

PREVALENCE OF DENTAL ANXIETY AMONG THE STUDENTS OF SARHAD UNIVERSITY SCIENCE, INFORMATION AND TECHNOLOGY

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Abstract

Dental anxiety is a prevalent psychological problem that can have a big impact on people's motivation to get dental care, which frequently results in postponed treatment and worsening oral health. This study examines the prevalence of dental anxiety among university students and pinpoints the causes of the condition. The objective was to ascertain the frequency and intensity of dental anxiety among Sarhad University students as well as the ways in which anxiety levels are influenced by age, gender, prior experiences, and particular dental procedures. 230 students who were at least 18 years old participated in a cross-sectional study. The Modified Dental Anxiety Scale (MDAS), a validated questionnaire that gauges anxiety in relation to different dental settings, was used to gather data. Patterns and severity levels were determined by analyzing the responses. The results showed that the majority of participants had mild to moderate dental anxiety, with local anesthesia and tooth drilling treatments causing the highest levels. Anxiety levels were generally greater among female participants and those who had had unpleasant dental encounters in the past. Relatively less anxiety was produced by procedures like scaling and polishing. University students frequently have dental anxiety, which is impacted by both procedural and psychological aspects. These findings highlight the value of patient-centered treatments, such as educational initiatives and anxiety-reduction techniques, in enhancing young adults' dental care experiences and results.

INTRODUCTION:

According to Alyami et al. 2020 a typical emotional response to one or more particular hazardous stimuli in the dental context is dental fear (DF). A severe form of dental anxiety (DA), dental phobia is typified by ongoing fear of either specific dental events or objects (such as injections and drilling) or dental scenarios in general. This study sought to determine the most common causes of dental phobia in the general population as well as the prevalence of anxiety and DF.

(Sukumaran, Taylor, and Thomson 2021)
Due to its relative prevalence and detrimental

effects on patients' oral health, it is a public health concern. The incidence of dental anxiety in the general population in developed nations is estimated to be between 4% and 20%, with at least some of the variation resulting from variations in the scales that have been employed. Dental anxiety is associated with a lower oral health-related quality of life (OHRQoL), more untreated carious tooth surfaces, and more missing teeth. Additionally, it feeds a vicious cycle of dental avoidance, whereby those who are nervous about their teeth miss more appointments, which results in worse oral health. Younger people and women are particularly

affected by this load. Although there are several dental anxiety scales, the Dental Anxiety Scale (DAS) and the

Modified Dental Anxiety Scale (MDAS) are the most often used, despite their drawbacks. Although it is more theoretically sound and was created to address the shortcomings of the previous scale, the IDAF-4C (Index of Dental Anxiety and Fear scale) is not yet widely used in dental anxiety research. The most often used scales are still the DAS and MDAS.

According to the Pakistan Armed Forces Medical Journal, MS Kakar, Q Ishfaq, and H. Khattak (2022), this study assisted in determining the prevalence of dental anxiety and the characteristics that contribute to it, such as residence, age, gender, and educational attainment. Patients' condition, employment position, and history of dental injuries. Our hypothesis was that the lack of access to and understanding of dental therapy would result in high anxiety levels. According to the Pakistan Armed Forces Medical Journal, MS Kakar, Q Ishfaq, and H. Khattak (2022)

According to Emami, Pazhouhanfar, and Stoltzin (2024) Patients are known to experience tension in dental clinic waiting rooms. Nonetheless, while waiting for therapy, soothing design features and constructive diversions may lower stress levels and stimulate the mind. Few studies have directly examined the effects of different dental clinic waiting area design features on patients' reported stress, despite the fact that ambient factors may be crucial to patient well-being.

Muneer et al. (2022) suggested that, another factor contributing to the spread of dental anxiety is finances. Patients with dental anxiety are frequently more concerned about paying for a treatment approach that is generally regarded as being costly. As a result, those with more socioeconomic standing would be less nervous or afraid to seek dental care.

