

**A CROSS-SECTIONAL STUDY TO EVALUATE DENTAL ANXIETY LEVELS AMONG PEOPLE IN VARIOUS STATES OF INDIA USING QUESTIONNAIRE BASED SURVEY****Dr. Darshit Jain\*, Dr. Deep Shah, Dr. Falguni Maniyar, Dr. Saeeda Kharodia and Dr. Rutuj Waghmare**<sup>1,2,3</sup>Post-Graduate Student, Department of Conservative Dentistry and Endodontics, Pacific Dental College and Hospital, Udaipur, Rajasthan, India.<sup>4</sup>Post-Graduate Student, Department of Oral and Maxillofacial Surgery, Pacific Dental College and Hospital, Udaipur, Rajasthan, India.<sup>5</sup>Post-Graduate Student, Department of Community Medicine, Datta Meghe Institute of Medical Sciences Sawangi (M), Wardha, Maharashtra, India.**\*Corresponding Author: Dr. Darshit Jain**

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**ABSTRACT**

**Introduction:** Dental treatment still remains one of the most anxious procedures despite far spread awareness in building doctor- patient relationship. Dental anxiety is a crucial, if not the main, component of distress to patients within the dental operatory. Regardless of vast knowledge on behaviour management, little attention is given to patient's fears whilst performing any treatment. Various scales have been proposed to study the anxiety levels of the patients, that can help alleviate their anxiety. This study towards aimed at studying the anxiety of a sample population using corah's dental anxiety scale and dental concerns assessment scale. **Methods:** Data were collected by means of one survey of a random sample of the adult population in India in two languages. The survey questionnaire consisted of two different anxiety scales viz. Corah's Dental Anxiety Scale (CDAS), & Dental Concerns Assessment Scale (DCAS). The answers were recorded and tabulated in Microsoft Excel software and statistically analysed. **Result:** Result showed that out of 203 answers recorded, corah's DAS showed non-significant anxiety level. However, Significant number of population were concerned about various procedures that was seen in dental concerns assessment scale. **Conclusion:** This study concluded that although the anxiety levels vary among various population, they showed similar anxious concerns towards dental treatment procedures.

**INTRODUCTION**

Anxiety is perceived as hypothetical hazard over uncertain and unfamiliar processes generally. It is defined as apprehension of danger and dread, amid restlessness, tension, tachycardia, and dyspnoea unattached to a transparent unidentifiable stimulus.<sup>[1]</sup> It is often expressed as an imaginary threat to a vague, unpleasant feeling which is amid the premonition that something undesirable will happen. Anxiety may also be defined as a reaction to a person's perceived danger, which is usually characterized by feelings of anxiety, worried thoughts, apprehension, and physical changes, like elevated blood pressure, nausea, and palpitations.<sup>[1]</sup>

Dental anxiety may be a psychological feeling, which may partially or completely prevent an individual from receiving dental treatment. It prevails altogether age groups but is most ordinarily observed among young adults between 18 and 26 years aged.<sup>[2]</sup> Dental anxiety is characterized by a physical and/ or emotional response to a perceived threat. This threat doesn't always need to be physically present, because the mere idea of being in an uncomfortable situation can provoke feelings of uneasiness and apprehension.<sup>[3]</sup> It's an emotion and a

serious complication which is prevalent worldwide and can't be limited to a specific country or population.<sup>[4]</sup> Consistent with the researchers of the United States, they found approximately between 50 and 80% of adult in United States have a point of dental anxiety categorized into mild to severe.<sup>[3]</sup> The prevalence of dental anxiety among Indian undergraduate students was found between 3.9 and 11%. Anxious dental patients, that suffer more from dental diseases, just because they cancel or delay their visit to a dentist, and consequently complicate their disease condition.<sup>[2]</sup>

Little is known of the explanation of dental anxiety. Weiner and Sheehan (1990) have suggested that dentally anxious people could be classified into two groups, exogenous and endogenous, with concerning the source of their anxiety. Within the former, dental anxiety is the result of conditioning via traumatic dental experiences or vicarious learning, while in the latter, it has its origins during constitutional vulnerability to anxiety disorders as evidenced by general anxiety states, multiple severe fears, and disorders of mood.<sup>[5]</sup>

Dental procedures are usually stressful situations for most of the patients everywhere the planet. Dental anxiety is ranked fourth among common fears and ninth among intense fears. Researches show this anxiety is often multifactorial; negative experiences within the past, patient's tendency to think negatively about treatment and expected pain, patient's perception of a dental procedure, patient's general anxiety and personality and some clinical factors like sort of dental procedure and dentist's behaviour are a number of the probable reasons. These anxiety's manifestations can potentially cause some difficulties for dentists to affect patients. Patients affected by dental anxiety tend to delay in seeking dental care or postpone their appointments and avoid dental care also which ends up their oral health being compromised. Also, they are more vulnerable to show hyperventilation and syncope symptoms, which are two of the foremost common dental emergencies.<sup>[6]</sup>

