An Overview Of Dental Phobia In General Practice

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ABSTRACT
Dental phobia, significantly impacting patient well-being and healthcare access, is a prevalent issue in general practice. This study delves into the causes, effects, and management of dental phobia, highlighting the crucial role of general practitioners (GPs) in addressing this challenge. Key sources of dental phobia include past traumatic experiences, fear of pain, and negative perceptions of dental settings. Effective management involves a multi-faceted approach that encompasses empathetic communication, pre-treatment planning, and the use of cognitive-behavioral therapy (CBT) and sedation techniques to alleviate anxiety. The study also examines the potential of technological advancements, such as virtual reality and computer-controlled anesthetic delivery, in mitigating fear and improving patient experiences. Early identification and intervention by GPs are essential to prevent severe oral health issues and ensure patients receive timely and appropriate care. The overview advocates for a comprehensive, understanding, and patient-centered approach in general practice to overcome the barriers posed by dental phobia, ultimately enhancing patient health outcomes and quality of life.

Keywords: Dental phobia, general practice, management strategies, technological advancements

INTRODUCTION

Dental phobia, also known as odontophobia, is a significant and often debilitating fear of dental care that can lead to serious health consequences due to the avoidance of dental treatment. This condition affects a wide range of individuals, impacting their overall well-being and quality of life. Dental phobia in the context of general practice is particularly relevant as primary care providers are often the first point of contact for patients with this condition. The understanding and management of dental phobia within general practice are crucial for ensuring patients receive the necessary dental care while addressing their fears and anxieties (1).

The prevalence of dental phobia varies, but it is widely recognized as a common issue that general practitioners (GPs) and dental professionals meet. The fear can originate from various sources, including previous traumatic dental experiences, fear of pain, the sounds and smells associated with dental procedures, and even the perceived loss of control while in the dental chair. These fears can be so overwhelming that individuals may avoid dental care altogether, which can lead to the deterioration of oral health, complicating conditions that are much more difficult and invasive to treat (2, 3).

GPs play a pivotal role in identifying and managing patients with dental phobia. GPs can employ several strategies to help patients overcome their fears, including providing a sympathetic and understanding approach, offering detailed explanations about procedures, and collaborating with dental colleagues to ensure a cohesive and supportive treatment plan. Additionally, GPs can refer patients to psychologists or psychiatrists when the phobia is severe, indicating a more profound anxiety disorder that requires specialized intervention (4).

Various therapeutic approaches have been developed to address dental phobia, including cognitive-behavioral therapy (CBT), which aims to change the patient's negative thought patterns about dental care, and sedation techniques such as nitrous oxide or oral sedatives to reduce anxiety during dental procedures (4). The use of advanced technology, like virtual reality or relaxation techniques, has also shown promise in helping patients overcome their dental fears (5).

Dental phobia, a significant barrier to oral health, can precipitate not only dental issues but also severe secondary health conditions like heart disease, diabetes, and respiratory infections due to neglect. General practitioners are pivotal in mitigating this fear by creating a supportive and understanding atmosphere. Their role is critical in encouraging patients to overcome dental anxiety, ensuring access to necessary dental care, and preventing the cascade of health complications associated with poor oral hygiene. This approach can significantly improve health outcomes for individuals with dental phobia (1).

METHODOLOGY

This study is based on a comprehensive literature search conducted on March 6, 2023, in the Medline and Cochrane databases, utilizing the medical topic headings (MeSH) and a combination of all available related terms, according to the database. To prevent missing any possible research, a manual search for publications was conducted through Google Scholar, using the reference lists of the previously listed papers as a starting point. We looked for valuable information in papers that discussed dental phobia in general practice. There were no restrictions on date, language, participant age, or publication type.

DISCUSSION

A considerable portion of dental anxiety and phobia originates from previous negative experiences with dental professionals or treatments, with studies showing that individuals with painful dental experiences and a perceived lack of control are significantly more likely to develop dental fear and reluctance towards future dental care (6). Even without conscious memory of such incidents, possibly from early childhood, the fear persists, often informed by stories from parents or guardians. Additionally, those who have suffered trauma, especially sexual abuse, find themselves at a heightened risk of dental phobia, as the dental setting can trigger memories of vulnerability and control loss, leading to fears such as reclining in the dental chair or experiencing a gag reflex (7-9). Negative experiences, including bullying and emotional mistreatment, further contribute to this phobia, as do adverse experiences in medical environments, translating into a specific fear of dental appointments. The perception of the dentist's attitude plays a crucial role, where the emotional impact of pain inflicted by perceived indifferent or authoritarian dentists exacerbates fear, in contrast to care from empathetic dentists which tends to cause less psychological distress. Additionally, long-term neglect of dental visits due to fear can result in poor dental health, leading to shame, embarrassment, and a fear of judgment during dental examinations. Observational learning, where children mimic the dental anxieties of parents or caregivers, and innate predispositions or genetic factors, such as a fear of needles, also play significant roles in the development of dental anxieties and phobias (6).

