

Dental Anxiety – Psychological and Physical Factors as Triggers

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Original Article

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Source: *Clinical Social Work and Health Intervention*
Pages: 8 – 14

Volume: 13
Cited references: 21

Issue: 3

Reviewers:

Yanna Trilisinskaya
Bujumbura, BI
Joseph Hasto
Trencin, SK

Keywords:

Dental Anxiety.

Publisher:

International Society of Applied Preventive Medicine i-gap

CSWHI 2022; 13(3): 8 – 14; DOI: 10.22359/cswhi_13_3_01 © Clinical Social Work and Health Intervention

Abstract:

While focusing on the terms dental anxiety, phobia, and fear, they are considerably common, but they are different in their circumstances. However, a difference has been noted between the terminologies. When challenged with a menacing dental issue, dental fear is a response to a familiar danger involving a “fight-or-flight” reaction meant to respond to stimuli¹. On the contrary, dental anxiety (DA) is a response to unfamiliar danger where an individual exhibits a negative attitude towards dental treatment². In contrast, dental phobia is primarily similar to fear, but it is much stronger because the “fight-or-flight” reac-

¹ Deva Appukuttan, Strategies to manage patients with dental anxiety and dental phobia: literature review, *Clinical, cosmetic and investigational dentistry*, 8 (2016): 36.

² Lingli Wu, and Xiaoli, Gao, Children’s dental fear and anxiety: exploring family related factors, *BMC Oral Health* 18, #100 (2018): 1.

tion happens when one thinks or is reminded about the situation³. There are 3 categories of dental phobias based on their intensity⁴. Dental anxiety is popular with the general population and is the least intense, mild odontophobia. When the issue becomes moderate, it becomes dental fear or moderate odontophobia. Finally, a severe case is considered rare and can be challenging to manage - dental phobia.

Introduction

DA is among the problems that affect different societies, becoming a worldwide public health concern, and has been identified as the fifth most prevailing reason for anxiety⁵. DA is ubiquitous as many people encounter various degrees of anxiety, mainly when they are about to experience a definite dental process, be operated on, and have not experienced it before. Furthermore, those with dental phobia will evade dental care regardless of whether they face a physical problem or a psychological challenge that turns out to be immense⁶. This means that DA result in dental care avoidance. DA patients regularly delay or evade dental treatment by turning down appointments. Consequently, this results in a vicious circle leading to a higher pervasiveness and seriousness of dental disease to co-found with impeded dental appointments owing to the disease⁷.

Causes of dental anxiety (DA)

One of the leading psychological and physical causes of DA is traumatic experiences in childhood which in many cases result in lifetime severity of DA⁸. If an individual experienced dental pain in their childhood, they are likely to

actively respond to any such pain due to the presence of historical but fresh memories. Additionally, DA can also be indirectly acquired from indirect sources like perceiving how others behave. This might be from relatives, close friends, or even strangers acting negatively toward dental stimuli. It can also be caused by a mutual negative reflection of DA drawn from media and society. Research has shown that this indirect learning aspect for some individuals has an ultimate effect on inducing phobia⁹. It has been identified that a sizeable percent of DA is acquired from external negative experiences.

Dental decay is highly associated with excessive pain. Apparently, pain is the primary cause of anxiety¹⁰. Due to the excruciating pain that some patients undergo, they fear that even the painless dental procedures will add more pain¹¹. An aching tooth usually becomes worse when touched. Therefore, they will try to evade dentists and settle on their pain rather than seeking intensified ones.

Furthermore, the formula of dentists, such as being cold and being in control of a character, might have a significant psychological influence on anxiety, worsening their fear. The challenging part is that DA leads to low cooperation among the

³ Irene Minja, and Febronia Kahabuka, Dental Anxiety and Its Consequences to Oral Health Care Attendance and Delivery. Anxiety Disord. From Childhood Adulthood, Health Sciences, (2019).

⁴ Rosa De Stefano, Psychological Factors in Dental Patient Care: Odontophobia, Medicina (Kaunas, Lithuania), 55, #10 (2019): 2.

⁵ Helen Chapman and Nick Kirby-Turner, Psychological Intrusion – An Overlooked Aspect of Dental Fear, Frontiers in Psychology, 9, #501 (2018): 1.

⁶ Lingli and Xiaoli, 2.

