CAUSES AND PATTERNS OF LOSS IN PERMANENT DENTITION AMONG PATIENTS ATTENDING DENTAL UNIT AT DISTRICT NOWSHERA, PAKISTAN

Syed Sohaib Daud Gilani[1], Ozal Saeed[2], Yasir Khattak[3], Iftikhar Qayum[4], Shah Anam[5], Marij Hameed[6]

[1]Incharge Dental Surgeon Provincial Health Services KPK

[2]Health Economist KPK

[3]Department of Operative Dentistry, Sardar Begum Dental Hospital Peshawar

[4]Department of Medical Education, Rehman Medical College Peshawar

[5]Department of Microbiology SBBWU Peshawar

[6]Department of Periodontology Multan Medical and Dental College

ABSTRACT

Objective: *To determine the major causes and patterns of loss in permanent dentition from district Nowshera, Pakistan.*

Materials and Methods: *A cross-sectional study was conducted at pre authorized oral health unit (Khairabad District Nowshera Khyber Pukhtoon khwa Pakistan). Records of patients, who had extraction of teeth at the oral health unit of Rural Health Center Khairabad between January 2018 and June 2019, were recorded on Pre Designed Performa of District Health Information System. Patients who were <16 years old at the time of treatment were excluded from the study. Data on age, gender, presenting complaint, type of tooth, and reason for extraction were documented. Reasons for extraction were classified in seven categories.Statistical analyses were done using the Statistical Package for Social Sciences version 20 (IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp).*

Results: *A total of 2296 permanent teeth were extracted of which 1097 (47.78%) teeth were extracted due to caries and its sequelae, 660 (28.75%) due to periodontal disease, 230 (10.02%) for failed endodontic treatments, 185 (8.06%) due to pericoronitis, 111 (4.84%) due to trauma and 13 (0.57%) prosthodontic purposes.*

Conclusion: *The results of the present study suggest caries and periodontal disease are the major causes of tooth mortality in the study population.*

Keywords: *????*

INTRODUCTION

Tooth mortality is an important measure that determines the effectiveness of oral health care and oral disease management.[1] Awareness and treatments are improving globally, which has led to a paradigm shift from treatment to prevention. Prevention of dental diseases on a mass scale has become the mainstay of dentistry in developed countries, but this is not well organized in countries with low socio-economic status where it remains a major public health problem.[2.]

Tooth mortality can impair self-esteem and social interaction due to its impact on appearance, ability to speak, and willingness to laugh.[3.] These problems significantly reduces the quality of life. Furthermore, loss of chewing ability due to loss of teeth is associated with nutritional deficiencies and imbalances, especially in the elderly.[4.] Tooth loss

Correspondence:
Syed Sohaib Daud Gilani
Incharge Dental Surgeon Provincial Health Services KPK
Email: Sohaib876@hotmail.com
Contact: +923331759174

has due share of pre-operative and post-operative complications.[5] Time consumption on the part of patients, clinical skills on the part of dentists, and financial burden for state increases to a great deal in restoring a missing tooth than maintaining healthy dentition. The severity of oral diseases at the time of presentation outlines the treatment protocol, but features responsible for the disease should be analyzed thoroughly as they provide an impetus for oral healthcare awareness and preventive strategies.

The relationship between oral health and tooth retention is complex. Dental caries and periodontal diseases are the main reasons for tooth loss; the contribution of other modifying factors such as cultural beliefs, socioeconomic characteristics, access to dental services, and dental practitioner's philosophy of treatment may also influence the decision to extract teeth. Degree of urbanization has also been found to affect the pattern of tooth extractions. Moreover, oral disease burden and its etiological factors exhibit inter- and intra-regional variations.[6] It has been shown that the reasons for and pattern of tooth extraction vary across geographical regions. Few reports on the pattern of extraction among a semi-rural populace exist. To the best of our knowledge, there is no study on the pattern and reasons for tooth mortality from District Nowshera, Khyber Pukhtoon khwa north-west region of Pakistan, which is a semi-Rural region. The data collected through this study will not only help to initiate/strengthen programmes aimed at the prevention of dental diseases but also for understanding nature of oral diseases and changing patterns at population level. It will also generate meaningful data which will aid policy makers for healthcare settings.

MATERIALS AND METHODS

The Present Study was conducted at pre authorized Dental Center of Khairabad District Nowshera Khyber Pukhtoon khwa Pakistan. Records of patients, who had extraction of teeth at the Dental center of Rural Health Center Khairabad between January 2018 and June 2019, were recorded on Pre Designed Performa of District Health Information System.

