

## Uncovering Oral Health Concerns: Exploring Dental Anxiety within Transgender Community: A Systematic Review

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### KEYWORDS

Dental Fear, Dental Anxiety, Oral Health, LGBTQ+ Health

### ABSTRACT

Dental fear and anxiety (DFA) have substantial implications for oral health, often resulting in the avoidance of dental care and negative consequences. Despite facing unique health challenges and discrimination, there is a lack of research on the prevalence of DFA among transgender individuals. This paper seeks to synthesize evidence regarding the prevalence of DFA within this population. We searched multiple databases, including PubMed, Google Scholar, Cochrane Database, Web of Science, and LILACS, for studies published up to May 2024. We included observational studies, cross-sectional studies, surveys, and cohort studies that provided data on DFA prevalence among transgender individuals. Eligible studies were screened, and data extraction was performed according to predefined criteria. The risk of bias was evaluated using the ROBINS-E tool, while the level of evidence and quality were assessed following the Oxford Centre for Evidence-Based Medicine guidelines. Among the 20 studies assessed for eligibility, only 2 met the inclusion criteria and were thus included in the review. These studies reported varying prevalence rates of DFA among transgender individuals, with both exhibiting a moderate risk of bias. However, the quality of evidence was deemed low due to the limited number of studies and their observational nature. The available evidence indicates that transgender individuals experience notable levels of dental fear and anxiety, which contribute to disparities in accessing oral health care and achieving positive outcomes. This review underscores the imperative for further high-quality research to comprehensively understand and address the oral health needs of transgender individuals, ensuring equitable and effective dental care.

### 1. Introduction

The transgender community comprises individuals whose gender identity differs from the sex assigned to them at birth. <sup>(1)</sup> Dental fear and anxiety encompass feelings of nervousness, apprehension, or unease experienced before or during dental procedures. Dental fear entails a strong emotional reaction marked by dread or fearfulness linked to dental treatment, ranging from mild discomfort to extreme phobia, often triggered by past negative encounters, fear of pain, or anxiety over specific procedures. <sup>(2)</sup> Dental anxiety, meanwhile, involves a more generalized sense of unease or apprehension related to dental visits, characterized by heightened nervousness or tension, potentially impacting dental care-seeking behavior and oral health maintenance. <sup>(3)</sup>

Transgender individuals frequently encounter marginalization and discrimination across various life domains, hindering access to healthcare, education, and employment opportunities. Discriminatory attitudes contribute to feelings of isolation and exclusion within this community, exacerbating dental fear and anxiety. <sup>(4)</sup> Concerns about discrimination or mistreatment in healthcare settings, including experiences of misgendering or refusal of care, significantly influence dental anxiety among transgender individuals. <sup>(5)</sup>

Studies indicate that 0.3% of the U.S. population identifies as transgender or gender non-conforming, with a substantial portion facing barriers to healthcare access, including refusal of care, harassment, and violence in medical settings, alongside encountering healthcare providers lacking transgender-specific knowledge. <sup>(6)</sup> Societal discrimination and bullying further compound challenges, with a significant proportion postponing medical treatment due to discrimination concerns, underscoring a pervasive climate of distrust. <sup>(7)</sup>

Transgender individuals may experience dysphoria related to their oral health and appearance,

intensified by discomfort with dental features incongruent with their gender identity, such as facial structure or voice. <sup>(8)</sup> These factors contribute to avoidance behaviors in seeking dental care, exacerbated by dental professionals' lack of awareness or sensitivity to transgender patients' needs. Systemic barriers, including inadequate transgender-inclusive policies and limited access to gender-affirming care, exacerbate dental fear and anxiety, impeding timely access to necessary dental services and perpetuating poor oral health outcomes. <sup>(9)</sup>

Addressing dental fear and anxiety among transgender individuals necessitates a comprehensive approach, involving education and awareness initiatives for dental professionals, advocacy for transgender-inclusive healthcare policies, and enhanced access to gender-affirming dental services. <sup>(10)</sup> Therefore, this systematic review aims to evaluate the prevalence of dental fear and anxiety within the transgender population.

