



www.bioinformation.net  
Volume 18(10)

Research Article

Received September 2, 2022; Revised October 31, 2022; Accepted October 31, 2022, Published October 31, 2022

DOI: 10.6026/97320630018982

**Declaration on Publication Ethics:**

The author's state that they adhere with COPE guidelines on publishing ethics as described elsewhere at <https://publicationethics.org/>. The authors also undertake that they are not associated with any other third party (governmental or non-governmental agencies) linking with any form of unethical issues connecting to this publication. The authors also declare that they are not withholding any information that is misleading to the publisher in regard to this article.

**Declaration on official E-mail:**

The corresponding author declares that lifetime official e-mail from their institution is not available for all authors

**License statement:**

This is an Open Access article which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly credited. This is distributed under the terms of the Creative Commons Attribution License

**Comments from readers:**

Articles published in BIOINFORMATION are open for relevant post publication comments and criticisms, which will be published immediately linking to the original article without open access charges. Comments should be concise, coherent and critical in less than 1000 words.

Edited by P Kanguane

Citation: Khan *et al.* Bioinformation 18(10): 982-985 (2022)

# Anxiety among patients undergoing various dental procedures

Siraj DAA Khan\*, Faisal Ali Alalhareth, Hadi Faraj Moshabab Alyami, Mohammad Abdulkareem Ahmed Alnaji, Abdullelah Abdulkareem Al Touk & Saleh Saeed Saleh Alyami

Department of Preventive Dental Sciences, Faculty of Dentistry, Najran University, KSA \*Corresponding author

**Author contacts:**

Siraj DAA Khan - E-mail: [sdkhan@nu.edu.sa](mailto:sdkhan@nu.edu.sa); Phone: +966-17542-7960

**Abstract:**

Dental Anxiety (DA) was the most frequent problem which can lead to the avoidance of treatment. Therefore, is to evaluate the DA level among patients of different treatments. A questionnaire was distributed among the participants. The Modified Corah Dental Anxiety Scale (MDAS) was used to measure dental anxiety. In gender differences, it has been found that females were more anxious than male participants. The younger age group (18-30 years) was less anxious than the older age groups ( $P < 0.05$ ). Most of the participants in all conditions were slightly anxious. Male participants exhibited less dental anxiety than females. This might be due to males being more stable emotionally.

**Keywords:** Dental anxiety, anxious, MDAS

**Background:**

The common condition which is associated with surgical and medical risks and avoidance of dental treatment is Dental anxiety.

In a stressful condition, as a physiological response, it can increase blood pressure and heart rate, dizziness, excessive sweating, pallor,

dizziness and flight response. [1] DA is also one of the major factors that impair dental treatment, thus providing a challenge to professional care. [2,3] Filling, root canal therapy, subgingival scaling, extraction, deep probing and other invasive procedures were the most reported procedures associated with pain in patients who have dental anxiety. [4] In a study which involves a group of patients receiving dental hygiene maintenance, those who had issues of dental anxiety anticipated more pain from different procedures i.e. scaling, probing and vibrating sensations. [5] However, the literature indicates that regular dental visits can reduce dental fear. [6] People who experienced dental anxiety or fear are likely to avoid or delay visits to the dentist and a large number of patients with fear fail to show up for appointments or cancel them. [7] Also the patients with dental fear both children and adults are difficult to treat, showed behavioural problems and require more time which leads to unpleasant and stressful conditions for patients as well as for dentists. [8] Finally, these dentally anxious people, due to their avoidance, often have poor

dental health. [9] Therefore, it is of interest to evaluate the anxiety level among patients who were undergoing different restorative and endodontic procedures.

### Material and Methods

After getting an ethical clearance from Scientific research Ethical Committee (442-40-44056 DS) a questionnaire was distributed among 795 patients who were having any type of restorative and endodontic treatment at different dental centers of Najran. The questionnaire had two parts. The 1<sup>st</sup> part contained the questions about demographic details including the experience of a past dental visit. The second part had questions about different situations related to dental treatment that can cause anxiety. The aim of the study was clearly explained to the participants. Descriptive statistics in terms of frequency and percentage were used to analyze the compiled data and for correlation chi-square test was used with SPSS.

