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Original Research

Prevalence of Dental Anxiety among Population of Ghaziabad, Uttar Pradesh, India- A Cross-Sectional Study

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ABSTRACT:

Introduction: Dental anxiety is an emotion and a major complication that is prevalent worldwide and cannot be limited to a particular country or population. It refers to patient's specific reaction toward stress associated with dental treatment in which the stimulus is unknown, vague or not present at the moment. **Aim:** The study aims to estimate prevalence, extent, and factors influencing dental anxiety in a sample of the patients visiting the OPD of a dental hospital in Ghaziabad, Uttar Pradesh, India. **Materials and methods:** A cross-sectional study was conducted among 400 consecutive patients. A self-administered questionnaire composed of ten questions was designed to assess the anxiety levels of dental patients. Data were tabulated and analyzed using Statistical Package for Social Sciences (SPSS) 18.0 (SPSS Inc., Chicago, IL, USA). Analysis was performed with Chi square test and independent t-test. **Results:** The study revealed that dental anxiety has a wide prevalence rate encompassing both genders. Distinctive predominance among females (n=155) and literates (n=274) exhibiting a greater degree of anxiety was identified. Pain and extraction have been identified as duress and anxiety inciting procedures. **Conclusion:** The present study revealed that age, gender, level of education, and procedure along with visit frequency has a direct effect on the patient's state of mind and anxiety.

Keywords: Dental Anxiety, dental fear, survey.

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INTRODUCTION

Fear is usually defined as an individual's response to an actual threatening event or a dangerous situation to protect one's life. An existing specific stimulus like injection or drilling can provoke dental fear. Dental anxiety is an emotion and a major complication that is prevalent worldwide and cannot be limited to a particular country or population. Dental anxiety refers to patient's specific reaction toward stress associated with dental treatment in which the stimulus is unknown, vague or not present at the moment. Regardless, in both these situations the patient's emotional reactions could be practically similar.^[1,2]

One of the highly prevalent type of fear is dental fear, it usually leads to avoidance of dental care which ultimately results in significant health problems.^[3,4] The four mainly proposed antecedents of dental fear are (a) direct negative

or painful dental experience (b) vicarious negative experiences portrayed by family, friends, and the mass media (c) generalization of anxiety related to aversive medical and (d) patients' personality characteristics or dynamics.^[5]

The practice among dentists to screen and evaluate the fear of the patient before dental treatment is not common, and so, this study aims to evaluate the dental anxiety and fear in patient and its significance with relation to their age, gender, education, past traumatic experiences, and frequency of dental visits.

OBJECTIVE

The study aims to estimate prevalence, extent, and factors influencing dental anxiety in a sample of the patients

visiting the OPD of teaching dental hospital in Ghaziabad, Uttar Pradesh, India

MATERIALS AND METHODS

A cross-sectional study was conducted among 400 consecutive patients visiting the OPD of teaching dental hospital in Ghaziabad, Uttar Pradesh, India. Any patient aged 18 and above was considered for the study. A self-administered questionnaire composed of ten questions was designed to assess the anxiety levels of dental patients. The sample was selected based on the exclusion and inclusion criteria. The Institutional Review Board of the Dental College provided the ethical clearance for this study and informed consent was obtained from all the study participants prior to the study.

Exclusion criteria

- Patients not willing to participate in the study
- Edentulous patients
- Medically compromised patients
- Patients with physical and mental disability

Inclusion criteria

- Patients above 18 years of age
- Willingness to participate in the survey
- Patients with the ability to understand, read, and fill questionnaires.

The eligible and willing participants received the structured questionnaire in a printed form (Hindi) after a brief explanation about the study and its purpose.

STATISTICAL ANALYSIS

Data were tabulated and analyzed using Statistical Package for Social Sciences (SPSS) 18.0 (SPSS Inc., Chicago, IL, USA). Frequency distribution was explained. Analysis was performed with Chi square test and independent t-test.

RESULTS

Table 1 included the demographic data of the study subjects. The study comprised of 245 males and 155 females. Among the total sample, 295 were having dental anxiety. A significant relation was observed between anxiety and gender and educational level of the study subjects. Table 2 shows the dental anxiety according to dental visit characteristics of the total study subjects. The results showed a statistically significant relation of anxiety with both dental visit frequency and reason for the visit. Table 3 describes the State of mind of the study subjects before dental visit. 73.75% sample were having an anxious and fearful mind while only 2% having happy and cheerful mind. Table 4a included the reasons for initial start of dental fear and anxiety while table 4b included the reasons provoking dental fear and anxiety. Table 4c described the treatment procedures that induce dental fear and anxiety among study subjects. 38.30% were feared of extraction while 29.85% were feared of the root canal treatment procedure.

TABLE 1: Demographic data and anxiety

| Characteristics | | Total sample | Patients with dental anxiety | P Value |
|-----------------|------------|--------------|------------------------------|----------------|
| Age | ≤40 Years | 257 | 193 | 1.282 |
| | >40 Years | 143 | 102 | |
| Gender | Male | 245 | 86 | 0.047** |
| | Female | 155 | 109 | |
| Education | Literate | 274 | 237 | 0.042** |
| | Illiterate | 126 | 58 | |

Test used – Independent t-test
P value ≤0.05 means significant

TABLE 2: Dental visit vs anxiety

| | TOTAL SAMPLE | ANXIOUS AND FEARFUL GROUP | NON-ANXIOUS GROUP | P VALUE | CHI SQUARE VALUE |
|-------------------------------|--------------|---------------------------|-------------------|----------------|------------------|
| DENTAL VISIT FREQUENCY | | | | | |
| TOTAL | 400 | 295 | 105 | 0.024** | 4.245 |
| 1 ST VISIT | 53 | 42 | 11 | | |
| 2 ND VISIT | 256 | 218 | 38 | | |
| 3 RD VISIT | 35 | 21 | 14 | | |
| >3 VISITS | 56 | 14 | 42 | | |
| REASON FOR VISIT | | | | | |
| TOTAL | 400 | 295 | 105 | 0.022** | 4.213 |
| TOOTH PAIN | 72 | 59 | 13 | | |
| COSMETIC REASONS | 186 | 139 | 47 | | |
| REGULAR CHECK UP | 38 | 11 | 27 | | |
| OTHERS | 104 | 86 | 18 | | |

