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Dental Anxiety and Its Determinants in Adult Patients of Gilgit Baltistan

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ABSTRACT

Objective: To evaluate the frequency of dental anxiety and its relationship with age, gender, marital status, education, occupational status, place of residence and previous dental injury experience in patients belonging to Gilgit-Baltistan.

Study Design: Cross-sectional study.

Place and Duration of Study: Psychiatry Department, Combined Military Hospital, Gilgit and Military Dental Center, Gilgit Pakistan, from Jul to Dec 2017.

Methodology: A total of 270 patients aged 18 to 65 years were selected for the study. The proforma was used to determine basic patient information, including past dental experience. Coral's Modified Dental Anxiety Scale (MDAS) was used to measure the level of dental anxiety.

Results: The mean anxiety score was 8.95±2.53. Dental anxiety was common in 33.1% of the study population. Correlational analyses showed a significant positive relationship between younger age, female gender, single marital status, rural residence and negative past dental experience with dental anxiety.

Conclusion: Within the Gilgit-Baltistan population, it was seen that younger patients, single females, people from rural areas and patients with a past negative dental experience had more Dental anxiety.

Keyword: Dental anxiety, Dental injury experience, Gilgit-Baltistan, Modified dental anxiety scale (MDAS).

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INTRODUCTION

Anxiety is a common emotion associated with our daily life. It can be a normal level of apprehensiveness or an extreme level of irrational fear like phobias. It has been seen that one of the most common forms of anxiety is the fear associated with dental treatment.[1] It is the fourth most common fear experienced by humans and the ninth most common cause of severe fears, affecting 4-30% of adults across the world.[2] It has been observed that around 50% of the general population feels some fear and anxiety when visiting a dental clinic. Research has shown that 7–12% of studies have highlighted the prevalence of high dental anxiety.[3]

A Dutch study with a sample size of 1959 individuals revealed that dental anxiety was prevalent in 24.3% of the general population.[4] The factors affecting dental anxiety include age, sex, educational qualification, and socioeconomic position.[5] It usually starts at an early age and tends to progress in middle age, but there is a decrease with old age.[6,7] Other factors predisposing to dental anxiety are personality traits, past dental injury experience, or indirect learning behaviour from friends or family members who suffer from the illness.

This study helped identify the levels of dental anxiety and its contributory factors, which included age, gender, residence, educational status, occupational status and past dental injury experiences in patients from Gilgit-Baltistan. We hypothesized that anxiety levels related to dental treatment would be high because of the lack of access to and awareness of treatment.

METHODOLOGY

This study was conducted at the Psychiatry Department, Combined Military Hospital, Gilgit and Military Dental Center, Gilgit Pakistan, from July to December 2017. The sample size was calculated by the WHO sample size calculator taking confidence level of 95% and was found to be 270 based on a Brazilian study which showed a prevalence of 23%.[2] Subjects were enrolled on the study after the informed consent of the patient and ethical approval from the Ethical Committee of CMH Gilgit.

Inclusion Criteria: Patients of either gender aged 18 to 60 years reporting to Outpatient Department were included in the study.

Exclusion Criteria: Non-consenting patients and patients of psychiatric illness were excluded from the study.

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The patients were selected by consecutive sampling technique, and a member of the Psychiatry Department asked those who fulfilled the inclusion criteria to participate in the study. Willing individuals were taken to a separate area of the waiting room, given a detailed explanation of the study, and signed a document of informed consent. All participants were informed that the study was independent of their scheduled treatment and that all data would be handled confidentially. Assessment tools consisted of a history form (including age, gender, educational level, occupational status and past dental injury experiences). Dental anxiety was evaluated by Coral's Modified dental anxiety scale (MDAS). This scale measures the degree of anxiety related to dental treatment via a four-item multiple-choice questionnaire. Thus, total scores range from 4(no anxiety) to 20 (high anxiety). DAS scores are classified in the following way: 9-12 (moderate), 13-14 (high) and 15-20 (severe). This scale can be applied quickly (less than five minutes).[12,13]

Statistical Package for Social Sciences version 20.0 was used for data analysis. Quantitative variables were described as mean±SD. Categorical variables were described as number and percentage. Chi-Square test was used to identify which independent variables significantly influenced the outcome. The *p*-value of ≤0.05 was considered significant.

RESULTS

There were 127(47%) males and 143(57%) females in this study. The patients were allocated to two age groups; 18-40 years and 41-65 years. 190(70.4%) patients belonged to the 18-40 years Age-Group and 80(29.6%) belonged to 41-65 years Age-Group with the mean age of 36.5±9.7 years. Dental anxiety was common in 89(32.9%) study population. 59(21.9%) of patients were found to be moderately anxious, and 25(9.25%) and 5(1.85%) of patients were found to be highly and severely anxious, respectively.

The mean total anxiety score was 8.95±2.53. The anxiety was less in the old age group. Women were more anxious, (*p*-value of 0.004).

It was also seen that education level and occupation had no significant effect on dental anxiety, as p-values were 0.334 and 0.594, respectively. A total of 137(50.7%) of the patients had visited a dentist once before, out of which 47(17.4%) had an undesirable experience in their past dental visit. Patients with a bad experience had higher anxiety levels, with a *p*-value of 0.001. Patients from rural areas had a higher anxiety (*p*-value=0.025) (Table).

