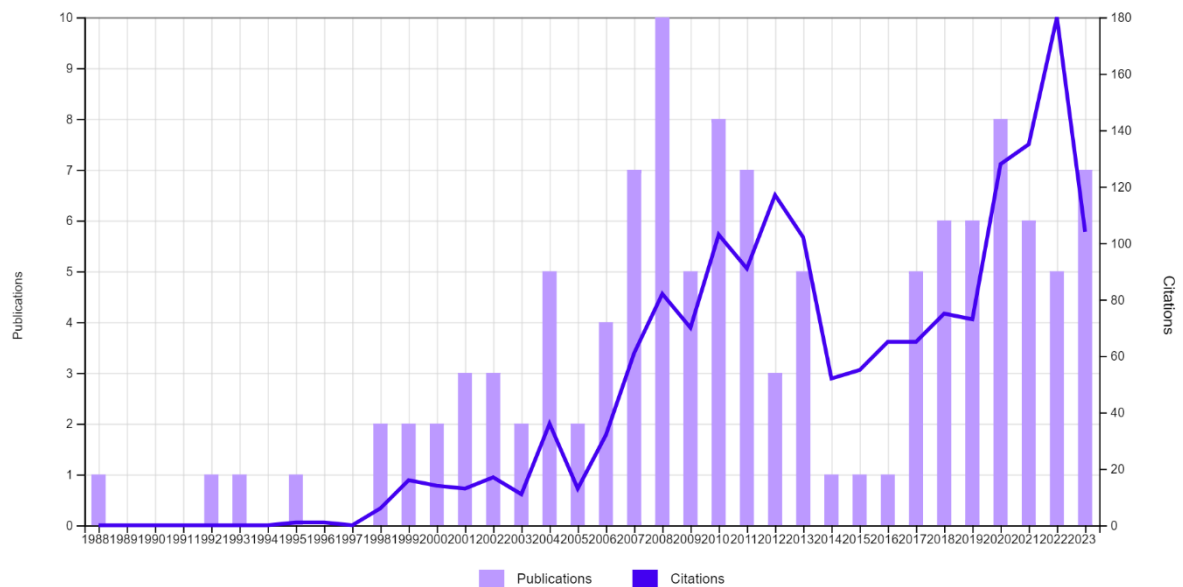


Figure 2. Characteristics of studies regarding the type of fracture.

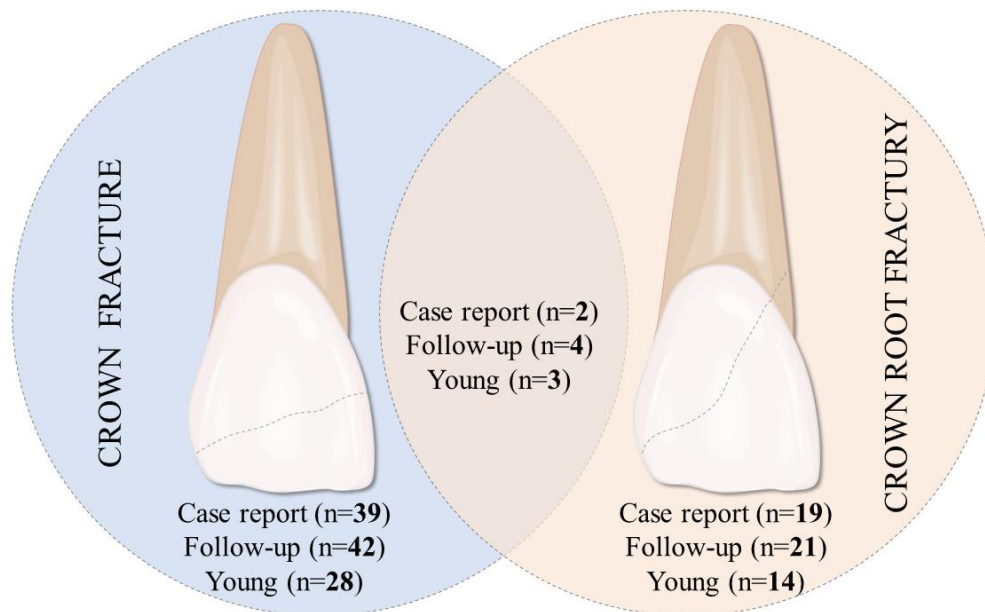


Figure 3. Global distribution of dental fragment bonding.