⁷ Muhannad Murad, Navin Ingle, and Mansour Assery, Evaluating factors associated with fear and anxiety to dental treatment--A systematic review, Journal of family medicine and primary care, 9, #9 (2020): 4531.

⁸ Lingli and Xiaoli, 2.

⁹ Enright, A. (2021). Dental anxiety and phobia - Causes, impacts, and treatment, 2.

¹⁰ Nadeem Jeddy et al., Dental anxiety and influencing factors: A cross-sectional questionnaire-based survey, Indian Journal of Dental Research, 29, no.1 (2018): 1.

¹¹ Readers Digest, 7 Main causes of dental anxiety 2021, 2021, <https://www.readersdigest.co.uk/health/well-being/7-main-causes-of-dental-anxiety>

patients when they visit dentists, resulting in more resources and time, as well as unpleasant experiences¹². The pain caused by a dentist seems to be sometimes caring but leads to psychological anxiety. The perceived reflections from professional dentists forecast the evasion behavior in anxiety because the negative images depress an individual further into evading an appointment to attend the dentist to get the benefit of dental care¹³. Studies have already confirmed that the most fear-evoking stimuli are related to invasive stimuli like surgical operations, compared with the minor anxiety-evoking stimuli of noninvasive. This indicates that the phobia may be personal and supported by definite items which may generalize, where the general event collectively prompts anxiety.

According to studies, children with DA have long-term effects on their lives and may be hard to relieve. DA has been identified to have an intense impact on daily life, affecting sleep and an individual's social behavior patterns, having dental phobia incriminated as its precursor. This defines a ferocious cycle of anxiety and has been confirmed by various studies¹⁴. The reasons that make the level of DA in children more complicated include dentists' appearance, clinic environment, and the instrument used. Dentists who do not encourage, show care and sympathize with their patients also contribute to DA's escalation because patients do not feel relaxed in their presence¹⁵. Behavioral demonstrations such as crying, evading dental treatment and screaming reduce the efficacy of dental health services. Several behaviors are used to tackle DA in children such as positive reinforcement, productive com-

munication, and modeling, resulting in improved children's treatment management¹⁶. The lack of these techniques intensifies DA among children. The behavioral management challenges are associated with dental factors such as earlier negative treatment occurrences, drilling, injections, indicating negative psychological loads.

Far from longer anxiety experiences from childhood, DA is also triggered by the specific dentists who care for childhood patients and have been regularly blamed for the developed anxiety of the same patient in adulthood. This indicates the significance of successful and encouraging early contact with dentists as a leading factor in reducing DA. Reportedly, DA has been increasing due to the quantity and quality of dental treatment experienced by children between 9-12 years¹⁷. Studies showed that DA is the main factor that results in the experience of unconvinced dental treatment in youth which showed almost 22% of the total. According to the studies, aspects related to the degree of DA in teenage between 13-18 years showed that the higher DA experienced, the lower confidence they usually have in the dental staff and exploitation of dental care¹⁸. The individual level of the emotional burden of visiting dental care was also noted to affect DA negatively. Specifically, DA experienced during teen years has also been confirmed to affect present oral health status and adulthood and old age.

Embarrassment has also been noted as another trigger of DA, mainly for adults. Adults patients seem to experience DA when they have lapsed on oral hygiene or delayed dental appointments¹⁹. Personal space is another trigger to DA, where

¹² Deva, 36.

¹³ Enrico Facco and Gastone Zanette, *The Odyssey of Dental Anxiety: From Prehistory to the Present. A Narrative Review*, *Front. Psychol.* 8 (2017): 2.

¹⁴ Nadeem, 1.

¹⁵ Kauther Musalam et al., *Magnitude and determinants of dental anxiety among adult patients attending public dental clinics in Dar-Es-Salaam, Tanzania*. *International Journal of Dentistry*. (2020): 3.

¹⁶ Shreya Kothari, Deepa Gurunathan, *Factors influencing anxiety levels in children undergoing dental treatment in an undergraduate clinic*. *Journal of family medicine and primary care*, 8, #6 (2019): 2036. <https://www.ncbi.nlm.nih.gov/pmc/articles/pmc6618196/>

¹⁷ Ah-Hyeon Kim, Eun-Suk, Ahn, So-Youn An, *Factors affecting dental fear in Korean adolescents*, *Journal of Korean Dental Science*, 10, #1 (2017): 23.

