

# Causes, Frequency & Pattern of Dental Extraction: An Analysis of 400 Patients Reporting to Oral & Maxillofacial Department of Baqai Dental College, Karachi.

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## ABSTRACT

**Objective:** To determine contributing factors, frequency and pattern of dental extractions.

**Study Design:** Analytical, observational study.

**Place & Duration:** Department of oral surgery, Baqai Dental College. From September 2011-February 2012.

**Methodology:** A representative sample of four hundred patients attending the OPD of Oral Surgery at Baqai Dental College were selected. The collected information was documented on a specially designed proforma.

**Results:** Four Hundred teeth were extracted during the study due to various reasons. Out of these 230 were male patients and 170 were female patients. The common group of patients belong to 4<sup>th</sup> and 5<sup>th</sup> decade of life. In this study, caries was the primary (75.8) cause of tooth loss followed by periodontal disease (16.3).

**Conclusion:** Dental caries is the common cause of tooth extraction which is preventable by restorative procedures, patient education and awareness programmes.

**Key words:** Dental caries, Dental extraction, Periodontal disease

## INTRODUCTION

One of the leading indicators of Oral health in adult population is tooth loss. Much like the decline in activities of daily living that is a final common pathway for a broad range of general health conditions finally lead to tooth loss<sup>1</sup>. Tooth loss, regardless of progress of modern dentistry can substantially cause serious problems and masticatory dysfunction and is considered as a multi complex problem for both the dentist and patient.<sup>2</sup>

The number of extracted teeth might serve as an indicator of the socio-economic and the oral hygiene level. Decrease in the number of teeth results in poor dietary habits and deterioration of quality of life<sup>3,4</sup>. Therefore, it is important to investigate the reasons for tooth extraction.

Extraction of permanent teeth is performed for several reasons including dental caries, periodontal disease, accident injuries, orthodontic reasons, impacted tooth, failed dental treatments (RCT), prosthetic reasons and other reasons such as patient's request<sup>5</sup>.

Previous studies have strongly implicated dental caries and periodontal disease as the major causes of tooth extraction in several countries. In those studies dental caries appeared to be the main cause of tooth extraction in a large number of countries<sup>6-11</sup> and the number of extracted teeth showed an increase with age. Only four studies have shown that the main reason for tooth extraction, regardless of age, is periodontal disease.<sup>12-17</sup>

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The importance of oral hygiene, dietary habits and tooth cleaning should be kept in mind while determining the causes of tooth loss<sup>6</sup>. The aim of present study is to determine the main cause of tooth loss, contributing factor, and educating population about preventive measures to preserve dentition for longer periods of time.

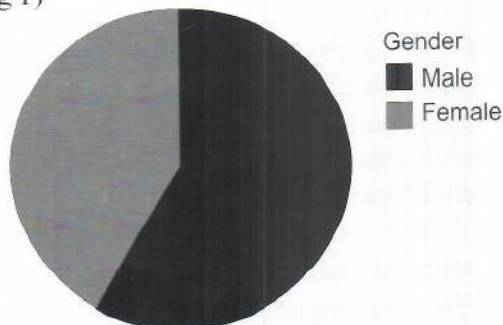
**MATERIAL & METHODS:**

Detailed clinical and radiological examination was carried out to determine the causes of extraction and the information retrieved was documented on specially designed proforma. The study was conducted at department of oral surgery Baqai Dental College. The duration of research was 6 months i.e September 2011-February 2012.

The data about permanent and deciduous teeth to be extracted including each tooth type, clinical and radiological features and the patient's chief complaint about the tooth to be extracted was noted. From this the cause of extraction was determined and documented. Age, sex, address, past medical and dental history, frequency of tooth brushing, and methods of maintaining oral hygiene apart from tooth brush was noted. The sample technique was convenient with sample selected based on inclusion and exclusion criteria. Patients of any age and gender indicated for extraction were included whereas patient not indicated for extraction were excluded. All the data was analyzed by SPSS software version 19.

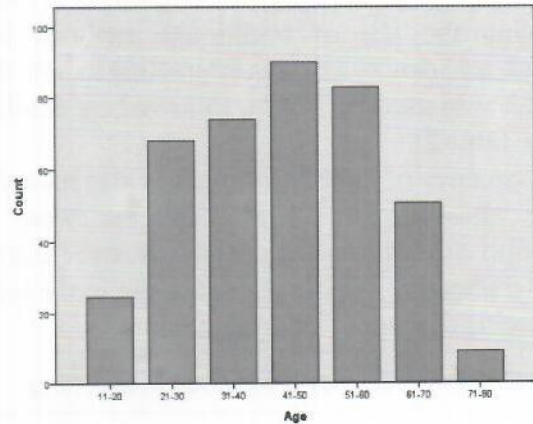
**RESULTS:**

In this study 400 patients were recruited. Out of 400 patients, 232 were males while 168 were females. The male to female ratio of extraction is: 1.03:1(Fig 1)



**Fig 1: Gender Distribution**

Dental extraction due to various reasons were more common in males than in females. The age distribution of patients undergoing extraction was also noted in order to find out that in which age group extraction is more common. Results are shown in Fig-2



**Fig 2 Age Distribution:**

The highest age group of patients undergoing extraction was 4<sup>th</sup> decade (22.5%) of life followed by 5<sup>th</sup> decade (20.8%).

