

Self-Assessment of Dental Anxiety Among Under-Graduates Dental Students Using Corah's Dental Anxiety Scale

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Abstract

Background: This study was designed to assess the level of dental anxiety among undergraduate dental students using Corah's dental anxiety scale (CDAS) among university students enrolled at Sri Aurobindo College of Dentistry. **Materials and Methods:** A cross-sectional questionnaire study was conducted among 270 undergraduate students of Sri Aurobindo College of Dentistry. CDAS was used in the study, in the form of a questionnaire containing data on gender, age, and year of study. **Results:** A total of 256 dental graduates consisting of 200 females and 56 males with mean age of 20.9 years participated in the study. According to the Dental Anxiety Scale, high or severe level of dental anxiety was seen in only 10% of students. Increased anxiety level of 2nd BDS students was recorded. There was no statistically significant difference in anxiety levels among the male and female participants. **Conclusion:** Dental anxiety in dental students is relatively high and decreases progressively as they pass through the clinical years. Anxiety before treating patients is relatively high for the 1st time. As dental students are future health-care providers, it is important that they learn techniques to help them manage their own dental anxiety.

Keywords: Dental anxiety, Corah's dental anxiety scale, Undergraduate students, Self-assessment.

INTRODUCTION

Dental anxiety refers to patient's response toward dental situation-related stress.^[1] The apprehension for dentistry results in patients differing their dental appointments or not seeking dental treatment at all. The avoidance of dental treatment at all costs is one of the main outcomes of dental anxiety.

Anxiety related to dental treatment is not only difficult for patients but it is also foremost source of worry for dental practitioners to treat anxious patients. Physiological stress markers such as increased blood pressure, elevated heart rate, and so on which dentist encounters are equal to the responses of the patients when procedures are being executed. This all becomes a management problem of the treating dentists as well.

Many scales were obtained to evaluate dental anxiety. Corah Dental Anxiety Scale was proven to be popular among dental researchers.^[2] It is a simple, easy to score, short, valid, and reliable test for dental visit-associated anxiety.^[2-7] Humphris *et al.*^[8] gave modified scale from the original Corah's Dental Anxiety Scale (CDAS). The Modified Dental Anxiety Scale was shown to be comprehensive, highly valid with a simpler, and more constant answering system. The scale has been

translated in various languages. Due to the features mentioned above, the Modified Dental Anxiety Scale was, therefore, used to measure dental anxiety in this study.

One important group is the dental students, who are future healthcare providers. Therefore, it is basic for these students to learn about the techniques that can help them to overcome their own dental anxiety.

This study was therefore designed to observe the subjective ratings of dental anxiety levels among dental students.

Through the widespread literature review, it was shown that the prevalence of dental anxiety ranged from 11% to 27.5% among the undergraduate students of various universities throughout the globe.^[6,7]

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Received: Apr. 11, 2023; **Accepted:** May. 11, 2023; **Published:** Jun. 02, 2023

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How to cite this article: Chand BR, Jaiswal N, Mishra P, Sandecha A, Jain A, Sontakke S. Self-Assessment of Dental Anxiety Among Under-Graduates Dental Students Using Corah's Dental Anxiety Scale. J Res Adv Dent 2023;14(4):1-4.

Access this article online

Website:
www.jrad.co.in

DOI:
<https://doi.org/10.53064/jrad.2022.14.4.364>

MATERIALS AND METHODS

A descriptive and cross-sectional questionnaire study was conducted among dental undergraduate students of Sri Aurobindo College of Dentistry, Indore for a period of 3 months. Before conducting the study, ethical clearance, informed consent, and permissions were obtained from the Institutional Review Board (Sri Aurobindo College of Dentistry) (No.-RC/2019/Faculty/41). A total of 270 students were registered in this study on a volunteer basis, and an informed consent was obtained from all students. Students from both genders were included in the study. The option of discontinuing at any time was given to the students.

