



## EVALUATION OF ANXIETY LEVELS OF PATIENTS REPORTING FOR DENTAL TREATMENT: AN INSTITUTIONAL ANALYSIS

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### ABSTRACT

**Background-** Anxiety is an adaptive emotional response to potentially threatening or dangerous situations; moderated by the sympathetic nervous system. Dental anxiety is common and occurs before, during, or after dental treatment. As a result, extensive anxiety leads to dental avoidance and many missed appointments, impacting both oral and overall health. In particular, those people who delay visiting the dentist for a long time, even when experiencing significant pain, may have extensive problems that require more complex and complicated treatment. **Aim-** To evaluate the level of dental anxiety in patients undergoing dental treatment based on the variables of age and gender. **Materials and Methods-** In the conducted study, a total of 100 dental patients took part, comprising 56 males and 43 females. The research employed a pre-treatment design to evaluate the impact of the dental procedure on the anxiety levels experienced by the patients. To gauge the anxiety levels of the patients before the treatment, the Modified Dental Anxiety Scale (MDAS) was utilized. **Results-** Out of 100 patients, 29 had MDAS scores above 19 i.e. were highly anxious. The results were evaluated based on age and gender. Females were twice as highly anxious as men, with 69% of females and 31% of males being highly anxious. Middle-aged group showed the maximum level of dental anxiety among all age groups. **Conclusions-** Dental anxiety and fear need to be alleviated and controlled with adequate measures. Highly anxious patients must be identified and adequate measures and assurance must be provided.

**KEYWORDS :** Anxiety, Dental treatment, Dentist, Fear, Oral health.

### INTRODUCTION

Fear is an innate emotion of the mind, especially in the dental environment, fear and anxiety contribute to the avoidance of dental treatment.<sup>1,2,3</sup> People often avoid dental treatment until the tooth becomes unsalvageable. Fear and dental anxiety are therefore important parameters of dental care.<sup>1,4</sup> We as dentists must address this fear so that people seek dental treatment as soon as possible and improve the overall dental health of the population.

Fear is a response to a known or perceived threat or danger. It leads to a fight-or-flight situation. Dental fear is a reaction to threatening stimuli in dental situations.<sup>4</sup> The anxiety associated with the idea of visiting the dentist for preventive care and dental procedures is referred to as dental anxiety. Anxiety is an emotional state that precedes the actual encounter with threatening stimuli, which is sometimes not even identifiable. It is usually found in everyday life such as exams, making major decisions, workplace, and in several other circumstances.<sup>5</sup>

Dental anxiety affects an individual's life in many ways. Physiological impacts included signs and symptoms of fear response and feelings of exhaustion after a dental visit, while cognitive impacts included a range of negative thoughts, beliefs, and fears. Behavioral effects include not only avoidance, but also other behaviors related to eating, oral hygiene, self-medication, crying, and aggression.<sup>6</sup>

Some common fears that lead to dental anxiety are fear of

pain, fear of blood injury, lack of trust or fear of betrayal, fear of ridicule, fear of the unknown, fear of personalized dental treatment or feeling depersonalized, fear of mercury poisoning, fear from radiation, fear of suffocation and/or gagging, feeling helpless in the dental chair and lack of control during dental treatment.<sup>6,7</sup>

This study aimed to determine the correlation between dental anxiety on the parameters of age and gender so that adequate measures can be taken to alleviate anxiety and improve the quality of dental care in these patients.

