

Dental Anxiety & Influencing Factors: A Cross - Sectional Questionnaire Study

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Abstract: Dental anxiety is an emotion and a major complication that is prevalent worldwide & is a stress which is created in response to dental treatment where & this study aims to compare & estimate the prevalence of dental anxiety in a sample of student's pursuing their bachelor's degree in BDS. Total of 217 participants were included randomly through E - mail. A total of 217 participants comprising of BDS students from First to Final Years respectively of which males were 36 (16.6%) & females 181 (83.4%) respectively. Statistically significant results were seen w. r. t reason for present dental visit amongst First to Final Years ($p < 0.005$). The results of intergroup comparison between all the years of BDS w. r. t State of mind before dental visit were statistically significant ($p < 0.005$). On intergroup comparison between First to Final Years, results were seen statistically significant w. r. t reason for fear of dental treatment, origin of fear & fear at maximum peak levels ($p < 0.005$). Statistical significant results were observed w. r. t dental procedure causing maximum anxiety ($p < 0.005$). Procedures such as drilling, scaling, extraction & root canal treatment were the factors for dental anxiety refraining them from dental treatment.

Keywords: Dental Anxiety, dental fear, survey

1. Introduction

Dental anxiety is a global phenomenon and is too serious a problem to be confined to a single country or population. One of the causes of anxiety is anxiety after dental treatment, in this case, the need may arise for an unknown reason or may not have a specific reason. There are also one or two or more specific stimuli that can cause dental anxiety, such as the sight of local anesthetics, dental instruments, the smell of the dental office, the use of rubber dams, and the sound of piercing teeth. Anxious patients may postpone or skip dental visits & experience increased / decreased pain. This creates difficulties for dentists & patients during treatment. Dental phobia (DP) represents a serious dental anxiety disorder characterized by persistent anxiety about familiar situations/objects (e. g., drilling, injections) or dental conditions. Even patients who are concerned about dental care, including dental students, suffer more from dental problems because they cancel or postpone their dental visits & therefore becomes severe. Therefore, students with dental anxiety cannot maintain a good quality of life due to their oral compliance.

2. Literature Survey

The Google form will be sent to individual participants through email. Once the questionnaire has been filled and submitted by all the participants, data will be entered in the Excel sheet and will be subjected for statistical analysis.

3. Materials & Methods

The sample population will be divided into 4 groups which will include first to final year students pursuing their BDS from K M Shah Dental College and Hospital. Each group will consist of 50 participants each. Participant information sheet and informed consent sheet will be shared through Email communication. There will be two sections, one section will consist of the information sheet and the informed consent & section two will comprise the questionnaire consisting of 10 open ended questions, which will assess dental anxiety.

4. Results

The demographic distribution of patients is presented in **Table 1**. The number of males in First Year BDS (20.9%) amongst First Year, Second Year & Third Year BDS. The number of females were more in Third Year & Final Year BDS when compared to First Year & Second Year BDS. Overall females were more (83.4%) than males (16.6%).

Distribution of study population according to **Reason for Present Dental Visit** is presented in **Table No 2**. On intergroup comparison w. r. t qualification between First Year, Second Year & Third Year there were statistically significant results observed in Any other reason in First Year BDS 22 (32.8%), Cosmetic Reasons in Second Year BDS 6 (16.7%), Regular Check - up in Third Year BDS 35 (61.4%) & Tooth pain in Second Year 11 (30.6%). Overall, there was statistical significance observed in all the years ($p < 0.005$)

Study population according to **State of mind before dental visit** is presented in **Table No 3**. In intergroup comparison,

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there was statistical significance difference observed in all the years ($p < 0.005$). Calm & Relaxed were 26 (45.6%) more among Final Year BDS students, Cheerful & Happy were 5 (8.8%) amongst Third Year BDS & Neutral were 28 (41.8%) amongst First Year BDS students.

