



Fear of dental pain among students of dental colleges in Lucknow city, Uttar Pradesh

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ABSTRACT

Dental fear is a normal emotional reaction to one or more specific threatening stimuli in the dental situation. Fear of pain is an important issue in the practice of dentistry because it interferes with both, the provision and the receipt of dental care. The present study was conducted to assess fear of dental pain among students of dental colleges in Lucknow city. A cross-sectional study was undertaken to assess the fear of dental pain among undergraduate dental students. A self-administered questionnaire was used to obtain the data. The questionnaire consisted of two parts. Part one consisted of basic demographic data of the subjects. Part two was a modified version of fear of dental pain (FDP) questionnaire.⁶ Fear of dental pain questionnaire is a self-administered questionnaire measuring pain-related fear to a variety of painful stimuli during routine dental treatment. It consisted of a set of 18 questions related to routine dental treatment. Among 1050 subjects majority 680(64.8%) were females and 370(35.2) were males. The highest score was for fear of being drilled in the jaw bone (2.11 ± 1.24) and lowest was for fear to get the filling of molar teeth done (0.94 ± 1.13). The fear score was observed to be higher among male (1.70 ± 0.74) students compared with females (1.44 ± 0.55) and the difference was significant ($p=0.0001$). The post-hoc comparison tests revealed that the fear score was significantly higher among the students of 1st year (1.64 ± 0.68). Dental fear is a major concern that should be dealt with and managed. Dental students, especially in the 1st year had more fear than 4th year students. Male dental students had more fear than female dental students. "Exposure therapy" is recommended for the junior students for the exposure of feared objects to reduce the fear gap between the students of different years.

Keywords— Fear, Dental fear, Filling, Drilling

1. INTRODUCTION

Fear is described as an apprehensive and uncomfortable feeling.¹ Dental fear is a normal emotional reaction to one or more specific threatening stimuli in the dental situation.² Elements of fear can be divided into two categories: subjective (including emotions and cognitions) and objective (including behavior and physiological reactions). The knowledge of a patient's subjective dental fear is more relevant when considering the development of dental health services.³

An investigation into dental fear involving 169 Japanese dental and nursing students between 18 and 37 years of age found that the most fear-provoking items were the sight and feeling of the needle and the sound and feeling of the drill.⁴

Severely fearful students have significantly poorer oral status, also induces stress to the dentists thus the quality of dental care may even suffer.⁵ Dental students preparing for a professional career must not only learn dental techniques but also how to deal with patient fear and anxiety.⁴ The present study was conducted to assess fear of dental pain among students of dental colleges in Lucknow city (U.P.)

2. AIM

To assess the fear of dental pain among the students of dental colleges in Lucknow city (U.P.)

3. OBJECTIVE

Elicitation of variables relating to pain using the modified version of Fear of Dental Pain (FDP) questionnaire.

4. METHODOLOGY

A cross-sectional study was undertaken to assess the fear of dental pain among the undergraduate dental students (BDS 1st year to final year) of three dental colleges of Lucknow City as out of the six, only three dental colleges gave the permission to conduct the survey. All the dental students present on the day of data collection and willing to participate in the study were included. Informed consent was taken from each student prior to the study. Official permission was obtained from the Dean of all the

respective colleges of Lucknow city (U.P.). A total of 1050 students formed the sample. A self-administered questionnaire was used to obtain the data. The questionnaire consisted of two parts. Part one consisted of basic demographic data of the subjects. Part two was a modified version of fear of dental pain (FDP) questionnaire.⁶ Fear of dental pain questionnaire is a self-administered questionnaire measuring pain-related fear to a variety of painful stimuli during routine dental treatment. It consisted of a set of 18 questions related to routine dental treatment. It is a five-point Likert scale which elicited variables like fear of receiving an anesthetic in the mouth, afraid of having some gum burned away, afraid of getting the dentist’s hook stuck behind a filling, afraid to get the filling of molar teeth done, afraid of receiving a root canal treatment, afraid of an incision in the gum etc.

5. STATISTICAL ANALYSIS

The unpaired t-test was used to compare the fear score between males and females. The one-way analysis of variance followed by Tukey’s multiple comparison tests was used to compare the fear scores among age groups and year of study. The p-value<0.05 was considered significant. All the analysis was carried out by using SPSS 16.0 version (Chicago, Inc., USA).