Zhang, Li, and Zhang (2024) argued in dental surgery, tooth extraction is a fairly basic and popular procedure that is also frequently performed to address certain dental conditions. However, it can result in changes in body

temperature, blood pressure, and heart rate as well as local tissue damage, bleeding, oedema, and discomfort, among

other effects. One of the top five most terrifying dental operations is tooth extraction, which is an invasive treatment. Compared to pain or helplessness, patients are more nervous and concerned about having their teeth extracted. Another significant trigger that causes anxiety is losing a tooth, and people undergoing tooth extractions typically have higher DA. Patients typically still fear having their teeth extracted, even with advancements in dental care. This is particularly true for kids and people with systemic illnesses who have poor heart function, blood vessel flexibility, pain tolerance, and other negative characteristics. The study of patient anxiety and ways to keep patients safe prior to tooth extraction is a relatively recent field of study.

Peric and Tadin 2024 reported that, according to what is currently known, people who suffer from dental anxiety frequently postpone or avoid going to the dentist, which lowers their quality of life and deteriorates their oral health. Furthermore, poor oral hygiene is common among those who experience high levels of anxiety and dread, which increases the risk of tooth decay and tooth loss. The general health of those impacted by this cycle of avoidance and degradation may be severely impacted, and subsequent dental procedures may become more involved. Additionally, people who suffer from high levels of anxiety and dread are more likely to practice poor oral hygiene, which raises the chance of tooth decay and loss. Those affected by this cycle of avoidance and degradation may experience significant negative effects on their general health, and more dental operations may be necessary.

Saba and Katirci (2023) suggested that Dental anxiety is a complex disorder.

Dental anxiety, which manifests as uncomfortable dentist contact, traumatic and painful dental treatment experiences, and general fearfulness, is largely influenced by prior dental experiences. Fear of pain, introversion, weakness, lack of control, fear of unforeseen

events, and embarrassment are all factors that contribute to dental anxiety.

Huynh et al. (2023) found that, patients may suffer anxiety during root canal therapy, which may be reinforced by acquired behaviors brought on by parental factors or cognitive conditioning. It is crucial to take into account the relative stress that a root canal treatment causes in comparison to other dental treatments, particularly extractions, which are frequently provided as an alternative treatment, since patients regard dental care to be generally stressful. Although root canal therapy and oral surgery caused the most anxiety, there was no overall statistically significant difference between the two dental procedures, according to one of the first studies comparing patients' anxiety levels. Remarkably, Stabholz and Peretz discovered that root canal therapy caused less anxiety than scaling or extraction. The findings of Wong and Lytle, who classified cleaning as a low anxiety process, were in opposition to this. The fact that Stabholz and Peretz's patient group was older and might have needed more extensive root planing could account for their findings. However, endodontic-related anxiety was "roughly equivalent to that associated with tooth extraction," according to a comprehensive review. This same evaluation did, however, point out that a large number of the included studies had small sample sizes, evaluated the level of evidence as low, and assessed the overall research quality as mediocre. It is unknown if receiving a root canal puts patients under more stress, particularly when compared to the more popular option of extraction.⁴

METHODOLOGY

STUDY PLACE:

This research study was conducted in different department of Sarhad University.

STUDY DURATION:

The study was conducted at Sarhad University over a period of three months, from april to June 2025.

SAMPLE SIZE:

In the period of three months, 230 different samples were collected from students of different department.

SELECTIVE CRITERIA:

INCLUSIVE CRITERIA:

This study include the students of SUI aged 18 and above willing to participate and able to understand the questionnaire.

EXCLUSIVE CRITERIA:

This study exclude the students with known psychiatric disorders.

SAMPLE COLLECTION:

Random sample were from students of different department and also from the patients who were visiting dental lab of Sarhad university. All the convenience sampling were according to the questionnaire MDAS (Modified Dental Anxiety Scale).

SAMPLE PROCESSING:

The data were thoroughly examined for consistency and completeness after the Modified Dental Anxiety Scale (MDAS) questionnaires were collected. After giving each question a unique identification number, each participant's overall anxiety score which range from 1 to 5, was determined by adding the values for each 5 MDAS items.

