

Assessment of Anxiety and Fear Among Patients Undergoing Tooth Extraction: A Clinical Study

Rohit Singh^{1*} Supriya Singh² Revati Singh³ Amit Kumar⁴ Amitabh Kumar Sinha⁵ Pawan Kumar⁶

¹Senior Lecturer, Department of Prosthodontic Crown and Bridge, Patna Dental College and Hospital, Patna, Bihar, India.

²Lecturer, Department of Oral Medicine & Radiology, Patna, Bihar, India.

³Senior Resident, Department of Dentistry, Patna Medical College & Hospital, Patna, Bihar, India.

⁴Lecturer, Department of Oral and Maxillofacial Surgery, Patna Dental College and Hospital, Patna, Bihar, India.

⁵Tutor, Department of Conservative Dentistry and Endodontics, Patna Dental College and Hospital, Patna, India.

⁶PGT, Department of Prosthodontics Crown and Bridge and Implantology, Patna Dental College and Hospital, Patna, India.

ABSTRACT

Background: Anxiety is nervousness, fear, unpleasant emotional state and worrying about anything. There are changes in body which can be physiological or behavioral. Various scales have been developed to measure level of dental anxiety in people. Most common are Spielberger's State-Trait Anxiety Inventor (STAI), the Modified Dental Anxiety Scale (MDAS) and the Dental Fear Survey (DFS).

Materials & Methods: This study was conducted in the department of Oral Surgery from January 2015 to June 2015. It included 120 patients in age group of 20-50 years. All were given questionnaire such as Spielberger's State-Trait Anxiety Inventor (STAI) and the Dental Fear Survey (DFS) to respond. After obtaining the response in the questionnaire, all underwent extraction of third molar under local anesthesia. Response was recorded at 3 points- T-1 – immediately before extraction, T-2- immediately after extraction and T-3- after 1 week.

Results: Out of 120 patients, males were 70 and females were 50. The difference was non – significant (P- 0.07). Duration of extraction (P- 0.04), type of local anaesthesia (P - 0.05) and duration of operation (P- 0.04) at T-2 showed significant difference in STRAI test. There was significant difference at T- 2 with duration of extraction (P- 0.02) and number of injections (P- 0.001).

Conclusion: Dental anxiety is common among those who visit dentist for any treatment for the first time than those who visit routinely. Patients should be educated regarding need of treatment and methods for reducing anxiety be employed.

Keywords: Anxiety, Extraction, Fear.

INTRODUCTION

Anxiety is nervousness, fear, unpleasant emotional state and worrying about anything. There are changes in body which can be physiological or behavioral. Anxiety regarding dental treatment, pain associated with it, fear of swelling or previous experience of dental treatment is very common. Extraction is one of the major causes in patients leading to reluctant nature towards dental treatment. It has been seen that dental anxiety is

commonly seen in patients who have poor oral hygiene and immune compromised state.¹

A study conducted by Schuller et al.² in year 2003 revealed that more dental decay, decayed tooth surfaces, less sound teeth and multiple missing teeth are common features among patients having more dental fear or anxiety. Congenital determinants and the previous experiences of family members and friends are among various factors leading to dental anxiety.

Received: Oct. 17, 2018: Accepted: Jan. 10, 2019

*Correspondence Dr. Rohit Singh.

Department of Prosthodontic Crown and Bridge, Patna Dental College and Hospital, Patna, Bihar, India.

Email: Not Disclosed

A similar study done by McGrath & Bedi³ confirmed that people with high dental related anxiety were having poor oral health. It has been seen that dental anxiety is commonly amongst with low socio-economic background and low education. Patients should be reassured regarding need of dental treatment and adequate pain control should be applied in very first dental visit.

Anxiety can be dental anxiety, state anxiety or state anxiety. Trait anxiety is a permanent feature of the personality of each individual emotion and state anxiety refers to the emotional state of the human body when it is evaluated. A study by Lago Mandez L⁴ revealed a direct relationship between dental anxiety, state anxiety and state anxiety.

