

## ORIGINAL ARTICLE

# Oral Health Status and Attitude of Patients towards Dental Extraction in Karachi

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## ABSTRACT

**Background:** Oral health is considered the most important factor in determining general health of an individual, since it reflects the condition of the whole body. This study was outlined to demonstrate the oral health status and attitude of patients toward tooth extraction in case of non-affordability.

**Methods:** A total of 350 dental patients who came to OPDs for dental extraction were included in this study. Dentist carrying out extraction were asked to fill a self-explanatory questionnaire having patient as the subject. Data tabulation and analysis was completed using SPSS software version 22. Odds ratios, Chi square test, p-value are used to determine oral health status and attitude of patients regarding extraction of teeth.

**Results:** There were 193(55%) female and 157(45%) male patients in the study. Age of the respondents varied from 20 to 65 with a mean of  $40.01 \pm 12.67$ . In addition, 202(57.7%) subjects were unemployed and 148(42.3%) were employed. In present study, teeth were found missing mainly in the age range 20-30. Among all teeth, First molar was the most commonly extracted tooth i.e. 109(31.1%). This indicated that patients wanted to save their teeth. They were willing to pay anything to save tooth in which 137(67.8%) were unemployed while 95 (64.1%) were employed.

**Conclusion:** Oral health status of the patients who came to OPD for dental extraction was found poor 150(42.9%). Since, patients were suffering from dental caries and periodontal disease. As far as the attitude of patients is concerned regarding tooth extraction, more employed (45.3%) individuals were interested in saving their tooth than unemployed people.

**Keywords:** Oral Health; Tooth Extraction; Caries; Periodontal Disease; Attitude.

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## INTRODUCTION

Oral diseases are prevalent worldwide in spite of all the possible measures taken by the governmental and non-governmental agencies to improve oral health. This is true especially in developing countries. Many authors believe that it is due to the oral health behaviour and attitude of the people<sup>1,2</sup>. Health attitude is described as the beliefs, notions, feelings towards personal health whereas health behaviour is defined as behaviour paradigm, conduct and practice that lead to preservation, betterment, and rehabilitation of health<sup>2</sup>.

Oral health is inextricable part of general body health. Several health discrepancies are due to inequity in socioeconomic status<sup>3</sup>. Sometimes, timely preventive procedures are not provided to the patients with dental problems. This may be due to patient factors. Even if the dentist has all the necessary skills, knowledge and materials to perform the conservative treatment but patients delay appointments or present late when there would be no other option than extracting the tooth<sup>4</sup>. Orthodontic reasons, infections, periodontal causes, trauma and caries are some of the reasons of tooth loss<sup>5,6</sup>.

Oral health is considered the most important factor in determining general health of an individual, since it reflects the condition of the whole body. Now, the concept of oral health has changed drastically from last 30 years. It changed acutely where once the clinician was the only one who made all decisions of the treatment plan and patient was considered just as a subject on which the procedure was done, to the era in which a treatment requires an equal contribution from the patient<sup>7</sup>. Many factors have been seen to influence tooth loss like lifestyle and health factors (history of disease, smoking and nutritional status), social and demographic factors (educational status and age) and status of dental health and attitude of people (dental check-ups and ailment of oral condition)<sup>8</sup>.

Data shows that the prevalence of edentulous patients has decreased dramatically especially in developed countries, yet the data from emerging and developing countries is missing<sup>9</sup>. Rabia et al. found that the most common cause of tooth loss was found to be caries and its consequences. After caries, periodontal disease, mal-positioned, impacted and fractured tooth, retained deciduous teeth; orthodontic treatment, Prosthodontic reasons, extra teeth and preparation for radiotherapy were among the common causes of tooth loss accordingly<sup>10</sup>. In Singapore, the population was seen to be more willing to pay for extractions in the year 2016<sup>11</sup>. In another study, it was seen that people are likely to visit dentist only when they suffer from an intense dental pain and when home remedies do not work<sup>12</sup>. This shows that money is a critical factor in getting treatment. A study conducted in Srinagar, shows male population was more concerned about options that saved their tooth rather than females. This could be probably because rural women of Srinagar were not that educated and were more concerned about saving their income<sup>13</sup>. Another study conducted in India shows that 50.27% of the subjects opted for dental extraction rather than saving the tooth, of which 37.17% study subjects belonged to lower socioeconomic status. People who belonged to upper socioeconomic status gave reasons like 'lack of time' for opting extractions where they could save the tooth<sup>14</sup>. A study done in Peshawar, Pakistan shows that people who got their teeth extracted were mostly from lower socioeconomic status (64.43%). These patients could not afford any other treatment, which could save their teeth. An important point noted in this study was that most of them were illiterate. This reflected the impact of illiteracy on a patient's choice of treatment<sup>10</sup>.