Participants were divided into 5 anxiety level based on their overall score:

- Not anxious (1)
- Slightly anxious (2)
- Fairly anxious (3)
- Very anxious (4)
- Extremely anxious (5)

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RESULT

Demographic distribution of study participants

The demographic distribution in table 1 shows that the majority of participants in this study belonged to the 18–30 years age group. Specifically, 161 males and 64 females were in this category, accounting for 67.22% and

26.70% of the total sample, respectively. This indicates that the sample population primarily consisted of young adults.

In contrast, the representation of older individuals was minimal. Only one male participant (0.42%) and four female participants (a combined 1.67%) were aged between 31 and 43 years. One of these female entries is labeled as 31-42, which may be a typographical variation. The gender distribution also shows a higher number of male participants compared to females. Males comprised nearly 68% of the total sample, while females accounted for about 32%. This gender imbalance, along with the age concentration in the younger bracket, suggests that the findings of this study are more reflective of the dental anxiety levels among

young adults. Due to the limited representation of older age groups, the data may not accurately represent the anxiety patterns of middle-aged or elderly individuals. Since dental anxiety can be influenced by age, life experience, and exposure to dental procedures, the lack of diversity in age groups is a limitation of this dataset.

However, the large sample size from the 18-30 age group still provides meaningful insights into the anxiety levels of younger individuals, who often delay dental visits due to fear or misconceptions. This highlights the importance of targeted awareness and anxiety-reduction strategies for young adults. Future studies should aim for a more balanced age and gender representation to ensure more generalizable results⁷

Table 1 : Demographic Distribution of study participants

Gender	Age Group	Count	Percentage (%)
Male	18-30	161	67.22%
	31-43	1	0.42%
Female	18-30	64	26.70%
	31-43	4	1.25%
Total	—	230	100%