## **2. Methodology**

### **Aim**

This systematic review aims to evaluate the prevalence of dental fear and anxiety within the transgender population.

### **Structured question**

What are the documented rates of dental fear among transgender individuals across various studies conducted globally?

### **PICO analysis:**

P – Transgender population

O - Prevalence of dental fear and anxiety

The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) <sup>(11)</sup> framework was utilized for reporting this review. An online search strategy was conducted to systematically review the literature on the prevalence of dental fear among transgender individuals worldwide. The evaluated data are presented in Figure 1.

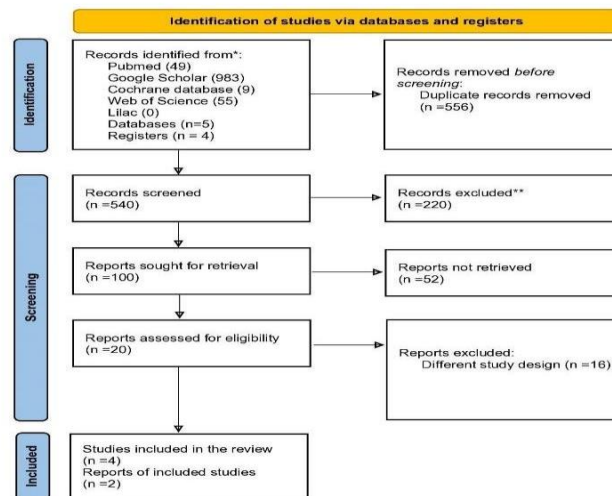
The systematic review titled "Prevalence of Dental Fear Among Transgender Individuals" has been officially registered with the International Prospective Register of Systematic Reviews (PROSPERO) under registration number CRD42024541476. This registration ensures adherence to stringent methodological standards and provides a transparent and comprehensive protocol for investigating the prevalence of dental fear within the transgender community.

An exhaustive literature search was conducted across multiple databases including PubMed, Scopus, Web of Science, Embase, Google Scholar, Cochrane database, and Lilac. The search utilized a combination of keywords such as ((Transgender Persons) OR (Trans individuals) OR (Gender queer individuals) OR (Gender Dysphoria) OR (Transsexualism)) AND ((Dental fear) OR (Dental anxiety) OR (Odontophobia) OR (Dental phobia) OR (Dental stress) OR (Fear dentist)). Additionally, study authors were contacted to identify any additional relevant studies. The search was last conducted in April 2024.

### **Inclusion Criteria:**

1. Studies that followed PICO Criteria.
2. Dental fear among transgender individuals, regardless of gender identity (transgender men, transgender women, non-binary, or gender non-conforming).
3. If applicable, Participants of any age are included, with separate analysis for children/adolescents and adults.
4. Studies from any geographic location to ensure a comprehensive perspective on dental fear among transgender individuals.
5. Observational studies, cross-sectional studies, surveys, and cohort studies offer data on the prevalence of dental fear among transgender individuals.
6. Studies published in English language literature.

PRISMA 2020 flow diagram for new systematic reviews which included searches of databases and registers only



### Exclusion Criteria:

1. Literature reviews, systematic reviews, and study protocols.
2. Studies with differing objectives.
3. Studies without full texts.
4. Studies that do not follow the PICO criteria.

Based on the current inclusion and exclusion criteria, the authors independently assessed the titles of the studies identified from the search. Any conflicts regarding the inclusion of the studies were resolved through discussion. We identified studies through various databases and registers: PubMed (49 records), Google Scholar (983), Cochrane Database (9), Web of Science (55), Lilacs (0), other databases (5), and registers (4). After removing 556 duplicates, 540 records were screened. We sought 100 reports for retrieval and assessed 20 for eligibility. Ultimately, four studies, along with two reports, were included in the review.

The review authors evaluated the studies' quality using the Oxford Centre for Evidence-Based Medicine guidelines (12). They independently assessed the risk of bias for each study using the ROBINS-E tool (13). Any conflicts regarding the risk of bias were resolved through discussion.

### Outcome measure:

The primary outcome of the study is to measure the proportion of transgender individuals who report experiencing dental fear and anxiety.