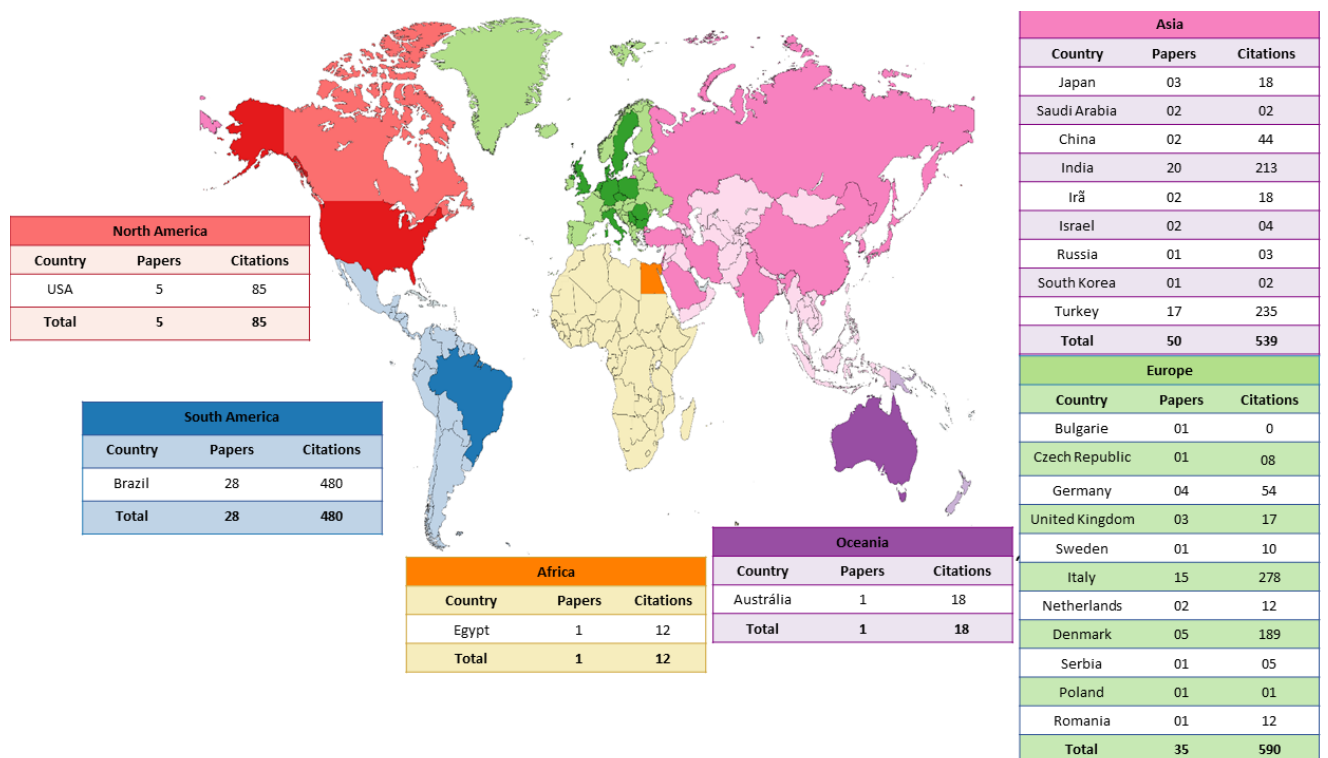


Figure 4. Description and collaboration among the main authors.