Not every patient who has experienced one or more painful dental procedures suffers from dental anxiety.<sup>[2]</sup> The aetiology for developing dental anxiety could also be multifactorial, which incorporates largely injection pricking, long-standing treatments, noise from dental drills or scaling tools, rubber dam use, extraction forceps or traumatic extractions, fears of blood injury, previous childhood traumatic dental experiences, prolonged mouth opening during dental treatment, frequent dental visits. Dental patients with elevated anxiety are especially susceptible to exaggerate pain expectations when the anticipated challenge situation is perceived as fear-relevant. This means that individuals with higher trait anxiety tend to experience more intense anxiety during dental treatment, which they are likely to feel more pain than low trait anxiety individuals. In agreement, suggested that dental fear and anxiety are associated with negative beliefs about what may transpire during dental treatment.<sup>[7]</sup> Thus The dental trauma doesn't simply affect the oral health through avoidance of treatment, but can also impact psychological state negatively with the event of post-traumatic stress disorder.<sup>[8]</sup>

Dental professionals play an important role within the management of dental anxiety. Dental anxiety which is said to the age, gender, educational qualification, socio-economic status, and culture varies from person to person, during which to spot dental anxiety level of the patient is crucial for the dentist for treatment. So before treatment, the dentist should be ready to detect patient anxiety level, therefore the dentist can use appropriate management option. The dental team should have a broad approach on patient's need, not be judgmental while managing the patient, instead of all that is required to allow the patient's anxiety, thus facilitating the provision of proper care.<sup>[9]</sup> Thus, this study was aimed towards assessing the amount of anxiety among people who are willing/ have taken treatment in a dental clinic using a questionnaire based survey.

## METHODOLOGY

The study sample included participants who are able to understand and fill the E-form were included in the study with the age of 18 years and above it was considered in the study. A structured custom – made questionnaires of 22 questions was designed to access the anxiety level of dental patients. The criterion of the study was formulated to make the study simple and clear. To make the questionnaire more understandable, the questions were appropriately translated into Hindi language and given along with its English counterpart. The sample was selected base on the exclusion and inclusion criteria.

### Exclusion Criteria

- Participants who are not willing to participate in the study

### Inclusion Criteria

- Participants with the age of 18 years or more,
- Willing to participate in the survey,
- Ability to understand, read and answer questionnaires

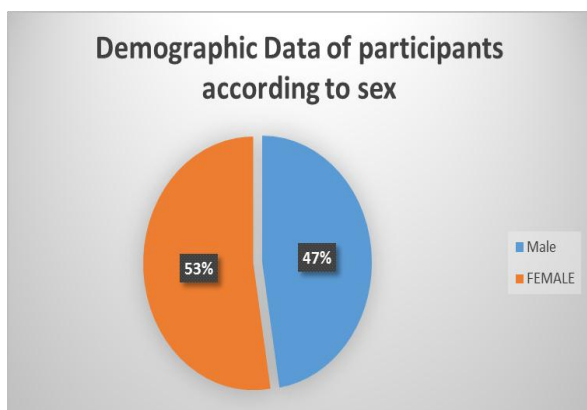
The eligible and willing participants received the structured questionnaire in E-format after a brief explanation about the study and its purpose. Data were tabulated and analyzed using SPSS Version 21 (SPSS 11.5 for Windows®). Analysis initially was performed with descriptive analysis for age, sex and number of visits, with anxiety scales assessed using univariate analysis of variance.

## RESULT

A total of 203 answers were recorded. 70.3% of the participants were in the age group of 21-40 years, followed by 13.9 % in the age group of 41-60 (Table 1). 106(52.6%) participants were female while the rest (47.5%) were male (Figure 1). Majority of the participants included in the study had previously visited the dentist or a dental clinic for more than 2 times (58.4%). Analysis of the participants by corah's dental anxiety scale showed no significant difference. It also showed no significant difference in dental anxiety in both the sexes ( $P>0.05$ ) (Table 2). Analysis of dental concerns assessment scale showed that a large population of participated individuals were concerned/anxious about various situations created in a dental healthcare office ( $P<0.05$ ). The concerns majorly included the sound of the drill, cost of dental treatment, gagging etc.

