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Dental anxiety and fear

Oba, C. V.[1], Adamu, V. E.[2, 3], & Eneojo, N. I. F.[2]

[1] *Dental Therapy Department, Federal College of Dental Technology & Therapy, Enugu, Nigeria*
[2] *Allied Health & Biological Sciences Department, Legacy University, Banjul, The Gambia.*
[3] *School of Global Health & Bioethics, Euclid University (Pôle Universitaire Euclide)*

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Correspondence to:
Lead-Author: C. V. Oba
zobyella98@gmail.com

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ABSTRACT

Anxiety or fear is a reaction to a known or perceived threat or danger. Dental anxiety or fear is a reaction to a known or perceived threat or danger in the dental facility or environment. Some genetic, behavioural, and cognitive factors contribute to the aetiology of dental anxiety and fear. The prevalence of dental anxiety and fear has not notably decreased over time, despite efforts that have been made to reduce or treat it. Dental anxiety and fear may have long-lasting complications. There are different instruments for the assessment of dental anxiety or fear - both in children and adults. The method used for the assessment of dental anxiety or fear involves the use of the Modified Dental Anxiety Scale (MDAS). Dental anxiety and fear are real. But taking steps to reduce them may improve dental attendance, and the quality of time spent at a dental facility during visits and enhance treatment outcomes.

INTRODUCTION

Dental anxiety and fear are major complications for patients and dental care providers. (Masoud et al., 2015). According to Arslan et al. (2011), fear is an individual's response to an actual life-threatening event or a dangerous situation to protect one's life. Fear is also defined as a reaction to a known or perceived threat or danger. It leads to a flight or fight situation. Dental fear is a reaction to a threatening stimulus in dental situations (Berggren et al., 2001).

Dental anxiety refers to specific reactions towards stress associated with dental fear in which the stimulus is unknown, vague, or not present at the moment (Jakkole et al., 2009).

Phobia is a persistent, unrealistic, and intense fear of a specific stimulus leading to complete avoidance of the perceived danger. Odontophobia is termed as an overwhelming and irrational fear of dentistry associated with a devastating feeling of hypertension, terror, trepidation, and unease and has been diagnosed under specific phobias according to the diagnostic statistical manual of mental disorders (DSM-iv) and the international statistical classification of diseases and related health problems (ICD-10) (Berggren et al., 2011).

Dental anxiety and fear results in avoidance of dental care. It is a frequently encountered problem in dental offices.

Dentophobia patients need to be identified at the earliest opportunity and their problems addressed. The initial interaction between the dentist and patient can reveal the presence of phobia (Deva, 2016).

Dentists do not usually screen dental fear. A study in England showed that only 20% of dentists who were interested in treating patients with dental fear had used a screening method to evaluate their patient's level of fear. Before treatment dentists should be able to detect the patient's level of anxiety or fear so they can use appropriate management options (Armfield, 2011).

Fearful and anxious individuals feel that something dreadful is going to happen if they undergo dental treatment and hence do not visit the dentist, such behavior ultimately results in bad oral health with more missing teeth, decayed teeth, or poor periodontal status; such patients present to the dental office only when in acute complicated dental situations often requiring complicated and traumatic treatment procedures which in turn further exacerbates and reinforces their fear leading to complete avoidance in the future (Quteish, 2002 & Van & Hoogstraten, 2003).

According to Nascimento et al. (2011), dental anxiety is prevalent worldwide and it is not limited to a population or country depending on the population and measurement. Many studies also ascertain that dental anxiety is more common in women. Also, it was reported that anxiety subsides with age and that patients with a high educational level experience less anxiety during dental procedures, and previous traumatic experience is a significant commencing factor in dental fear and anxiety.

FACTORS THAT CONTRIBUTE TO DENTAL ANXIETY AND FEAR

An individual's dental anxiety or fear is likely to have been created by involving a multitude of factors (Carter et al., 2014), viz:

1. Genetics: People who manifest dental anxiety and fear may have inherited that trait that makes them vulnerable to fear and anxiety (Carter et al., 2014).
2. Preparedness: Dental anxiety and fear may be part of a naturally beneficial tendency and protect the body from intrusion by foreign objects (Seligman, 2007 & Carter et al., 2014).
3. Negative affectivity: Some persons are vulnerable to experiencing negative emotional states. This trait can predispose one to anxiety and fear. (Krossin et al., 2000).
4. Classical conditioning: A previously neutral stimulus can elicit a response by pairing the stimulus with another stimulus that elicits the same response. This is, sometimes, also called 'Pavlovian' (Wolpe, 2008; Carter et al., 2014).
5. Operant conditioning: Certain behaviours in a dental situation are reinforced through association with positive consequences or the removal of negative consequences (Cook & Minekas, 2008 & Carter et al., 2014).
6. Learned fear: Stories of unsavoury dental experiences may scare potential clients from paying dental visits (Askew & Field, 2008).
7. Cognitive factors: Perceptions about the outcome of a dental procedure may debar individuals from attending the dental clinic (Carrillio-diaz et al., 2013).