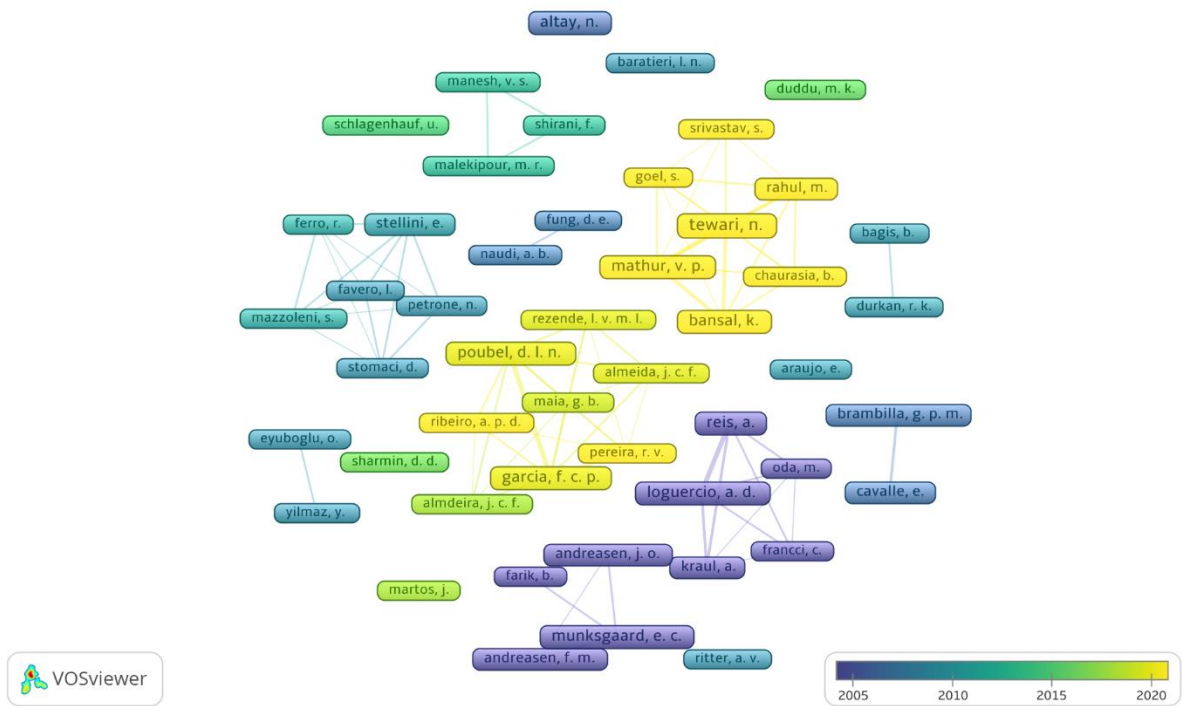
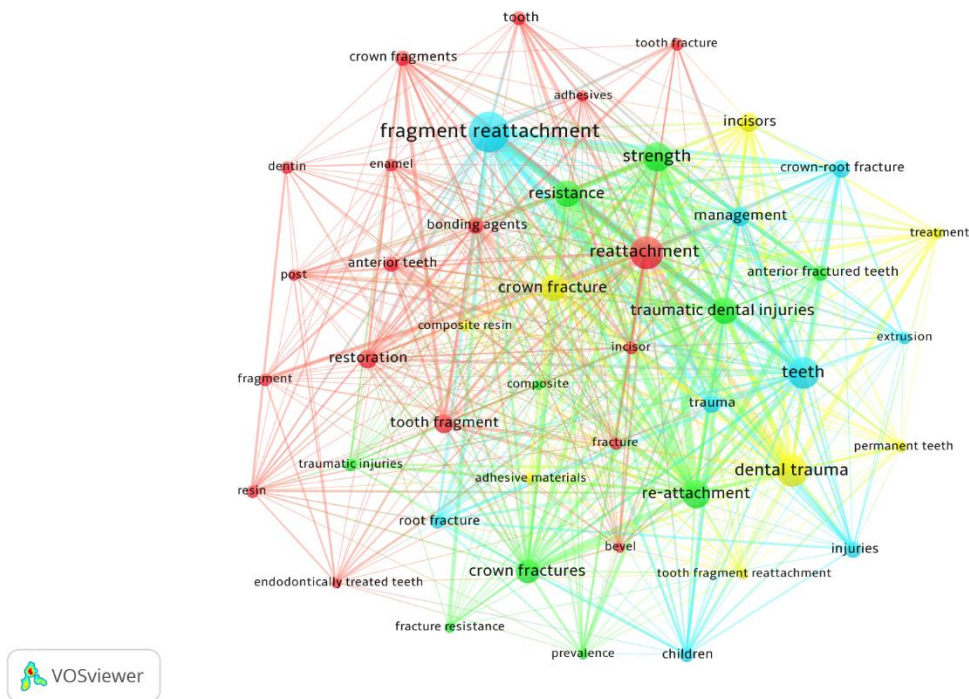


