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DENTAL ANXIETY AMONG PATIENTS UNDERGOING EXTRACTION OF TEETH

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ABSTRACT

People avoid going to the dentist due to fear and anxiety related to dental procedures. The study aimed to determine the estimated percentage of anxiety among individuals undergoing exodontia and the association between gender, previous dental experience, and dental anxiety. A descriptive cross-sectional study was conducted in the oral and maxillofacial surgery ward of Peshawar Dental College Hospital from March to May 2022. A non-probability consecutive sampling technique was used. All adult patients were taken in the survey. Medically compromised patients were not included in the study. The Modified Dental Anxiety Scale was used to assess the anxiety of dental patients. The Chi-square test was used to find an association between variables. Out of 120 respondents, 57(47.5%) were male and 63(52.5%) were female. Most of the respondents were in the age group of 18-29 (40%). The majority (42.5%) of patients had a past dental history of extractions and had rated previous dental experience on a scale of 1-3 (58.5%). MDAS score 1-5 (31.7%) and 6-10 (25%) was found frequently. 16.7% of patients reported experiencing high levels of dental anxiety. A significant Association of MDAS was found with gender p=.001 and previous dental experience p=.041. Gender and previous dental experience impact the anxiety levels of patients undergoing teeth extraction.

Keywords: *Anxiety, Dental experience, Modified Dental Anxiety Scale (MDAS), Cross-sectional study.*

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INTRODUCTION

For most patients with dental problems, Dental treatments can be a source of fear and pain.[1] Dental anxiety refers to nervousness and fear in dental situations, resulting in delaying or avoiding dental treatment.[2] Despite recent technological advances in dentistry, dental anxiety remains widespread in children and adults.[3] Dealing with fearful dental situations can be difficult, even with the use of conscious sedation, local anesthesia, and other methods. Unfortunately, anxiety and fear cannot always be eliminated among patients, which can have a negative impact on their oral hygiene and overall quality of life-related to oral health.[4] Patients who suffer from dental anxiety often delay or even avoid visiting the dentist, which in turn leads to a deterioration of their oral health. As their untreated oral diseases worsen, they may experience feelings of guilt, shame, or inferiority, which only serves to heighten their dental anxiety. This vicious cycle can be difficult to break.[3]

Exodontia is one of the most commonly carried out dental procedures. Patients who present with non-restorable teeth, periodontal disease, dental trauma, impacted teeth, orthodontic treatment, and severe toothache often go for extraction of teeth.[5] Exodontia is the invasive procedure of removing teeth from the alveolar socket that cannot be saved otherwise. The procedure requires invasive equipment such as local anesthesia injections, forceps, elevators, and bone curretes. The sight of exodontia equipment raises the dental anxiety of patients towards exodontia.[6] Local anesthesia is used to eliminate pain sensations in a specific area to ease the removal of exodontia. A pain-free dental procedure is beneficial for both the dentist and the patient, resulting in smoother procedures with better treatment outcomes.[7] Pain perception during injections can cause anxiety due to tissue penetration, needle pricks, and administration technique of local anesthesia.[8] Patients may feel pressure during extraction

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due to forceps and elevator forces, which can contribute to dental anxiety.[9]

There has been limited research on dental anxiety prevalence in Pakistani patients undergoing exodontia, highlighting the need for a study in our population.[10] According to the findings of a study in Lahore, Pakistan by Butt et al. 14% of patients experienced high levels of dental anxiety.[11] Masoud et al. found that 22% of patients in Islamabad experienced high levels of anxiety.[12]

The Modified Dental Anxiety Scale (MDAS) is a tool used to measure the level of anxiety in dental patients. The scale is based on a set of five questions that inquire about the patient's emotional responses to various aspects of dental procedures, such as how they feel while waiting in the waiting area or when they see dental instruments.[13] Assessment of multiple datasets confirms the validity and usefulness of the scale as a measure of dental anxiety, and it can be easily utilized in dental clinics or research projects.[3]

Dental anxiety often leads to untreated dental problems, resulting in a decline in oral health and loss of teeth. The results of the study will reveal the prevalence of dental anxiety and the factors leading to an increase in distress among people regarding dental treatment. Identifying the factors causing dental anxiety is crucial as it can help in taking measures to address the root causes of this issue. This identification can also assist dentists in taking measures to reduce anxiety and establish a trustworthy relationship between the dentist and the patient, thus ensuring a smooth and stress-free dental procedure.

The study aimed to determine the prevalence of anxiety among individuals undergoing exodontia and to assess its correlation with gender and prior dental experience among patients reporting to Peshawar Dental College Hospital for extraction of teeth.