TYPES OF DENTAL ANXIETY AND FEAR

According to Deepak et al. (2014), Dental anxiety and fear types include:

1. General factors: This includes anxiety, guilt, shame, embarrassment, and loss of self-esteem. This may also include fear of letting someone even see their teeth or afraid of what the dentist's reaction will be about the condition of their teeth. Many a time, it is the embarrassment that is the primary concern probably because they may be self-conscious about how their teeth look. The mouth is an intimate part of the body and people feel embarrassed to let some stranger look at their teeth. A vicious cycle of the dentist lecturing and let someone observe the patient's mouth exists in dental phobia leading to avoidance which finally means no access to professional dental care resulting in poor oral health and at times total avoidance of the dentist even in times of excruciating pain.

2. General needle phobia: Needle phobia or belonephobia can be so severe in some cases as to necessitate treating the patient under sedation.

3. Dental needle phobia: Ironically, the very procedure that allows patients to be treated virtually free from pain is the one that they often fear the most, once the initial consultation is established, care should be taken regarding the patient's concerns with the needle be it in isolation or when combined with other specific or general factors.

4. Adverse reactions to local anesthesia: This includes allergic reactions, systemic toxic reactions, psychogenic effects, or drug interactions. Routinely, the adverse effects that follow a dental injection are due to somatic manifestations of fear and phobia and this includes; nausea, sweating, pallor, tremor, and fainting. Here, it should be emphasized that this is not an allergy and there is no need for a change in the anesthetic agent.

5. Blood phobia: This can be from the sight of their blood or the images of blood in the dental setting, it is more likely to result in anxiety during the procedures of tooth removal.

Other types of dental phobia by Singh et al. (2015) include:

6. Fear of being helpless: A severe discomfort with a feeling of helplessness or out of control in the dental situation is a common cause of fear. A considerable number of patients are afraid to lose self-control even if only partially during dental treatments.

7. Gagging and vomiting reflux: A gagging or vomiting reflex during dental treatment is commonly associated with fear of dentists. In many cases, dentophobia develops only secondarily, triggered by the patient's expected fear of gagging reflex during treatment.

8. Drilling sounds: Sounds especially the high-frequency sound of the so-called "Turbine", a fast running drill operated with compressed air, triggers panic attacks in many dental phobia patients.

9. Dentist smell: The typical odour in many dental practices originates from eugenol; an artificial clove oil contained in dental cement and medicines. In the predisposed patient, the perception of this smell can cause involuntary panic attacks.

10. White coats and dental instruments: The visual perception of the instruments and other attributed association with former treatment experiences can lead to anxiety increasing effect in the sense of a conditioned reflex.

PREVALENCE OF DENTAL ANXIETY AND FEAR

Regardless of advances in technology and methods of dental treatment, the prevalence of dental anxiety has not decreased significantly. The prevalence of patients with high anxiety levels varies but it is believed that dental anxiety in the North American population ranges from 10-20% (Armfield & Heaton, 2013). Other studies show the prevalence of dental anxiety in different populations ranging from 4-30%. Avoiding dental treatment due to fear is present in 6-15% of the adult world population. Though 4-5% of adult patients express high dental anxiety while 2-3% of adults express avoidance of dental treatment similar to phobia (Hasier et al., 2007). The prevalence of dental fear is present in about 11% in Germany while a Norwegian study showed 10%. Furthermore, one-third of women in the sub-population between 30 and 45 years of age show a high degree of dentophobia and fear reduces with age while other studies have not established the correlation between age and fear. The correlation between socioeconomic status, education, and fear has not been clearly defined (Hmud & Walsh,2009).

The British Dental Association (BDA, 2011) explained that 25% of the British population suffer from a sort of anxiety before visiting the dentist. Women tend to report more dental fear than men and younger people tend to report being more dentally fearful than older individuals. People tend to report being more fearful of more invasive procedures such as oral surgery than they are of less invasive procedures such as professional dental cleaning and prophylaxis (Stabholz & Peretz, 2009).

Dentophobia is prevalent among children, it has been found that as many as 19.5% of school-age children are afraid of the dental clinic (Nuttal et al., 2008). It has been

reported that dentists consider the fearful child to be among the problematic types (Milgrom et al., 2010).