**Table 1: Comparison between gender of participants and their response**

Response		Response					Chi-square	p-value
		Not anxious	Slightly anxious	Fairly anxious	Very anxious	Extremely anxious		
If you went to your dentist for treatment tomorrow, how would you feel?	Female	145 18.2%	220 27.7%	137 17.2%	45 5.7%	17 2.1%	75.358	0.000
	Male	131 16.5%	65 8.2%	27 3.4%	8 1.0%	0 0.0%		
	Total	276 34.7%	285 35.8%	164 20.6%	53 6.7%	17 2.1%		
If you were sitting in the waiting room (waiting for treatment), how would you feel?	Female	171 21.5%	215 27.0%	95 11.9%	61 7.7%	22 2.8%	50.540	0.000
	Male	124 15.6%	67 8.4%	34 4.3%	6 0.8%	0 0.0%		
	Total	295 37.1%	282 35.5%	129 16.2%	67 8.4%	22 2.8%		
If you were about to have a tooth drilled, how would you feel?	Female	105 13.2%	190 23.9%	154 19.4%	75 9.4%	40 5.0%	100.590	0.000
	Male	115 14.5%	76 9.6%	21 2.6%	18 2.3%	1 0.1%		
	Total	220 27.7%	266 33.5%	175 22.0%	93 11.7%	41 5.2%		
If you were about to have your teeth restored and polished, how would you feel?	Female	135 17.0%	187 23.5%	127 16.0%	84 10.6%	31 3.9%	80.153	0.000
	Male	122 15.3%	75 9.4%	20 2.5%	11 1.4%	3 0.4%		
	Total	257 32.3%	262 33.0%	147 18.5%	95 11.9%	34 4.3%		
(If you were about to have a local anaesthetic injection in your gum, how would you feel?)	Female	75 9.4%	142 17.9%	155 19.5%	117 14.7%	75 9.4%	86.876	0.000
	Male	94 11.8%	63 7.9%	35 4.4%	29 3.6%	10 1.3%		
	Total	169 21.3%	205 25.8%	190 23.9%	146 18.4%	85 10.7%		

P > 0.05 = Non Significant, P < 0.05 = Significant, P < 0.01 = Highly significant

**Table 2: Comparison between age of participants and their response**

Response		Response					Chi-square	p-value
		Not anxious	Slightly anxious	Fairly anxious	Very anxious	Extremely anxious		
If you went to your dentist for treatment tomorrow, how would you feel?	18-30	219 27.5%	195 24.5%	109 13.7%	37 4.7%	11 1.4%	22.094	0.005
	30-40	48 6.0%	79 9.9%	39 4.9%	15 1.9%	5 0.6%		
	More than 40	9 1.1%	11 1.4%	16 2.0%	1 0.1%	1 0.1%		
	Total	276 34.7%	285 35.8%	164 20.6%	53 6.7%	17 2.1%		
If you were sitting in the waiting room (waiting for treatment), how would you feel?	18-30	231 29.1%	188 23.6%	84 10.6%	52 6.5%	16 2.0%	16.542	0.035
	30-40	54 6.8%	80 10.1%	34 4.3%	13 1.6%	5 0.6%		
	More than 40	10 1.3%	14 1.8%	11 1.4%	2 0.3%	1 0.1%		
	Total	295 37.1%	282 35.5%	129 16.2%	67 8.4%	22 2.8%		
If you were about to have a tooth drilled, how would you feel?	18-30	177	190	107	68	29	19.330	0.013