Caries is leading complication contributing to 76.3% of the tooth loss of both permanent and deciduous dentition in our study while periodontal disease was the second leading cause of tooth extraction in 16.3% of the teeth were lost mainly due to periodontal problems. Other reasons of tooth extraction in our study are listed below: (Table-1)

**Table-1: Causes**

Causes	Frequency	Percentage
Caries	305	76.3
Periodontal Diseases	65	16.3
Pericoronitis	15	3.8
Retained Deciduous	09	2.2
Prosthetic Reasons	02	0.5
Cracked Tooth	02	0.5
Malposed Teeth Irritating soft Tissues	01	0.2
Orthodontic Reasons	01	0.2
Total	400	100.0

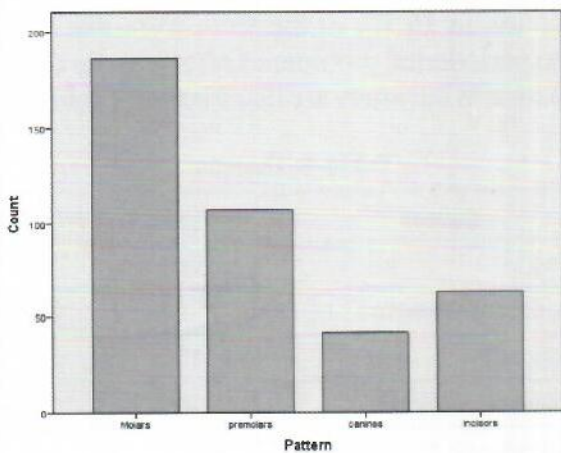


Patients were also asked about their oral hygiene maintenance procedures including the use of toothbrushes and other methods of cleaning. Regarding the use of toothbrushes, it was found that 51.5% of patients had the habit of using toothbrushes while 7.8% patients did not brush their teeth at all. Apart from the use of tooth brushing other methods of cleaning was also asked including the use of traditional methods like miswak and dandasa. It was interesting to note that miswak was used by 33.0% followed by dandasa 7.8% ( Table 2).

The frequency of tooth brushing was also recorded which showed that 77.8% patients were in the habit of cleaning their teeth just once during the day whereas 14.5 % patients were in the habit of cleaning their teeth on weekly basis.

**Table-2:** Frequency & Methods of Brushing

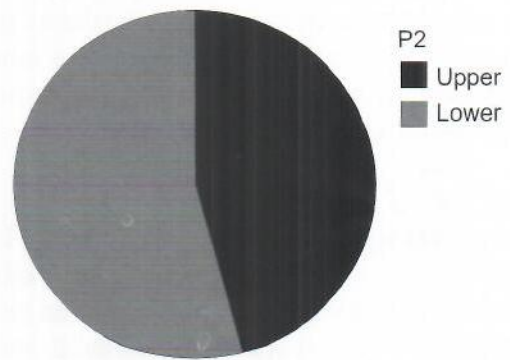
Method	Frequency	Percentage
Tooth Brushing	206	51.5
Miswak	132	33.0
Dandasa	31	7.8
None	31	7.8
Total	400	100.0



**Fig-3:** Patterns of Tooth Extraction

Pattern in which tooth extracted were also noted and is shown in Fig 3. The most commonly extracted tooth were Molars 46.8 % followed by Premolars 27%, Incisors 15.8% & Canines 10.5 %. In this study, the extraction of mandibular teeth

was more common that is 52 % then maxillary that are 48 % (Fig 4).



**Fig-4:** Mandible Versus Maxillary Extractions

**DISCUSSION:**

The results of this study indicate that caries and periodontal disease are the main cause of tooth extraction. A steep increase in extraction of teeth was seen in patients of 4<sup>th</sup> - 5<sup>th</sup> decade. Caries were the main reason of tooth mortality in our study. The result of similar studies conducted in neighboring countries, Bangladesh<sup>8</sup>, Afghanistan<sup>9</sup>, and India<sup>10</sup>, are 80%, 59.25% and 39.5% respectively. The variable percentages reflect a change in the disease pattern in different countries. Periodontal conditions do not make significant contribution to tooth loss, but is the second leading cause of tooth loss in our study which is in accordance to studies conducted abroad<sup>9,10,12</sup>.

Dental caries is one of the most common causes for tooth loss in both the developing and the developed countries. This finding is consistent with findings from other studies where dental caries is the main reason for tooth loss over all followed by periodontal disease<sup>18,19</sup>. Most patients burdened with poverty sought relief of pain by extraction of teeth which is cheaper in comparison to restorative care. Availability, afford ability to oral health care services, perceived need, dietary factors, oral hygiene measures are some of the associated factors of dental caries.

The study also proved the fact that frequency of tooth brushing and additional methods used for cleaning effect of oral hygiene as bad oral health accelerates tooth loss.



## CONCLUSION:

The present study widely supports the tooth loss in population is mainly due to caries and its sequelae that is pulpitis which when left untreated leads to crown fracture ultimately requiring extraction. It is one of the major dental problems; however it can be arrested at an early stage by restorative procedures.

## RECOMMENDATIONS:

Awareness programs need to be initiated to educate people about the importance of good oral hygiene as tooth loss is more commonly observed in patients having bad oral hygiene. Preventive programs have to be initiated to change patient perception towards restoration rather than extraction of teeth. Dentists need to induce preventive habits and attitudes and educate them about early restoration of teeth as these restorative programs will help in retaining teeth for longer period of time. Public needs to be educated about the restorative options available such as endodontic treatment, to restore their teeth rather than removing their teeth as a remedy to relief pain and to get rid of carious teeth. Information on the reasons for tooth extraction is useful in knowing the prevalence of dental diseases and associated factors like dental visits, socioeconomic status. A common risk factor approach, effective public health measures like salt fluoridation, integration of oral health education component in community level such as Mother and Child Health (MCH) program and through WHO Health Promoting schools should be considered for reduction of dental caries in low income nations.

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