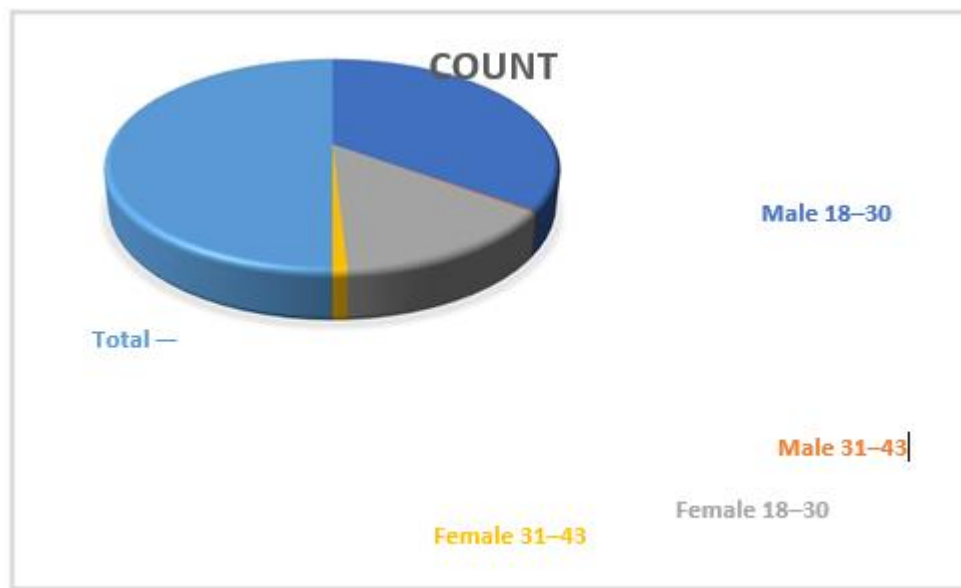


FIGURE:1

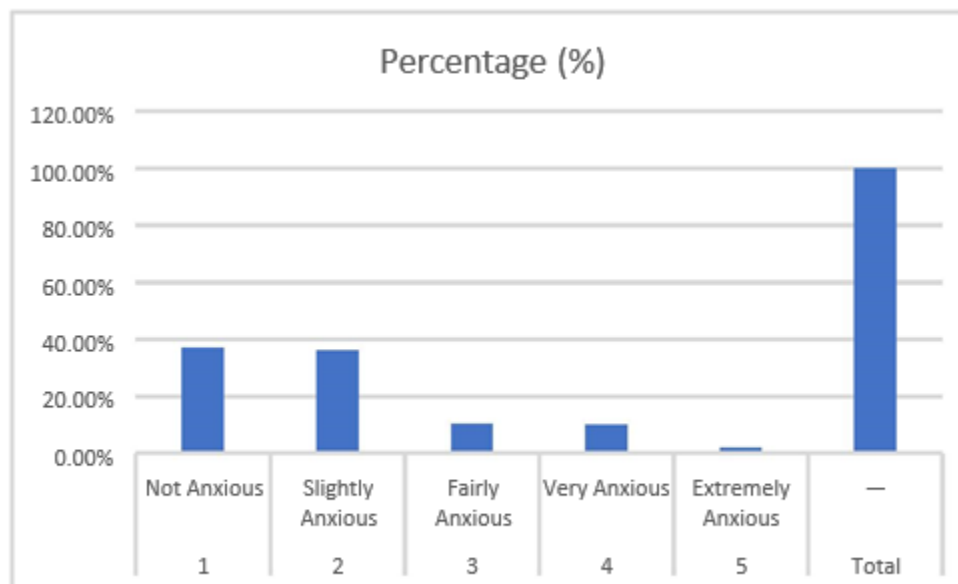
Anxiety Level: If You Went to the Dentist for Treatment Tomorrow

The table 2 shows that the majority of participants experienced low levels of dental anxiety, with 37.08% classified as not anxious and 36.25% as slightly anxious. A smaller proportion, 10.42%, were fairly anxious, while 10% were very anxious. Only 2.08% of the participants reported being extremely anxious about dental treatment.

These results suggest that most individuals in the study had a generally positive or manageable perception of dental visits, with only a minor percentage experiencing high levels of anxiety. This may reflect increased awareness of dental care, better patient experiences, or greater exposure to dental procedures among the sample population.⁸

Table 2: Anxiety Level a day before the dental Procedure

Scale No	Anxiety Level	Percentage (%)
1	Not Anxious	37.08%
2	Slightly Anxious	36.25%
3	Fairly Anxious	10.42%
4	Very Anxious	10.00%
5	Extremely Anxious	2.08%
Total	—	100%

**FIGURE:2**

Anxiety Level in Waiting Room

The data in table 3 reveals that a significant portion of participants, 35.42%, were not anxious while waiting for dental treatment, and 26.67% were only slightly anxious. This suggests that over 60% of individuals experienced low anxiety in the waiting room. About 18.75% reported a moderate level of anxiety, while

12.08% felt very anxious. A small group, 2.92%, experienced extreme anxiety. Overall, the findings indicate that although most people were relatively calm while waiting, a noticeable minority still experienced moderate to high levels of anxiety, possibly due to past dental experiences or fear of anticipated discomfort.

Scale No	Anxiety Level	Percentage (%)
1	Not Anxious	35.42%
2	Slightly Anxious	26.67%
3	Fairly Anxious	18.75%
4	Very Anxious	12.08%
5	Extremely Anxious	2.92%
Total	—	100%

