

FREQUENCY AND POTENTIAL REASONS FOR EXODONTIA AMONG PATIENTS REPORTING TO DENTISTRY DEPARTMENT LADY READING HOSPITAL, PESHAWAR

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ABSTRACT

Introduction: The aim of this retrospective study was to investigate the reasons for tooth extraction and their associations with possible causes in Pakistan.

Materials and Method: The study involved 760 individuals, 483 males and 277 females. The inclusion criteria were patients from both genders, above the age of 10 years and indicated for extraction of permanent tooth. All the causes of extracted teeth were recorded and data collected was recorded on a proforma. The data were processed and analyzed by means of the Statistical Package for Social Sciences (SPSS version 20.0, Institute Inc, Cary, NC, USA). Frequency distributions of variables were computed separately for male and female subjects.

Results: The results showed that the main reason for tooth extraction was dental caries (82%). Other causes included periodontal disease (8.0%), impaction 6% and trauma 4%. Mandibular Molars were the most common teeth extracted and most extractions were done between age groups 30-41 years.

Conclusions: Dental caries and periodontal disease were the main reasons for tooth extraction in Pakistan. Changes in eating habits and life style along with community water fluoridation could help reduce incidence of dental decay.

Key Words: Tooth extraction, dental caries, periodontal disease.

INTRODUCTION

With improvement in dental treatment, preservation of permanent teeth until old ages is not achievable, and tooth extraction is considered only as final resort of treatment. However, in under developed countries like Pakistan or in countries where people are not covered under health insurance, Tooth extraction statistics, especially for treatable teeth, are high¹. Tooth loss continues to be an oral health hazard in adults and elderly individuals and it has negative impacts on quality of life². Low self-esteem related to tooth loss can hinder socialization and hamper the performance of work and daily activities³. Moreover, missing teeth can interfere with chewing ability, esthetics and speech. Periodontal disease and caries are the main reasons for tooth loss in adults⁴. In addition to clinical causes, other factors like acidic beverages and sweets have been associated with tooth loss. Smoking cessation and higher access to dental care lead to better dental preservation. On the other hand, using tobacco, financial problems,

lower socioeconomic status⁵ and underlying diseases accompany higher dental caries, lead to more teeth extraction^{5,6}. Improving education and hygiene level have been shown as important as developing dental services⁷. Knowledge about causes and risk factors of permanent teeth extraction and demographic factors is essential to plan the educational approaches. This study has assessed the frequency and potential reasons for Exodontia among patients reporting to dentistry department Lady Reading Hospital, Peshawar.

MATERIALS AND METHODS

In this cross-sectional study, all patients presenting with dental problems and undergoing tooth extraction at Lady Reading Hospital, Peshawar from July 1, 2015 till December 31, 2015 were included. The inclusion criteria were patients from both genders, above the age of 10 years and indicated for extraction of permanent tooth. The total number of 760 subjects, 483 males and 277 females were included in the study. The selected subjects were divided into five groups, according to the age (10-15), (16-29), (30-45), (46-60) and >60 years respectively. All the causes of extracted teeth were recorded and data collected was recorded on a proforma. The reasons for extractions were caries, periodontal disease, Impaction and trauma. In addition, prosthodontics and orthodontic treatment reasons were also recorded. The data were processed and analyzed by means of the Statistical Package for Social Sciences (SPSS version 20.0, Institute Inc, Cary, NC, USA). Frequency distributions of variables were computed separately for male and female subjects.

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Table 1: Frequency of tooth extraction according to age

Less than and up to 15 years		Total = 37	5%
Male	35		
Female	02		
16 years and up to 30 years		Total = 308	41%
Male	148		
Female	160		
31 years and up to 45 years		Total = 315	41%
Male	235		
Female	80		
46 years and up to 60 years		Total = 70	9%
Male	42		
Female	28		
61 years and Above		Total = 30	4%
Male	23		
Female	07		