This study had been carried out to ascertain the preference of people when it comes to saving a tooth and extracting it, in cases where they have the option to save it. It was done to check the level of awareness and concern towards the dental health among people. The authors addressed

some of the viable questions including: Do people prefer extractions or any restorative treatment option that could save their dentition? Is it money that affects their choice or illiteracy would be a contributing factor? Are the differences in opinion related to gender? What makes each gender think what they choose? By finding out the answer to such questions, we will be able to understand the predilection of people and administer our awareness programs in that direction.

## METHODS

A descriptive-cross sectional study was conducted at Jinnah Sindh Medical University and Fatima Jinnah Dental College during the period April 2019-October 2019. Ethical approval was obtained from Ethical review board of Fatima Jinnah Dental College and Hospital to conduct this study with reference number DEC-2018-ORS-02.

In this study, the target population was patients coming for extractions. Dentist carrying out extraction were asked to fill a self-explanatory questionnaire having patient as the subject. This questionnaire contained two open ended and fifteen close-ended questions. At first, limited dentists were asked to fill the questionnaire to have an idea about understanding of the questions by the dentist. When it was deduced that the questionnaire was clear and easy to understand by everyone, then it was distributed in masses.

Some of the data was extracted by asking questions from the patients and some question were answered with the help of clinical examination of the patient. The sampling type chosen was non-probability (Purposive sampling technique). The sample size for this study was 350. It was calculated via [www.openepi.com](http://www.openepi.com) at 95% confidence level. The sample size was also referenced from a study<sup>15</sup>. Patients in the waiting area of the department of surgery who came for extraction of teeth, Patients from any caste, culture, creed or class, patients having single extractions, patients who were Pakistani and living in Karachi were included in this study. Patients outside the department of surgery, Patients who came for any surgery other than extraction of teeth, Patients with multiple extractions, Patients who do not reside in Karachi and Patients who came to Karachi just for the treatment were excluded from this study.

Every subject who was included in the study was informed about it before hand and prior consent was obtained before including him or her in the study. A data entry sheet was formulated which contained questions regarding their age, gender, the employment and educational status of the participants were filled. Data tabulation and analysis was completed using SPSS software version 22. Odds ratio, Chi-square test, p-value was used to

determine behavioural pattern and attitude of patients regarding extraction of teeth.

## RESULTS

A total of 350 respondents were included in this study. Out of this, 193(55%) were females and 157(45%) were males. Age of the respondents varied from 20 to 65 with a mean of  $40.01 \pm 12.67$ . Majority of the participants had primary education 87(24.9%) and were unemployed 202(57.7%) (Table 1).

**Table 1: Demographic characteristics of the patients.**

Characteristics	(N) Patients
<b>Gender</b>	
Male	157(44.9%)
Female	193(55.1%)
<b>Age</b>	
20-25	48(13.7%)
26-30	63(18.0%)
31-35	49(14.0%)
36-40	39(11.1%)
41-45	40(11.4%)
46-50	47(13.4%)
51-55	16(4.6%)
56-60	28(8.0%)
61-65	20(5.7%)
<b>Education</b>	
Nil	80(22.9%)
Primary	87(24.9%)
Secondary	127(36.3%)
Graduate	56(16.0%)
<b>Employment status</b>	
Unemployed	202(57.7%)
Employed	148(42.3%)

**Table 2: Findings on oral examination of the patients.**

Indicators	Frequency (%)	
Dental Diseases	Caries	299 (85.4%)
	Periodontal diseases	74 (21.14%)
Oral hygiene status	Good	52(14.9%)
	Satisfactory	148(42.3%)
	<b>Poor</b>	<b>150(42.9%)</b>

It was found that out of 350 patients who came for dental extraction, 299(85.4%) patients had caries in their tooth while 74(21.14%) cases were suffering from periodontal disease. Among these, 130 cases (37.14%) of caries were reported in males while 169(48.3%) cases of caries were reported in females. Likewise, 35(10%) cases of periodontal diseases pertained to male gender while 39(11.14%) cases of periodontal disease were reported in females (Table 2).

