

Original Research Article

Comparison of dental anxiety among students of different academic backgrounds

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ABSTRACT

Objectives: The aim of this study is to investigate the subjective ratings of dental anxiety levels among university students of different fields.

Materials and Methods: A prevalidated questionnaire was distributed among the undergraduates in the dental, medical, and engineering fields.

Results: A total of 150 students participated in the study. According to the result, it can be stated that anxiety was more common in engineering undergraduates. The majority of participants were more anxious before the procedure even started. The reason for fear among all the procedures, fear of pain was the main cause for 58% (87) participants, while fear of injection remains a cause for 18.7% (28) participants. On the contrary, minimum respondents had a fear about the sound of the drill.

Conclusion: The result of current research indicates that dental anxiety is quite prevalent among undergraduates. Fear of pain is the main reason behind anxiety. Extraction of a tooth and root canal is a major reason for provoking anxiety among all the procedures. Therefore, all efforts should be undertaken to allay the fear by appropriate techniques of patient counseling to make sure that the patient understands the necessity of the procedure and cooperates.

Keywords: Cross-sectional study, Dental anxiety, Undergraduates

INTRODUCTION

Anxiety, as per definition, is a feeling of worry or fear, especially about the future. Experiences vary from person to person. The definition of anxiety, the feeling of anxiety is different for everyone.

Dental fear is a response to a known danger, although they are frequently used interchangeably, dental anxiety, fear, and phobia all refer to different conditions.^[1-3] Most of the people have some degree of dental anxiety, which is very common.

Dental anxiety has many different root causes, making it a complicated condition. This fear is especially frequent for people who are going to undergo a certain dental procedure that they have never undergone. A person with a dental phobia will avoid going to the dentist at all costs until the issue is resolved physically or psychologically.^[2]

A person's quality of life, looks, and self-esteem are significantly impacted by their oral health.^[2] A sizable majority of people of all ages and social groups experience dental anxiety. The daily provision of normal dental care continues to be a critical concern for the dental professional and the patient. Since dental anxiety is associated with

having to undergo invasive treatment procedures, a decrease in dental anxiety levels had been anticipated. A reliable indicator of the condition that can be applied in clinical and research contexts is one tool for describing, recognizing, and minimizing dental anxiety. Clinicians must identify the condition and consider ways to treat it. Researchers need to pay close attention to measurement concerns while analyzing trends and drawing comparisons.

Numerous evaluation techniques have been employed. One of them is the Modified Dental Anxiety Scale (MDAS). This was modified from the original Corah's Dental Anxiety Scale. This MDAS is a five-question, self-complete questionnaire that contains the lowest score of 5 indicating not anxious and ranges to 25 indicating extremely anxious after being added together. The MDAS has the advantages of being brief, quick to complete, and a basic, affordable tool for population-based research. It has been translated into other languages and is determined to be trustworthy and cross-culturally valid. The present study measured the prevalence of dental anxiety among medical students including dental and medical in comparison with engineering students. Hence, feedback from

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students of VSPM Dental College, NKP Salve Institute of Medical Sciences, and engineering colleges will be recorded. The responses were collected through Google Form which included the MDAS.

Objectives

The objective of this study is to examine the subjective assessments of dental anxiety levels among university students from various fields.

MATERIALS AND METHODS

A cross-sectional type of study was carried out among the undergraduates of dental, medical, and engineering fields. A prevalidated self-administered questionnaire containing 13 questions related to dental anxiety was distributed.

The MDAS is a brief, well-validated five-item questionnaire with five-point Likert scale responses to each question, ranging from “not anxious” to “extremely anxious.”^[2] The questionnaire consists of basic questions related to the number of visits to a dentist, reasons for being anxious, state and nature of anxiety, and so on. The questionnaire also had the following question regarding anxiety related to dental extractions like How anxious would you feel, if you were about to have your tooth/teeth extracted? Likert scale was used to record responses and patients were asked to choose answers from or “not anxious, slightly anxious, fairly anxious, very anxious, or extremely anxious.”^[2]

A self-administrated questionnaire was distributed among the participants anonymously. All willing and present participants were included in the study.

