

FREQUENCY OF ANXIETY RELATED TO DENTAL PROCEDURES AMONG PROFESSIONAL STUDENTS

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ABSTRACT

OBJECTIVE: To determine the frequency of self-reported anxiety levels related to dental procedures amongst professional students using Revised Corah's Dental Anxiety Scale, (DAS-R).

STUDY DESIGN: A cross sectional study

PLACE AND DURATION: Jinnah Medical and Dental College, Karachi and Isra University, Hyderabad from 1st October 2010 to 30th April 2011

METHODOLOGY: A total of 259 professional students comprised the study sample. All those students who consented to participate were scored for anxiety using revised Corah's Dental Anxiety Scale (DAS-R).

RESULTS: Of the total students, we categorized 20.95% as anxious, owing to their DAS scores above 12. From within them, only 20.7 % were finally classified dental phobic, scoring 15 or above on the same scale. Other findings are detailed subsequently in the full text.

CONCLUSION: We found that self-reported -phobic levels were very close to the statistically calculated levels of anxiety score using the standard DAS scoring criteria. Using the same criteria, the actual frequency of phobia in our study was 4.35%.

KEY WORDS: Anxiety, Dental Procedures, Revised Corah's Dental Anxiety Scale, (DAS-R), Dental Phobia.

INTRODUCTION

Association of fear and anxiety to reduced dental clinic attendance has been well established. Despite the fact that advancements in dentistry have led to dental treatment becoming relatively pain free, anxiety remains an unresolved issue for many oral health care professionals and patients alike. On one hand, anxiety helps an individual deal with challenges of everyday life; excessive responses to the same may completely interfere with their lifestyle, a consequence of which is missing dental appointments.

The Dental Anxiety Scale (DAS) is the most widely used and well-validated test in the assessment of dental anxiety and phobia. DAS has also shown high internal consistency^{1,2} and test-retest reliability³.

A study by Oosternik et al in 2009 compared dental fears and phobia with ten other common fears, and revealed that it was as common as 24.3% among Dutch adults, making it the fourth highest prevalent fear in the list⁴. However, fear or anxiety related to noise produced in the setting of dental clinic appears as the third most important cause of letting pass an appointment for dental care⁵.

It is therefore, not surprising that individuals experiencing anxiety to dental settings and procedures ignore their appointments.^{1,6} Only a minority of patients claim to have no anxiety in the dental environment. It has been reported in literature that dental fear and anxiety and dental behavior management problems in children and young adults are strongly linked and these problems reduce with the growing age. The same article also highlighted that the problem was more common in girls than in boys⁷.

Some parents related their child's fear to a previous unpleasant dental experience while others attributed it to uncontrollable external factors⁸. Irrespective of the reason however, the need for more careful management of such cases cannot be over emphasized⁹.

Almost no evidence-based information on prevalence of dental anxiety was available at the time of start of this study, several years ago. A short communication was published in 2011, for study conducted in Islamabad, Rawalpindi and Multan. This study was conceived to determine the frequency of self-reported anxiety levels related to dental procedures amongst professional students using Revised Corah's Dental Anxiety Scale, (DAS-R). This time, it could serve to collect data from Karachi and Hyderabad, representing southern Pakistan.

METHODOLOGY

This is a cross-sectional study conducted at Jinnah Medical and Dental College, Karachi and Isra University, Hyderabad from 1st October 2010 to 30th April 2011. Students who consented to participate were included. The only inclusion criterion was to be a student of one the selected professional college. The only exclusion criterion was, to not consent to participate in the study.

Norman Corah's Dental Anxiety Scale was used as a data collection tool. The Dental Anxiety Scale is a brief, four item questionnaire with a consistent answering format for each question and the array of responses from 'not anxious' (score 1) to 'extremely anxious (score 5). It outlines four dentally related situations including the day before dental care plus three scenarios (the attending room, the dentist preparing a drill and the dental hygiene session); the sum of responses ranging between 4 and 20. Scores higher than 12 suggest anxious patients,¹⁰⁻¹² and scores higher than 15 denote phobic levels of anxiety that may call for special attention by dental professionals¹³.

Pre-tested self-responding questionnaires were handed to a

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'convenient' sample of about 300 students, but concluded the study with 259 valid responses, after data editing. SPSS version 19 was used to perform statistical derivations.

RESULTS

259 students participated in the study. The ages of the respondents were 17 - 25 years, with mean age of 21.27 years (SD 1.69). The gender distribution of 255 valid accounts (04 missing records) was male 30.59% (n=78) and females 69.41% (n=177). Close ended, direct questions for anxiety level assessment were asked. The response options were ordinal, from no anxiety at all to a high level of anxiety. The analyzed data for the four questions is summarized in Table -I. In our study, the mean DAS score was 8.74 (SD 3.38). Details of numbers in each category can be seen in Figure - 2.