### 3. Results and discussion

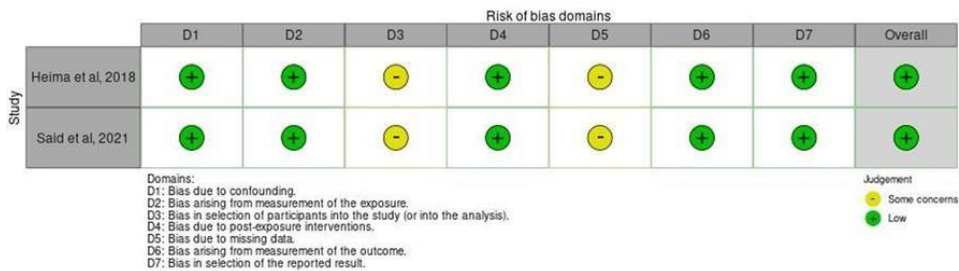
Data extraction was carried out to gather information regarding the general characteristics of the studies and the outcome variables.

For each study, the following data were recorded:

1. Title of the study,
2. First author,
3. Publication year,
4. Study design,
5. Age group,
6. Target population,
7. Sample size, and
8. Criteria used to record and conclusion.

S.no	Author and Journal	Study setting	Study design	Age group	Number of participants	Criteria used	Conclusion
1.	Heima et al, 2018 Special Care Dentist (14)	Midwestern United States	Cross-Sectional Survey	18 years and older	70	Dental Fear Survey (DFS)	The level of dental fear was significantly positively associated with experiences of discrimination and maltreatment.
2.	Said et al, 2021 Journal of International Dental and Medical Research (15)	Terengganu state, Malaysia	Cross-Sectional Study	Not mentioned	100 (transgender women)	Modified Dental Anxiety Scale (MDAS)	The majority of transgender women have dental anxiety

### Risk of Bias Assessment:



### Quality assessment:

The Oxford Centre for Evidence-Based Medicine (OCEBM) Levels of Evidence is a framework that helps categorize the strength of evidence based on the type of study design and its methodological quality. The OCEBM Levels of Evidence range from Level 1 (highest) to Level 5 (lowest) and are used to guide clinical decision-making and research evaluation. In summary, both studies are classified as Level 2 evidence based on their cross-sectional design, quality of data collection and analysis, adequate sample size, and relevance to the research question.

### Risk of Bias assessment:

The risk of bias was assessed using the Robvin-E tool, and 2 cross-sectional studies were evaluated for the risk of bias. Both Heima et al, 2018 and Said et al, 2021 showed a low risk of bias.

### Heima et al, 2018

This study investigates dental fear within the transgender community in the USA and found that the overall Dental Fear Scale (DFS) score among transgender individuals (48.88) is higher than the DFS scores in the general US population (which range from 34.7 to 46.3). Transgender men and women showed slightly elevated fear levels compared to their cisgender counterparts, while gender non-conforming individuals displayed significantly higher levels of dental fear. The increased dental fear levels may be explained by minority stress theory, which suggests that minority group members experience increased stress due to conflicts with dominant societal values. This stress often stems from a lifetime of harassment, discrimination, and victimization, which can affect their access to dental care. Additionally, significant correlations were found between dental fear and fear of maltreatment in dental clinics, as well as past experiences of maltreatment. These findings are consistent with previous research across various populations, indicating that early experiences of maltreatment or discrimination can have long-lasting effects on dental fear and behaviors, such as uncooperative behavior and appointment cancellations.

### **Said et al, 2021**

This study uncovered a notable prevalence of dental anxiety among transgender women (TGW). While direct comparisons with analogous studies in Malaysia and elsewhere were hindered by data constraints, a study in the United States revealed heightened dental fear scores among transgender individuals when juxtaposed with cisgender counterparts, albeit utilizing a distinct assessment tool, the Dental Fear Survey. The prevalence of dental anxiety among TGW in this investigation mirrored that among the adult populace in Kelantan, Malaysia, where 88.6% reported dental anxiety spanning from mild to severe levels. These consistent findings underscore a pervasive presence of dental anxiety in Malaysia across diverse demographic groups. Noteworthy is that a quarter of respondents in this study disclosed extreme dental anxiety (dental phobia), surpassing the proportion documented in prior research, which stood at only 3.5%. Similar patterns were observed in studies conducted in Jordan and Turkey, where approximately 23.5% and 22% of adults, respectively, indicated extreme dental anxiety (dental phobia).

