

Frequency and reasons for tooth extraction at institute of dentistry, CMH Lahore Medical College

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Abstract

Aims and objectives: Indications for tooth extractions at Institute Of Dentistry, CMH Lahore Medical College

Materials and Methods: The cause of tooth loss was analyzed by considering gender, age of the patient, anatomical location and reasons for extraction on a total of 178 patients age ranging from 10-70 years. Out of 178 patients 112 patients were male and 66 were female, the reason of tooth extraction and the type of tooth extracted was recorded. The study was conducted over a period of 13 months duration from 01-11- 2010 to 01-12- 2011 at Department of Oral Surgery, Institute of Dentistry, CMH Lahore Medical College.

Results: The age groups from 31-40 (group III), 41-50 (group IV) and 51-60 (group V) were the groups more significantly affected. The results and data proved that caries was the most common indication of tooth extraction (52.6%) affecting the younger age group and adults up to 40 years. Periodontal disease was the second most common cause (36.4%) and affecting the age between 41 years old to 70 years old whereas extractions because of orthodontic treatment plan (10%) was the least common cause of extraction. Early tooth loss in the anterior teeth was significantly related to aging, while the tooth loss seen in premolars and molars were higher in young patients.

Conclusion: It was concluded that for some reasons tooth loss was related directly or indirectly to old age but caries and periodontal diseases were the main reasons as far as early tooth loss is concerned.

Key words: Tooth loss, prosthetic, qualitative, extraction.

Introduction:

There are number of reasons and indications for dental treatment. Tooth extraction regardless of the cause remains one of the most common dental surgical procedure. Greater number of missing or extracted teeth is an indicator of both the poor socioeconomic condition as it is comparatively affordable treatment and consume less number of sittings and time. The other main reason is poor oral hygiene. A lesser number of teeth result in poor dietary habits and affects the quality of life^{1,2}. The common causes of permanent teeth extraction includes dental caries, periodontitis, avulsions accidents and traumas, orthodontic reasons, impactions

(e.g. canines, lateral incisors (rarely impacted though), failure of dental treatments (e.g endodontic treatments, etc.), dental prosthesis requirement etc.³⁻⁶ The general belief is that dental caries is the main cause of exodontia in the young adults, whereas after 40 years of age periodontal diseases becomes more prominent cause of tooth loss.^{7,8} However, in this regard, important geographical and cultural differences have been observed within various countries.^{9,10} Caries and periodontitis have consistently been shown as the two main causes of tooth extraction^{3,11-22} It has been seen that extraction due to grossly carious teeth is basic cause for tooth loss in large number of countries and the percent-

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Table 1: Number of patients according to age groups and gender ratio

Age in years	Gender (male/female)	Total
10-20	6/4	10
21-30	12/12	24
31-40	18/11	29
41-50	14/11	25
51-60	28/12	40
61-70	34/16	50

Table 2: Numbers of teeth extracted in relation to age groups

Age in years	Number of teeth	Percentage of teeth extracted
10-20	17	10%
21-30	42	24%
31-40	94	29%
41-50	81	25%
51-60	130	40%
61-70	162	50%
Average age 40	Total 526	P value < 0.001

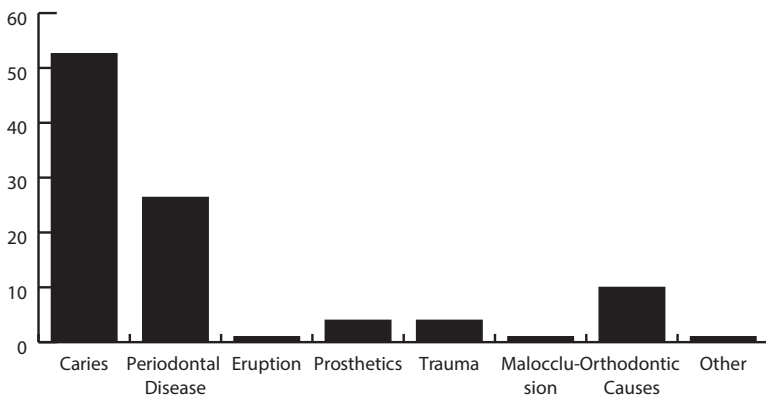


Fig.2: Distribution of patients according to different diseases

age increases with old age. Though a few studies reported that periodontal disease was the main reason^{6,21-25} only a handful reported that dental caries and periodontal disease were equally responsible.^{13,26,27} Periodontal disease is the main cause of extractions in India,^{28,29} whereas in Scandinavia,¹⁰ Canada,³⁰ New Zealand, Australia³¹ and Israel³² dental caries remains the dominant cause. In United States of America, however, tooth extraction due to caries and advance periodontitis almost equally contribute to tooth loss. The basic purpose of this study was to find out the causes for tooth extraction as well as to find out the most frequently extracted tooth.

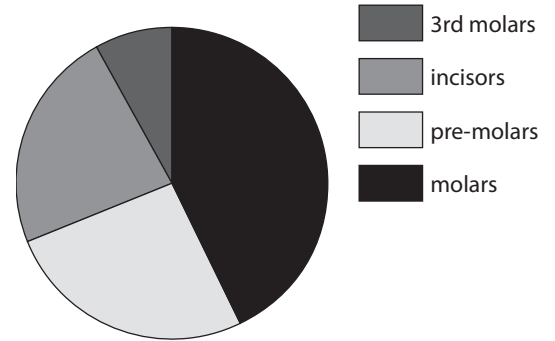


Fig.1: Frequency of the type of teeth extracted

The rationale of this study is to find out the common causes of dental extraction in our population as minimal data is available and aim to prevent this early tooth loss in younger age group.

