INTRODUCTION

Anxiety can be defined as a condition of unidentified concern, discomfort about something with a vague outcome\(^1\). Dental anxiety is one of the utmost commonest anxieties among several other types of anxieties that have been widely studied worldwide\(^2,3\). According to a one study, 73% to 79% of patients were undergoing through some kind of dental anxiety before going for dental procedure\(^3\), which was resulted into unsuccessful treatment, and so dissatisfied patient that further might prevent future visits to a dentist\(^4\). The recent advancement in the quality of oral health care has resulted in better and satisfied patient care\(^4\). Previous researches on dental anxiety in developed countries have shown that people usually avoid dental treatment because of dental fear results in poor oral health\(^5,6\).

It has been observed that large proportion number of patient visit their dentist only when they have any emergency\(^7\) or alternate treatment become less or ineffective for their particular problem, which may further worsen their oral health\(^8\). Literature was unable to divulge the exact cause of dental anxiety; however possible factors of dental anxiety were mentioned in some studies as gender, age, objects and situations\(^3\). It has also been observed in previous studies that dental instruments could be one of the reasons for dental

DENTAL ANXIETY AMONG PATIENTS ATTENDING PUBLIC AND PRIVATE DENTAL HOSPITALS OF KARACHI

Shanila Faisal\(^1\)
Nosheen Zehra\(^2\)
Mujtaba Hussain\(^3\)
Huzaifa Ali Jaliawala\(^4\)
Asima Faisal\(^5\)

OBJECTIVE: To assess and compare the frequency of dental anxiety among patients visiting the public and private dental hospitals of Karachi, Pakistan.

METHODOLOGY: This cross sectional study was conducted in 2014 among patients at public and private dental hospitals of Karachi. Sample size of 400 patients was selected from the Outpatient Department (OPD) of hospitals through non probability convenience sampling technique. Data was collected by interviewing the study participant via structured questionnaire using Modified Dental Anxiety Scale (MDAS). Data was entered and analyzed using SPSS version 20.

RESULTS: Total 400 patients were studied of which 184 (46%) were males and 216 (54%) were females. Tooth extraction and filling were identified as the most common reason to visit dental OPD as answered by 111 (27.8%) and 100 (25%) patients respectively. Among them 276 (69.5%) had positive experience and were satisfied while treated in dental OPD. Using MDAS, dental anxiety was found in 12 (3%) patients at private as compared to none in public dental hospital (\(p=0.001\)).

CONCLUSION: On the basis of MDAS score dental anxiety was found more among patients from private dental hospital as compare to patients from public dental hospitals.

KEY WORDS: Dental Anxiety, Public, and Private Dental Hospitals.

anxiety, as when it is placed in a mouth results in gag reflex and confrontation in breath\(^9\) thus patient who are sensitive to these things may face greater probability of having dental anxiety. Kirova et al. found that 25-26-year-old age group tends to experience higher dental anxiety than other people\(^9\).

The seriousness of problem can be understood by its worldwide ranking. Dental anxiety is ranked 4th among the common fears and 9th among intense fears\(^1\). Understanding the frequency and seriousness of a problem many treatment modalities for dental anxiety has been suggested by various researches\(^10\). In most of the developing countries the access to dental treatment is limited due to treatment cost ignorance about importance of oral hygiene\(^11\). When compared this to developed countries thus chances of dental anxiety is more due to less exposure and little awareness. Dealing with a patient suffering from dental anxiety is usually found to be a difficult task for the dentists to diagnose and manage\(^12,13,14,15\). In country like United States of America, 10-19% of population faces dental anxiety\(^16,17\). However, data on this topic is scarce in Pakistan.

The aim of this study therefore was to compare the presence of dental anxiety among the patients attending Public and Private dental hospital of Karachi, and to also compare the presence of dental anxiety among different demographics of patients visiting dental hospitals of Karachi, Pakistan.

**METHODOLOGY**

This study was a cross sectional study and it was conducted at one Public and one Private Dental hospitals of Karachi. It was conducted in year 2014 and completed over a period of four months. The target population was included of patients from age 18-70 years of both genders. Sample size was calculated by WHO sample size estimation calculator. For sample size calculation anticipated population proportion of anxiety was taken as 50%, at 95% confidence level and keeping 0.05 margin of error. The minimum number of participants required for inclusion in the sample was calculated as 385 but to avoid data wastage 400 participants were included in the study. Patients who visited dental OPD (outpatient department) for routine check-up, scaling, extraction, filling and root canal were consented to participate in the study. Patients with impactions, extensive periodontal treatment and edentulous ridges were excluded, furthermore those who were undergoing psychiatric therapy or were suffering from generalized anxiety disorders were also excluded from the study after taking detailed history from patients. Non probability purposive sampling technique was used to induct patients in the study.

The data collection questionnaire was comprising of four parts, the first part contains information about the study and a request for a consent for participation, the second part includes demographic details which proceed with the third part where questions regarding previous dental experience, reason for last dental visit and the facility where dental procedure took place (Public, Private hospital or by unskilled person) were asked, fourth part contain Modified Dental Anxiety Scale (MDAS) Proforma which has an online open access which is used for measuring patient anxiety level. The MDAS consist of five items which have been coded from 1 to 5 (not anxious to extremely anxious respectively). The items that were included in MDAS are;

- If you went to your dentist for treatment tomorrow, how would you feel?
- If you were sitting in the waiting room (waiting for treatment), how would you feel?
- If you were about to have a tooth drilled, how would you feel?
- If you were about to have your teeth scaled and polished, how would you feel?
- If you were about to have a local anesthetic injection in your gum, above an upper back tooth, how would you feel?