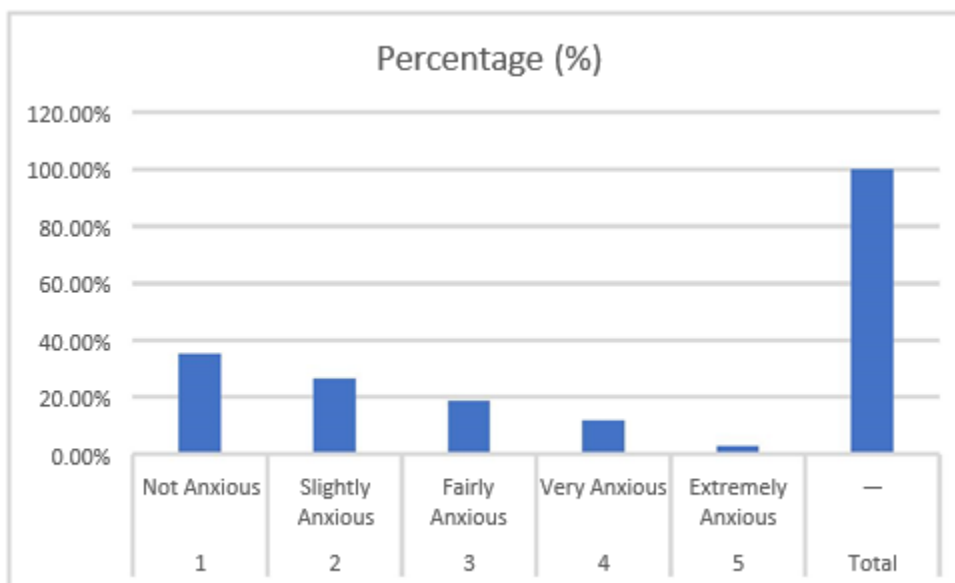


FIGURE:3

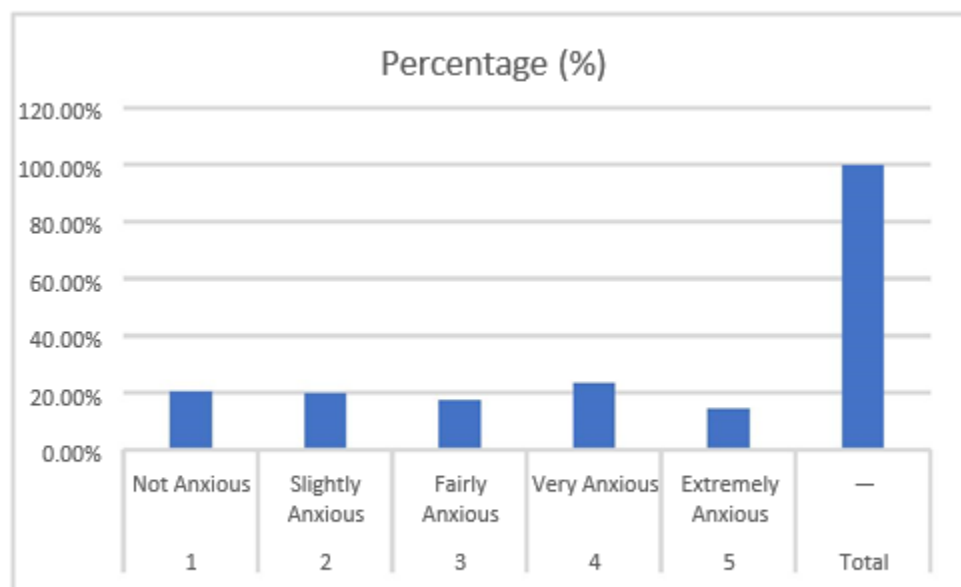
Anxiety Level during Tooth Drilling

The data shows a more balanced spread of anxiety levels during tooth drilling, with higher levels of anxiety becoming more prominent. While 20.42% of participants reported no anxiety and 20% reported slight anxiety, a significant proportion experienced moderate to high anxiety, with 17.5% fairly anxious, 23.33% very anxious, and 14.58% extremely anxious.

This indicates that nearly 38% of individuals experienced considerable discomfort during tooth drilling, which is often associated with fear of pain, loud noise, or previous negative experiences. Compared to other dental procedures, tooth drilling appears to trigger more intense anxiety in a larger segment of the population.(Table:4)

Table 4: Anxiety Level of study participants during Tooth Drilling

Scale no	Anxiety Level	Percentage (%)
1	Not Anxious	20.42%
2	Slightly Anxious	20.00%
3	Fairly Anxious	17.50%
4	Very Anxious	23.33%
5	Extremely Anxious	14.58%
Total	—	100%

**FIGURE:4**

Anxiety Level during Teeth Scaling and Polishing

The data in 5 indicates that nearly 40% of participants were not anxious during teeth scaling and polishing, and an additional 24.17% were only slightly anxious. This suggests that individuals found the procedure relatively comfortable or familiar. About 12.92% reported being fairly anxious, while 12.08% felt very

anxious, and 7.08% were extremely anxious. Overall, teeth scaling and polishing caused low to moderate anxiety in most participants, possibly because it is a common, less invasive procedure compared to treatments like drilling or injections. The lower anxiety levels here may reflect positive past experiences or awareness of the minimal discomfort involved.