We also analyzed our results based on gender and found that the average DAS score for males (n=76) was 8.68 (SD 3.80) and for females (n=173), it was 8.75 (SD 3.22).

In our study, 79.05% of the participants (n=200) scored less than 12 on DAS, representing non-anxious group. The rest, 20.95% (n=53), scored 12 and above denoting individuals who are anxious towards dental care. According to DAS scoring system, a score of 15 or above is considered as that of a highly anxious

(phobic) person. From within the 53 anxious respondents above, 11 scored more than 15 on DAS, which amounted to 20.75% of all anxious patients. Six responses were excluded from analysis due to their being incomplete.

When asked if the respondents perceived themselves as 'dental phobic' (defined as those in whom 'anxiety interferes with getting the dental treatment'), 1.54% (n=04) did not respond to the question. Of those who responded, 28.62% (n=73) perceived themselves as dental phobics, while 71.37% (n=182) perceived themselves otherwise.

The age of onset of dental phobia varied from 02 – 20 years (range 18 years), with a mean age of 13.26 years (SD 4.15).

Of those who responded to how their dental phobia started, 52.88% (n=110) did not know its reason, 20.67% (n=43) related it to a bad experience and 26.44% (n=55) had heard about a bad experience from a family member. We excluded 51 missing responses from this analysis (Figure - 2).

When the questionnaire asked them as to whom do they felt most comfortable talking to, when they had a dental concern, the statistic of the responses (excluding 08 invalid responses), was: 72.1% (n=181) with the dentist; 10.0% (n=25) with the dental assistant; 9.2% (n=23) with the receptionist; and 8.8% (n=22) with none of the above. (Table - I)

TABLE – I: DATA SUMMARY OF THE ANXIETY ASSESSMENT.

	Q. 1		Q. 2		Q. 3		Q. 4	
	n	%	n	%	n	%	n	%
Relaxed	100	43.5	74	32.2	38	16.7	63	27.6
A little uneasy	96	41.7	104	45.2	78	34.2	80	35.1
Tense	18	7.8	31	13.5	76	33.3	49	21.5
Anxious	14	6.1	19	8.3	24	10.5	29	12.7
So anxious that I sometimes break out in a sweat or almost feel physically sick	2	0.9	2	0.9	12	5.3	7	3.1
Invalid or missing responses (excluded from analysis)	4		4		6		4	

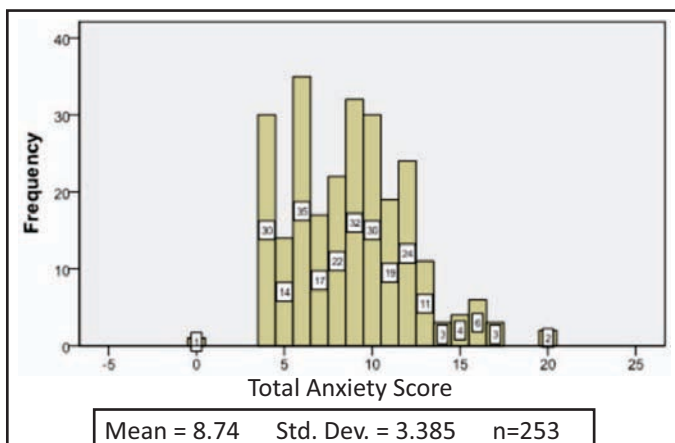


FIGURE-1: TOTAL ANXIETY SCORE (0-20), OF THE STUDY SUBJECTS (n=253)

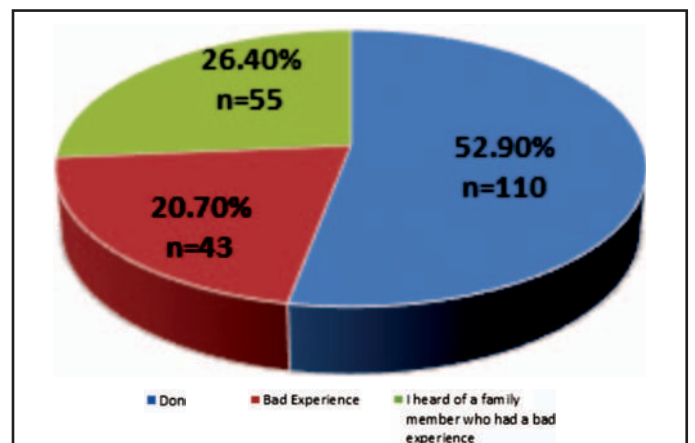


FIGURE - 2- HOW DID DENTAL PHOBIA START? (n= 208) (51 MISSING RESPONSES EXCLUDED FROM ANALYSIS)