¹⁸ Ibid

¹⁹ McCarthy Dentistry *Causes of Dental Anxiety*, n.d., <https://www.mytotaldentistry.com/blog/causes-of-dental-anxiety/>

most individuals feel uncomfortable with people trespassing on their personal space. It has also been confirmed that these patients feel uncomfortable when someone places instruments near their mouths²⁰. Apart from dentist experiences, some individuals might have other mental challenges and ultimately expect something disastrous to occur during the treatment. This has been identified as the main reason why most people carry over their controls which results in worse dental health, mainly in teeth loss, deep cavities, poor teeth service, and maybe leading to periodontosis, reducing the well-being and quality of life²¹. There are categories of factors that lead to DA, such as psychological comorbidities which means an individual may have some mental problems. An excellent example is an individual diagnosed with anxiety may also have depression, generalized anxiety, social anxiety, or multiple comorbidities²². This means that such comorbidities may influence the diagnosis and treatment of dental problems.

Dentists' handling of the patients also elicits fear in patients: potential causes of anxiety are fear of choking and drowning, seeing blood, and fear of injections²³. The inclined lying of the patients while being treated upsurges the affection of frailty and lack of control. When seated in the dentist's chair with their mouths wide open, patients cannot see what the dentist is doing²⁴. Additionally, the dentist engages patients' mouths in an intrusive way in an area that can be considered a personal space²⁵.

In surgical involvement like extractions, patients are unaware of the used technique and know nothing about what to expect. This proves that the unknown is one of the factors resulting

in DA. Reportedly, this DA trigger has nothing to do with teeth. A patient who fears injection or seeing blood will experience such anxiety whenever they are about to engage in such treatments. Since dental treatment, particularly the extraction of teeth, will result in injections to initiate numbness and blood will be shed, anxiety sets in.

Situational or environmental factors associated with the dental clinic also trigger DA. Sensory triggers are pivotal in aggravating anxiety²⁶. Some of these triggers are sensory-motors that have high-frequency vibrations; visuals such as needles; auditory sounds from turbines; olfactory which is the smell of the dental materials although currently materials used in treating dental problems have been improved.

Another trigger is the waiting room atmosphere, where photos or pictures without neutral topics reinforce patients' anxiety. Similarly, environmental factors that affect patients include unpleasant odor. Ideally, there are two common types of factors that are related to pain perception. One is situational factors, and the other is individual factors²⁷. In situational factors, these are narratives that we hear from others and the exact situations of pain appearance. The fear of situations has been ranked fourth, after injuries, height and snakes²⁸. Individual factors are the previous pain experiences, where patients tend to postpone appointments for dental control due to this.

Irreversible pulpitis is an enlarged medical situation that entails spontaneous and impetuous pain. Such pain may prompt patients with pulpitis to seek emergency dental care. Yet, fearing pain during and after being treated may cause DA in patients delaying treatment²⁹. The treatment for

²⁰ Readers Digest, 1.

²¹ Sebastian Vaida, Mariana Dumitru, Dental Anxiety Factors and Treatments, *Rev. Psih*, 65, #4 (2019): 309.

²² Harri Halonen et al., "The Association Between Dental Anxiety And Psychiatric Disorders And Symptoms: A Systematic Review," *Clinical practice and epidemiology in mental health: CP & EMH*, 14 (2018): 208.

²³ Jason Armfield, and Lisa Heaton, "Management of fear and anxiety in the dental clinic: a review," *Australian Dental Journal*, 58, no.4 (2013): 391.

²⁴ Readers Digest, 1.

²⁵ Jason and Lisa, 392.

²⁶ Sebastian and Mariana, 313.

²⁷ Kauther, 1.

²⁸ *Ibid.*, 1.

²⁹ Lei Dou et al., "The prevalence of dental anxiety and its association with pain and other variables among adult patients with irreversible pulpitis," *BMC Oral Health*, 18, no.1 (2018): 2.

irreversible pulpitis is endodontia therapy, which is claimed to be physical and psychological distress for patients. Alternatively, one may seek aromatherapy to reduce dental pulp inflammation pain³⁰. The endodontia therapy procedure contains injection, root canal, cleaning, and obturation provoking DA in patients.

When seeking dental treatment, some patients may also experience embarrassment particularly if their state of health is poor. Experiencing dental odor, some individuals will feel ashamed of themselves and feel that they cannot open their mouths to have their teeth extracted³¹. Bad breath is highly associated with low self-esteem. Essentially, people with halitosis (bad breath) tend to have poor social and relationship skills because they fear talking openly to others³². They feel discomfort smiling, laughing, or speaking before others because other people will perceive them negatively. When they are about to visit the dentist, the same anxiety engulfs them.