The study used the self-described assessment test of CDAS. The questionnaire comprises four questions each with five possible answers, rated in points of 1–5. The overall maximum score is 20. The final valuation of anxiety is given by the sum of points given for each question: <8 score is considered to indicate no anxiety; 9–12 score – moderate anxiety, 13–14 score – high anxiety, and 15–20 score – severe anxiety bordering on phobia. Corah considers patients to suffer from high dental anxiety if they score 13–20 points. The reason we selected this scale as an instrument of assessment was because it is rather brief, approachable, and easily understood.

The students were informed about the objectives of the study before processing of questionnaire. Questionnaire was circulated during free time and participants were given sufficient time to complete them. Total 270 students participated in the study; 14 students were dropped from the study. Hence, they were excluded from the sample size. Two hundred and fifty-six students from Sri Aurobindo College of Dentistry completed the questionnaire. The population included students of all years of study and these were divided into four groups: n1 = 71 1st-year students, n2 = 73 second students, n3 = 39 3rd year students, and n4 = 73 final year students.

The data collected were entered into a Microsoft Excel data sheet and analyzed using the Statistical Package for the Social Sciences. Group comparisons were analyzed using one-way analysis of variance (ANOVA) test. Multiple group comparisons were conducted using *post hoc* LSD test. The significance level was set at $P \leq 0.05$.

RESULTS

A total of 256 dental graduates consisting of 200 females and 56 males with mean age of 20.9 years participated in the study. A statistically significant difference in mean dental anxiety score was observed among different years of study ($P < 0.05$).

Table 1 shows the demographic characteristics of the study participants presented in percentages. The difference in the number of male and female participants was huge (78.1% female to 21.9% male). Largest percentage (81.7%) of female participants was from the 1st professional year. The largest percentage (27.4%) of male participants was from the final professional year students. The mean age of the students

participating in the study was 20.9 years. Participants from the 3rd professional year were fewer compared to the other groups.

Table 2a shows comparison of mean dental anxiety score among undergraduate students using one-way ANOVA. It was seen that dental anxiety was most with 2nd BDS (9.2 ± 2.21), followed by 1st BDS (8.81 ± 2.88) students compared to 3rd BDS (7.82 ± 2.84) and 4th BDS (7.54 ± 2.86). P -value was significant for intergroup comparisons.

Table 2b shows the *post hoc* LSD test for pairwise comparison of mean dental anxiety score among undergraduate students. This indicates a significant statically difference between 1st BDS and 4th BDS, 2nd BDS and 3rd BDS, and 2nd BDS and 4th BDS students.

Table 3 shows comparison of level of anxiety according to dental anxiety scale among undergraduate students. Moderate anxiety was seen in 41.0%, whereas severe anxiety was seen only in 2.7% of students. Majority of the students (52.3%) showed no anxiety. High anxiety was observed in 3.9% of students.

Table 4 shows the comparison of mean dental anxiety among gender of all undergraduate students. It was found non-significant with $P = 0.926$.

Table 1: Demographic variables of study subjects

Year of study	Age		Gender			
			Male		Female	
	Mean	SD	n	%	n	%
1 st BDS	19.6	1.13	13	18.3	58	81.7
2 nd BDS	20.4	1.09	16	21.9	57	78.1
3 rd BDS	21.2	0.96	7	17.9	32	82.1
4 th BDS	22.6	1.21	20	27.4	53	72.6
Total	20.9	1.62	56	21.9	200	78.1

Table 2a: Comparison of mean dental anxiety score among undergraduate students using one-way ANOVA

Year of study	n	Dental anxiety score					
		Minimum	Maximum	Mean	SD	F-value	P-value
1 st BDS	71	2	16	8.81	2.88	6.13	0.001 (S)
2 nd BDS	73	6	18	9.27	2.21		
3 rd BDS	39	4	19	7.82	2.84		
4 th BDS	73	4	16	7.54	2.86		

ANOVA: Analysis of variance

Table 2b: *Post hoc* LSD test for pairwise comparison of mean dental anxiety score among undergraduate students