Convenience sampling was done and 150 undergraduates were enlisted. The MDAS administered to the patients was used to gauge their level of anxiety. $P < 0.05$ was considered as the statistically significance level. The data were then collected and inserted in an Excel sheet. IBM SPSS Statistics for Windows software was used to do the Chi-square test.

RESULTS

A total of 150 responses were collected. The undergraduates in dental, medical, and engineering fields were included in the study. Out of 150 responses received, 43.3% (65) belonged to dental students, 39.3% (59) belonged to medical students, and 17.3% (26) were engineering students, as described in Figure 1. The fear related to health can be evidently seen more in engineering students. This is because they are less subjected to health-care practice. While dental and medical students are dealing with and exposed more to patients, they are less likely to have high scale fear. This brings us to the result of the questionnaire.

Tables 1 and 2 summarize the responses from all participants. Results on assessment of anxiety regarding going to a dentist for a checkup revealed that 44% (66) participants have visited regularly, whereas only 27.3% (41) have visited only once. Results on assessment of anxiety regarding going to a dentist

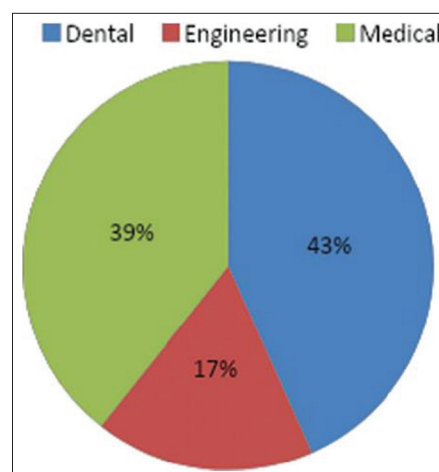


Figure 1: Academic background of the participants.

revealed that 32% (48) of participants visited due to tooth pain, whereas 26% (39) went for a regular checkup and 18.7% (28) due to cosmetic reasons.

A question regarding the state of mind before a dental visit revealed maximum participants 46% (69) had a neutral feeling. On the contrary minimum number of participants, 2.7% (4) felt cheerful and happy about the visit; further, 29.3% (44) participants were calm and relaxed, whereas 22% (33) participants felt anxious but were cheerful about the same.

For a question regarding anxiety during the waiting period in a dental office, the results revealed that maximum participants of 68% (102) experienced slight anxiousness, as against the minimum of 9.3% (14) participants who were not anxious. In addition, 22.7% (34) of participants were fairly anxious about the situation.

When asked to grade the level of anxiety, 60% (90) participants experienced mild anxiety, whereas 24.7% (37) participants had a moderate feeling about it, whereas 6.7% (10) participants were very anxious.

When questioned about the reason for fear of dental treatment, out of the several procedures, fear of pain was the main cause for 58% (87) participants, whereas fear of injection remains a cause for 18.7% (28) participants. On the contrary, minimum respondents had a fear about the sound of the drill.

When questioned about how anxious a person feels if he/she is about to have a tooth drilled, about 36% (54) participants were fairly anxious while a minimum of 4% (6) participants experienced extreme anxiousness; further, 28% (42) participants were slightly anxious, 17.3% (26) participants were not anxious while 14.7% (22) participants were very anxious about the entire procedure.

When questioned about how anxious would you feel if you were about to get your teeth scaled and polished, 50.7%

Table 1: Descriptive statistics: Responses.