Figure 5. Description and collaboration among the main keywords.



4. CONSIDERAÇÕES FINAIS

Esta revisão bibliométrica proporcionou uma visão abrangente das atuais tendências de pesquisa relacionadas à colagem de fragmentos em dentes traumatizados, evidenciando um crescente interesse investigativo na Ásia. No entanto, o Brasil foi o país com o maior volume de artigos citados, seguido pela Índia. Predominantemente, os estudos consistiram em relatos de casos para avaliar a eficácia do tratamento e descrever protocolos clínicos. Ao longo das décadas, a revista *Dental Traumatology* destacou-se historicamente como a publicação mais frequente. Este estudo revela o progresso científico na abordagem da colagem de fragmentos em dentes traumatizados e ressalta a necessidade de realizar mais revisões sistemáticas e estudos clínicos. Devido à escassez de publicações, incentiva-se a pesquisa nessa área em países da África, Oceania e América do Norte.

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ANEXOS

ANEXO 1 – ATA DE APRESENTAÇÃO



UNIVERSIDADE FEDERAL DE SANTA CATARINA
CENTRO DE CIÊNCIAS DA SAÚDE
CURSO DE ODONTOLOGIA
DISCIPLINA DE TRABALHO DE CONCLUSÃO DE CURSO DE ODONTOLOGIA

ATA DE APRESENTAÇÃO DO TRABALHO DE CONCLUSÃO DE CURSO

Aos 21 dias do mês de MAIO de 2024, às 15 30 horas,
em sessão pública no (a) APUFSC desta Universidade, na presença da
Banca Examinadora presidida pelo Professor
MARIANE CARDOSO

e pelos examinadores:

1- LUCAS MENEZES DOS ANJOS

2- KARINA CARDOSO

o aluno JULIA MULINARI

apresentou o Trabalho de Conclusão de Curso de Graduação intitulado:

TENDÊNCIAS E PERSPECTIVAS MUNDIAIS SOBRE COLAGEM DE FRAGMENTO
DENTAL DE 1978 A 2023 - UMA REVISÃO BIBLIOMÉTRICA

como requisito curricular indispensável à aprovação na Disciplina de Defesa do TCC e a integralização do Curso de Graduação em Odontologia. A Banca Examinadora, após reunião em sessão reservada, deliberou e decidiu pela aprovação do referido Trabalho de Conclusão do Curso, divulgando o resultado formalmente ao aluno e aos demais presentes, e eu, na qualidade de presidente da Banca, lavrei a presente ata que será assinada por mim, pelos demais componentes da Banca Examinadora e pelo aluno orientando.

Mariane Cardoso

Presidente da Banca Examinadora

Karina Cardoso

Examinador 1

Lucas Menezes dos Anjos

Examinador 2

Julia Mullinari

Aluno

ANEXO 2- NORMAS DA REVISTA

PREPARING THE SUBMISSION

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Parts of the Manuscript

The manuscript should be submitted in separate files: title page; main text file; figures.