Test used – Chi square analysis
P value ≤0.05 means significant

TABLE 3: State of mind before dental visit

| STATE OF MIND BEFORE DENTAL VISIT | STUDY SAMPLE N (%) |
|-----------------------------------|--------------------|
| CALM AND RELAXED | 31 (7.75%) |
| ANXIOUS AND FEARFUL | 295 (73.75%) |
| NEUTRAL | 66 (16.5%) |
| HAPPY AND CHEERFUL | 8 (2%) |

TABLE 4a: Reasons for initial start of dental fear and anxiety

| REASONS FOR INITIAL START OF DENTAL FEAR AND ANXIETY | ANXIOUS AND FEARFUL GROUP |
|--|---------------------------|
| TOTAL SAMPLE | 295 (100%) |
| UNKNOWN | 70 (23.72%) |
| BAD EXPERIENCE | 134 (45.44%) |
| UN-EMPATHIC DENTIST | 48 (16.27%) |
| NEGATIVE INFORMATION FROM OTHERS | 43 (14.57%) |

TABLE 4b: Reasons provoking dental fear and anxiety

| REASONS PROVOKING DENTAL FEAR AND ANXIETY | ANXIOUS AND FEARFUL GROUP |
|---|---------------------------|
| TOTAL SAMPLE | 295 (100%) |
| INJECTION | 42 (14.23%) |
| FEAR OF PAIN | 198 (67.13%) |
| SIGHT OF BLOOD | 39 (13.22%) |
| SOUND OF DRILL | 16 (5.42%) |

TABLE 4c: Treatment procedures that induce dental fear and anxiety

| TREATMENT PROCEDURES THAT INDUCE DENTAL FEAR AND ANXIETY | ANXIOUS AND FEARFUL GROUP |
|--|---------------------------|
| TOTAL SAMPLE | 295 (100%) |
| SCALING | 32 (10.84%) |
| FILLING | 48 (16.27%) |
| EXTRACTION | 113 (38.30%) |
| ROOT CANAL TREATMENT | 88 (29.85%) |
| ALL PROCEDURES | 14 (4.74%) |

DISCUSSION

The fear of dental treatment determines the frequency of treatment availed and has a long term implication in maintaining oral health. ^[1] The fear in an individual visiting a dentist is universal and can be seen in both children and adults. The estimated prevalence range of dental anxiety seems to vary from 3% to 43% with many factors such as age, gender, and culture playing a vital role of influence. ^[6] Studies report an increased prevalence of anxiety among the female gender and a general reduction in anxiety as age advances. ^[7] Dental fear results in a delayed dental visit which further compounds the dental problem leading to symptom driven treatment culminating in further fear of dental treatment. ^[2]

This study estimated the prevalence, extent, and factors influencing dental anxiety in a sample of patients visiting a private dental hospital in Ghaziabad, India. Association between visiting patterns, experience at the dental care center, and dental fear were elucidated through self-administered questionnaire composed of ten questions that

were designed to assess the anxiety levels of dental patients.

The total 400 patients were a mixed population with both male (61.25%) and female (45.2%) participants. This is similar to the distribution of sample population in studies by Jeddy N et al ^[2] and Astrom et al ^[8] where the males constituted the majority of the sample size. The most common reason for inciting a visit to the dentist has been cosmetic reasons for almost (n=186 patients) and with regular dental checkup being the reason in only 38 of the patients.

Around 295 (73.75%) patients claimed to be anxious and fearful, of which the majority of the patients were found to be ≤40 years of age. This corresponds to another study by Marya CM et al where the majority of the anxious population seemed to be in the 30–40 years age group. ^[9] The anxiety levels were more in females when compared to males. The increased anxiety levels experienced by the fairer sex in this study correspond with study by Fuentes D

et al. ^[10] This could be attributed to a combination of emotional and social factors.

An increased frequency of dental visits seems to decrease the anxiety levels among patients. This is in agreement with many study results which reported an increased anxiousness among patients who have had no previous dental experience when compared to patients with regular or frequent dental attendance. ^[11,12] The reason could be a fear of the unknown procedure manifesting as anxiety.

Out of the patients exhibiting anxiety, those coming to the hospital with tooth pain tended to be overly anxious followed by patients visiting the dentist for cosmetic reasons. A previous unpleasant experience with the dentist or the dental procedure seems to play an important factor in instilling early seeds of anxiety within the patient's mind, with the fear of pain cited as the most important reason for fear.

Generalizability of the results possibly will be one of the limitations of our study because of the smaller sample size. It is a fact that studies involving the use of questionnaires are susceptible to acquiescence bias and social desirability bias and this may be another limitation.

CONCLUSION

The findings of our study concludes that there is a high prevalence of dental fear among the Ghaziabad population. The findings also revealed that age, gender, level of education, and procedure along with visit frequency has a direct effect on the patient's state of mind and anxiety. Dental anxiety has an impact on behavior, health, physiology, cognition, and social factors. This in turn is manifested as fear, avoidance behavior, aggression, tension, and emotional instability affecting sleep, work, and relationship. For a satisfactory dental treatment and a good oral health status, the state of mind of the patient is very important. This can be achieved by modifying the behaviour of both the dentists and patients.

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