Pair 1		Pair2	P-value	Sig.
1 st BDS	versus	2 nd BDS	0.311	NS
1 st BDS	versus	3 rd BDS	0.065	NS
1 st BDS	versus	4 th BDS	0.005	S
2 nd BDS	versus	3 rd BDS	0.007	S
2 nd BDS	versus	4 th BDS	0.001	S
3 rd BDS	Versus	4 th BDS	0.611	NS

Table 3: Comparison of level of anxiety according to dental anxiety scale among undergraduate students

Year of study	n	Dental anxiety level								Chi-square test
		No anxiety		Moderate anxiety		High anxiety		Severe anxiety		
		N	%	n	%	n	%	n	%	
1 st BDS	71	34	47.9	29	40.8	6	8.5	2	2.8	X ² =23.97 P=0.04 significant
2 nd BDS	73	27	37.0	43	58.9	2	2.7	1	1.4	
3 rd BDS	39	24	61.5	14	35.9	0	0.0	1	2.6	
4 th BDS	73	49	67.1	19	26.0	2	2.7	3	4.1	
Total	256	134	52.3	105	41.0	10	3.9	7	2.7	

Table 4: Comparison of mean dental anxiety among gender of all undergraduate students

Gender	n	Mean	SD	t-value	P-value	Sig.
Male	56	8.4643	2.86651	0.093	0.926	NS
Female	200	8.425	2.76089			

DISCUSSION

Dental anxiety is one of the major concerns in the regular clinical practice that should be dealt and managed for good oral health.^[8] Therefore, this study was conducted to investigate the dental anxiety among undergraduate students of Sri Aurobindo College of Dentistry, Indore, using CDAS questionnaire. As CDAS is acceptable, reliable, concise, approachable, and easy to use; thus, it was used to measure the level of dental anxiety in the present study.

In the present study, the average dental anxiety score decreased significantly with each successive professional year. This result is in agreement with studies conducted by Peretz and Mann,^[9] Kirova,^[10] and Acharya and Sangam^[11] This directly indicates that 1st-year dental students have greater fear from dental treatment compared to 4th-year dental students. This might be because the students become more alert, more professionally built and have more clinical experience through their progress in the clinics. The findings are in correlation with the results of study done by Ali *et al.*^[12]

At Shri Aurobindo College of Dentistry, during 1st year, there is an introductory session for students to introduce them to all branches of dentistry. This allows them to have a bird's eye view of the clinical aspects of dentistry. Gradually, as they progress in the subsequent years a better understanding of dentistry is there. Henceforth, anxiety scores of the participants in the present study are less as compared to studies done earlier in various institutes.^[9,10]

Female students showed higher CDAS scores than males, which is in agreement with previous studies.^[13-15] It has been hypothesized that women are more sensitive to perceived threats or danger, and that they may define their fears more openly; while men may be more emotionally tolerant and hide their anxieties.^[16] Nevertheless, some studies found no sex differences^[17,18] which in agreement with the present study.

The current available data indicates that suitable dental health knowledge and education could overcome the negative effects of personality and reduce dental anxiety. Dental health care workers should obtain training in the management of dental anxiety. Resolution of dental anxiety at early stages will decrease the chance of resistant dental anxiety which is difficult to deal within the dental clinic. The comparison of dental anxiety levels among gender of all undergraduate students showed no statistically significant difference in anxiety levels between the male and female participants.

The importance of dental health education should be overemphasized in the reduction and control of dental anxiety. Schools as well as non-dental university courses should compulsorily include dental health education to help reduction of dental anxiety among the population.

The limitations of the present study are as follows: First, this is a cross-sectional study and it is important to note that opinions of dental anxiety can change over time. Thus, the associations identified in such studies should not be believed a causal relationship. Second, it is a self-administered questionnaire study where the respondents may hide their true emotions and may also have underreported their dental anxiety, and unpleasantness related to seeking and gaining dental care.

CONCLUSION

Dental anxiety in dental students is relatively high during the initial years and decreases progressively as they pass through the clinical years. Anxiety before treating patients is relatively high for the 1st time before starting the patient. As dental students are future healthcare providers, it is important that they learn techniques to help them manage their own dental fears.

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