COMPLICATIONS OF DENTAL ANXIETY AND FEAR

Dental anxiety may have long-lasting complications for a child and family. Research has found out that children with dentophobia have a higher caries experience than children with low levels of dentophobia (Nicholas et al., 2010). Fear of going to the dentist can be a significant barrier to the completion of dental treatment in both children and adults whilst it could be argued that children themselves may not be in control of whether they attend dental appointments or not, there is evidence that parents who consistently fail to take their children to the dentist report that their children's dental anxiety is one of the influencing factors for their avoidance behavior (Hallberg et al., 2007). Interestingly, research has found out that there may be long term oral health complications resulting from children's dental anxiety as dentally anxious children are more likely to be symptomatic rather than proactive users of dental services in adulthood (Porritt, 2012).

According to Porritt (2012), dental anxiety has been strongly associated with poor oral health. Avoidance of dental treatment is high in dentally anxious patients and they also have increased caries morbidity. The long term consequences of the dentition explain the role of dental anxiety which leads to increased use of antibiotics and analgesics. Dentophobia apart from affecting the patients' oral health also has a large impact on the individuals' life and also evokes physiological responses of the fright and flight type which can also cause a feeling of exhaustion after a dental appointment. Some of the cognitive impacts of dental anxiety include negative thoughts, fear, crying and aggression, disturbances in sleep and eating patterns and also use of self-medications (Hallbrg et al., 2007). The other problems commonly encountered by dentists include reduced satisfaction with the treatment offered and planned and as the patient's perceptions of the dentists' competence decreased, their dental anxiety increase (Deepak et al., 2014).

DIAGNOSIS OF DENTAL ANXIETY AND FEAR – THE MODIFIED DENTAL ANXIETY SCALE (MDAS)

There are different instruments for the assessment of dental anxiety both in children and adults (Newton & Buck, 2000). The method used for the assessment of dentophobia involves the use of a modified dental anxiety scale. For example, the United Kingdom Adult Dental Survey measured dentophobia using a fear instrument called the Modified Dental Anxiety Scale (MDAS) easy (Humphris et al., 2009).

MDAS is the commonly used scale for assessing the level of anxiety of dental patients. MDAS is the commonly used questionnaire which is a modification of Corah's dental anxiety scale. MDAS questionnaire is less time-consuming and more importantly, the process of completion does not raise the patients' anxiety level. MDAS has been translated into different languages namely, Arabic, Chinese, Greek, Romanian, Spanish, Tamil, Turkish, and Hindian. It has good cross-cultural reliability and validity (Giri, et al., 2007).

The modified dental anxiety scale is a brief self-complete questionnaire consisting of five questions and summed together to construct a Likert scale to produce a total score ranging from 5-25. If the total score is within the range of 9-12 (moderate dentophobia), 13-14(high dentophobia), and 15-20 (severe dentophobia) (Humphris et al, 2009). According to Humphris, the MDAS is the most frequently used dental anxiety questionnaire in the United Kingdom and it does not increase patients' fear when completed. Existing data also suggests that completion of the questionnaire can significantly reduce the state of phobia in the practice setting. And it has good psychometric properties; relatively quick to complete and scoring is easy.

MANAGEMENT OF DENTAL ANXIETY & FEAR

The following are the strategies that should help in managing an individual with dentophobia:

1. Distraction: Several types of distraction have been noticed to reduce the level of dentophobia. (Newton et al, 2012).

2. Environmental changes: Studies have sought to make the dental environment more attractive to persons attending dental surgery (Sharipo et al., 2007).

3. Parental involvement: The presence or absence of parents in the treatment area is often used to gain a child's cooperation. For some children, the presence of parents is a great comfort and for others, parental presence may be a distraction for the treatment. Working together, the dental team

and parents decide upon the best approach. Parents who choose not to be present for the visit can watch from an observation area (Newton et al, 2012).

4. Nitrous oxide relaxation: Some dental procedures are difficult to accomplish without the help of special medications. These medications may help relax patients enough for treatment. Music also serves as a means of relaxation (Coulthard et al., 2011).

5. Positive reinforcement: When patients are positively re-inforced, the likelihood of a future occurrence of the described behaviour is guaranteed (Herandez and Ikkanda, 2011).

6. The building of trust: Many dentophobics report been traumatized in the past from being betrayed by a dentist they have trusted. Also the easily given promise by the dentist, "for sure, it will never hurt", which is then later not kept can easily undermine the patient's confidence (Schulte, 2013).

7. Low stimulus atmosphere: For individuals with dentophobia, the dental practice is a place loaded with all experience made in the past. This negative conditioning of the individual is prone to be kept to a minimum by appropriate measures. Therefore, long waiting that promotes fear that leads to phobia must be avoided whenever possible. The waiting area should offer diverse reading materials as a distraction especially for children (Schulte, 2013).

CONCLUSION

Dental anxiety and fear are real. But taking steps to reduce them may improve dental attendance, and the quality of time spent at a dental facility during visits and enhance treatment outcomes.

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