### MATERIALS AND METHODS

The present study was performed in the Department of Conservative Dentistry and Endodontics of Baba Jaswant Singh Dental College, Hospital and Research Institute, Ludhiana. Informed consent was obtained and the option to refuse participation at any point in the study was provided along with the dental anxiety questionnaire. Figure 1 shows the Modified Dental Anxiety Scale (MDAS), which was used to assess dental anxiety. A questionnaire survey (Figure 1) was performed with the patients, which was also translated into vernacular language; (Punjabi) but the actual content of the scale wasn't altered. The survey was done at the treatment's initial diagnosis and evaluation stage. Participants were asked to respond to the questions based on their level of agreement. The possible responses included: not anxious, slightly anxious, fairly anxious, very anxious, and extremely anxious. Any score of 19 or higher indicates a highly anxious

patient. The Modified Dental Anxiety Scale (MDAS), is a worldwide scale, given by G M Humphris et al in 1995.<sup>2</sup> It is a brief questionnaire of 5 questions, summed up together to produce a score ranging from 5 to 25. The present study randomly selected 100 adult patients (M:53, F:47) aged 18-60 years reporting to the department. Patients having MDAS scores 19 and above were screened and labeled as anxious.

CAN YOU TELL US HOW ANXIOUS YOU GET, IF AT ALL, WITH YOUR DENTAL VISIT? PLEASE INDICATE BY INSERTING 'X' IN THE APPROPRIATE BOX-

- If you went to your Dentist for treatment tomorrow, how would you feel?  
Not anxious  Slightly anxious  Fairly anxious  Very anxious  Extremely anxious
- If you were sitting in the waiting room (waiting for treatment), how would you feel?  
Not anxious  Slightly anxious  Fairly anxious  Very anxious  Extremely anxious
- If you were about to have a tooth drilled, how would you feel?  
Not anxious  Slightly anxious  Fairly anxious  Very anxious  Extremely anxious
- If you were about to have your teeth scaled and polished, how would you feel?  
Not anxious  Slightly anxious  Fairly anxious  Very anxious  Extremely anxious
- If you were about to have a local anesthetic injection in your gum, above an upper back tooth, how would you feel?  
Not anxious  Slightly anxious  Fairly anxious  Very anxious  Extremely anxious

➤ Instructions for scoring-  
Each item scored as follows:  
Not anxious = 1  
Slightly anxious = 2  
Fairly anxious = 3  
Very anxious = 4  
Extremely anxious = 5  
Total score is a sum of all five items, range 5 to 25; Cut off is 19 or above which indicates a highly dentally anxious patient, possibly dentally phobic.

Figure 1: The Questionnaire and the scoring criteria used in Modified Dental Anxiety Scale (Humphris et al, 1995).

**RESULTS**

Out of 100 patients, 29 patients had MDAS scores above 19 i.e. were highly anxious. The results were evaluated based on age and gender. According to gender, females expressed two times more dental anxiety than males (Figure 2). Using the cut-off score of ≥ 19, 69% of females and 31% of males were highly anxious (Figure 2). Also, dental anxiety was found to be maximum amongst the age group 31-42 years, followed by age groups 18-30 years, and 43-54 years, with the least highly anxious patients in the age group 55-60 years. (Figure 3).

**According to the gender-**

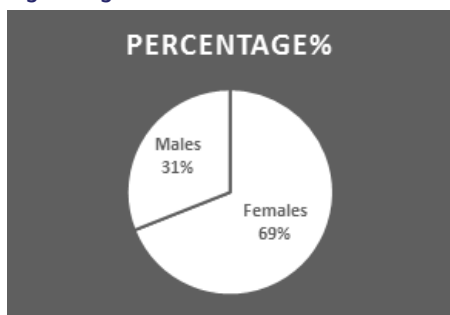


Figure 2: Percentage of males and females who were highly anxious.

**According to age-**

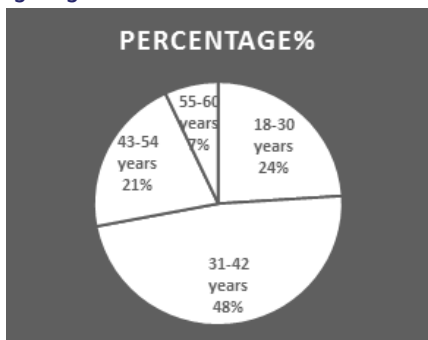


Figure 3: Percentage of highly anxious patients according to age.