Various scales have been developed to measure level of dental anxiety in people. Most common are Spielberger's State-Trait Anxiety Inventor (STAI), the Modified Dental Anxiety Scale (MDAS) and the Dental Fear Survey (DFS).⁵

The present study was conducted to assess the level of fear and anxiety in patients towards dental extraction preoperatively, immediately following extraction and a week after extraction.

MATERIALS & METHODS

This study was conducted in the department of Oral Surgery from January 2015 to June 2015. It included 120 patients in age group of 20-50 years, who visited the department with complaint of either decayed, impacted third molar. In all patients, third molar was to be extracted under local anesthesia. Patients were informed regarding the study and written consent was obtained. Approval from institutional ethical committee was obtained prior starting the study. All relevant information such as name, age, gender, status of third molar etc. was noted.

All were given questionnaire such as Spielberger's State-Trait Anxiety Inventor (STAI) and the Dental Fear Survey (DFS) to respond. After obtaining the response in the questionnaire, all underwent extraction of third molar under local anesthesia.

The STAI-State is used to record patient's anxiety. There are 20 statements in this state. There were 4 statements like not at all, some what, moderately so, or very much so making it 4 point scale. SO there

was either 20 as minimum score or 80 as maximum score as "little or no anxiety" denoted 20-37 score, "moderate anxiety" showed 38-44 score, or "extreme anxiety" showed 45-80 score.

The DFS score was assessed on a Likert scale of intensity ranging from 1 showing no fear to 5 having extreme fear consisted of 20 items grouped into 3 dimensions: avoidance, physiological reactions, and specific dental stimuli. Scores range from 20 (no fear) to 100 (terrified) and the lower limit for an appreciable degree of fear is considered to be 63.

Response was recorded at 3 points- T-1 - immediately before extraction, T-2- immediately after extraction and T-3- after 1 week.

Results were tabulated and subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I shows that out of 120 patients, males were 70 and females were 50. The difference was non - significant (P- 0.07). Table II shows that shows that duration of extraction (P- 0.04), type of local anaesthesia (P - 0.05) and duration of operation (P- 0.04) at T-2 showed significant difference in STRAI test. Table III shows that there was significant difference at T- 2 with duration of extraction (P- 0.02) and number of injections (P- 0.001).

DISCUSSION

Dental fear and anxiety are common among general population. Anxiety is either related to the pain associated with dental treatment or apprehension. Extraction of teeth is most common cause of dental anxiety among patients. The thinking of blood loss and fear of injection leads to anxiety. Though dental extraction is not much time consuming and there is less blood loss, still it is the matter of worry for patients.⁶

The present study was conducted to assess the anxiety towards dental treatment in patients using STRAI test and DFS test.

In this study, we included 120 patients underwent extraction of third molars. OFF 120 patients, 70 were males and 50 were females. A study conducted by Yusa et al⁷ found that those underwent second

Table 1: Distribution of patients.

	Total - 120	
Male	Female	P value
70	50	0.07

Table 2: Dental anxiety using STRAI.

	STRAI (State) immediately after tooth extraction		STRAI (Trait) immediately after tooth extraction		STRAI (State) after 7 days		STRAI (Trait) after 7 days	
	Mean	P value	Mean	P value	Mean	P value	Mean	P value
Local anesthesia		0.3		0.05		0.8		0.4
Block (75)	24.42		27.30		25.30		25.30	
Infiltration (45)	24.40		23.60		25.48		24.19	
No. of injection		0.12		0.02		0.4		0.25
One (90)	23.40		24.88		25.70		24.60	
Two (30)	22.31		28.20		25.82		24.90	
Duration of extraction		0.02		0.04		0.2		0.0
<10 (70)	23.28		24.90		25.50		24.32	
>10 (50)	26.16		28.30		24.40		26.40	

Table 3: Dental anxiety using DFS.

	DFS immediately after tooth extraction				P value	DFS after 7 days				P value
	Mild	Moderate	Severe			Mild	Moderate	Severe		
Local anesthesia					0.2					0.05
Block (75)	28	36	11			13	28	4		
Infiltration (45)	14	26	4							
No. of injection					0.5					0.001
One (90)	50	35	5			45	42	3		
Two (30)	20	8	2			22	6	2		
Duration of extraction					0.02					0.5
<10 (70)	45	15	10			42	17	11		
>10 (50)	25	18	7			28	16	6		

time extraction complaint of less fear and anxiety as compared to those who were exposed it to the first time. This study was performed on Japanese students. Author concluded that anxiety had direct link with the experience.