Table: Determinants of Dental Anxiety in the Study Population (n=270)

Characteristics	DAS Scores According to Severity Normal	Moderate	High	Severe	*p*-value
Gender					
Male	95(35.1%)	27(10%)	04(1.4%)	01(0.3%)	0.004
Female	86(31.8%)	32(11.8%)	21(7.7%)	04(1.4%)	
Age					
18-40 years	116(42.9%)	45(16.6%)	24(8.8%)	05(1.8%)	0.002
41-65 years	65(24%)	14(5.1%)	01(0.3%)	00	
Marital Status					
Single	18(6.6%)	09(3.3%)	10(3.7%)	03(1.1%)	0.001
Married	152(56.2%)	49(18.1%)	15(5.5%)	02(0.7%)	
Divorced/widow	11(4.07%)	01(0.3%)	00	00	
Occupational Status					
Employed	80(29.6%)	26(9.6%)	09(3.3%)	02(0.7%)	0.594
Unemployed	70(25.9%)	20(7.4%)	14(5.1%)	02(0.7%)	
Students	31(11.4%)	13(4.8%)	02(0.7%)	01(0.3%)	
Educational Status					
Uneducated	71(26.2%)	16(5.9%)	11(4.0%)	02(0.7%)	0.334
Educated	110(40.7%)	43(15.9%)	14(5.1%)	03(1.1%)	
Residence					
Rural	98(36.2%)	44(16.3%)	17(6.2%)	04(3.7%)	0.025
Urban	83(30.7%)	15(5.5%)	08(2.9%)	01(0.3%)	
Past Dental Experience					
Positive	80(29.6%)	09(3.3%)	01(0.3%)	00	0.001
Negative	07(2.5%)	22(8.1%)	15(5.5%)	03(1.1%)	
No history	94(34.8%)	28(10.3%)	09(3.3%)	02(0.7%)	

DISCUSSION

The study was conducted to identify dental anxiety in patients of Gilgit-Baltistan. It is conducted in this region to get an idea of how the terrain, family life, age and past experiences with dentists can shape people's general anxiety with dental treatment. The study showed that almost 33.1% of the patients had dental anxiety, which was found to be more in young people who were usually single and belonged to the female gender. It was also seen that dental anxiety was more in people from rural areas and people who had a past negative experience during dental treatment.

A study in the US showed that dental fear was common in 66(47.1%) patients in a sample of 140 individuals.[3] A study including 503 university students in Islamabad, Rawalpindi, and Multan showed high to severe anxiety in 21.6% of males and 24% of females.[14] Another Pakistani study involving dental college students showed female students presented with higher mean anxiety scores with a mean and standard deviation anxiety score calculated as 9.11±3.15.[15] A study conducted at Dow University

of Health Sciences on 386 students revealed that there was a statistically significant association between dental anxiety and factors like gender (*p*-value=0.002), level of education (*p*-value=0.005) and type of dental procedures (*p*-value 0.02).[16] A study from Lahore also found Dental anxiety to be prevalent in 37.9% of the study population, out of which 13.6% and 24.3% were found to be moderately and highly anxious, respectively, and the factors predisposing to anxiety were rural residence, family history, dental concern and dental anxiety.[17]

A Turkish study found a 20.8% prevalence in a sample of 250 patients, and most of the affected people were young women.[18] In an Iranian study with a sample size of 780, it was found that 29% had higher anxiety levels, and 21.8% had high dental fear. The most significant contributing factor was past dental injury experience.[19] A Nigerian study revealed that anxious personality traits and female gender were the strongest factors predisposing to dental anxiety.[20] A met analysis concluded that Dental anxiety tends to increase the impact of pain during a dental procedure and recommended that dental anxiety be assessed before any procedure.[21] A cross-sectional Swedish national survey concluded that dental anxiety leads to avoidance of dental care.[22]

This study was one of the pioneer studies in the backward region of Gilgit-Baltistan in Pakistan to look into the levels of dental anxiety in patients visiting a dental OPD. It supports the contention that past unfavourable dental experiences can perpetuate the dental anxiety associated with dental procedures. It also showed that the female gender and being a resident of rural areas could affect your anxiety levels. This might be related to the lack of awareness and limited access to dental treatments in such areas. A future study can look into the management of patients who develop such anxiety and the best treatment mode in such regions. The study also highlighted the need to address such patients' dental fears and anxiety before any dental procedures. This can be the basis of a strong liaison between the psychiatrist and dentist in any hospital.

CONCLUSION

Within the Gilgit-Baltistan population, dental anxiety was present in about 33.1% of the subjects. It was also seen that younger patients, single females, people from rural areas and patients with a past negative dental experience had more dental anxiety.

Conflict of Interest: None.

Author's Contribution

Following authors have made substantial contributions to the manuscript as under:

MSK: Conception, study design, drafting the manuscript, approval of the final version to be published.

QI: Data acquisition, data analysis, data interpretation, critical review, approval of the final version to be published.

HK: Critical review, drafting the manuscript, approval of the final version to be published.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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