6. RESULTS

Among 1050 subjects majority 680(64.8%) were females and 370(35.2) were males. More than half of the students were in the age group between 20-22 years (59.6%) and 21% were between 23-24 years. However, 15.7% were below 20 years and 3.6% were ≥25 years. Majority of the female students were below 25 years (Fig.1).

Table-1 presents the type of fear and level of fear among the students. The fear of being drilled in the jaw bone as a extreme level of fear was found among 14.7% of the students followed by fear of a wisdom tooth to be extracted (14.1%), Afraid of having a tooth pulled (12.4%), fear of a severe toothache (11.9%), fear when a cavity is being excavated with a rude drill (11%). The percentage of another type of fears for the extreme level was <10%.

The overall average score was found to be 1.53 being minimum 0.00 and maximum of 3.94. The highest score was for fear of being drilled in the jaw bone (2.11±1.24) and lowest was for fear to get the filling of molar teeth done (0.94±1.13).

The mean fear score was higher among the students of age <20 years (1.62±0.72) than 20-22 (1.53±0.64), 23-24 (1.49±0.57) and ≥25 (1.46±0.56) years, however, the differences were statistically not significant (p>0.05). (Table 2)

The fear score was observed to be higher among male (1.70±0.74) students compared with females (1.44±0.55) and the difference was significant (p=0.0001) (Table-3).

There was a significant (p=0.005) difference in the fear score among all the study year students. The post-hoc comparison tests revealed that the fear score was significantly higher among the students of 1st year (1.64±0.68) than a 3rd year (1.48±0.59) and 4th year (1.46±0.49) (Table-4).

6.1 Tables and figures

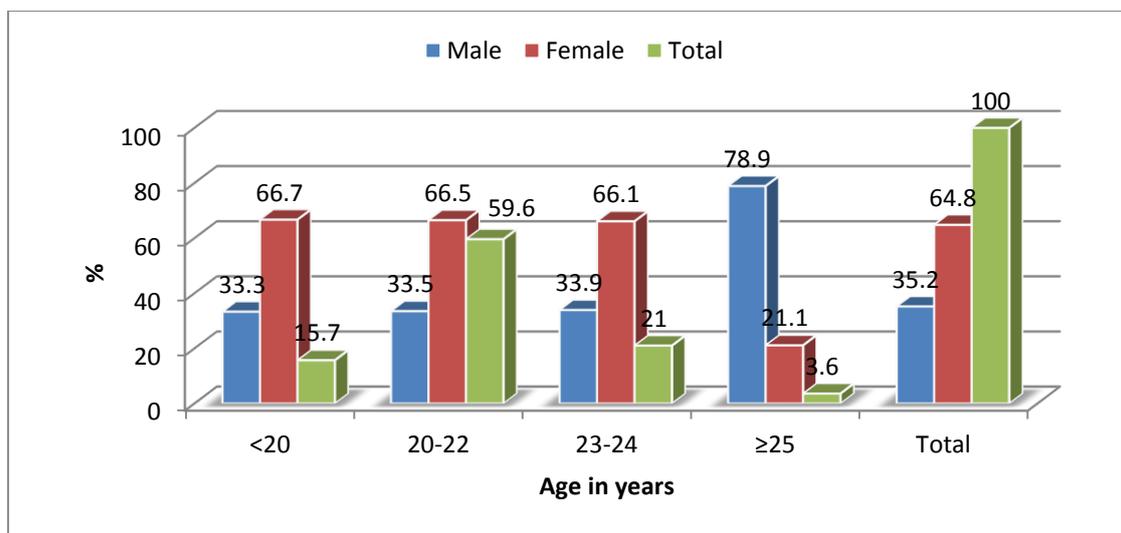


Fig. 1: Age and gender distribution of the students

Table 1: Type of fear and level of fear

S. No	Questions	Level of fear									
		Not at all		A little		A fair amount		Very much		Extreme	
		No.	%	No.	%	No.	%	No.	%	No.	%
1	Fear of receiving an anesthetic in the mouth	222	26.9	441	42.0	190	18.1	83	7.9	54	5.1
2	Afraid of having some gum burned away	261	24.9	362	34.5	280	26.7	117	11.1	30	2.9