**DISCUSSION**

The prevalence of dental anxiety in this study among females and males indicates that despite the technological advances made in modern dentistry, anxiety associated with dental treatment was widespread in the study population.<sup>8</sup> Dental anxiety and fear have many determinants like age, socio-economic status, gender, and physiological health of a patient. In general, women and middle-aged people experience more dental anxiety.<sup>9</sup> The etiology of dental anxiety is multifactorial, and there is no monotherapy for its management. This includes previous negative or traumatic experiences (conditioning experiences), vicarious learning from anxious family members or peers, and exposure to frightening portrayals of dentists in the media. Substantial distress leads to avoidance of dental treatment and multiple failed appointments, negatively impacting oral and general health.<sup>10</sup>

It may be due to the gender roles that make the females more accepting of their dental anxiety and low tolerance to pain, while men find it difficult to accept their dental anxiety and pain tolerance.<sup>11</sup> In this study, patients from the age group 31-42 years showed the most highly anxious patients, followed by age groups 18-30 years, and 43-54 years, with the least highly anxious patients in the age group 55-60 years. Since every patient is unique, a tailor-made approach to alleviate their anxiety should be used to ensure a positive dental experience for the patient. Good communication skills, establishing rapport, and providing control, should be a standard approach for all patients and would be expected to contribute substantially to a mutually respectful dentist-patient relationship and, ultimately, to enhanced patient satisfaction.<sup>10</sup> As females show more dental anxiety, they can be counseled before the dental appointment and made aware of the procedure. While dentistry requires the use of a range of clinical skills, from the simple to the highly complex, at the heart of dentistry is the service industry involving the interaction between the dental professional and the patient.

Psychotherapeutic strategies, pharmacological interventions, or a combination of both can relieve anxiety in the dental clinic depending on patient characteristics, anxiety level, and clinical situations.<sup>11</sup> Psychotherapeutic management strategies modify behavior through learning and are minimally invasive with nil or negligible side effects. These therapies involve muscle relaxation, aromatherapy, positive reinforcement, guided imagery, and physiological monitoring using biofeedback, hypnosis, acupuncture, distraction, and desensitization. Cognitive behavioral therapy (CBT) is a combination of behavior therapy and cognitive therapy. It involves changing negatively distorted thoughts (cognitions) and actions (behaviors). Pharmacological interventions utilize relative analgesia (nitrous oxide), conscious intravenous sedation, or oral sedation, which have a range of undesirable side effects, contraindications, and risks. Dental anxiety is a common barrier to oral care, affecting almost half of the Indian population. Patients with low or moderate fear can be effectively managed with good communication skills, empathy, careful treatment, and some basic non-pharmacological approaches such as relaxation or distraction. More fearful individuals may require more time and effort, employing different techniques, before they are prepared to undergo treatment and then successfully return to receive treatment in the future. By understanding its causes, effective treatment can reduce anxiety, and therefore barriers to achieving high standards of oral health can be overcome.<sup>12</sup>

**CONCLUSION**

29% of patients were found to be highly anxious in our study as per the MDAS. Females were found to be two times more

anxious than men, with 69% of females and 31% of males being highly anxious. Also, dental anxiety was found to be maximum amongst the age group 31-42 years, followed by age groups 18-30 years, and 43-54 years, with the least highly anxious patients in the age group 55-60 years. Adequate anxiety-relieving measures should be used in routine dental practice to alleviate patients' dental fears and provide them with the best oral health care. Further exploration with a larger sample size should be done in the future.

#### Legends for figures:

**Figure 1:** The Questionnaire and the Scoring criteria used in the Modified Dental Anxiety Scale (Humphris et al in 1995.)

**Figure 2:** Percentage of males and females who were highly anxious.

**Figure 3:** Percentage of highly anxious patients according to age.

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