Table 2: Frequency of tooth involved in extraction

S. No.	Tooth Involved	Total	Percentage
1.	Maxillary 3rd molar/upper 8	Total = 28	4%
2.	Mandibular 3rd molar/lower 8	Total = 102	15%
3.	Maxillary 2nd molar/upper 7	Total = 18	2%
4.	Mandibular 2nd molar/lower 7	Total = 92	13%
5.	Maxillary 1st molar/upper 6	Total = 66	12%
6.	Mandibular 1st molar/lower 6	Total = 136	20.2%
7.	Maxillary 2nd premolar/upper 5	Total = 29	4.3%
8.	Mandibular 2nd premolar/lower 5	Total = 51	7.5%
9.	Maxillary 1st premolar/upper 4	Total = 22	6%
10.	Mandibular 1st premolar/lower 4	Total = 28	4%
11.	Maxillary canine/upper 3	Total = 26	3.8%
12.	Mandibular canine/lower 3	Total = 19	5%
13.	Maxillary lateral incisor/upper 2	Total = 17	2.5%
14.	Mandibular lateral incisor/lower 2	Total = 13	1.9%
15.	Maxillary central incisor/upper 1	Total = 20	2.9%
16.	Mandibular central incisor/lower 1	Total = 10	1.4%
		Total = 673	

RESULTS

A total number of 760 subjects were included in this study. The total number and percentages of male subjects were 483 (64%), and females 277 (36%) with male to female ratio of 1.74:1. Table 1 showed the descriptive statistics with patient's age ranged from 10 to >60 years old. The highest percentage was in group 16-30 (41%) and 31-45 (41%) years old, while the lowest percentage was in the group of 60 years and above (4%).

Caries was the most common cause for teeth extraction (n=550 82%) in both male and female (n=350, 64% and (n= 200, 36%) respectively. Exactly equal percentages were found in males (n= 33, 64%) and females (n=17, 36%) for the periodontal disease causes (n= 52, 8%). Impaction contributed to 43 cases (6%) with 27 males (48%) and 19 females (32%). The lowest cause was trauma 28 cases (4%) with 18 male cases (64%) and 10 female cases (36%). Table 2 showed the frequency of tooth involved in the disease.

DISCUSSION

Dental caries was the most common cause of tooth extraction in this study followed by periodontal diseases. This shows that poor oral hygiene remains a problem in Pakistan and it requires more interest. This result is similar to the studies in other developing countries including India, Bangladesh, Libya, Nigeria, Jordan and Brazil⁸⁻¹³ In addition to poor oral hygiene, dietary factors¹⁴⁻¹⁶ such as increase intake of refined sugars and soft drinks which are now readily available all over Pakistan even in rural areas, also contribute significantly to dental caries. Similarly in terms of most often extracted teeth, this study further confirm those reported elsewhere^{17,18}. Molar teeth, slightly more in the mandible compared to maxilla, were the teeth most often extracted.

Permanent molars are most susceptible to extraction because they have larger surface areas, deeper pits and fissures to lodge foods. Secondly, they erupt early into the mouth resulting in prolonged duration of exposure to an unfavorable oral environment.¹⁹ Hence molars, unlike other teeth, are more susceptible to oral diseases including dental caries, which is more common in the young.^{19,20} Periodontal disease is a chronic irreversible condition, its effects are cumulative in nature, such that once an individual presents with bone loss, it cannot be regained.²¹ Consequently, those individuals who develop periodontal disease at younger ages are likely to present with the worst form of the condition later in life. It is for this reason that periodontal disease is regarded as a disease of the aged.

If we talk of prevention, various methods are available to prevent or decrease the adverse effects of Dental caries. One of the most cost-effective methods for preventing teeth decay is fluoridation of community

water supply. Several studies²² worldwide have recorded dental caries reduction of 40-50% in deciduous dentition and 50-65% in permanent teeth. Increasing the number of dentists and dental auxiliaries is also important for both prevention and treatment of oral diseases²³. Likewise, dental hygienists and nutritionists, would help in the development of specialized centers which in effect will reduce the incidence of dental caries and periodontal diseases.