Oral hygiene status of patients was found to be poor in majority of cases i.e. 150 (42.9%). On comparing oral hygiene status of the patients with gender, it was seen that 18(34.6%) of the male population and 34(65.4%) of the female population had good oral hygiene status. Furthermore, 57(38.5%) of the male population and 91 (61.5%) of the female population had satisfactory oral hygiene status and 82(54.7%) of male population and 68(45.3%) of female population had poor oral hygiene status (Figure 1).

Teeth were found missing mainly in the age range 20-30. Among all teeth, First molar was the most commonly extracted tooth with 109(31.1%) cases followed by second molar 63(18.0%) and central incisor was the least extracted tooth with 8(2.3%) cases. Upon checking the mobility of all the extracted teeth, 276(78.9%) of the teeth were found with no mobility, 27(7.7%) of teeth were grade 1 mobile, 23(6.6%) were grade 2 mobile and 24(6.9%) were grade 3 mobile. Highest frequency of subjects (17.6%) with mobility in extracted tooth aged 60 years and subjects without mobility (14.1%) aged 30 years (Table 2).

Out of all the teeth affected by caries, 93(31.1%) were grossly carious which was also the highest percentage, 81(27.1%) had Broken Down Root (BDR), 59(19.7%) had class 1 cavity, 40(3.4%) had class 2 cavity, 3.7% (13) had class 3 cavity, 5(1.4%) had class 4 cavity and 8(2.3%) had class 5 cavity.

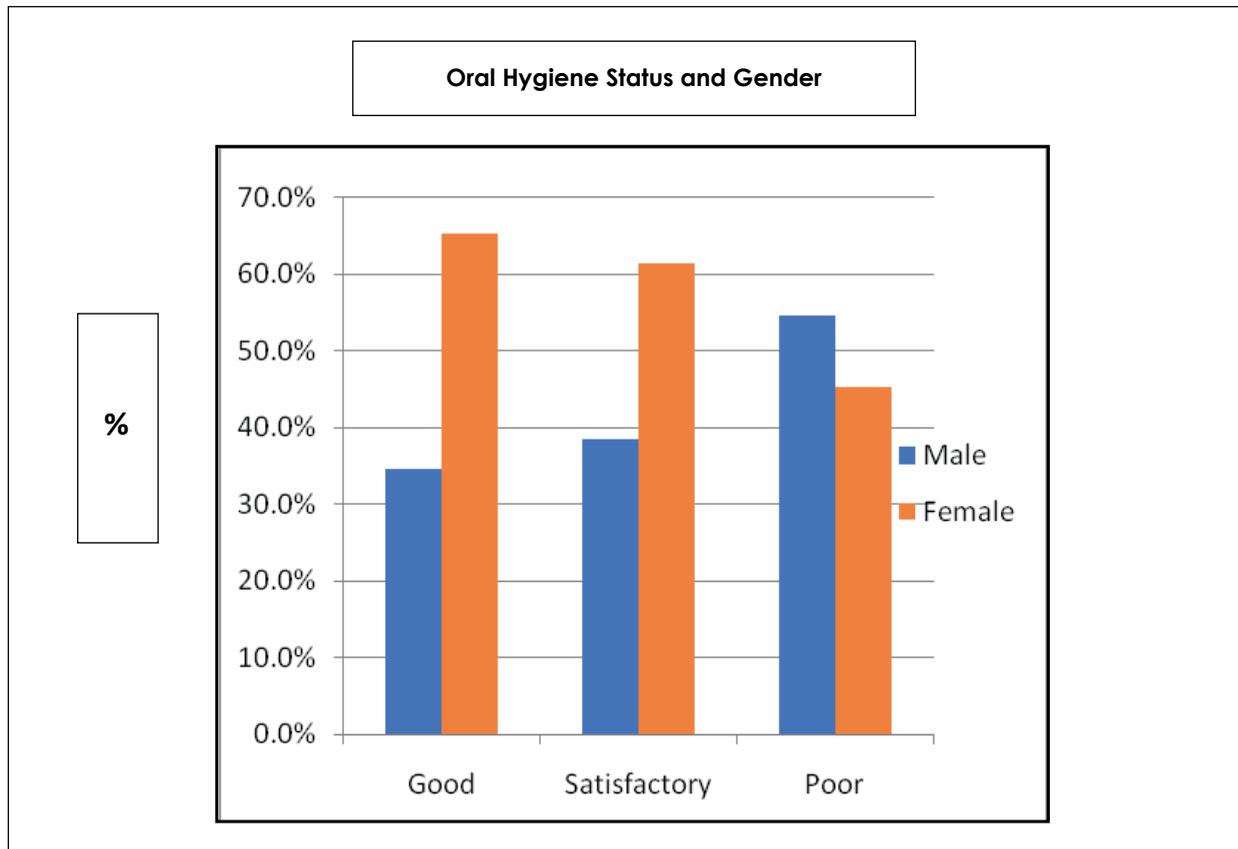
Number of missing teeth in specified age groups	<b>20 - 30</b>	<b>56(28.28%)</b>
	31 - 40	49(22.99%)
	41 - 50	57(26.75%)
	51 - 65	49(22.99%)
Tooth to be extracted	Central Incisor	8 (2.3%)
	Lateral Incisor	11(3.1%)
	Canine	17(4.9%)
	First Premolar	39(11.1%)
	Second Premolar	40(11.4%)
	<b>First Molar</b>	<b>109(31.1%)</b>
	Second Molar	63 (18.0%)
	Third Molar	62(17.7%)
Mobility status of the tooth	Grade 1 mobile	27(7.7%)
	Grade 2 mobile	23(6.6%)
	Grade 3 mobile	24(6.9%)
	<b>No mobility</b>	<b>276(78.6%)</b>
Caries status of the tooth that is to be extracted	Class 1 cavity	59(69.9%)
	Class 2 cavity	40(11.4%)
	Class 3 cavity	13(3.7%)
	Class 4 cavity	5(1.4%)
	Class 5 cavity	8(2.3%)
	<b>Grossly Carious</b>	<b>93(26.6%)</b>
	Broken Down Root	81(23.1%)
	No caries	51(14.6%)
Is there any swelling?	Yes	53(15.1%)
	No	297(84.9%)
	Yes	81(23.1%)
	No	269(76.9%)