Methodology:

In this study a total number of 178 patients were included and the patients were divided into sub-groups between ages 10-70 years with mean age of 40 years. Out of 178 patients 112 were male and 66 were female. A complete history, including age, gender and type of tooth extracted was taken. Clinical examination was done indication for the tooth extraction was recorded for each patient. An informed and written consent was taken prior to including the patient in study. Patients included were distributed into 6 groups according to age. In group I patients were (10-20) years old, group II (21-30), group III (31-40), group IV (41-50), group V (51-60) & group VI (61-70). The number of teeth extracted was divided into 8 groups according to the cause of tooth extraction.

1. Caries
2. Periodontal diseases
3. Eruption problems
4. Prosthetics
5. Traumas
6. Orthodontics
7. Occlusal problems and
8. Others

All the patients coming for extraction were included within the study irrespective of the age or gender.

Statistical Analysis:

All the data was collected and was assessed using SPSS version 16, Distribution of tooth extraction according to age, gender, reason for tooth extraction was recorded as qualitative data.

Results:

A total number of 178 patients were included in the study, out of these 178 patients 112(63%) patients were male and 66(37%) were female. A total of 526 teeth were extracted for various reasons. There were more male patients in this study that underwent tooth extraction for different reasons. But the average number of teeth extracted between male and female patients was statistically significant. The number of patients according to age groups and gender ratio can be seen in Table 1. It was seen that the prevalence of tooth loss between all age groups between genders is same ($P=0.66$). It was also seen that the age groups from 31-40, 41-50 and 51-60 revealed significant number of teeth extractions than the rest of the groups ($P < 0.001$) as shown in table 2. The number of teeth which were extracted, the most common were molars followed by premolars and incisors as shown in Figure 1. Molars and premolars were seen more at younger age group and incisors were seen in elderly age group. Caries and periodontal diseases were statistically significant reasons for tooth extractions ($P < 0.0001$).

According to the results caries was found to be the most prevalent cause for tooth extraction in all age groups, making about 52.6% of the reasons for all tooth extractions, followed by periodontal disease making 26.4%, eruption problems 1%, prosthetic causes 4, trauma 4%, occlusal problems 1%, orthodontic problems 10% and others 1% contributes to the reasons for tooth extraction, in our study as shown in figure 2.

Discussion:

Dental caries is the most common cause of tooth extraction worldwide. In many studies carried out in different parts of the world revealed that dental caries is the leading reason for exodontia, ranging from a percentage of 34.6% to 79.65%.

^{3-6, 13-19} Only three studies show that periodontal diseases and caries contribute equally for tooth extraction. These studies were carried out in Japan, Italy and Singapore.^{13,33,27} Our study shows similar results and caries being the common reason for dental extraction making about 52.6% of all the reasons for tooth extraction included in the study. The geographical difference of reason for tooth extraction can be attributed to the genetic differences in various populations, sample size, progression of dental caries and periodontal disease during the last decade.

According to data and results of our study the average number of teeth extracted between males and female patients were statistically significant. This represents the fact that tooth extraction is still a major problem in our community despite the availability of updated techniques for saving them. This can be postulated to the fact that socio-economic status plays a vital role in reducing the morbidity of teeth. Same results can be correlated to other studies.^{12,19,34,35} Periodontal disease was the leading cause of tooth extraction in age group above 35, whereas caries made up a significant portion of the age group upto 35 years. In our study male population was found to have both periodontal disease and caries as reason for tooth extraction whereas caries was the leading cause among female patients. These results were similar to some studies done in Japan and Italy.³⁵ Our study also shows that 1st and 2nd molar are extracted more frequently due to caries whereas the anterior teeth are usually extracted due to periodontal disease. These results are consistent with other studies.^{18,22,36}

Thus it can be concluded from our study that carries and periodontal disease remains the most common cause of tooth extraction, whereas caries is the common cause for extraction of 1st and 2nd maxillary and mandibular molars, periodontal disease is the leading cause of anterior teeth extraction especially in the elderly.

Conclusion:

Keeping in view all the limitations of this study in which we exclude the physical health and

chances of systemic diseases if the patient is suffering from, it is evident that caries and periodontal cause is the main cause of loss of permanent teeth and that can be related to the growing age of the patient. Awareness about maintaining dental oral hygiene can be one of the important factors but this was not included in the scope of this study. A marked increase in the graph of carious lesions and periodontal disease was observed thus the main cause of early tooth loss.

Conflict of Interest: None

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Role and contribution of authors:

Dr. Faiqua Yasser BDS, M.phil, Assistant Professor of Oral Pathology, Institute of Dentistry, CMH Lahore Medical College, Abdur Rehman Road, Lahore Cantt. Pakistan, did the initial writeup and collected the data.

Dr. Najeeb Ullah Ghumman BDS, FDSRCS. Oral & Maxillofacial Surgeon, reviewed the data, wrote the discussion and helped in results and conclusions.

Dr. Saira Atif BDS, BSc. Mphil, Head of Oral Biology Department, Assistant Professor, Institute of Dentistry, CMH Lahore Medical College, Abdur Rehman Road, Lahore Cantt, critically review the article.

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