### **Discussion**

In recent years, dental fear and anxiety among transgender individuals have garnered increased attention due to emerging research highlighting this underexplored area of healthcare. Various factors contribute to heightened dental fear and anxiety within the transgender community (16). These factors include Minority Stress Theory, access barriers, trauma, maltreatment, health disparities, and identity affirmation. Tackling dental fear and anxiety in transgender individuals requires a multifaceted approach. This includes creating inclusive and affirming healthcare environments, educating and training dental providers on transgender cultural competency, and advocating for policies that ensure equitable access to transgender-affirming dental care(17). By addressing these factors, healthcare professionals can work towards reducing barriers to dental care and improving the oral health outcomes of transgender individuals.

The study revealed that one-fifth of participants had experienced discrimination while seeking dental treatment. However, there was no significant correlation between these experiences and dental anxiety. This contrasts with a study conducted in the United States, which found that transgender individuals who faced discrimination during treatment were more likely to experience dental anxiety. The U.S. study included both transgender men and women but had a smaller sample size than other studies. It is crucial to acknowledge that negative past dental experiences often contribute to dental anxiety. Such experiences can evoke feelings of fear, mistrust, and vulnerability, which may persist and increase anxiety during future dental visits. The broader impact of negative dental experiences on the mental well-being of transgender individuals underscores the importance of fostering inclusive and supportive dental environments (18). By recognizing and addressing these challenges, dental professionals can aim to create spaces where all individuals, regardless of gender identity, feel respected, valued, and able to access quality dental care without fear or discrimination (19).

A hypothesis suggested that individuals assigned male at birth and treated as female exhibited higher levels of dental fear compared to those assigned male at birth but not treated as female. However, this hypothesis did not show a significant difference in dental fear levels between these groups. It was noted that individuals assigned male at birth who were not treated as female might experience greater psychological stress compared to those treated as female. Additionally, gender non-conforming individuals often exhibit elevated levels of dental fear. These complex circumstances could contribute to increased stress levels, potentially worsening dental fear(20). Further investigation into the effects of hormonal intervention and psychosocial transition on dental fear levels is necessary for a more comprehensive understanding of these dynamics.

### **Limitations:**

The transgender women (TGW) sample size in Malaysia was limited, posing challenges to the generalizability of findings. Exploring the influence of hormonal therapy and psychosocial transition on dental anxiety levels among transgender individuals, while accounting for their hormonal status, is imperative.



#### 4. Conclusion and future scope

Dental fear and anxiety are prevalent among transgender individuals, highlighting the need for targeted interventions and personalized approaches within dental care settings. Educating dental professionals and customizing strategies are essential steps in aiding this community to address and surmount these obstacles, thereby enhancing their utilization of dental services. Creating a welcoming and accommodating atmosphere within dental practices can mitigate the fears and anxieties often encountered by transgender patients, promoting both oral health and affirming the specific requirements and perspectives of this demographic. This proactive stance not only supports dental well-being but also cultivates trust and streamlines access to critical dental treatments for transgender individuals.

#### Authors Contributions:

All authors were involved in the conceptualization and execution of the study, analysis of the results, and interpretation, as well as the writing and editing of this article.