3	Afraid of getting the dentist's hook stuck behind a filling	288	27.4	357	34.0	281	26.8	94	9.0	30	2.9
4	Afraid of having a lump cut open in the mouth	192	18.3	344	32.8	274	26.1	180	17.1	60	5.7
5	Afraid to get the filling of molar teeth done	507	48.3	268	25.5	147	14.0	91	8.7	37	3.5
6	Afraid of receiving a root canal treatment	283	27.0	321	30.6	190	18.1	166	15.8	90	8.6
7	Afraid of having a tooth pulled	180	17.1	289	27.5	230	21.9	221	21.0	130	12.4
8	Afraid of a cold sensation in the mouth close to a cavity	303	28.9	380	36.2	234	22.3	107	10.2	26	2.5
9	Afraid of an incision in the gum	186	17.7	365	34.8	300	28.6	153	14.6	46	4.4
10	Afraid of an old filling being removed	444	42.3	310	29.5	158	15.0	100	9.5	38	3.6
11	Afraid of being drilled in the jaw bone	126	12.0	235	22.4	240	22.9	295	28.1	154	14.7
12	Afraid of being drilled in a tooth	194	18.5	323	30.8	261	24.9	208	19.8	64	6.1
13	Afraid when a cavity is being explored with the dentist's hook	290	27.6	368	35.0	248	23.6	101	9.6	43	4.1
14	Afraid of receiving an injection in the roof of the mouth	157	15.0	293	27.9	277	26.4	225	21.4	98	9.3
15	Afraid when bracelets are being tightened	251	23.9	362	34.5	220	21.0	150	14.3	67	6.4
16	Afraid of a wisdom tooth to be extracted	188	17.9	242	23.0	220	21.0	252	24.0	148	14.1
17	Afraid of a severe toothache	137	13.0	247	23.5	266	25.3	275	26.2	125	11.9
18	Afraid when a cavity is being excavated with a rude drill	135	12.9	226	21.5	308	29.3	265	25.2	116	11.0

Table 2: Comparison of fear score according to age

Age in years	No. of subjects	Fear score	
		Mean	Std. Deviation
<20	165	1.62	0.72
20-22	626	1.53	0.64
23-24	221	1.49	0.57
≥25	38	1.46	0.56

Table 3: Comparison of fear score according to gender

Gender	No. of subjects	Fear score	
		Mean	Std. Deviation
Male	370	1.70	0.74
Female	680	1.44	0.55

Unpaired t=6.45, p=0.0001 (Significant)

Table 4: Comparison of fear score according to year of study

Study year	No. of subjects	Fear score	
		Mean	Std. Deviation
1 st	211	1.64 ^a	0.68
2 nd	194	1.54	0.75
3 rd	181	1.48 ^a	0.59
4 th	195	1.46 ^a	0.49

ANOVA F=4.36, p=0.005 (Significant), ^ap<0.05 (Post-hoc Tukey's test)

7. DISCUSSION

Dental fear is a major concern that should be dealt with and managed. Lowering dental fear might help in increasing the utilization of dental services which could improve and maintain oral hygiene. The purpose of the present study was to assess the fear of dental pain among students of dental colleges in Lucknow city.

In the present study, the fear score was observed to be higher among male (1.70±0.74) students compared with females (1.44±0.55) and the difference was significant (p=0.0001) but in the study conducted by Schuller AA⁷, Holtzman JM⁸ and Settineri S⁹, dental fear was more prevalent and severe among females. Various studies have reported that more females tend to

choose dentistry as a career than males^{10,11} and a similar situation is found in Lucknow as well. This was the reason for the high response rate reported by females.

In the present study, senior students had less mean fear of dental pain (FDP) which could be owed to their increased level of dental education and clinical experience. There was a significant ($p=0.005$) difference in the fear score among all the study year students. The post-doc comparison tests revealed that the fear score was significantly higher among the students of 1st year (1.64 ± 0.68) than a 3rd year (1.48 ± 0.59) and 4th year (1.46 ± 0.49). The results of this study agree with the results of Kirova¹².