Attitude of patients towards dental extraction was also checked by asking various questions. It was found that majority of patients wanted to save it. Among these, 87 (43 %) of the patients were unemployed while 67 (45.3 %) were employed. Majority were willing to pay anything to save tooth. Among these, 137(67.8%) were unemployed while 95 (64.1%) were employed. Also 96 (47.52%) of the unemployed while 69 (46.62%) of the employed patients saved their tooth in past when they were

asked for tooth extraction. When the subjects were investigated about the number of their dental check-ups per year, 277(79.14%) candidates answered that they go for dental check-ups only when they needed it or /when they felt any symptoms, 57(16.3%) answered once a year and 16(4.6%) said twice a year. The Chi-square test for this sample shows a Chi-square value of 10.448 and a significance value of 0.005 (Table 3).

**Table 3: Questions asked from patients regarding teeth extraction.**

Options	Unemployed	Employed	95% CI	Chi Square Value	p-Value
<b>Do you want to save your tooth?</b>	87 (43.0%)	67 (45.3%)	1.51 -1.61	0.168	0.744
<b>Are you willing to pay anything to save it?</b>	65 (32.2%)	53 (35.8%)	1.61 -1.71	0.504	0.494
<b>Did you ever save your tooth?</b>	81 (40.09%)	59 (39.86%)	1.66 -1.80	0.102	0.950
<b>Dental check-ups:</b> a. When needed b. Once a year c. Twice a year	163 (80.7%) 28 (13.9%) 11 (5.4%)	114 (77.0%) 29 (19.6%) 5(3.4%)	0.20-0.31	2.6 67	0.263



**Figure 1: Oral hygiene status of patients with their gender in percentages.**

## DISCUSSION

This study showed us the oral health status and attitude of people towards dental extraction. About 350 patients were recruited in this study. It was found that on oral examination, 299(85.4%) patients out of 350 had caries in their extracted tooth while 74(21.14%) cases were suffering from periodontal disease. Majority of the sufferers pertained to female gender. However, in a study conducted in Srinagar, it was found that leading cause of dental extraction in male gender was caries and periodontal disease was the major causes of dental extraction in females<sup>13</sup>.