		22.3%	23.9%	13.5%	8.6%	3.6%		
If you were about to have your teeth restored and polished, how would you feel?	30-40	36	65	55	21	9	33,348	0.000
		4.5%	8.2%	6.9%	2.6%	1.1%		
	More than 40	7	11	13	4	3		
		0.9%	1.4%	1.6%	0.5%	0.4%		
	Total	220	266	175	93	41		
		27.7%	33.5%	22.0%	11.7%	5.2%		
(If you were about to have a local anaesthetic injection in your gum, how would you feel?)	18-30	208	178	86	76	23	28,781	0.000
		26.2%	22.4%	10.8%	9.6%	2.9%		
	30-40	44	67	49	18	8		
		5.5%	8.4%	6.2%	2.3%	1.0%		
	More than 40	5	17	12	1	3		
		0.6%	2.1%	1.5%	0.1%	0.4%		
Total	257	262	147	95	34			
	32.3%	33.0%	18.5%	11.9%	4.3%			
	18-30	133	158	120	91	69	28,781	0.000
		16.7%	19.9%	15.1%	11.4%	8.7%		
	30-40	34	39	54	46	13		
		4.3%	4.9%	6.8%	5.8%	1.6%		
	More than 40	2	8	16	9	3		
		0.3%	1.0%	2.0%	1.1%	0.4%		
Total	169	205	190	146	85			
	21.3%	25.8%	23.9%	18.4%	10.7%			