Maximum and minimum scores that can be obtained are 25 and 5, moreover it also has cut-off value 19. Therefore those who score at or above this score would be considered as 'very dentally anxious'. The study participate were approached in the OPD waiting area of public and private hospitals and face to face interview was conducted. The study was reviewed and approved by Research Ethical Committee of Institute of Business Management (IOBM) Karachi, Pakistan.

Standard procedure of informed consents was applied and confidentiality of patients was well maintained and data collected was only used for this study. The questionnaire was completed on the spot by the researcher. Data was analyzed by using SPSS version 20 software. All qualitative variables were presented as percentages and frequencies and all quantitative variables...
were presented as mean and standard deviation. Independent t-test and ANOVA was used for quantitative variables with two and more than two categories of independent variables respectively. While Chi square was used for qualitative data while p value less than 0.05 was considered significant.

RESULTS

In this study total 400 patients participated with 200 each from public and private dental hospitals. Of them 184 (46%) were males and 216 (54%) were females. Age of the study participants was distributed as 183 (45.8%), 98 (24.5%), 76 (19%) and 43 (10.8%) in age groups of 18-30, 31-45, 46-60 and more than 60. In our study population 100 (25%) patients were illiterate while 136 (34%) had primary and high school education, 127 (31.8%) had graduation and 37 (9.3%) had post graduation. Patients were inquired about the reason for their visit at dental OPD and their previous dental visit experience, the details are provided in table 1.

Dental anxiety score was calculated from Modified Dental Anxiety Scale (MDAS) that comprised of 5 items. Mean score obtained by study participants was 10.24 ± 4.7 with 0 and 25 as minimum and maximum score. MDAS score for various demographic factors is presented in table 2, where mean MDAS score was different between type of hospital, past dental visit experience and reasons for dental visit with statistically significant p-value.

MDAS scores further transformed according to the suggested cut off value of 19 into two groups as No Dental Anxiety (score <19) and Dental Anxiety (score ≥ 19). Among 400 study sample dental anxiety was found in 12 (3%) patients. Association of Dental Anxiety with demographic factors was also analyzed and illustrated in table 3.

DISCUSSION

Oral health is not only essential in term of appearance and oral wellbeing but it has connection with your whole body. If not properly taken care off might result in serious conditions like cavities and gum diseases which may contribute to diabetes and respiratory diseases. Research showed that one of the common reasons for impediment in health care utilization was dental fear which usually let people delay their dental visit or even cancellation of appointments. From the results of this study we analyzed the frequency of dental anxiety with demographic factors was also analyzed and illustrated in table 3.
among the patients visiting public and private dental hospital of Karachi and dental anxiety was found more among the patient visiting private hospital.

The literature shows that women have a lower level of pain threshold which results in higher number of dental anxiety21-22. However in this study, no significant association was found between dental fear and gender, which has also been supported by some previous studies23. Similarly, regarding dental anxiety and age relation, it has been observed from the previous studies that dental anxiety found less in older patient then young. This might be because of increase in pain threshold of adult as time passes19,24. Alike our study where dental anxiety is found most among the patient age grouped 18-30, one study also found that 20-30-year-olds that tend to experience higher dental anxiety than other people1.

The attitude of dentist has a great role in developing dental anxiety, if the dentist is caring and spends appropriate time in informing and relaxing the patients about the dental procedures, the people do not develop dental fear even if they experience painful procedures23,25. Usually it has been observed and also literature supports that previous positive dental experience reduces future dental anxiety26 but in this study patient with previous positive experience faced more dental anxiety. Further incidence of dental anxiety can be prevented with pain control and considering patient as whole and behavior management27 and creating awareness of dental procedures among common people.

Literature shows that patient with higher level of education has awareness about oral health28 and visit dentists on regular basis thus exhibit low dental anxiety but in our study two extreme group patient with no education and patient with higher education exhibit lesser dental anxiety when compare to middle level education. In one more study conducted in Lahore, Pakistan found that educated group of and people in jobs were more dental phobic (55%) which followed by students (21%)22. In this study high socioeconomic group faces more dental anxiety than low socioeconomic group alike few of the studies in relationship29,30. However, other studies do not found such relationship31,32. Our study also exhibited that postponement of dental visit was significantly associated with anxiety level, similar results were found in the study conducted in India Chenai28.

This study was conducted in Karachi, Pakistan which is one of the developing countries where majority of population belong to low and middle socioeconomic status and most of them are catered by public health facilities. A study conducted in Australia stated that people from lower socio-economic backgrounds has reduced access to resources29 and have less options available for dental treatment thus showed less dental anxiety. Similar finding was found in our study that shows no dental anxiety among patient visited public hospital. However, one study also states that no matter how much experienced dentist is, patients fear of experiencing pain during dental visit exist in patient mind31-33 which can make pain as one of the cause for dental fear among patients.

The MDAs score of this study shows that patients visited for dental filling exhibit most dental fear followed by patients came for extraction. These result correspond to the literature which states that procedures dealing with drill and needle injections are the most provoking stimuli for dental anxiety34,6.

At the cut off value of ≥ 19 for MDAS score, 3% of the patients had extremely high level of dental anxiety; this was similar to the findings of Acharya et al. (2.2%) among Indian population33. The percentage of people with dental anxiety was less when compared with Western countries like UK (11%)34, Northern Ireland (19.5%)35, Turkey (23.5%)36 and Finland (3%)34.

CONCLUSION

It was concluded from the results of this study that Mean MDAS Score was high among patients attending private dental hospitals.

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