**Table 1: Table showing the frequency of participants in individual age group.**

Age Group	Frequency	Percent
10-20	26	12.9
20-40	142	70.3
40-60	28	13.9
60>	6	3.0



**Figure 1: Demographic data of the participants according to sex.**

## DISCUSSION

About one-third of the sample population surveyed showed moderate to high anxiety levels. This anxiety reveals a compulsion both for early detection and for

patient management strategies to influence their treatment optimistically. Supporting concerned patients to overcome their dental anxiety is a challenge although if brought, will lead to an overall improvement in their oral health care and hence general welfare. Comparison of the CDAS with sex or the number of previous visits to the dentist showed no significant difference. This shows the prevalence of fear in almost every individual with the dental healthcare professional doing nothing to overcome this state of anxiety. A significant number of participants showed that the sound or vibration of the drill is one of the main causes of dental fear whilst starting dental treatment. Also, taking an x-ray, particularly an intraoral periapical radiograph, also invokes fear in the majority of people. This can be attributed to the fact of getting exposed to the radiation during this procedure. A survey done by Yamada T et al showed that the second most fearful situation in dental treatment was the sound of drill along with the feel of drill onto the tooth.<sup>[10]</sup>

**Table 2: Table showing Comparison of scores of Corah's Dental Anxiety Scale.**

Questions	Type III Sum of Squares	Mean Square	F	Sig.
Do You feel anxious when you visit the dental clinic for any treatment?	.002	.002	.007	0.43
How do you feel when you're waiting in the dental office?	.589	.589	1.575	
How do you feel when you're in the dental chair waiting, while the dentist gets his drill ready to work on your teeth?	.379	.379	1.012	
Do You feel worried about the number of appointment and the time that will be required for necessary appointments and treatment, time away from work or transportation?	.456	.456	1.220	

Gagging can be caused due to a lot of factors during endodontic treatment including anatomical, medical as well as iatrogenic factors.<sup>[11]</sup> In endodontics, it is mostly due to IOPA films placed inside the mouth. A significant number of participants showed anxiety to gagging reflex caused during the dental procedure. A study has also shown that patients with gag reflex tend to show higher scores on DAS.<sup>[12]</sup>

## CONCLUSION

Within the limitations of this study, it can be seen that dental procedure does lead to a lot of anxiety in all types of patients. While the elderly are less anxious, there is no difference in levels of anxiety in either male or female. Thus, the dental healthcare professional should consult and manage each patient according to their state of mental well-being.

**Table 3: Table showing significant concerns shown by participants in The Dental Concerns Assessment Scale.**

Questions	Type III Sum of Squares	Mean Square	F	Sig.
You feel the sound/vibration of the drill	3.349	3.349	11.255	.001
Gagging (for example during impression of the mouth)	6.747	6.747	22.678	.000
Jaws get tired during treatment	1.783	1.783	5.992	.015
You feel You are not listened to	3.986	3.986	13.398	.000
You feel that You may need a lot of dental treatment	2.241	2.241	7.533	.007
I'm worried about the cost of dental treatment I need	2.321	2.321	7.800	.006

## REFERENCES

1. Sinha E, Rekha R, Nagashree S: Anxiety of dental treatment among patients visiting primary health centers. Journal of Indian Association of Public Health Dentistry, 2019; 17: 235.
2. Chowdhury CR, Khijmatgar S, Chowdhury A, Harding S, Lynch E, Gootveld M: Dental anxiety in first-and final-year Indian dental students. BDI open, 2019; 5: 1-9.
3. White AM, Giblin L, Boyd LD: The prevalence of dental anxiety in dental practice settings. American Dental Hygienists' Association, 2017; 91: 30-4.
4. Jeddy N, Nithya S, Radhika T, Jeddy N: Dental anxiety and influencing factors: a cross-sectional

- questionnaire-based survey. *Indian Journal of Dental Research*, 2018; 29: 10.
5. Fotedar S, Bhardwaj V, Fotedar V: Dental anxiety levels and factors associated with it among patients attending a dental teaching institute in Himachal Pradesh. *SRM Journal of Research in Dental Sciences*, 2016; 7: 153.
  6. Razavian H, Sara M, Zare H, Sepahvandi A: State and Trait Anxiety Evaluation in Dental Patients. *Int J Depress Anxiety*, 2018; 1: 1-008.
  7. Fuentes D, Gorenstein C, Hu L: Dental anxiety and trait anxiety: an investigation of their relationship. *British dental journal*, 2009; 206: E17.
  8. Humphris G, King K: The prevalence of dental anxiety across previous distressing experiences. *Journal of anxiety disorders*, 2011; 25: 232-6.
  9. Minja IK, Kahabuka FK: Dental Anxiety and Its Consequences to Oral Health Care Attendance and Delivery. *Anxiety Disorders-From Childhood to Adulthood*: IntechOpen, 2019.
  10. Yamada T, Ebisu S, Kuwano S: A questionnaire survey on the effect of the sound of dental drills on the feeling of patients in dental clinics. *Acoustical science and technology*, 2006; 27: 305-8.
  11. Dickinson C, Fiske J: A review of gagging problems in dentistry: 1. Aetiology and classification. *Dental update*, 2005; 32: 26-32.
  12. Akarslan Z, Erten H: Reliability and validity of the Turkish version of the shorter form of the gagging problem assessment questionnaire. *Journal of oral rehabilitation*, 2010; 37: 21-5.