P >0.05 = Non Significant, P<0.05 = Significant, P<0.01= Highly significant

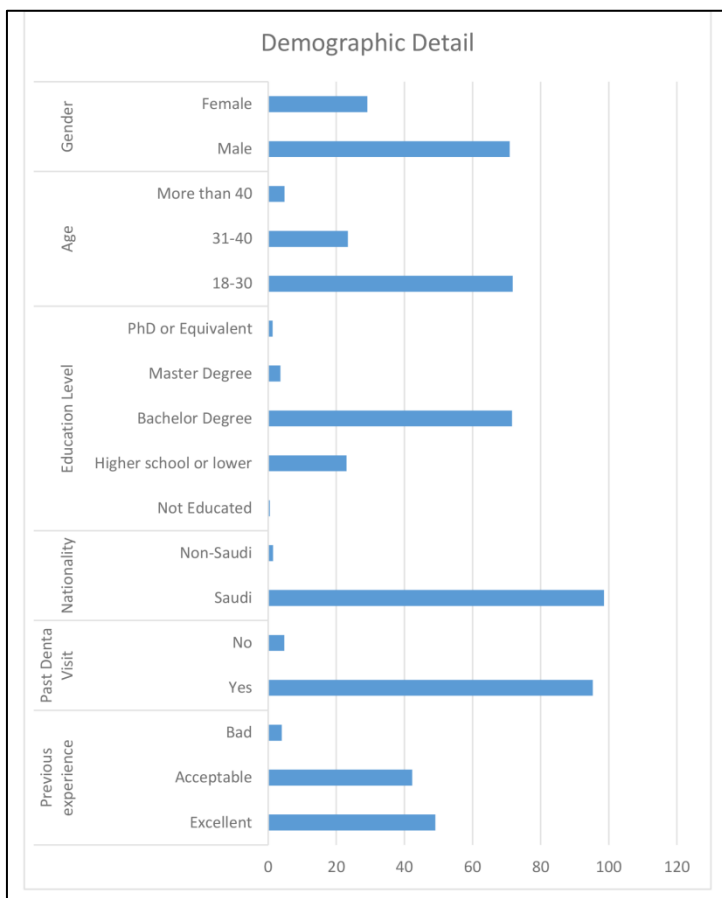


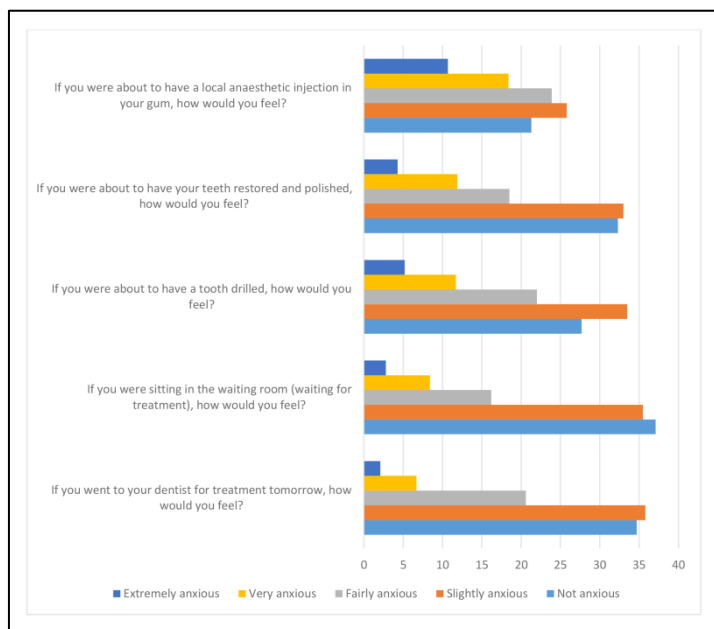
Figure 1: Demographic details of participants

**Results:**

A total of 795 people participated in this survey. 564 were female and 231 were male. 571 were aged between 18-30 years, 186 were 31-40 years old and 38 participants were aged more than 40 years. Most of the people (569) had bachelor-level education. Only 4 participants were not educated. In context with their nationality, only 11 persons were non-Saudi. A large number of participants (758) had an experience of a past dental visit. Out of those 758 participants, 390 had an excellent while 32 had a bad experience

(Figure 1). Among female participants, 220(27.7%) were slightly anxious when they have a dental visit while most of the male participants 131(16.5%) were not anxious. 215(27.0%) female participants said they will feel slightly anxious while sitting in the waiting room for dental treatment and 124(15.6%) male participants were not anxious. About the question of tooth drill, 190(23.9%) were slightly anxious and 40(5.0%) were extremely anxious while 115(14.5%) males were not anxious and only 1(0.1%) participant responded extremely anxious. 135(17.0%) and 187(23.5%) female participants were not anxious and slightly anxious when they will have tooth restoration. Most of the female participants 155(19.5%) were fairly anxious while most of the male participants 94(11.8%) were not anxious about the local anaesthetic injection. All responses to this comparison showed significant (P<0.01) relation (Table 1). When the response of patients was observed in comparison with their age, the result showed that 219 (27.5%) participants 18-30 years old were not anxious when they have a dentist visit and 11 (1.4%) participants of the same age group were extremely anxious. Among the group more than 40 years old 9 (1.1%) were not anxious, 16(2.0%) were fairly anxious and 1(0.1%) were extremely anxious about their dental visit. While sitting in the waiting room for dental treatment, 188 (23.6%), 80 (10.1%) and 14 (1.8%) from the age group of 18-30 years, 30-40 and more than 40 years were fairly anxious respectively. Most of the participants were from every age group, 190 from 18-30 years. 65 from 30-40 years and 11 from more than 40 years said that they will feel slightly anxious about tooth drill. About the question of restoration and polishing of teeth, 208(26.2%) people aged between 18-30 years said they will not feel anxious while 23(2.9%) were extremely anxious. 44(5.5%) participants said that they will feel not anxious among the age group of 30-40 years and 5(0.6%) from more than 40 years responded in the same way. A large number of participants 205(25.8%) from all age groups agreed on being slightly anxious when they have the local anaesthetic injection in their gums (Table: 2). All responses to this comparison were significant (P<0.05). A total of 795 people participated in this survey. About the dental visit, the percentage of participants who were slightly anxious was the highest (35.8%) and the lowest percentage for those who were extremely anxious (2.1%). While sitting in the waiting room the highest percentage of participants (37.1%) were not anxious and 2.8% were extremely anxious. Most of the participants (33.5%) were

slightly anxious when they have tooth drill, followed by the not anxious (27.7%), fairly anxious (22.0%), very anxious (11.7%) and extremely anxious (5.2%). The same trend was found in the response about restoration and polishing of teeth. The percentage for slightly anxious, not anxious, fairly anxious, very anxious and extremely anxious was 33.0, 32.3, 18.5, 11.9 and 4.3 respectively. The majority of the participants (25.8%) were slightly anxious about LA injection while only 10.7% were extremely anxious (Figure 2).