	Frequency	Percentage
To which field do you belong?		
Dental	65	43.3
Engineering	26	17.3
Medical	59	39.3
A number of visits to the dentist so far		
One	41	27.3
Two	31	20.7
Three	12	8.0
More than three	66	44.0
Reason for the usual dental visit		
Cosmetic reasons	28	18.7
Regular checkup	39	26.0
Tooth pain	48	32.0
Any other	35	23.3
State of mind before the dental visit		
Anxious and cheerful	33	22.0
Calm and relaxed	44	29.3
Cheerful and happy	4	2.7
Neutral	69	46.0
If you are going to a dentist tomorrow, how would you feel		
Extremely anxious	1	0.7
Fairly anxious	22	14.7
Not anxious	61	40.7
Slightly anxious	59	39.3
Very anxious	7	4.7
How would you grade your level of dental anxiety?		
Cannot say	13	8.7
Mild	90	60.0
Moderate	37	24.7
Severe	10	6.7
Reasons for fear of dental treatment		
Fear of pain	81	54.0
Injection	39	26.0
The sight of blood/doctor's operator	10	6.7
Sound of drill and suction	20	13.3
If you were sitting in the waiting room, how would you feel		
Fairly anxious	34	22.7
Not anxious	14	9.3
Slightly anxious	102	68.0
If you were about to have a tooth drilled, how would you feel		
Extremely anxious	6	4.0
Fairly anxious	54	36.0
Not anxious	26	17.3
Slightly anxious	42	28.0
Very anxious	22	14.7
If you were about to have your teeth scaled and polished, how would you feel		
Extremely anxious	1	0.7
Fairly anxious	21	14.0
Not anxious	76	50.7
Slightly anxious	48	32.0
Very anxious	4	2.7

(Contd...)

Table 1: (Continued).

	Frequency	Percentage
If you were about to have a local anesthetic injection in your gums, how would you feel		
Extremely anxious	8	5.3
Fairly anxious	39	26.0
Not anxious	35	23.3
Slightly anxious	50	33.3
Very anxious	18	12.0
How did the fear start?		
Bad previous experience	50	33.3
Information from others	52	34.7
Unempathetic dentist	10	6.7
Unknown	38	25.3
Any physical manifestation of fear during dental treatment?		
Light-headedness	25	16.7
Palpitation	25	16.7
Sweating	33	22.0
No response	67	44.7
When do you feel that your fear is at its peak		
After the procedure	2	1.3
In the waiting lobby	59	39.3
During treatment	75	50.0
Previous night	14	9.3
Which dental procedure causes the most anxiety?		
Any other/RCT	49	32.7
Extraction	96	64.0
Filling	3	2.0
Scaling	2	1.3
How would you prefer to control anxiety?		
Conscious sedation	17	11.3
Counseling by doctors	71	47.3
Medication	23	15.3
Medication and alternative relaxation	39	26.0

RCT: Root canal treatment

(76) participants being the maximum felt that they were not anxious while a minimum of 2.7% (4) participants were very anxious about it; further, 32% (48) participants were slightly anxious while 14% (21) participants felt fairly anxious with a lowest being. About 7% (1) participants felt extremely anxious. When questioned about how would you feel if they were about to have a local anesthetic injection in their gums, 33.3% (50) participants were slightly anxious while a minimum of 5.3% (8) participants were extremely anxious while 26% (39) participants were fairly anxious, and 23.3% (35) participants were not at all anxious, while 12% (18) participants were very anxious about the entire procedure. When questioned about how did fear start, 34.7% (52) participants answered that they had heard it from others,

Table 2: Association between responses and field of study.