Armfield et al⁸ in their study revealed that indirect dental experience by relatives or family members play an important role in developing fear among patients even if they never had painful dental treatment in the past. In this study we found that using STRAI test, duration of extraction, type of local anesthesia and duration of operation at T-2 showed significant difference. This is in accordance to Eitner S et al.⁹

There was significant difference at T- 2 with duration of extraction (P- 0.02) and number of injections (P- 0.001) using DFS test. This is in agreement to study done by Van Wijk.¹⁰

Anxious response to specific stimuli can be explained as a physiological mechanism of adaptation in unknown situations. However, multiple negative effects of such a state of mind accompanying surgical treatment have nearly always been proved by multiple studies within last 50 years.¹² Liao F et al¹³ conducted a study on 180 adult patients. The level of anxiety was measured at 15 minutes prior to LA administration using Corah's DAS. Author found that Corah's DAS is a useful test for estimating the impact of anxiety, and younger patients with anxiety were more likely to have high levels of anxiety.

CONCLUSION

Dental anxiety is common among those who visit dentist for any treatment for the first time than those who visit routinely. Patients should be educated regarding need of treatment and methods for reducing anxiety be employed.

CONFLICT OF INTEREST

No potential academic conflict of interest relevant to the above article was reported.

REFERENCES

1. Bergdahl M, Bergdahl J. Temperament and character personality dimensions in patients with dental anxiety. Eur J Oral Sci. 2003; 111: 93-8.
2. Schuller AA, Willumsen T, Holst D. Are there differences in oral health and oral health behavior between individuals with high and low dental fear? Community Dent Oral Epidemiol 2003; 31:116-21.
3. Mc Grath C, Bedi R. The association between dental anxiety and oral health-related quality of life in Britain. Community Dent Oral Epidemiol. 2004; 32: 67-72.
4. Lago-Méndez L, Diniz-Freitas M, Senra-Rivera C, et al. Dental anxiety before removal of a third molar and association with general trait anxiety. J Oral Maxillofac Surg 2006; 64: 1404-8.

5. Scott LE, Clum GA, Peoples JB. Pre operative predictors of post operative pain. *Pain* 1983; 15:283-93.
6. Klages U, Kianifard S, Ulusoy Ö, et al. Anxiety sensitivity as predictor of pain in patients undergoing restorative dental procedures. *Community Dent Oral Epidemiol* 2006; 34:139-45.
7. Yusa H, Onizawa K, Hori M, Takeda S, Takeda H, Fukushima S, et al. Anxiety measurements in university students undergoing third molar extraction. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod.* 2004; 98:23-7.
8. Arm field JM, Pohjola V, Joukamaa M, et al. Exploring the associations between somatization and dental fear and dental visiting. *Eur J Oral Sci* 2011; 119: 288-93.
9. Eitner S, Wichmann M, Paulsen A, et al. Dental anxiety-an epidemio- logical study on its clinical correlation and effects on oral health. *J Oral Rehabil* 2006; 33 :588-93.
10. Van Wijk A, Linde boom J. The effect of a separate consultation on anxiety levels before third molar surgery. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod.* 2008; 105: 303-8.
11. Eli I, Baht R, Kozlovsky A, et al. Effect of gender on acute pain prediction and memory in periodontal surgery. *Eur J Oral Sci.* 2000;108: 99-103.
12. Mc Neil DW, Helfer AJ, Weaver BD, et al. Memory of pain and anxiety associated with tooth extraction. *J Dent Res.* 2011; 90: 220-4.
13. Liao F L, Kok S H, Lee J J, Kuo R C, Hwang C R, Yang P J, Lin C P, Kuo Y S, and Chang H H. Cardiovascular influence of dental anxiety during local anesthesia for tooth extraction. *Oral Surg Oral Med Oral Path Oral Radiol Endod* 2008; 105:16-26.