Title Page

The title page should contain:

1. A short informative title containing the major key words. The title should not contain abbreviations (see [Wiley's best practice SEO tips](#)) and should not be a question about the aim. The title should not be a statement of the results or conclusions;
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3. The full names of the authors;
4. The author's institutional affiliations where the work was conducted, with a footnote for the author's present address if different from where the work was conducted;
5. Acknowledgments.

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Acknowledgments

Contributions from anyone who does not meet the criteria for authorship should be listed, with permission from the contributor, in an Acknowledgments section.

Financial and material support should also be mentioned. Thanks to anonymous reviewers are not appropriate.

Conflict of Interest Statement

Authors will be asked to provide a conflict of interest statement during the submission process. For details on what to include in this section, see the section 'Conflict of Interest' in the [Editorial Policies and Ethical Considerations section](#) below. Submitting authors should ensure they liaise with all co-authors to confirm agreement with the final statement.

Main Text File

As papers are double-blind peer reviewed, the main text file should not include any information that might identify the authors.

The main text file should be presented in the following order:

1. Title, abstract, and key words;
2. Main text;
3. References;
4. Tables (each table complete with title and footnotes);
5. Figure legends.

Do not use any sub-headings within the above sections.

The text in the main document should be double-spaced.

Figures and supporting information should be supplied as separate files.

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The abstract is limited to 300 words in length and should contain no abbreviations. The abstract should be included in the manuscript document uploaded for review as well as inserted separately where specified in the submission process. The abstract should convey a brief background statement

plus the essential purpose and message of the paper in an abbreviated form. For Original Scientific Articles, the abstract should be structured with the following headings: Background/Aim, Material and Methods, Results, and Conclusions. For other article types (e.g. Case Reports, Reviews Papers, Short Communications) headings are not required and the Abstract should be in the form of a paragraph that briefly summarizes the paper.

Keywords

Please provide 3-6 keywords. Keywords should be carefully chosen to ensure they reflect the content of the manuscript.

Main Text of Original Articles

- As papers are double-blind peer reviewed, the main text file should not include any information that might identify the authors.
- The main text should be divided into the following sections: Introduction, Material and Methods, Results and Discussion.
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 - **Materials and Methods:** This section must contain sufficient detail such that, in combination with the references cited, all clinical trials and experiments reported can be fully reproduced. As a condition of publication, authors are required to make materials and methods used freely available to academic researchers for their own use. Describe your selection of observational or experimental participants clearly. Identify the method, apparatus and procedures in sufficient detail. Give references to established methods,

including statistical methods, describe new or modified methods. Identify precisely all drugs used by their generic names and route of administration.

If a method or tool is introduced in the study, including software, questionnaires, and scales, the author should state the license this is available under and any requirement for permission for use. If an existing method or tool is used in the research, the authors are responsible for checking the license and obtaining the permission. If permission was required, a statement confirming permission should be included in the Methods and Materials section.

- **Results** should clearly and simply present the observations/results without reference to other literature and without any interpretation of the data. Present the results in a logical sequence in the text, tables and illustrations giving the main or most important findings first. Do not duplicate data in graphs and tables.
- **Discussion** usually starts with a brief summary of the major findings. Repetition of parts of the Introduction or of the Results sections should be avoided. Statements and interpretation of the data should be appropriately supported by original references. A comment on the potential clinical relevance of the findings should be included. The Discussion section should end with a brief conclusion, but the conclusion should not be a repeat of the results and it should not extrapolate beyond the findings of the study. Link the conclusions to the aim of the study. Do not use sub-headings in the Discussion section, The Discussion should flow from one paragraph to the next in a cohesive and logical manner.

References

- All references should be numbered consecutively in order of appearance and should be as complete as possible. In text citations should be superscript numbers. Journal titles must be abbreviated; correct

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