Table 5: Anxiety Level during Teeth Scaling and Polishing procedure

Scale No	Anxiety Level	Percentage (%)
1	Not Anxious	39.58%
2	Slightly Anxious	24.17%
3	Fairly Anxious	12.92%
4	Very Anxious	12.08%
5	Extremely Anxious	7.08%
Total	—	100%

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Anxiety Level in Local Anesthesia

The anxiety levels related to local anesthesia show a noticeable shift toward higher anxiety. While 21.25% of participants reported no anxiety and 15.42% reported slight anxiety, a considerable portion of the sample experienced elevated levels of fear. Specifically, 12.92% were fairly anxious, 23.33% were very anxious, and 22.92% were extremely anxious. This

distribution highlights that nearly half of the participants had a strong fear of local anesthesia, likely due to needle phobia, fear of pain, or negative

prior experiences. Local anesthesia appears to be one of the most anxiety-provoking aspects of dental treatment for many individuals. (Table:6)

Table 6: Anxiety Level due to Local Anesthesia in study participants

Scale No	Anxiety Level	Percentage (%)
1	Not Anxious	21.25%
2	Slightly Anxious	15.42%
3	Fairly Anxious	12.92%
4	Very Anxious	23.33%
5	Extremely Anxious	22.92%
Total	—	100%

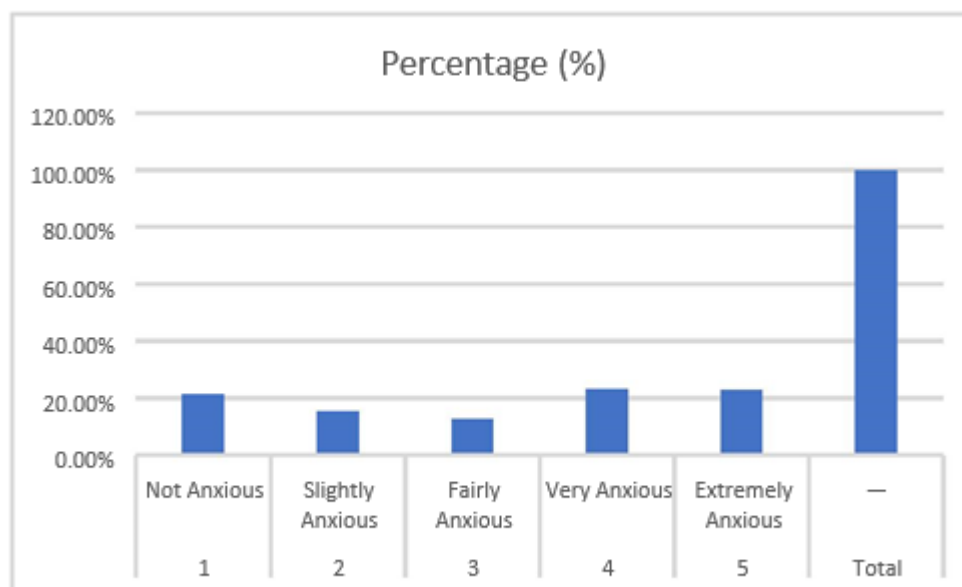


FIGURE:6

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CONCLUSION

This study used the Modified Dental Anxiety Scale (MDAS) to assess the prevalence and severity of dental anxiety among Sarhad University students. According to the results, a considerable percentage of students suffer from various forms of dental anxiety, with local anesthesia and tooth drilling being the most nerve-racking operations. Participants who were female and had a history of

unpleasant dental experiences were more likely to report feeling anxious. According to the study's findings, university students frequently experience dental fear as a psychological obstacle to receiving proper oral healthcare. Over time, it can exacerbate oral health concerns by influencing treatment-seeking behaviour and promoting avoidance. To improve oral health and patient compliance, dental anxiety must be addressed through clinical, educational, and psychological therapies.¹⁴

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