Questionnaire	Field			Chi-square value	P-value
	Dental	Engineering	Medical		
The number of visits to the dentist so far					
One	14	9	18	2.853	0.827
Two	14	6	11		
Three	6	1	5		
More than 3	31	10	25		
Reason for the usual dental visit					
Cosmetic reasons	17	7	15	2.184	0.975
Regular checkup	19	7	22		
Tooth pain	16	6	13		
Any other	13	6	9		
State of mind before the dental visit					
Anxious and cheerful	17	7	9	4.170	0.654
Calm and relaxed	18	9	17		
Cheerful and happy	2	0	2		
Neutral	28	10	31		
If you are going to the dentist tomorrow, how would you feel					
Extremely anxious	1	0	0	4.494	0.810
Fairly anxious	9	3	10		
Not anxious	22	12	27		
Slightly anxious	29	10	20		
Very anxious	4	1	2		
How would you grade your level of dental anxiety?					
Cannot say	7	1	5	2.983	0.811
Mild	37	16	37		
Moderate	15	7	15		
Severe	6	2	2		
Reasons for fear of dental treatment					
Fear of pain	37	8	36	11.21	0.048*
Injection	18	11	10		
The sight of blood/doctor's operator	4	1	5		
Sound of drill and suction	6	6	8		
If you were sitting in the waiting room, how would you feel					
Fairly anxious	15	9	10	8.488	0.204
Not anxious	3	2	9		
Slightly anxious	47	15	39		
If you were about to have a tooth drilled, how would you feel					
Extremely anxious	4	2	0	24.807	0.002*
Fairly anxious	20	8	26		
Not anxious	7	4	15		
Slightly anxious	16	9	17		
Very anxious	18	3	1		
If you were about to have your teeth scaled and polished, how would you feel					
Extremely anxious	0	1	0	13.598	0.045*
Fairly anxious	10	1	10		
Not anxious	29	13	34		
Slightly anxious	24	9	15		
Very anxious	2	2	0		
If you were about to have a local anesthetic injection in your gums, how would you feel					
Extremely anxious	6	2	0		
Fairly anxious	18	7	14		
Not anxious	6	6	23		
Slightly anxious	25	9	16		
Very anxious	10	2	6		

(Contd...)

Table 2: (Continued).

Questionnaire	Field			Chi-square value	P-value
	Dental	Engineering	Medical		
How did the fear start?					
Bad previous experience	25	7	18	17.25	0.025*
Information from other tremors	20	7	25		
Unempathetic dentist	4	4	2		
Unknown	16	8	14		
Any physical manifestation of fear during dental treatment?					
Light-headedness	19	0	6	17.702	0.007*
Palpitation	12	6	7		
Sweating	13	6	14		
No response	21	14	32		
When do you feel that your fear is at its peak?					
After the procedure	2	0	0	3.136	0.792
In the waiting lobby	24	10	25		
During treatment	33	14	28		
Previous night	6	2	6		
Which dental procedure causes the most anxiety?					
Any other/RCT	16	11	22	9.089	0.169
Extraction	45	14	37		
Filling	3	0	0		
Scaling	1	1	0		
How would you prefer to control anxiety?					
Conscious sedation	7	3	7	5.15	0.524
Counseling by doctors	26	13	32		
Medication	10	3	10		
Medication and alternative relaxation	22	7	10		

P<0.05: Significant, *P*<0.001: Highly significant, *P*>0.05: Not significant. RCT: Root canal treatment. **P*-value statistically significant

33.3% (50) participants had a bad experience, for about 25.3% (38) participants did not know the reason behind it, whereas 6.7% (10) participants answered it was due to unempathetic dentist.

When questioned if they experienced any physical manifestation due to fear during the dental procedure that 22% (33) participants experienced sweating, almost equal to 16.7% of participants experienced palpitations and light-headedness. Nonrespondents were 44.7% (67). When questioned about when did you feel the peak of anxiety, 64% (96) participants had a fear when a tooth is being extracted, whereas 32.7% (49) participants felt anxious during root canal treatment, 2% (3) participants felt anxious about the dental filling, and 1.3% (2) participants got anxious about scaling.

When asked which method they would prefer to control anxiety, 47.3% (71) participants suggested counseling by doctors, while a minimum of 11.3% (17) participants suggested that conscious sedation should be preferred, whereas 26% (39) participants suggested medications and alternative relaxation should be preferred and about 15.3% (23) participants suggested that taking medication can be of great help.

As *P*-values from the independent t-tests were more than the standard *P*-value, concluding the data are statistically nonsignificant.