**Figure 2:** Response of participant

### Discussion:

In the present study, the comparison between male and female participants showed that females experienced more Dental Anxiety than male participants when they have any kind of dental treatment. The majority of the male was not anxious and only a few were extremely anxious. Same-gender differences were also reported in previous reports on dental anxiety that in comparison to males, females had more fear of the dentist. [10] These results were in accordance with another finding in which females showed higher mean MDAS scores. [11] This could be due to that females have less tolerance to pain and lower pain threshold. [12] For the treatment of tooth drilling and LA injection, high levels of anxiety were reported in females. [11] Same response was reported in our study. The current study showed that the young people (18-30 years old) were less anxious than the other age groups. Participants who were more than 40 years old were more anxious. These results could be due to the past experience of participants. In contrast to our findings, several studies reported an inverse relationship between dental anxiety and age. [12] Lower DA was found in older people. [11] Higher means for MDAS consistent were reported in younger age groups [13], and an increase in anxiety was found in

early years of age. This may be due to increased exposure over time allowing patients to develop a tolerance to treatment, and therefore have less anxiety as they age.

### Conclusion:

Overall it has been concluded from the results that in all conditions most of the participants were slightly anxious and only a few patients were extremely anxious. However, female patients exhibited more dental anxiety than males and people of the young age were more anxious than other age groups.

### Disclosures:

#### Conflicts of interest:

In compliance with the ICMJE uniform disclosure form, all authors declare the following:

#### Payment/services info:

All authors have declared that no financial support was received from any organization for the submitted work.

#### Financial relationships:

All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work.

#### Other relationships:

All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

### References:

- [1] Facco E *et al.* *Minerva Anestesiol.* 2013 79:1389-95. [PMID: 23860442]
- [2] Dantas LP *et al.* *Med Oral Patol Oral Cir Bucal.* 2017 22:95-101. [PMID: 27918731]
- [3] Astramskaite I *et al.* *Int J Oral Maxillofac Surg.* 2016 45:1630-43. [PMID: 27436789]
- [4] Maggias J& Locker D. *Community Dent Oral Epidemiol.* 2002 30:151-9. [PMID: 12000356]
- [5] Hofer D *et al.* *BMC Oral Health.* 2016 16:43-7. [PMID: 27009086]
- [6] Crego A *et al.* *Front Public Health.* 2014 2:16. [PMID: 24616889]
- [7] Armfield JM. *Aust Dent J.* 2012 57:1-5. [PMID: 22792584]
- [8] Brahm CO *et al.* *Swed Dent J.* 2012 36:79-89. [PMID: 22876395]
- [9] Armfield JM *et al.* *Community Dent Oral Epidemiol.* 2009 37:220-230. [PMID: 19508270]
- [10] Armfield JM *et al.* *Aust Dent J.* 2006 51:78-85. [PMID: 16669482]
- [11] Marie L *et al.* *BMC Oral Health.* 2018. [PMID: 29558935]
- [12] Nayak S *et al.* *Cross Cult Res.* 2000 34:135-51.
- [13] Thomson WM *et al.* *Community Dent Oral Epidemiol.* 2000 28:289-94. [PMID: 10901408]

### Readers' comments:

The authors did not cite the following article:

Udoye CI *et al.* *J Contemp Dent Pract.* 2005 May 15; 6(2):91-8. PMID: 15915208.

<https://pubmed.ncbi.nlm.nih.gov/15915208/>