Study population according to **Reason for fear of dental treatment is presented in Table No 4**. On intergroup comparison, Fear of pain 22 (61.1%) was more among First Year BDS, Reason for fear of injection 25 (43.9%) was observed more in Third Year BDS, Sight of blood / Doctor's operatory 3 (8.3%) was observed in Second Year BDS & Sound of drill & suction 9 (13.4%) was seen more in First Years. Overall, there was statistical significance observed in all the Years ($p < 0.005$)

Study population according to **origin of fear** is presented in **Table No 5**. Previous bad experience 4 (11.1%) was observed more in Second Year BDS, Information from others 27 (40.3%) was seen more in First Years, Un - empathic dentist experience 2 (3.5%) was more in Third Year BDS, Fear of unknown 40 (70.2%) was observed more

in Final Year BDS compared to First, Second - & Third - Year BDS. Overall, there was statistical significant difference observed in all the years ($p < 0.005$)

Study population according to **fear at maximum peak level** is presented in **Table No 6**. On intergroup comparison, there was statistical significance seen in First Year BDS & Second Year BDS 3 (4.5%) & 1 (2.8%) respectively when compared to Third Year & Final Year BDS 4 (7.0%). At the waiting lobby 28 (41.8%) was seen more in First Year BDS, Fear during treatment 20 (55.6%) was seen more in Second Year BDS & Previous night fear 5 (13.9%) was observed more in Second Year BDS.

Study population according to **dental procedure causing the maximum anxiety** is presented in **Table No 7**. On intergroup comparison, Fear of RCT 16 (28.1%) was more observed in Final Year BDS, Fear of Extraction 45 (78.9%) was more observed in Third Year BDS, Fear of filling was 6 (9.0%) and Fear of scaling 3 (8.3%) was more observed in Second Year BDS students. Overall, there was a statistically significant difference observed in all the years ($p < 0.005$)

Table 1: Demographic distribution of Participants

Gender	Qualification of participants				Total
	First Year BDS	Second Year BDS	Third Year BDS	Final Year BDS	
Male	14	6	8	8	36
	20.9%	16.7%	14.0%	14.0%	16.6%
Female	53	30	49	49	181
	79.1%	83.3%	86.0%	86.0%	83.4%
	67	36	57	57	217
	100.0%	100.0%	100.0%	100.0%	100.0%

χ^2 value = 1.435, p - value = 0.697

Table 2: Distribution of study population according to Reason for Present Dental Visit

Reason for present dental visit	Qualification of participants				Total
	First Year BDS	Second Year BDS	Third Year BDS	Final Year BDS	
Any other reason	22	9	7	12	50
	32.8%	25.0%	12.3%	21.1%	23.0%
Cosmetic Reasons	9	6	3	5	23
	13.4%	16.7%	5.3%	8.8%	10.6%
Regular Check - up	17	9	35	21	82
	25.4%	25.0%	61.4%	36.8%	37.8%
Tooth pain	17	11	12	16	56
	25.4%	30.6%	21.1%	28.1%	25.8%
	67	36	57	57	217
	100.0%	100.0%	100.0%	100.0%	100.0%

χ^2 value = 25.803, p - value = 0.011*

Table 3: Distribution of study population according to State of mind before dental visit

State of mind before dental visit	Qualification of participants				Total
	First Year BDS	Second Year BDS	Third Year BDS	Final Year BDS	
Anxious	19	12	4	7	42
	28.4%	33.3%	7.0%	12.3%	19.4%
Calm & Relaxed	16	10	23	26	75
	23.9%	27.8%	40.4%	45.6%	34.6%
Cheerful & Happy	2	3	5	2	12
	3.0%	8.3%	8.8%	3.5%	5.5%
Neutral	28	11	25	20	84
	41.8%	30.6%	43.9%	35.1%	38.7%
	67	36	57	57	217
	100.0%	100.0%	100.0%	100.0%	100.0%

χ^2 value = 24.868, p - value = 0.015*

Table 4: Distribution of study population according to Reason for fear of dental treatment

Reason for fear of dental treatment	Qualification of participants				Total
	First Year BDS	Second Year BDS	Third Year BDS	Final Year BDS	
Fear of Pain	34	22	19	32	107
	50.7%	61.1%	33.3%	56.1%	49.3%
Injection	15	7	25	10	57
	22.4%	19.4%	43.9%	17.5%	26.3%
Sight of blood/ Doctor's operatory	2	3	2	4	11
	3.0%	8.3%	3.5%	7.0%	5.1%
Sound of drill & suction	9	3	2	5	19
	13.4%	8.3%	3.5%	8.8%	8.8%
	67	36	57	57	217
	100.0%	100.0%	100.0%	100.0%	100.0%