REFERENCES

1. Ramezani, M. and Alizade, A. Evaluation of the Reasons for the Extraction among Patients Referred to the Oral Surgery Department, Faculty of Dentistry, Tehran University of Medical Sciences. *Journal of Dental Medicine* 2004;17, 86-90.
2. Gerritsen AE, Allen PF, Witter DJ, Bronkhorst EM, Creugers NHJ. Tooth loss and oral health-related quality of life: a systematic review and meta-analysis. *Health Qual Life Outcomes*. 2010 Nov 5;8:126.
3. Petersen PE. The World Oral Health Report 2003: continuous improvement of oral health in the 21st century – the approach of the WHO Global Oral Health Programme. *Community Dent Oral Epidemiol*. 2003 Dec;31(Suppl. 01):3-24.
4. Steele JG, Treasure E, Pitts NB, Morris J, Brandnock G. Total tooth loss in the United Kingdom in 1998 and implications for the future. *Br Dent J*. 2000 Dec;189(11):598-603
5. Astrom, A.N., Ekback, G., Ordell, S. and Unell, L. Socio-Behavioral Predictors of Changes in Dentition Status: A Prospective Analysis of the 1942 Swedish Birth Cohort. *Community Dentistry and Oral Epidemiology* 2004;39,300-310
6. Kida, I.A., Astrom, A.N., Strand, G.V. and Masalu, J.R. Clinical and Socio-Behavioral Correlates of Tooth Loss: A Study of Older Adults in Tanzania. *BMC Oral Health* 2006;6,5.
7. Hassan, A.K. Reasons for Tooth Extraction among Patients in Sebha, Libyan Arab Jamahiriya: A Pilot Study. *Eastern Mediterranean Health Journal* 2000 :6, 176-178
8. Akhter, R., Hassan, N.M., Aida, J., Zaman, K.U. and Morita, M. (2008) Risk Indicators for Tooth Loss Due to Caries and Periodontal Disease in Recipients of Free Dental Treatment in an Adult Population in Bangladesh. *Oral Health & Preventive Dentistry*, 6, 199-207.
9. Anand, P.S., Kamath, K.P. and Nair, B. (2010) Trends in Extraction of Permanent Teeth in Private Dental Practices in Kerala State, India. *The Journal of Contemporary Dental Practice*, 11, 41-48.
10. Ashiwaju, M.O., Folayan, M.O., Sote, E.O. and Isikwe, M.C. (2011) Pattern of Tooth Extraction in Children Attending Tertiary Health Care Centers in Nigeria: A Prospective Study. *The Journal of Clinical Pediatric Dentistry*, 36, 107-110.
11. Byahatti, S.M. and Ingafo, M.S. (2011) Reasons for Extraction in a Group of Libyan Patients. *International Dental Journal*, 61, 199-203.
12. Caldas Jr., A.F. (2000) Reasons for Tooth Extraction in a Brazilian Population. *International Dental Journal*, 50, 267-273.
13. Haseeb, M., Ali, K. and Munir, M.F. (2012) Causes of Tooth Extraction at a Tertiary Care Centre in Pakistan. *Journal of the Pakistan Medical Association*, 62, 812-815.
14. Chukwu GA, Adeleke OA, Danfillo IS, Ottoh EC. Dental caries and extractions of permanent teeth in Jos, Nigeria. *Afr J Oral Health* 2004;1:31-6.
15. Oginni FO. Tooth loss in a sub-urban Nigerian population: causes and pattern of mortality revisited. *Int Dent J* 2005;55:17-23.
16. Adeyemo WL, Oderinu HO, Oluseye SB, Taiwo OA, Akinwande JA. Indications for extraction of permanent teeth in a Nigerian teaching hospital: a 16-year follow-up study. *Nig Q J Hosp Med* 2008;18:128-32.
17. Angellilo I. Survey of reasons for extraction of permanent teeth in Italy. *Community Dent Oral Epidemiol* 1996;24:336-40.
18. Sayegh A. Pattern of tooth loss in recipients of free dental treatment at the University Hospital of Amman, Jordan. *J Oral Rehabil* 2004;31:124-130.
19. Macek MD, Beltran-Aquilar ED, Lockwood SA, Malvitz DM. Updated comparison of the caries susceptibility of various morphological types of permanent teeth. *J Public Health Dent* 2003;63(3):174-82.
20. Edelstein BL. Paediatric caries worldwide: implications for oral hygiene products. *Compend Contin Educ Dent* 2005;26(Suppl 1):17-23.
21. Socransky SS, Haajee AD, Goodson JM, Lindhe J. New conception of destructive periodontal disease. *J Clin Periodontol* 1984;11:21-32.
22. AL Khateeb TL, Darwish SK, Bastawi AE, O'Mullane DM. Dental caries in children residing in communities in Saudi Arabia with differing levels of natural fluoride in drinking water. *Community Dent Health J* 1990;7:165-71.
23. Farsi JM. Common causes of extraction of teeth in Saudi Arabia. *Saudi Dent J* 1992;4:101-5.