DISCUSSION

The research was conducted to compare dental anxiety among students of different academic backgrounds. A distressing emotion aroused by impending danger is what we call fear. Dental care is often avoided as a result of dental phobia and anxiety.^[2]

Dental anxiety is a condition linked to worrying about getting preventative care and having dental operations done at the clinic. We can say it is an uncertain emotional condition that we face even before the commencement of the treatment. Moreover, it is a frequently encountered issue. The feeling of anxiety can be due to previous bad experiences. Before starting the dental treatment, evaluating the patient's level of anxiety may provide crucial insight into the likely patient's attitude and behavior.^[1] This can be of great help to manage anxiety. Knowledge does not consistently influence behavior but when it does it affects behavior. Dental anxiety is less among dental students rather than among medical or engineering students. If little knowledge about oral care is added to the curriculum itself, it might be helpful for dealing with anxiety.^[2] Findings can be supported by the background information and knowledge dental students acquire during their education, which would help them feel less anxious if

they were aware of some of the specifics of each procedure.^[1] The importance of dental health education can be of great use. Dental education, regular appointments, strong patient–dentist relationships, and efficient communication with the patient’s dentist can all reduce dental anxiety.^[1,2] Eliminating the fear of anxiety is very important and beneficial overall as it elicits physical, cognitive, emotional, and behavioral responses. Furthermore, while dealing with a patient who has anxiety a gentle approach should be taken into consideration. If the patient was already told and explained about the procedure, it can be helpful to, for instance, “tell- show-do” and modeling.^[3] The advantage of dealing with teenagers is that they are moldable and they can be taught a certain thing by explaining properly. At last, it is the duty of a dentist to provide excellent dental care.^[1] If we look at the results, participants were getting anxious just at the thought of pain or getting an injection, which is moreover common in every situation anybody would be in. Following a thorough evaluation, therapy should be tailored to each individual depending on the dentist’s training, experience, level of anxiety, patient intelligence, age, cooperation, and clinical circumstances. In addition, the quality of prior dental experiences — whether positive or negative—had an impact on the amount of anxiety.^[2-5] Therefore, by offering frequent dental education and developing campaigns that raise awareness and understanding about oral health, it may be possible to eliminate anxiety.

CONCLUSION

The result of current research indicates that dental anxiety is quite prevalent among undergraduates. Fear of pain is the main reason behind anxiety. Besides all the anxiety-provoking procedures, it was observed that the extraction of a tooth and root canal caused more anxiety. Therefore, all efforts should be undertaken to allay the fear by appropriate

techniques of patient counseling to make sure that the patient understands the necessity of the procedure and cooperates.

Limitations

The limitations of the study include — data were collected from the adjoining institutions which may not be representatives of the population. Further, long-term studies representing all institutes are recommended to more precisely study anxiety and find the solution to overcome it.

Declaration of patient consent

The authors certify that they have obtained all appropriate consent.

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Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Al-Omari WM, Al-Omiri MK. Dental anxiety among university students and its correlation with their field of study. *J Appl Oral Sci* 2009;17:199-203.
2. Al Jasser R, Almashaan G, Alwalaan H, Alkhazim N, Albougami A. Dental anxiety among dental, medical, and nursing students of two major universities in the central region of the Kingdom of Saudi Arabia: A cross-sectional study. *BMC Oral Health* 2019;19:56.
3. Giriraju A, Bhat PK, Ananya JN, Raju M, Ashli VK. Assessment of the level of anxiety related to dental treatment among undergraduate students in a dental college of Bengaluru, Karnataka, India: An online pilot survey. *J Health Sci Res* 2020;11:6-11.
4. Kirova DG. Dental anxiety among dental students. *J IMAB* 2011;17:137-9.
5. Appukuttan D, Subramanian S, Tadeipalli A, Damodaran LK. Dental anxiety among adults: An epidemiological study in South India. *N Am J Med Sci* 2015;7:13-8.

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