Patients who were <16 years old at the time of treatment were excluded from the study. Data on the age, gender, presenting complaint, type of tooth, and reason for extraction were documented. Reasons for extraction were classified into the following:

a. Caries and its sequelae

b. Pericoronitis

c. Trauma

d. Periodontal disease

e. Orthodontic

f. Failed Endodontic treatments

g. Others such as impactions, supernumeraries, and prosthetic reasons.

Statistical analyses were done using the Statistical Package for Social Sciences version 20 (IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp.). Descriptive analyses and cross tabulations of different variables were done.

RESULTS

A total of 2296 permanent teeth were extracted of which 1097 (47.78%) teeth were extracted due to caries and its sequelae, 660 (28.75%) due to periodontal disease, 230 (10.02%) for failed endodontic treatments, 185 (8.06%) due to pericoronitis, 111 (4.84%) due to trauma and 13 (0.57%) prosthodontic purposes. Table1

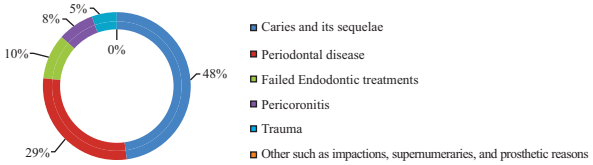

Figure 1: Causes of tooth extraction with percentile distribution

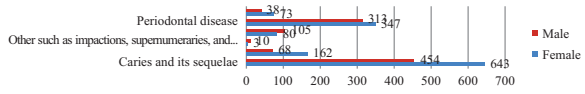

Figure 2: distribution of reasons for extraction vs gender

DISCUSSION

Tooth extraction is one of the most commonly performed procedure in dental clinics.[7] Tooth loss affects the quality of life and it is an important marker of oral hygiene and it may be an indication of patients' disposition and access to oral care. Tooth loss is the dental equivalent of mortality. Little is known about the reasons for and pattern of tooth

Table 1: Age wise distribution against causes of tooth extractions 1=16years to 25 years, 2=26years to 35 years ,3=36years to45 years,4=46years to 55 years,5=56years to 65 years,6=66years to 75years.

Count of reason for extraction Age Group	Reason for extraction caries and its sequelae	Failed Endodontic treatments	other such as impactions, supernumeraries, and prosthetic reasons	Pericornitis	Periodontal disease	Trauma
1	575	28			163	4
2	109	53		112	188	2
3	23	18	10	73	7	14
4	91	16			60	5
5	245	74	3		164	60
6	54	41			78	26

extraction in rural areas of Pakistan. The present study was conducted in rural health center of district nowshera Pakistan.

In the present study, the reasons for tooth extractions were 47.78 % due to dental caries followed by periodontal diseases 28.75%, failed endodontic treatments 10.02%, pericoronitis and impactions 8.06%, trauma 4.83% and 0.57% due to prosthetic reasons and orthodontic reasons. Considerable number of studies have been conducted worldwide to evaluate reasons for dental extractions in different population groups.[2,3,4] Caries has been cited as the most common dental disease leading to tooth extraction in the afore-mentioned studies, the results from the current study conform to the previous studies. Caries was the most prevalent condition leading to tooth extraction (47.78%) in the present study (figure 1, figure 2). Periodontitis was the second most common dental disease leading to tooth extraction. Considerable percentage of patients (28.75%) presented with periodontitis (with or without the presence of caries), however in the present study it was mostly due to grade 2 mobility, periodontitis was considered to be the cause of extraction. Periodontitis was primarily diagnosed amongst patients in their second decade or later. These findings contradicts to many international studies which reported periodontitis as the major cause of tooth extraction in the elderly the reason for which may be poor oral hygiene and nutritional deficiencies.[8,9] amongst the extraction done for periodontal reason, 63.5% patients were younger than 50 year of age.

Amongst the minor causes of tooth extraction, root canal treatment failure was considered as main cause of extraction. Both subjective and iatrogenic causes can be considered as a possible underlying factor. Restoration failure was seen equally in all age groups. Incomplete cleaning and shaping canals during root canal treatments (with or without peri-apical lesions), adjacent class II cavities restored together as single one were the most common reasons for treatment failure which may be due to lack of qualified dental surgeons and abundance of quacks in the region.

Dento-alveolar trauma usually leads to fracture of crown and/or root which eventually required extraction. Local pathologies such as odontogenic cysts and benign tumours developing in jaw-bones were the least frequent causes of tooth extraction.

CONCLUSION

Dental caries and periodontal diseases still remain the main causative factors for tooth loss in this environment, more common in women in district Nowshera Pakistan.

Recommendations

Data regarding the causes of tooth loss indirectly provides information on the pattern of oral health in a population. At present, very little data is available regarding the causes of loss of permanent teeth among pakistani population. Hence, the data generated from this study can be used for conducting similar studies in other regions of the country. Data generated from such studies would serve as a valuable reference for the design of public oral health policies at national level.

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