

Determine the Pattern and Etiology of Permanent Teeth Extraction

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ABSTRACT

Objectives: To determine the pattern and etiology of permanent teeth extraction.

Study Design: Cross-sectional

Place and Duration: Oral & Maxillofacial Surgery Department of Dr Ishrat ul Ebad Khan Institute of Oral Health Sciences, Karachi for the duration of four months from 1st November, 2019 to 29th February, 2020.

Material and Methods: Total 650 patients of both genders with ages 8-60years were included in this study. 1000 teeth were extracted from enrolled patients. Patients detailed demographics including age, sex, residence and co-morbidities were recorded after taking written consent. Qualitative data like gender, reason of extraction of tooth, tooth loss pattern and socioeconomic status were presented as frequencies and percentages. Data was analyzed by SPSS 24.0.

Results: Out of 650 patients 260 (40%) were male while 390 (60%) were females with mean age 36.42±11.54 years. Mean BMI of the patients were 21.38±2.52. We found that the majority of the patients 495(76.15%) had lower socioeconomic status while rest of the patients belong to middle socio economic status. In extraction of tooth the main etiology was caries 700(70%) which was followed by periodontal diseases 135(13.5%) and impaction was in 115(11.5%) tooth. This provided results that the ratio of third molar 260(26%) was greater than that of first molar tooth 210(21%).

Conclusion: In this study we concluded that the caries followed by periodontal diseases was the major causes of tooth extraction and majority of the patients were from the lower socioeconomic status.

Keywords: Caries, periodontal diseases, tooth extraction.

INTRODUCTION

To improve oral health outcomes, research on the reasons for tooth extraction in various samples and regions is important. Teeth extraction and loss may lead to poor dietary habits and eventually affect the quality of life^[1]. The aesthetic and function are impaired as a consequence of tooth extraction. In addition, the compensation of missing teeth by dental implants, fixed or adjustable dentures^[2] entails a major financial burden. The number of extracted teeth is inversely influenced by oral hygiene and socioeconomic standard of life, while the figure of extracted teeth may be a measure of the history of the patient.^[3]

In certain people, however, survival of permanent teeth becomes a problem for several reasons, leading to tooth loss.^[4-5] The predominant cause of tooth loss was tooth decay.^[6-12] But a few studies indicated that periodontal disease was responsible for a higher proportion of tooth extractions.^[13-15]

It may be possible to restrict potential extractions and highlight the vital role of prevention by recognizing the key causes and predictors of tooth loss. Therefore, it is very important to find a reason for tooth loss due to extractions, due to the large number of extractions in Pakistan.

MATERIALS AND METHODS

This prospective/observational study was conducted at Oral & Maxillo Facial Surgery Department of Dr Ishrat ul Ebad Khan Institute of Oral Health Sciences, Karachi for the duration of four months from 1st November, 2019 to 29th

February, 2020. Total 650 patients of both genders with ages 8 to 60 years with BMI less than 30 were enrolled in this study. Patients detailed demographics including age, sex, residence and body mass index were recorded after taking written consent. Those patients who did not give written consent or had any other severe/chronic disease were excluded from this study.

Patients were examined regularly to calculate data in a sequential form in which different causes of extraction were observed according to economic status and causes of tooth loss. Complete data was analyzed by SPSS 24.0 version. Mean±SD was done. Frequencies and percentages were recorded.

RESULTS

Out of 650 patients 260 (40%) were male while 390 (60%) were females with mean age 36.42±11.54 years. Mean BMI of the patients were 21.38±2.52 kg/m². We found that the majority of the patients 495(76.15%) had lower socioeconomic status while rest of the patients 155(23.85%) belong to middle socio economic status.(Table 1)

We extracted the frequency of etiology of tooth extraction and it provided majority of caries 700(70%), ratio of periodontal diseases 135(13.5%), impaction showed 115(11.5%), and rest were 50(5%) showed due to prosthodontics, orthodontics, RCT failure, tooth inline fracture, supernumery teeth, sensitivity and psychological cause. (Table 2)

Table No 1: Baseline detail of all the patients

Characteristics	Frequency No.	%age
Mean age (Yrs)	36.42±11.54	-
Mean BMI (Kg/m)	21.38±2.52 kg/m2	-
Gender		
Male	260	40
Female	390	60
Status		
Lower Class	495	76.15
Middle Class	155	23.85

Table 2: Frequency of tooth extraction

Variables	Frequency No. (Tooth extraction)	%age
Caries	700	70
Periodontal diseases	135	13.5
impaction	115	11.5
Rest	50	5
Total	1000	100

In all of the above extraction of the tooth showed that the majority of frequently extracted teeth were third molar 260(25%) in the both arches, and first molar was 210(21%). As compared to them the supernumery teeth were least in numbers 15(1.5%) and the rest showed in table 3.

Table 3: Characteristics/pattern of tooth removal

Pattern	Frequency	%age
Third molar	260	26
First molar	210	21
Central Incisor	90	9
Lateral Incisor	85	8.5
Canine	80	8
First premolar	110	11
Third premolar	150	15
Supernumery	15	1.5
Total	1000	100

DISCUSSION

One of the most commonly performed procedures is tooth extraction for dental diseases.^[16,17] Because dental diseases are considered to be the most common public health burden. We concluded that dental caries were the most frequent cause for tooth extraction in patients and the next most common diseases were periodontal diseases. Compared to several previous studies, our analysis produced the same results.^[4,5,6,7,18,19]

The present study found that the percentage of causes of periodontal disease as a cause of extraction increased with ageing. This is in line with several of the previous research that indicated a rise in teeth mortality due to periodontal disease over ageing. In this study, several predictors of caries-related tooth loss were considered. Age was substantially associated with dental caries in patients, while a study conducted in Brazil by Jovino-Silveria et al.^[12] found that age was the best predictor of tooth loss due to periodontal disease. While the degree of education of patients had affected reasons for tooth loss, because of caries, it was not an indicator for extraction.

In this research, we found that the proportion of women 60 percent was greater than that of males 40

percent. The basis for this may be the stubborn essence of self-care and primarily oral care in our female community.^[20] We extracted the frequency of tooth extraction aetiology and given 700 (70 percent) majority of caries, 135 (13.5 percent) ratio of periodontal diseases, impact showed

The most important extraction was performed between the age group of 35-55years in this study, and this was also noted in women. Several previous studies found that caries in women is a predominant cause for extraction than in males.^[22] Third molars is commonly extracted tooth, which were preceded in our research by first molars.^[5,20] Due to its malpositioning and approach complexity for conservative technique, the third molar removal is unavailable for conservative treatment alternatives for the third molar tooth In all of the above, tooth extraction revealed that the majority of regularly extracted teeth in both arches were third molar 260 (25%) and first molar 210 (21%).^[9,10,13,16,17]

CONCLUSION

In this study, we concluded that the key causes of tooth extraction were caries accompanied by periodontal diseases, and most of the patients were from lower socioeconomic status. This revealed that due to conservative care options, the extraction of third molar teeth was disproportionate in numbers relative to that of first molars.

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