#### Reference

- [1] Reisner SL, Choi SK, Herman JL, Bockting W, Krueger EA, Meyer IH. Sexual orientation in transgender adults in the United States. *BMC Public Health*. 2023 Sep 15;23(1):1799.
- [2] Appukuttan DP. Strategies to manage patients with dental anxiety and dental phobia: literature review. *Clinical, cosmetic and investigational dentistry*. 2016 Mar 10;35-50.
- [3] DeDonno MA. Dental anxiety, dental visits and oral hygiene practices. *Oral health & preventive dentistry*. 2012 Apr 1;10(2).
- [4] Hughto JM, Reisner SL, Pachankis JE. Transgender stigma and health: A critical review of stigma determinants, mechanisms, and interventions. *Social science & medicine*. 2015 Dec 1;147:222-31.
- [5] Tamrat J. "Trans-forming" dental practice norms: Exploring transgender identity and oral health implications. *Canadian Journal of Dental Hygiene*. 2022 Oct;56(3):131.
- [6] Safer JD, Coleman E, Feldman J, Garofalo R, Hembree W, Radix A, Sevelius J. Barriers to healthcare for transgender individuals. *Current Opinion in Endocrinology, Diabetes and Obesity*. 2016 Apr 1;23(2):168-71.
- [7] Cooper LA, Beach MC, Williams DR. Confronting bias and discrimination in health care—when silence is not golden. *JAMA Internal Medicine*. 2019 Dec 1;179(12):1686-7.
- [8] Nong P, Raj M, Creary M, Kardia SL, Platt JE. Patient-reported experiences of discrimination in the US health care system. *JAMA network open*. 2020 Dec 1;3(12):e2029650-.
- [9] Hughto JM, Reisner SL, Pachankis JE. Transgender stigma and health: A critical review of stigma determinants, mechanisms, and interventions. *Social science & medicine*. 2015 Dec 1;147:222-31.
- [10] Discepolo K, Aquino N. Considerations for transgender patients requiring dental rehabilitation. *Journal of Dentistry for Children*. 2022 Jan 15;89(1):46-51.
- [11] Parums DV. Review articles, systematic reviews, meta-analysis, and the updated preferred reporting items for systematic reviews and meta-analyses (PRISMA) 2020 guidelines. *Medical science monitor: international medical journal of experimental and clinical research*. 2021;27:e934475-1.
- [12] Winkelmann RR, Kim GK, Del Rosso JQ. Treatment of cutaneous lupus erythematosus: review and assessment of treatment benefits based on oxford centre for Evidence-based Medicine criteria. *The Journal of clinical and aesthetic dermatology*. 2013 Jan;6(1):27.
- [13] Bero L, Chartres N, Diong J, Fabbri A, Ghersi D, Lam J, Lau A, McDonald S, Mintzes B, Sutton P, Turton JL. The risk of bias in observational studies of exposures (ROBINS-E) tool: concerns arising from application to observational studies of exposures. *Systematic reviews*. 2018 Dec;7:1-1.
- [14] Heima M, Heaton LJ, Ng HH, Roccoforte EC. Dental fear among transgender individuals-a cross-sectional survey. *Special Care in Dentistry*. 2017 Sep;37(5):212-22.
- [15] Said AH, Mohd FN, Zarim KA, Ibrahim NR, Draman S. Prevalence of Dental Anxiety Among Transgender Women in Malaysia and its Associated Factor. *Journal of International Dental and Medical Research*. 2021 May 1;14(2):691-5.
- [16] Randall CL, Shaffer JR, McNeil DW, Crout RJ, Weyant RJ, Marazita ML. Toward a genetic understanding of dental fear: evidence of heritability. *Community dentistry and oral epidemiology*. 2017 Feb;45(1):66-73.
- [17] Griffin JA, Casanova TN, Eldridge-Smith ED, Stepleman LM. Gender minority stress and health perceptions among transgender individuals in a small metropolitan southeastern region of the United States. *Transgender Health*. 2019 Oct 1;4(1):247-53.
- [18] Locker D, Shapiro D, Liddell A. Negative dental experiences and their relationship to dental anxiety. *Community dental health*. 1996 Jun 1;13(2):86-92.
- [19] Bhambra P. Sustainable Development Goals in dentistry: addressing challenges for a healthier future. *British Dental Journal*. 2023 Oct 27;235(8):568-9.
- [20] Alenezi AA, Aldokhayel HS. The impact of dental fear on the dental attendance behaviors: A retrospective study. *Journal of Family Medicine and Primary Care*. 2022 Oct 1;11(10):6444-50.