OBJECTIVES

The objectives of the study were to find out the incidence of dental anxiety among individuals undergoing exodontia and to assess its association with gender and previous dental experience.

METHODS AND MATERIALS

A descriptive cross-sectional study was conducted in the oral and maxillofacial surgery ward of Peshawar Dental College from March 2022 to May 2022. Permission to conduct the study was taken from the ethical review committee of Peshawar Medical College in March 2022. To achieve the required sample size consecutive sampling technique was used in which all subjects meeting the inclusion criteria were selected to gather data from them. A sample size of 120 was calculated by considering a 5% margin of error, 95 % confidence interval, and population frame of 174 (turnover of the patients coming for extraction in the said period of data collection), using the Rao soft sample size calculator.[14]

All adult patients (above 18) referred from OPD for extraction, irrespective of gender, were included in the study. Patients referred from the OPD were invited to participate in the study. They were thoroughly investigated to decide whether to include or exclude them in the survey based on inclusion criteria. Patients undergoing surgical procedures other than extraction and patients with systemic problems such as hypertension, diabetes, and issues with coagulation were excluded. Pregnant female patients were excluded as well. Informed consent was taken from patients for their participation in the survey. Before starting the extraction procedure, the patients were questioned, and their emotional responses were recorded. Data was collected by the investigators and was kept with the supervisor till the completion of the data collection period.

The questionnaire consisted of two sections: one with demographic questions, and inquiries about gender, age, and past dental experiences. The other section was The MDAS (Modified Dental Anxiety Scale), which was used to evaluate the anxiety of dental patients. The scale is based upon five questions asking about patients' responses towards dental procedures, like how they felt upon waiting in the waiting area, their response upon seeing dental instruments, etc. Each question had a score ranging from 1 to 5; 1 indicated that the patient had no anxiety, and a five score suggested that the patient was extremely anxious. All five questions' scores were then summed up on a scale of 5-25. This total score was categorized as follows: Minimum anxiety (5-9), moderate anxiety (10-12), high anxiety (13-17), and highly anxious (18-25) who need special care.

The collected data was analyzed by SPSS version 25. Frequency and percentages of mean age and MDAS scores were calculated while for gender male to female ratio was calculated. The Association of dental anxiety with gender and past dental experience was found by the Chi-square test, a p value equal to or less than 0.05 was considered statistically significant at a 95% confidence interval.

RESULTS

Out of the 120 patients who underwent tooth extraction, 57 (47.5%) were male and 63 (52.5%) were female. The mean age of the patients was 36.52. The majority of respondents (40%) were between the ages of 18-29, followed by those aged 30-39 (30.8%) (*Table 1*).

The Modified dental anxiety score shows the incidence of dental anxiety among patients undergoing tooth extraction. Most patients experienced mild to moderate anxiety, scoring 1-5 (31.7%) however, 16.7% of patients reported experiencing high levels of dental anxiety (Figure 1).

The relationship between gender and MDAS scores (dental anxiety) was analyzed using the Chi-square test. Before the extraction procedure, 28.6% of female

TABLE 1: AGE DISTRIBUTION OF PATIENTS

	Age
18-29	48 (40%)
30-39	37 (30.8%)
40-49	14 (11.7%)
50-59	11 (9.2%)
60-69	5 (4.2%)
70 and above	5 (4.2%)
Mean age value	36.52

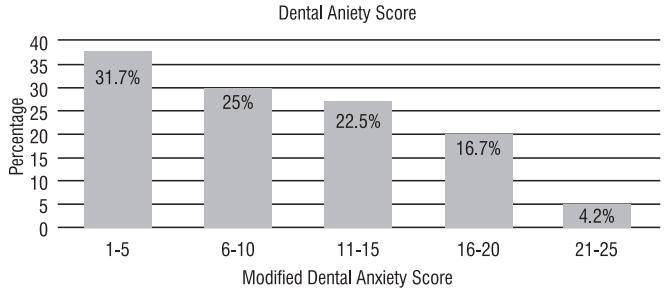

Fig 1: Modified Dental Anxiety Scale (MDAS) scores of patients undergoing exodontia

TABLE 2: ASSOCIATION OF MDAS SCORE WITH GENDER AND PREVIOUS DENTAL EXPERIENCE.

