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Dental fear and anxiety: A review

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Abstract
Introduction: Dental fear and anxiety (DFA) are still prevalent in adults and should be considered a dental public health problem.
Objective: To analyze the literature on dental fear and anxiety, focusing on the cause, diagnosis, treatment, and prevalence.
Methodology: PubMed, SCOPUS and Google Scholar databases were reviewed to find recent articles published on the management on provisionalization of implants with the following keywords "anxiety", "odontophobia", "dental anxiety" and "dental fear".
Results: Quantifying the factors that can trigger a DFA event, plus the added complexity in determining those that are affecting the patient during the appointment, knowing these factors will allow for better treatment. The visual perception of anxiety by the dentist has not been shown to be related to the true degree of anxiety reported by the patient, the use of a worldwide standardized scale is adequate in making real and not subjective decisions. Physiological tests are competent, although they will be more complex to perform. Preventive strategies during the dental consultation will help to mitigate or decrease the levels of DFA, starting with non-pharmacological actions such as aromatherapy, which shows favorable results. The prevalence of the population affected by DFA is high, at 15.3%, with young educated women comprising the highest percentage.
Conclusion: By means of the world standardized scale it is possible to detect dental phobia and/or dental anxiety, the dentist should be trained for prevention, with non-pharmacological therapeutic options.

Keywords: Anxiety, odontophobia, dental anxiety, dental fear, diagnosis, treatment, prevalence

1. Introduction
Dental fear and anxiety (DFA) have a high prevalence among people and should be considered a dental public health problem [1].
Anxiety is described as a feeling of fear that appears in stressful or threatening situations [2], having a negative impact on people's quality of life and with severe consequences [3]. Anxiety is not conditional or limited to age and/or gender and is not isolated in time, as well as it does not disappear by itself, it requires concrete actions to change it [4].
Dentistry and oral health are at the heart of human systemic health. This branch of medicine is underestimated, for socioeconomic reasons or out of fear. In dentistry, there is often a widespread condition of odontophobia among patients [5].
DFA is often described as a vicious cycle in which dental care avoidance, poor oral health, and psychosocial effects are common features, often increasing over time [1].
This research is conducted in order to understand the aspects around the DFA health problem, understanding that it is a daily challenge in dentistry, therefore, the aim is to analyze the literature, reviewing factors related to DFA, treatment, diagnosis and prevalence.

2. Materials and methods
Articles on the subject published through the PubMed, SCOPUS, and Google Scholar databases were analyzed, with emphasis on the last 5 years. The quality of the articles was evaluated using guidelines, i.e., identification, review, choice, and inclusion.

The quality of the reviews was assessed using the measurement tool for evaluating systematic reviews. The search was performed using Boolean logical operators AND, OR, and NOT with the keywords: "Anxiety", "dental fear", "dental anxiety", odontophobia", "diagnosis", and "treatment". The keywords were used individually, as well as each of them related to each other.

3. Results and Discussion

3.1 Factors Related to DFA

Evidence suggests that the causes of dental fear, anxiety, or dental phobia are related to exogenous and endogenous factors [6]. Surveys have revealed that exogenous factors such as age (a delayed exposure at the age of the first visit to the dentist), gender (mostly associated with the female gender), education level (individuals with higher educational level), and procedure (the sound of the handpiece, the type of procedure, a recent previous bad dental experience or else during childhood and adolescence) together with the frequency of visits has a direct effect on patient anxiety [7-16]. DFA is explained through endogenous factors by genetic components and by its shared relationship with other psychological [17], or mental well-being [18], conditions such as low self-esteem, depression, dissociative symptoms, and degree of overall life satisfaction [8, 19].

Factors cited that correlate with and incite dental anxiety (DA) even before starting treatment among subjects range from the type of facility attended; government clinics have been shown to have the highest levels of DA prevalence [20], prolonged waiting room stay [21], and pain [7], at the most recent dental visit or prior to the current dental visit [22], regardless of gender [23].

Several are the factors that can trigger a DFA event, either due to external reasons and/or some psychological conditions of the individual, in addition to the added complexity in determining those that are affecting the patient during the appointment, knowing each of the factors that originate dental anxiety will allow for better treatment.

3.2 Diagnosis

Commonly patients' subjective opinions are used to diagnose DFA, so there was a need for standardized diagnostic criteria among practitioners [24]. The Modified Dental Anxiety Scale (MDAS) is one of the most widely used questionnaires to measure DFA in the world [25]. With modified versions being introduced by different nations in order to specifically assess their population, for example, the MDAS-A scale (MDAS-A Modified Dental Anxiety Scale), is a suitable tool for routine assessment of DFA among Lebanese adult patients [13]. In one study, dentists responded to a questionnaire about their DA screening and management practices and assessed patients' DA using the visual analog scale. In addition, patients responded to the MDAS to measure their DA. Dentists' rating of patients' DA correlated weakly with patients' self-reported DA [26]. In conclusion, clinicians fail to identify a dentally anxious patient without the simultaneous use of patient self-assessment tools [27].

Among the physiological tests that could support DA arrest is heart rate variability, is a measure of beat-to-beat variability in heart rate, related to the work of the autonomic nervous system. It can serve as a clinical psychophysiological indicator of arousal, emotional state and stress level [28]; salivary pH change towards acidity, where a mean value of salivary pH at rest is 6.79 and in an anxious state is 6.43 [29].

The visual perception of anxiety by the dentist has not been shown to be in relation to the true degree of anxiety referred by the patient, the use of a worldwide standardized scale is adequate in making real and not subjective decisions. Physiological tests are competent, although they will be more complex to perform.

3.3 Treatment

Early detection and treatment of anxiety, as well as identification of associated factors, are important in the dental clinic [30]. DA should have a greater focus on preventive strategies at the clinical and population level to prevent this problem from escalating in adulthood [31-32]. Personalized care and clinical communication skills in the dental office play an important role in the success of DA treatment [33-34].

Knowing the patient's degree of anxiety could help the dentist to decide on the use of anxiolytic premedication [35]. Effective methods linked to pharmacology that produce conscious sedation are reported in the literature [36], although nonpharmacological and noninvasive methods should be used as a first option, an example of which, hypnosis, can be considered a powerful and successful method [37]; breaks and breaks, which provide better anxiety control [38]; aromatherapy [39], with lavender and rose oils giving a significant reduction in anxiety level due to their sedative characteristics [40-41].

Preventive strategies during the dental consultation will help to mitigate or decrease the levels of DFA, starting with non-pharmacological actions such as aromatherapy, which shows favorable results.

3.4 Prevalence

Several studies show similar results in prevalence levels. Moderate to high DA was present [42], at 23.7% and 11.4% respectively [38], The estimated overall prevalence in adults is 15.3%, with a higher incidence in women [43], of up to 65.2% [7]. In younger age groups [44], it is usually prevalent in children aged 3-18 years, more prevalent in schoolchildren and preschoolers than in adolescents [45]. DA also represents a common problem among older adults, with 66.9% of the total being very anxious [46].

The population prevalence affected by DFA turns out to be high at 15.3%, with young and educated women comprising the highest percentage.

4. Conclusions

Recognizing the worldwide prevalence affected by dental phobia and anxiety, keeps the professional in a state of alert and objective detection, with the world standardized scale, as well as continuous prevention, with non-pharmacological therapeutic options, such as the use of lavender aromas, or continuous pauses during treatment, to achieve better control of anxiety in the patient.

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