χ^2 value = 22.957, p - value = 0.028*

Table 5: Distribution of study population according to origin of fear

How did the fear start	Qualification of participants				Total
	First Year BDS	Second Year BDS	Third Year BDS	Final Year BDS	
Bad previous experience	4	4	3	3	14
	6.0%	11.1%	5.3%	5.3%	6.5%
Information from others	27	9	8	8	52
	40.3%	25.0%	14.0%	14.0%	24.0%
Un - empathic dentist	0	1	2	0	3
	0.0%	2.8%	3.5%	0.0%	1.4%
Unknown	28	21	36	40	125
	41.8%	58.3%	63.2%	70.2%	57.6%
	67	36	57	57	217
	100.0%	100.0%	100.0%	100.0%	100.0%

χ^2 value = 25.344, p - value = 0.013*

Table 6: Distribution of study population according to fear at maximum peak level

When do you feel that your fear is at peak?	Qualification of participants				Total
	First Year BDS	Second Year BDS	Third Year BDS	Final Year BDS	
After the procedure	3	1	4	4	12
	4.5%	2.8%	7.0%	7.0%	5.5%
At the waiting lobby	28	9	18	17	72
	41.8%	25.0%	31.6%	29.8%	33.2%
During treatment	21	20	20	23	84
	31.3%	55.6%	35.1%	40.4%	38.7%
Previous night	1	5	3	5	14
	1.5%	13.9%	5.3%	8.8%	6.5%
	67	36	57	57	217
	100.0%	100.0%	100.0%	100.0%	100.0%

χ^2 value = 19.530, p - value = 0.047*

Table 7: Distribution of study population according to dental procedure causing the maximum anxiety

Which dental procedure causes the most anxiety?	Qualification of participants				Total
	First Year BDS	Second Year BDS	Third Year BDS	Final Year BDS	
RCT	7	6	3	16	32
	10.4%	16.7%	5.3%	28.1%	14.7%
Extraction	42	25	45	32	144
	62.7%	69.4%	78.9%	56.1%	66.4%
Filling	6	2	0	1	9
	9.0%	5.6%	0.0%	1.8%	4.1%
Scaling	2	3	1	2	8
	3.0%	8.3%	1.8%	3.5%	3.7%
	67	36	57	57	217
	100.0%	100.0%	100.0%	100.0%	100.0%

χ^2 value = 28.908, p - value = 0.004*

5. Discussion

Dental anxiety is a psychological condition that can prevent a person from undergoing dental treatment but is most common in young people between the ages of 18 and 26. Dental anxiety causes negative attitudes towards receiving

dental care; therefore, these students suffer from dental problems and anxious patients and dental students themselves suffer more from dental treatments as their visit to the dentist is canceled or postponed, which makes them sick. This study found a maximum of 3+ visits in the first year of BDS (37.3%) and a maximum of 1 visit in the last

year of BDS (42.1%). The most frequent answers in this study regarding the reasons for the current visit were in the three - year BDS

In a study by Anjan Giriraju et al., mental health before going to the dentist was 3%, while in the last year of BDS it showed peace and relaxation (45.6%) and in the first year of BDS happiness and joy (3.0%). al & Chitta Ranjan Chowdhury et al. In this study, it was determined that the stress levels of BDS students in the third and last year were mild stress (63.2%) and severe stress (1.1%) in the third and last year. The results of this study showed that BDS 2nd year students were afraid of dental treatment due to fear of pain (61.1%), while BDS 1st year students were afraid of blood/medical work (3.0%). Similar results were found in a study by Yashffika Abdul Bari et al.

The study revealed that senior BDS students had more fear of the unknown (70.2%), while second - year BDS students had more fear of the dentist (2.8%). A physical manifestation of fear during dental treatment, dizziness in BDS seniors (36.8%) and BDS third - year students (1st grade).

Similar results were found in a study by Anjan Giriraju et al. and Yashffika Abdul Bari et al. It was determined that the most fear was in the second year of BDS (55.6%), and the first fear was in the first year of BDS (1.5%). The study found that people were more likely to use meditation and other relaxation techniques (40.4%) in their senior year to manage their anxiety, compared to conscious sedation/general anesthesia (1.8%) in their senior year. Subtraction (78.9%), scaling (1.8%) and filling (1.8%) caused the most stress in BDS third year students.

6. Conclusion

In this study, BDS students were found to experience fear of dental anxiety & influential factors were previous dental procedures and, more importantly, their parents' experiences. It was also found that procedures such as drilling, scaling, tooth extraction and root canal treatment are the most common causes of dental anxiety and prevent them from undergoing dental treatment, so they should be controlled. Therefore, more information and advice is needed to deal with dental anxiety among dental students for better treatment and health of patients.

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