It was seen that periodontal status of teeth worsens with age as the highest percentage (17.6%) of patients with mobility in extracted tooth were of 60 years and 14.1% of patients who had no mobility in extracted tooth were of 30 years. This finding is consistent with the findings of some of the other studies<sup>16-18</sup>.

When the subjects were inquired about the number they answered that they visited dentist only when needed or when they felt any tooth related symptoms. These figures indicate that people are not so concerned about their dental health and they do not feel it necessary to invest on their dental health. Daniel et al. in their study concluded that there is an integral and interrelated association between oral health and general body health. A patient's oral health can give us an idea of their perception about life<sup>17</sup>. Another study, mentioned that about one-third of the subjects visited regular dental check-ups that is once a year and 54% of the subjects visited dentist only when they suffered from dental pain<sup>19</sup>. In another study, it was postulated that about 64% of the participants visited dentist only when they suffered from pain or wanted to get their tooth removed<sup>20</sup>.

When oral hygiene status was examined, it was found that majority had poor oral hygiene status and when it was compared gender wise, males were having poorer oral hygiene. According to WHO, there are differences in oral health status among different groups of people globally where social factors play a major role in determining the attitude of people towards their oral health. Adding to this, most low and middle-income countries are also not able to cater the oral health demands of the people<sup>14,18</sup>.

It was seen that majority of teeth were found to be missing in the age range 20-30. In a study conducted in Srinagar, 10.20% of missing teeth were found in the age group 21-30<sup>13</sup>. In our study, first molar was the most commonly extracted tooth followed by second molar. In a study conducted in Japan, the loss of mandibular first molar was found at a percentage 32.7%. It further says that loss of mandib-

ular first molar was higher in women (36.2%) than in men (26.7%)<sup>21</sup>.

Upon comparing, the question that did the individual ever saved the tooth that was advised extraction by the dentist, 60(17.14%) males and 80(22.85%) females answered yes. Similar findings were observed in a study conducted in Tehran, Iran<sup>22</sup>. A study conducted in Riyadh, concluded that, although males and females had the same level of knowledge about oral health but the attitude towards their oral status varied drastically. It says that females were more concerned about their teeth and appearance than males<sup>23</sup>.

When the preceding question was plotted against the employment status, majority of the unemployed dental patients answered no. In a study conducted in Srinagar, they concluded that socioeconomic status was a major factor that influences the choice of patients towards conservative treatment<sup>13</sup>. It showed that tooth loss was more common in low socioeconomic status group. The fact was supported by another study conducted in a tertiary care hospital in Pakistan, which says that people having no source of income are more prone to tooth loss<sup>24</sup>. Another study says that wrong perception about importance of prevention and conservation is interrelated with less knowledge about health leading to inferior health<sup>25</sup>.

When the patients were inquired about their willingness to pay (WTP) for the restorative treatment, majority of the unemployed individuals answered no. WTP is a measure that predicts the choice and strength of preference of the patient to pay for a particular treatment option. It can also be said that it is a variable of expression, which a patient relates to the economic value of a treatment and the maximum limit of the amount they are going to pay. In a study conducted on willingness to pay, this factor was seen to be related with the financial status and income<sup>26</sup>.

## CONCLUSION

Oral health status of majority of patients who came to OPD for dental extraction was found to be poor 150(42.9%) especially among the male population. Majority of the patients were suffering from dental caries and periodontal disease. As far as the attitude of patients was concerned regarding tooth extraction, more employed individuals were interested in dental hygiene than unemployed.

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## CONFLICT OF INTEREST

The authors declare no conflict of interest.

## ETHICS APPROVAL

Fatima Jinnah Dental College Institutional Ethical and

Scientific Review Board Reference number: DEC-2018-ORS-02.

### PATIENT CONSENT

Consents were obtained from the participants of the research study.

### AUTHORS' CONTRIBUTION

AD did the contribution in concept designing, data collection, data analysis, drafting and final approval of the manuscript. FH revised the manuscript critically and did analysis of the data. TA did the interpretation of the obtained data, revised the manuscript critically. HJ did the contribution in data collection and revision.

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