Impact of dental phobia on daily life

The impact of dental phobia on people's lives can be divided into the following five categories: physiological disruption, cognitive changes, behavioural changes, health changes, and social changes **(Table 1)** (3)

Table 1: Summarized categories and impact of dental phobia on daily life (3).

Category	Impact
Physiological disruption	Dry mouth, palpitations, sweating, tremor
Cognitive changes	Negative/catastrophic thoughts or feelings, unhelpful beliefs or fears
Behavioural changes	Diet alteration, changes to dental hygiene, avoidance of dental environment, sometimes crying or displaying aggression
Health changes	Sleep disturbances, acceptance of poor oral health
Social changes	Impact on relationships and social interactions

Management

Dental management focuses on effective communication, strategic planning, and addressing patient anxiety with both behavioral and pharmacological interventions, all while considering the psychological aspect of care. It aims for a compassionate, patient-centered approach to improve outcomes (1).

Communication

Effective communication, encompassing both spoken and unspoken forms, is crucial for fostering a comfortable atmosphere that promotes patient well-being. The absence of communication has been linked to increased dental phobia and anxiety due to diminished trust through effective dialogue (10). It is essential to maintain an open dialogue with patients, ensuring they feel secure, valued, and heard, enabling them to express their concerns openly. It is wise to view the relationship between the dental team, patients, and their parents as a collaborative partnership, with the patient playing a central role in making healthcare decisions (11). This includes considering various ways of communicating, such as visual or hands-on strategies (1). Clear and positive communication within the dental team, especially when interacting

with nurses and support staff, involves using calming language and avoiding terms that could cause discomfort, such as needles or drills.

Prepare for and plan treatment

Planning and preparing for treatment are key to minimizing surprises. Patients should be informed about what to expect during their visit ahead of time, and barring unexpected circumstances, the plan should remain unchanged to bolster trust. Proper preparation for the procedure helps in executing it smoothly without the need for last-minute searches for materials or equipment setup (1). The arrangement of the dental office should also consider the needs of patients with dental anxiety, incorporating distraction techniques and guided imagery when possible. Additionally, creating an environment without negative visuals, like hiding anxiety-inducing objects such as syringes until necessary, is important. Recent research has suggested that the presence of a lavender scent in the treatment area can help lower anxiety levels (12).

Practise and be aware of behavioural management and distraction techniques

Utilizing background music and visual distractions, such as ceiling-mounted TVs during procedures, can positively affect patients' emotional state, reducing anxiety (13, 14). Engaging with patients through social media or other virtual means has also been shown to lessen anxiety, particularly during procedures like the removal of impacted teeth under local anaesthesia. Recognizing and responding to patients' non-verbal cues of anxiety, and mirroring their body language can further ease their stress (1). Offering patients control during treatment, like using a stop signal, enhances trust and reduces feelings of helplessness (15). The Tell-show-do technique helps demystify procedures, reducing uncertainty (16). Additionally, modeling behavior through observation and teaching effective breathing techniques can significantly aid in managing anxiety, promoting relaxation, and increasing oxygenation (17).

Pharmacological management where necessary

In managing dental phobia, pharmacological methods may be required for some patients when behavioral and distraction techniques prove insufficient. Pre-medication with Diazepam is recommended for mild anxiety and phobia, facilitating relaxation without constituting a sedation technique, thus accessible to non-sedation trained dentists but necessitating patient caution regarding post-treatment activities (1). Conscious sedation, varying in administration routes (oral, inhalation, intravenous), offers a tailored approach to maintaining verbal communication while reducing central nervous system activity (18). Inhalation sedation, or laughing gas, provides quick relief with minimal recovery issues, suitable for broad patient use with proper assessment and consent. Intravenous sedation with midazolam, notable for its rapid effect and potential for amnesia regarding the dental procedure, requires thorough patient assessment and trained personnel for administration, emphasizing the need for post-sedation care and monitoring (19, 20). Oral sedation offers an alternative for highly anxious patients, necessitating experienced staff in intavenous techniques due to its longer onset and fixed dosing limitations. General anaesthesia represents a more intensive option, reserved for patients with profound needs or when other forms of sedation are inadequate, ensuring patient safety and informed consent in specialized settings (21, 22).

