

Dental Fear – Prevalence and Ways to Combat It

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Abstract: *The fear of the dentist, dental anxiety and dental phobia continue to concern the medical world, seeking to elucidate the causes, calculate the prevalence and its implications on the oral health of the population, as well as identify the most effective methods to combat it. The survey included 208 patients, who were treated and investigated, in the period 2018-2019. The questionnaire consisted of 15 questions, structured in 3 sections: socio-demographic data, oral hygiene habits and past experience, during dental treatment, with analysis of dental anxiety, using modified MDAS.*

The mean value of MDAS in the study group was 11.7 ± 4 . Most of the respondents (80%) had medium or low dental anxiety. High levels of anxiety were observed in 20% of patients, including 12% with dental phobia. A statistically significant correlation was found between the mean values of the MDAS and sex ($p = 0.030$), age ($p < 0.0005$), place of residence ($p = 0.016$), socioeconomic status ($p = 0.040$), subjective assessment of oral health ($p < 0.0005$), frequency of dental appointments ($p < 0.0005$) and negative dental experiences in the past ($p < 0.0005$). No correlation was observed between anxiety, education, or habits related to oral hygiene. As methods of combating dentist fear, it resorted, somehow differentiated and personalized, to progressive muscle relaxation techniques, desensitization and cognitive behavioral therapy, the therapeutic act being carried out in a "tell-show-do" manner. These applied methods have meant the extension of the working time, but without additional costs. We consider our experience in using them as positive, with stable results and with increasing efficiency over time.

Our study shows that most of the respondents were without any special fear of dental treatment, one in five patients had a high level of anxiety, and one in ten suffered from dental phobia. Middle-aged women seem to have higher rates of dental anxiety, compared to men.

Practitioners need to be aware of the common occurrence of fear, in order to combat it being required knowledge of behavioral psychology and, first of all, establishing a relationship based on trust with the patient, from the beginning.

Keywords: *dental fear; prevalence; cognitive behavioral therapy.*

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Introduction

Dental fear can be defined as a normal emotional reaction to specific threatening stimuli, under the conditions of a dental treatment, otherwise necessary. Dental anxiety indicates a state of agitation, in the idea that something terrible is going to happen, related to dental treatment, usually accompanied by an imminent loss of control. Similarly, dental phobia is a severe dental anxiety, with marked and persistent anxiety, in relation to specific situations or objects (eg drilling, local anesthetic injections) or the dental environment in general. The more comprehensive term *dental fear and anxiety* (DFA) is used for strong negative feelings associated with dental treatment, both among children, adolescents and adults, regardless of whether the diagnosis of dental phobia can be based on objective criteria. Dental phobia can also include fear of dental tools and procedures, of the dental environment or even fear of the dentist, as a person (Moore 1991; Seligman et al., 2017).

Dental phobia causes people with this problem to avoid dental treatments, neglecting their oral health. Only the problems of serious dental pathology determine them to visit the dentist. The urgency of this visit can aggravate the phobia, in this way closing a vicious circle (Fulga, Perju-Dumbrava & Crassas, 2008). Also, dental anxiety, can start from childhood. Thus, it can have a negative impact on social relations and in the workplace.

In terms of etiology, research shows that people with a high level of fear and dental anxiety usually attribute anxiety to a past traumatic dental event, directly or indirectly, usually on the first visit to the dentist's office. Thus, the first traumatic dental episode was suspected to have occurred in childhood, but its anxiety-generating effect extended over time to adulthood (Armfield & Heaton 2013, Locker, Thomson & Poulton, 2001).

There is a significant relationship between the dental fear of the child and his parents. Dental fear also has, of course, a genetic component, heritability being more evident in girls than in boys (De Jongh, Adair & Meijerink-Anderson, 2005; Ray et al., 2010).

Material and Methods

The present study included 208 patients, aged 25-65 years, 108 women, 100 men, who were investigated and treated during the period 2018-2019. The prevalence of dental fear was assessed through a survey, carried out with the help of a questionnaire, consisting of 15 questions, structured in 3 sections, involving, in addition to socio-demographic data, elements of

oral hygiene habits and past experiences during dental treatment. The analysis of the results was done using Modified Dental Anxiety Scale (MDAS).

As methods of combating dentist fear, it resorted, somehow differentiated and personalized, to progressive muscle relaxation techniques, desensitization and cognitive behavioral therapy, the therapeutic act being carried out in a "tell-show-do" manner.