TABLE – II: RESPONSES FOR THE QUESTION WHO AM I MOST COMFORTABLE TALKING TO

	n (Frequency)	Percent	Valid Percent	Cumulative Percent
Rvalid Receptionist	23	8.9	9.2	9.2
Dental Assistant	25	9.7	10.0	19.1
Dentist	181	69.9	72.1	91.2
None	22	8.5	8.8	100.0
Total	251	96.9	100.0	
Invalid	8	3.1		
Total	259	100.0		

DISCUSSION

“Fear can be considered as an inevitable thrilling, a response to a certain external threat and with an identified origin in which individual is afraid without clear reasons.”¹⁰

When patients are scared and anxious of the treatment they are to receive, their cooperation and compliance reduces to a level that may jeopardize the success of the intervention. Even worse, this dental fear could also become a deciding factor as to whether or not this anxious individual would even consider clinical dental care¹⁴. Dental phobia has also been documented as associated with reduced or irregular attendance of dental clinic, or in worse cases, plain avoidance of dental care altogether.¹⁵⁻¹⁷

For the same reason, dental phobias and anxiety related to dental care is increasingly attracting dental and social researchers' attention¹⁸. Newton and Buck have made great contributions towards the development of several reliable and valid measures of dental anxiety and commented positively over Corah's DAS, Dental Anxiety Score, as the most widely used questionnaire for anxiety measurement also used in alternative European languages.¹⁵ DAS is also criticized for its narrow range of scores¹⁹, poor representation of intermediate levels of anxiety²⁰, and its inability to identify confounding factors like personality traits, proneness to anxiety in general, or associated pessimism in the studied subjects.

Several factors including the social circumstances; behavioral and psychological patterns; and psycho-social phenomena, have variously been related to dental anxiety.^{21,22} Studies have shown higher prevalence of dental anxiety in females than males⁸ which supports the need to measure dental anxiety in the larger picture of contextual general anxiety levels. Similarly dental attendance cannot be isolated from other socio-economical variables, since it is influenced by the financial capability and willingness to pay for the dental treatments. Yet, this relationship still remains predominantly unexplored²³. Previous dental experiences are also significant players.¹⁰ It may be summed up by the simple realization that the attitudes, like anxiety, are influenced by individual circumstances and collective cultural background, which render the absolute measurement of dental anxiety alone, as much impossible therefore. Similarly, researchers like Berggren, Pierce and Eli, realized the challenges of determining the different levels of dental fear and causes, across cultures in Europe.

A study was conducted on 25 year-olds in Norway. Two separate cohorts of randomly sampled participants were used in 1997 and 2007. On gender comparison, they found that in the 1997 cohort, 11.5% males and 23% females had high levels of dental anxiety. On time comparison, they found that dental anxiety levels dropped from 1997 to 2007 study and attributed it to better education²⁴.

Our study subjects were students, with a mean age of 21.27 years, and, modal and median ages, both, of 22 years. These 22-year-old subjects covered a quarter of our sample. Their average DAS scores turned out to be 7.0 (± 2.83) for males and 8.50 (± 2.90) for females. However, when we broadened the age group to range from 21 years to 23 years, it covered more than half of the sample in size. Comparatively, the average DAS scores for the males in this group became 7.76 (± 3.53) and for females became 8.54 (± 3.20).

Our questionnaire had four questions and each question had a maximum score of four, so the maximum possible score for each subject was sixteen.

In our study, the mean DAS score was 8.74 (SD 3.38), while the median and modal scores were 9.0 and 6.0 respectively. When we segregated these results on gender, we found that the average DAS score for males (n=76) was 8.68 (SD 3.80) and for females (n=173), it was 8.75 (± 3.22). This represented a shift of gender-based scores, from the mean score of the complete group. Since we conducted our study on educated subjects – the professional students, it coincided well with the findings of Åström, Skaret and Haugejorden, that education plays a role in decreasing dental anxiety, particularly when females are more and better educated.

A number of previous studies in Norway and other parts of the world, that have compared dental anxiety scores in males and females, have usually found women to have more dental anxiety than men.²⁵⁻²⁸

Interestingly, in our study, the dental anxiety scores did not significantly vary between males and females. It may however be noted, that apart from education, the other common factor in the two groups was similarity of social-economic background.

CONCLUSION

We found that self-reported-phobic levels were very close to the statistically calculated levels of anxiety score using the standard DAS scoring criteria.

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