Consider the underlying aetiology

Understanding the root causes of dental anxiety is crucial, especially when considering the impact of psychological trauma, which encompasses events perceived as physically or emotionally damaging or life-threatening, such as accidents, domestic abuse, interpersonal violence, and sexual abuse. The prevalence of psychological trauma, including issues like sexual abuse and domestic violence, has reportedly increased, leading to more disclosures of trauma history. Certain architectural features of buildings and specific treatments might trigger flashbacks or traumatic responses. Symptoms of trauma in the dental setting might include substantial emotional reactions to minor stimuli or dissociation. Effective trauma management starts with acknowledging these issues and having a trauma-informed dental team capable of recognizing signs and assisting patients in receiving necessary dental care. Employing grounding techniques to reassure patients of their safety is beneficial. However, it is critical to avoid phrases that might re-traumatize or trigger patients, such as do not cry, do not worry, it will not hurt, or it will be over soon, as these can echo the language used by abusers, necessitating cautious communication by dental professionals (7, 8).

Clinical psychology

Recognizing one's professional boundaries is essential, especially when addressing dental anxiety through clinical psychology. Psychologists, while not trained in dentistry, can offer significant support in managing the emotional aspects of dental care. In certain regions, particularly those associated with dental hospitals, psychologists with a focus on dental anxiety are accessible. Their involvement aims to assist patients in embracing dental treatments by uncovering the root causes of their phobia and the hurdles they face in seeking or accepting dental care, then working collaboratively to address these challenges. Techniques employed might range from breathing and relaxation exercises to cognitive-behavioral therapy and the creation of personal coping strategies, such as a checklist or survival list for use during dental visits. While psychological interventions can be effective as a standalone treatment for dental anxiety, they are also frequently combined with various dental sedation methods to enhance patient comfort and treatment acceptance (1).

Advancements in local anaesthetic administration

Technological advancements in the administration of local anaesthesia have emerged as effective strategies to reduce anxiety related to dental injections, benefiting patients with injection fear or needle phobia.

Computer-controlled local anaesthetic delivery

This innovative approach utilizes a computer to regulate the flow rate of the anesthetic, offering a less intimidating experience compared to traditional syringes. The system, designed to inject the anesthetic solution slowly, minimizes tissue distension, resulting in more comfortable injections and less postoperative discomfort. Clinical studies in dentistry have shown significant improvements in patient experiences with this technology, and its benefits have also been recognized in medical clinical trials (15).

Electronic dental anaesthesia

Utilizing transcutaneous electric nerve stimulation, this method provides anaesthesia without needles. Electrodes, which can be placed extra orally or intraorally, generate an ionic current flow in tissue to control pain. It is a non-invasive, safe technique that avoids the use of needles and drug injections, offering several advantages such as limited soft-tissue anaesthesia and a residual analgesic effect. However, it has its drawbacks, including cost, variability in effectiveness, and a learning curve for successful application. Despite its potential, the efficacy of electronic dental anesthesia remains a topic of debate among researchers (15).

Computer-assisted relaxation learning

Developed to alleviate the fear of dental injections, this program employs cognitive-behavioral therapy principles through a series of videos that demonstrate coping skills and gradual exposure to dental injections (15).

Advancements in restorative dentistry

In restorative dentistry, addressing the phobia of patients who need to undergo treatment involves innovative strategies beyond traditional approaches **(Table 2)** (15). The 4 S principle, designed to mitigate dental anxiety, focuses on eliminating four primary sensory triggers encountered in the dental environment, sight (such as the visibility of air-turbine drills and needles), sounds (notably drilling noises), sensations (particularly the high-frequency vibrations known as the annoyance factor), and smells related to dental procedures (23).

Table 2: Recent advancements in restorative dental treatments and how they contribute to a more patient-friendly and less distressing dental care experience (15)

Technology	Description
Atraumatic Restorative Treatment (ART)	Minimizes the need for drilling by focusing on removing decayed tooth material with hand instruments and applying a sealing material.
Air abrasion	Utilizes streams of alumina powder to gently remove decayed tooth material without the noise and vibration of traditional drilling.
Ultrasonic tips coated with diamond particles	These tips allow for precision in removing decayed material with less discomfort compared to conventional drills.
Chemomechanical caries removal	Targets collagen in infected dentine, which is then selectively removed using sodium hypochlorite and chloramines, offering a less painful alternative to mechanical removal.
Lasers for cavity preparation	Laser technology provides a less invasive, more accurate, and often painless method for preparing cavities for restoration.

These advancements aim to reduce the uncomfortable and painful aspects traditionally associated ed with dental restorations, thereby reducing patient anxiety and enhancing comfort during treatment.