Variables	Not anxious (1-5) n (%)	Minimally anxious (5-9) n (%)	Moderately anxious (10-12) n (%)	Highly anxious (13-17) n (%)	Extremely anxious (18-25) n (%)	Total	P value
Gender							
Male	25 (43.9%)	18 (31.5%)	10 (17.5%)	2 (3.5%)	2 (3.5%)	57 (47.5%)	0.01*
Female	13 (20.6%)	12 (19%)	17 (26.9%)	18 (28.5%)	3 (4.7%)	63 (52.5%)	
Total	38 (31.6%)	30 (25%)	27 (22.5%)	20 (16.6%)	5 (4.1%)	120	
Previous dental experience							
1-3	15 (31.2%)	17 (35.5%)	12 (25%)	3 (6.3%)	1 (2.1%)	48 (58.5%)	0.041*
4-5	18 (52.9%)	6 (17.6%)	3 (8.8%)	4 (11.8%)	3 (8.8%)	34 (41.5%)	
Total	33 (40.2%)	23 (28%)	15 (18.2%)	7 (8.5%)	4 (4.8%)	82	

participants (n=63) reported high anxiety levels (MDAS score of 21-25), while only 3.5% of male participants (n=57) reported high anxiety. Our findings indicate that there is a significant association between gender and MDAS (p=.001). This suggests that gender is a key predictor of dental anxiety (Table 2).

Out of 82 participants who had visited the dentist before, 34 (41.5%) had a better dental experience score of 4-5 while 48 (58.5%) had a score of 1-3 indicating not a good experience. 18 out of 34 participants (52.9%) who had a better experience had a low anxiety score (MDAS 1-5). In contrast, only 15 out of 48 participants (31.3%) with a bad experience had a low anxiety score. The results of the Chi-square test indicate a significant correlation between prior dental experience and MDAS (p=.041) (Table 2).

DISCUSSION

Many people experience dental anxiety causing them to avoid necessary treatments. Patients may experience fear which can potentially hinder them from seeking dental care. In the present report, 52.5% of patients were females, while 47.5% were males which is in contrast to the research conducted by Masoud et al. and Butt et al. in Pakistan, where the majority of patients undergoing extraction were female (66% and 64.3% respectively). However, a study carried out in India reported more male patients (67%) seeking extraction.[10]

Most of the participants in this study belonged to the 18-29 age group, which is in line with a survey conducted in Islamabad where 72.3% fell in this same age range.[11] Patients commonly present for third molar extraction in their third decade as these teeth remain asymptomatic until around age 20, and continue to erupt until age 25.[15]

In the current study, it was found that 16.7% of the patients suffered from high dental anxiety. This figure is similar to the percentages stated by Butt et al. and Masoud et al. which were 14% and 16.8% respectively, among patients in Pakistan who experienced high dental anxiety.[11,12] Zegan et al. reported that only 4.3% of the patients in Romania experienced high levels of anxiety.[16] The reason for the increase in anxiety among patients may be because they are being scheduled for extractions instead of less invasive root canal treatments.[17] Lack of patient education regarding dental procedures can lead to increased anxiety during dental appointments and potentially traumatic experiences.[18]

The study found a strong correlation between gender and dental anxiety score (p=0.001). This aligns with the findings of previous studies conducted by Munir et al. and Butt et al. where gender was also found to have an impact on anxiety levels (p=0.03 and p=0.005 respectively) in individuals undergoing exodontia pro-

cedure. According to both studies, it was found that women tend to experience higher levels of anxiety as compared to men.[11,19] Studies have shown that women tend to have stronger emotional responses to various stimuli compared to men.[20] In India and Karachi, dental anxiety was equally prevalent among men and women.[21,22]

All participants with no exposure to dental procedures had greater anxiety than those with better dental experience; a significant correlation was found between dental anxiety and prior dental experience (p=0.041) in this study. Similar results were found by Suhaib et al. and Kumari et al.[10,23] Dental anxiety exhibited a significant connection with traumatic past dental experiences. People who frequently recall their traumatic experiences tend to avoid going to the dentist for future treatments.[24] To the best of our knowledge, no research has been conducted on a national level to correlate dental anxiety with previous dental procedures.

LIMITATIONS

The study design is cross-sectional, which does not allow the determination of the cause-effect relationship. The survey was led in a single hospital, limiting the generalization of the outcome. The study only included patients referred for extraction, so the findings may not correlate to other dental procedures. Additionally, the study only assessed the anxiety levels of patients before the process, and nervousness during and after the procedure was not appraised.

CONCLUSION

It is concluded from this study that gender and previous dental experience have an impact on the anxiety levels of patients undergoing extraction of teeth. Female patients and people with bad or no dental experience are more likely to have higher anxiety.

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4 Laiba Jalal:	Data collection, article revision.
5 Raheela Wajid:	Data collection, Data analysis, data analysis.
6 Hamayal Waseem Khattak:	Data collection, article revision.