Results

For the study group, MDAS had a mean value of 11.7 ± 4 . Analysis of responses showed that the majority (80%) had moderate to low forms of dental anxiety. On the other hand, 20% patients, showed a high level of anxiety, including 12% with dental phobia. The mean values of MDAS were in a statistically significant correlation with female gender ($p = 0.030$), mean age 30-45 years ($p < 0.0005$), urban environment ($p = 0.016$), poor socioeconomic status ($p = 0.040$), subjective assessment of oral health ($p < 0.0005$), high frequency of dental appointments ($p < 0.0005$) and negative dental experiences in the past ($p < 0.0005$). The level of education and oral hygiene habits do not seem to be correlated with anxiety. Our results are similar to those of other dental fear prevalence studies (Sopińska & Boltacz-Rzepakowska 2016).

The diagnosis was also analyzed in the Seattle system:

- type 1: simple conditional phobia (fear of dental procedures) - 147 cases (70%)

- type 2: fear of disaster (lipothymia, heart attack, panic attack) during dental treatment - 6 cases (3%)

- type 3: generalized anxiety - 35 cases (17%)

- type 4: a priori distrust in dentists (dental fear) - 20 cases (10%)
The applied methods of combating the dental fear have meant the extension of the working time, but without additional costs. We consider our experience in using them as positive, with stable results and with increasing efficiency over time.

Discussions

The fear of the dentist varies constantly, from a very slight fear to severe forms. Therefore, in a dental practice, patient management should be applied differentially and customized (Stan & Voicu 2019).

In the management of dental fear cases, momentary, time-inoperative methods (hypnosis, general anesthesia) or longer-term methods

(cognitive behavioral therapy and the development of coping skills) can be used. Psychological approaches are more effective in maintaining regular dental care, but require additional knowledge for the dentist and, of course, patient motivation (Moore, 1991).

Similarly, distraction techniques can be used (video projections, focusing on another region of the body) that divert the patient's attention, in order to cancel the negativity and ensure comfort (Ciubara et al., 2016).

The progressive muscle relaxation technique for certain muscle groups can be applied in a sitting position, even in the waiting room. Relaxation begins with the pelvic limbs, continues with the thoracic limbs, then the muscle groups of the trunk and, finally, the head, neck and shoulders. These steps have been described by Edmund Jacobson (Appukuttan, 2016).

Behavioral control is a technique that involves the patient giving a signal, chosen before the start of treatment (eg raising the hand) to the clinician when he will have to stop the procedure. In this way, people feel that they have control over the session and, as such, gain confidence in the dentist (Stan & Voicu 2019).

Cognitive behavioral therapy (CBT) is effective in reducing fear and increasing the frequency of visits to the dentist. Other useful measures could be distraction, guided images, relaxation techniques and music therapy.

Behavioral techniques are considered to be effective, but sufficient only in cases of mild anxiety (Armfield & Heaton 2013; Stan & Voicu, 2019).

Tell-show-do is another common non-pharmacological practice, used to manage a dentist's fear behavior. The purpose of this intervention is to promote a positive attitude towards dentistry and to build a friendly relationship with the patient. The patient is gradually introduced to treatment. First, the dentist "tell", explains in words, the patient which will be the dental procedure. In the "show" phase, the patient is familiar with the dental treatment, using demonstrations. Finally, in the "do" phase, the dentist continues the treatment itself, following the same procedure and the same demonstrations, previously illustrated for the patient (Stan & Voicu, 2019).

Desensitization in dentistry refers to the gradual exposure of a new procedure to the patient, in order to relieve anxiety (Chitescu et al., 2018; Perju-Dumbrava et al., 2019). It is based on the principle that a patient can overcome his anxiety, if he is gradually exposed to the dreaded, imagined or real stimuli, in a controlled and systematic way. Exposure to stimuli or fear situation is recognized as a central treatment component for specific phobias (Locker, Thomson & Poulton, 2001; Moore 1991).

Conclusions

In our study, most respondents had no special fear of dental treatment. 1/5 of the patients had a high level of anxiety and about 1/10 suffered from dental phobia. The most affected by dental anxiety seem to be middle-aged women, compared to men of the same age.

Dentists must be aware of the usual appearance of fear. To combat it, it is necessary to know the behavioral psychology. What matters a lot, however, is the initial establishment of based on trust relationship with the patient.

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