Addressing DA to seek Dental Care

Since DA limits dental care, different approaches are required to break the existing barriers and help patients to access care. It has been identified that DA makes patients evade care, a behavior that leads to health deterioration. Thus, implementing strategies that encourage patients to feel comfortable with dental care is indispensable for perfect oral hygiene.

As indicated, unsympathetic dentists provoke DA³³. On the other hand, encouraging and caring

practitioners usually soothe patients as they feel relaxed. Patients need to be assured that everything will be okay. Patients who might have experienced DA resulting from their childhood or past experiences also need assurance that current treatment will be different³⁴. Nonetheless, dentists' assurances can psychologically and dramatically change the situation. Dentists need to develop good relationships with patients by being supportive, compassionate, and professional³⁵. Apart from previous experiences, communicating with the dentist also helps patients who feel anxious when they lose control or when they feel that their personal space (mouth) has been encroached on³⁶. When the dentist communicates about the procedure to use and answers any arising questions beforehand, the patient can feel comfortable with the process. For young children, a parent can act as a source of moral support and assurance by reinforcing the dissipation of anxiety³⁷. Dentists can also use pain-relieving approaches to ensure that pain has been alleviated during treatment.

Aromatherapy intervention reduces anxiety and pain. As a cost effective and safe treatment option, different plants are used in this approach, including lavender³⁸. Research has confirmed that patients who have been engaged in aromatherapy experienced a reduced mood, alertness, and anxiety³⁹. Lavender aromatherapy has also reduced pain and anxiety among children. When administered as inhaled or a nebulizer, it gets into the nasal mucosa, leading to the limbic system where it boosts the psychological pathway⁴⁰. This ap-

³⁰ Ganes Jadhav and Priya Mittal, "Evaluation of aromatherapy on success rate of inferior alveolar nerve block in teeth with irreversible pulpitis: a prospective randomized clinical trial," *Quintessence International*, 51, no.10 (2020): 868.

³¹ *Readers Digest*, 1.

³² Sarah Salvador, and Ramona Toassi, Oral health self-perception: physical, social and cultural expressions of a body in interaction with the world, *Physis: Revista de Saúde Coletiva*, 31, #1(2021): 1.

³³ Kauther, 3.

³⁴ Lingli and Xiaoli, 6.

³⁵ Kauther, 6.

³⁶ *Readers Digest*, 1.

³⁷ Helen and Nick, 12.

³⁸ Ganes and Priya, 865.

³⁹ Kamalapuram Nirmala, and Rekhakshmi Kamatham, Effect of Aromatherapy on Dental Anxiety and Pain in Children Undergoing Local Anesthetic Administrations: A Randomized Clinical Trial. *Journal of caring sciences*, 10, #3 (2021): 118.

⁴⁰ *Ibid.*, 118

proach can also be critical to patients with irreversible pulpitis because it will help manage pain. To be effective, aromatherapy can be induced before the patient visits the dentist.

To address embarrassment due to halitosis, the patient can be trained on the best methods to improve oral hygiene. Dentists are willing to recommend different approaches that patients can embody so that they can address halitosis⁴¹. Additionally, several treatment options are available for bad breath to ensure that the patient improves breath before they engage in other dental treatment services⁴².

Conclusion

Undeniably, DA has been regarded as a global health problem and ultimately leads to patients' devastating dental health. Examining DA triggers can help address it in a bid to improve dental care. Some of these triggers include: poor past experiences; experiences from close people; unsympathetic dentists; poor oral health; pain perception; lack of control; encroachment of personal space; environmental factors such as clinic odor. These triggers act as barriers to dental care access. Since dental care is part of the larger public health, understanding how to address these triggers can be effective. The dentist needs to engage in a positive relationship by demonstrating compassion and support to patients erasing any negative experiences. Additionally, children can accompany their parents or close friends who can assure them that the process is well. Dentists should also communicate with the patients before treatment to improve awareness of the procedure. Aromatherapy has also been termed as an effective solution to pain and anxiety management. Finally, oral health can address bad breath to eliminate DA.

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⁴¹ Sara and Ramona, 1.

⁴² Readers Digest, 1.

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