CONCLUSION

Dental phobia affects many patients, necessitating awareness among all dental team members in both primary and secondary care settings. Dental team members should recognize the impact of dental phobia and employ various pharmacological and non-pharmacological techniques to assist patients in accepting necessary dental care.

REFERENCES

1. Abdulla R, Murray A, Seeballuck C, Heffernan A. Top tips for the management of the dentally anxious patient in general practice. British Dental Journal. 2023;235(3):166-9.
2. Avramova N. Dental fear, anxiety, and phobia; causes, diagnostic criteria and the medical and social impact. Journal of Mind and Medical Sciences. 2022;9:202-8.
3. Hedayat M, Nabavi N. Managing dental phobia in patients. BDJ Student. 2021;28(2):19-21.

4. Davies JG, Wilson KI, Clements AL. A joint approach to treating dental phobia: a re-evaluation of a collaboration between community dental services and specialist psychotherapy services ten years on. British Dental Journal. 2011;211(4):159-62.
5. Rosa A, Pujia AM, Docimo R, Arcuri C. Managing Dental Phobia in Children with the Use of Virtual Reality: A Systematic Review of the Current Literature. Children. 2023;10(11):1763.
6. Team DFCW. What is dental phobia? 2024.
7. Fredriksen TV, Søftestad S, Kranstad V, Willumsen T. Preparing for attack and recovering from battle: understanding child sexual abuse survivors' experiences of dental treatment. Community Dentistry and Oral Epidemiology. 2020;48(4):317-27.
8. Leeners B, Stiller R, Block E, Görres G, Imthurn B, Rath W. Consequences of childhood sexual abuse experiences on dental care. Journal of Psychosomatic Research. 2007;62(5):581-8.
9. Nir U, Bronner G, Elran E, Eli I. Sexual correlates of gagging and dental anxiety. Community dental health. 2012;29:243-7.
10. Kheir OO, Ziada HM, Abubakr NH, Abdel-Rahman ME, Fadl SM, Ibrahim YE. Patient–dentist relationship and dental anxiety among young Sudanese adult patients. International dental journal. 2019;69(1):35-43.
11. Freeman R, Humphris G. Dental anxiety, communication and the dental team: responses to fearful patients. Journal of the California Dental Association. 2019;47(8):495-500.
12. Kritsidima M, Newton T, Asimakopoulou K. The effects of lavender scent on dental patient anxiety levels: a cluster randomised-controlled trial. Community dentistry and oral epidemiology. 2010;38(1):83-7.
13. De Witte M, Spruit A, van Hooren S, Moonen X, Stams G-J. Effects of music interventions on stress-related outcomes: a systematic review and two meta-analyses. Health psychology review. 2020;14(2):294-324.
14. Gurav KM, Kulkarni N, Shetty V, Vinay V, Borade P, Ghadge S, et al. Effectiveness of audio and audio-visual distraction aids for Management of Pain and Anxiety in children and adults undergoing dental treatment-a systematic review and meta-analysis. Journal of Clinical Pediatric Dentistry. 2022;46(2):86-106.
15. Appukuttan DP. Strategies to manage patients with dental anxiety and dental phobia: literature review. Clinical, cosmetic and investigational dentistry. 2016:35-50.
16. Radhakrishna S, Srinivasan I, Setty JV, Krishna M, Melwani A, Hegde K. Comparison of three behavior modification techniques for management of anxious children aged 4-8 years. J Dent Anesth Pain Med. 2019;19(1):29-36.
17. Hopper SI, Murray SL, Ferrara LR, Singleton JK. Effectiveness of diaphragmatic breathing for reducing physiological and psychological stress in adults: a quantitative systematic review. JBI Evidence Synthesis. 2019;17(9):1855-76.
18. Corcuera-Flores J-R, Silvestre-Rangil J, Cutando-Soriano A, López-Jiménez J. Current methods of sedation in dental patients-a systematic review of the literature. Medicina oral, patologia oral y cirugia bucal. 2016;21(5):e579.
19. Yoon J-Y, Kim E-J. Current trends in intravenous sedative drugs for dental procedures. Journal of dental anesthesia and pain medicine. 2016;16(2):89-94.
20. Nayani-Low S, Patel J. Safe intravenous sedation for oral surgery in a primary care setting. Primary Dental Journal. 2022;11(3):46-52.
21. Dougherty N. The dental patient with special needs: a review of indications for treatment under general anesthesia. Special Care in Dentistry. 2009;29(1):17-20.
22. Messieha Z. Risks of general anesthesia for the special needs dental patient. Special Care in Dentistry. 2009;29(1):21-5.
23. Walsh LJ. Anxiety prevention: implementing the 4 S principle in conservative dentistry. Auxilliary. 2007;17(5):24-6.