The highest score was for fear of being drilled in the jaw bone (2.11 ± 1.24) and lowest was for fear to get the filling of molar teeth done (0.94 ± 1.13). Which is in disagreement with the findings described in previous studies^{13,14,15,16}. Among the stimuli studied, those that achieved the highest fear index values were the sight of the needle, the sensation of injection during anesthesia (48.9%) and the sound and sensation of the drill on the teeth (27.6%). The findings corroborate those reported by Yoshida *et al.* in 2009¹⁷. It is recommended that regular counseling sessions for severely feared students should be conducted and 'Exposure therapy' to be conducted for junior dental students for the exposure of feared object or procedure repeatedly.¹⁸

8. CONCLUSION

It was concluded that dental students, especially in the 1st year had more fear than 4th year students. The fear score was higher among the students of age <20 years. Male dental students had more fear than female dental students. The highest score was for fear of being drilled in the jaw bone and the lowest was for fear to get the filling of molar teeth done. Clinical education of dental training could favorably help in the reduction of dental fear.

9. REFERENCES

- [1] Bay EJ, Algase DL. Fear and anxiety: a simultaneous concept analysis. *Nurs Diagn* 1999; 10: 103-11.
- [2] Seligman LD, Hovey JD, Chacon K, Ollendick TH "Dental anxiety: An understudied problem in youth". *Clinical Psychology Review*. 2017, 55: 25–40.
- [3] Jaakkola S, Rautava P, Alanen P, Aromaa M, Pienihäkkinen K, Räihä H, Vahlberg T. Dental Fear: One Single Clinical Question for Measurement, *The Open Dentistry Journal*, 2009, 3, 161-166.
- [4] Yoshida T, Milgrom P, Mori Y, Nakai Y, Kaji M, Shimono T, Donaldson A.N. Reliability and cross-cultural validity of a Japanese version of the Dental Fear Survey. *BMC Oral Health* 2009, 9, doi:10.1186/1472-6831-9-17.
- [5] Hagglin C, Hakeberg M, Ahlqwist M, Sullivan M, Berggren U. Factors associated with dental anxiety and attendance in middle-aged and elderly women. *Community Dent Oral Epidemiol*. 2007; 28:451-60
- [6] Van Wijk AJ, Hoostraten J. The fear of dental pain questionnaire: construction and validity. *Eur J Oral Sci* 2003; 111:12-18
- [7] Schuller AA, Willumsen T, Holst D. Are their differences in oral health and oral health behavior between individuals with high and low dental fear?. *Community Dent Oral Epidemiol* 2003;31:116-21
- [8] Holtzman JM, Berg RG, Mann J, Berkey DB. The relationship of age and gender to fear and anxiety in response to dental care. *Spec Care Dentist* 1997; 70:82-7.
- [9] Settineri S, Tati F, Fanara G. Gender differences in dental anxiety; Is the chair position important? *J Contemp Dent Pract*. 2005;6:115-22.
- [10] Weaver R.G., Haden N.K, Valachovic R.W. U.S. dental school applicants and enrollees: a ten-year perspective. *J Dent Educ*, 2000; 64 (12):867–870
- [11] Brand A.A, Chikte U.M.E. Choosing dentistry as a career—part 1: a comparison of student motives .*J Dent Assoc South Africa*, 1992, 47 (11): 469–473.
- [12] Kirova GD. Dental anxiety among dental students. *J IMAB* 2011; 17: 2.
- [13] Abu-Ghazaleh, S.B. Rajab L.D, Sonbol, H.N, Aljafari, A.K, Elkarmi, R.F, Humphris G. The Arabic version of the modified dental anxiety scale. Psychometrics and normative data for 15–16 years old. *Saudi Med. J.* 2011, 32: 725-729.
- [14] Shaikh, M.A.; Kawal, A. Over dental anxiety problems among university students: Perspective from Pakistan. *J. Coll. Physicians Surg. Pak.* 2011, 21:237-238.
- [15] Omari A, W.M.; Al-Omiri, M.K. Dental anxiety among university students and its correlation with their field of study. *J. Appl. Oral Sci.* 2009, 17, 199-203.
- [16] Cesar, J.; de Moraes, A.B.; Milgrom, P.; Kleinknecht, R.A. Cross-validation of a Brazilian version of the Dental Fear Survey. *Community Dent. Oral Epidemiol.* 1993, 21, 148-150.
- [17] Yoshida, T.; Milgrom, P.; Mori, Y.; Nakai, Y.; Kaji, M.; Shimono, T.; Donaldson, A.N. Reliability and cross-cultural validity of a Japanese version of the Dental Fear Survey. *BMC Oral Health* 2009, 9, doi:10.1186/1472-6831-9-17.
- [18] Marks I. Exposure therapy for phobias and obsessive-compulsive disorders *Hosp Pract*, 14 (2) (1979):101–108.