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Research Article

STUDY TO KNOW THE CAUSES OF TEETH EXTRACTION **IN MULTAN**

Dr Muhammad Kamran¹, Dr Ayesha Afzal², Dr Ghazala Arshad³ ^{1,2,3} Nishtar Institute of Dentistry, Multan

Abstract:

Objective: The aim of this study was to determine the causes of permanent tooth extraction. Study Design: An observational descriptive study. Place and Duration: This study was conducted in Nishtar Institute of Dentistry, Multan for six months duration

from January 2019 to June 2019.

Methods: A questionnaire was distributed to 180 dentists and dental clinic to record patient information, number of extracted teeth, and reason for extraction. The collected data were analysed using statistical package (SPSS) for Social Sciences software and Chi-square test was used to compare between different variables.

Results: Dental caries and its sequelae were the main causes of extraction in all age groups (from 10 to 60). The highest percentages of caries and sequelae were in the age group (30-39) and the lowest rate was in the age groups (10-19) and above sixty years. The number of extractions in women was higher in all groups than in men except for patients over 60 years of age. The first molars were the most extracted in both arches.

Conclusion: Advanced caries were the main cause of extraction in all age groups, while periodontal diseases followed by prosthetic reasons were the most common causes in patients older than 40 years.

Keywords: tooth extraction; advanced bruises; periodontal disease.

Corresponding author: Dr.Muhammad Kamran,

Nishtar Institute of Dentistry, Multan



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INTRODUCTION:

The aesthetics, speech and chewing are effected by tooth loss has a serious impact on people's quality of life¹⁻². It is very important to collect data on tooth loss in different countries of the world, to assess the condition of the tooth and to measure the appropriateness of dental care in the community³⁻⁴. Various studies have been conducted to determine the causes of tooth extraction in the world and it has been reported that tooth decay is the most common cause⁵. Studies in Germany, Canada and Jordan have reported that periodontal disease is the most common cause of extraction, while studies in Italy and Singapore show almost the same rate of caries and periodontal disease⁶.

In Pakistan, a limited number of epidemiological studies have been conducted to investigate the causes of tooth extraction⁷. There are no similar studies in Pakistan. Therefore, this study aimed to determine the causes of permanent tooth extraction according to age and sex.

MATERIALS AND METHODS:

This was a descriptive observation study conducted in Nishtar Institute of Dentistry, Multan for six months duration from January 2019 to June 2019. Informed consent was not required because the patient data was completely anonymous and there was no intervention. A questionnaire was distributed to 180 dentists and dental clinic to record patient information, number of extracted teeth, and reason for extraction. Dentists were asked to record the age, sex, nationality, type of tooth, and reasons for the patient's emergence. If more than one extraction was performed on the same patient, the dentist recorded the number of teeth and the reason for each tooth withdrawal

Dentists chose the reason for the following list;

- 1. Sequelae, including tooth decay, failure in endodontics, tooth fractures in decay or endodontics. 2. Periodontal disease; mobility.
- 3. Caries / periodontal disease combination.
- 4. Trauma
- 5. Orthodontics
- 6. Prosthesis.
- 7. Eruption problems (effects), including
- 8. Other reasons for removal.

The previous list of possible causes has been changed from those used in previous studies. Participation criteria were patients older than 10 years of both sexes. The reasons recorded by dentists were listed crosswise with age, sex and each tooth type in the upper and lower arches. The data were descriptively coded and analysed using the statistical package (SPSS-20, Chicago, IL, USA) for the Social Sciences software, and Chi-square test was used to compare different variables.

RESULTS:

The total number of teeth extracted and percentages in male subjects were 673 (42.3%) and women were 916 (57.6%). The number of teeth extracted in female patients was higher than that of male patients in all age groups (Table 1).

Age	Male	Female	Total	%			
10-19	21	54	75	4.7			
20-29	82	212	294	18.5			
30-39	138	178	316	19.9			
40-49	128	193	321	20.2			
50-59	149	179	328	20.6			
> 60	155	100	255	16.0			
Total	673	916	1589	100			
Notes: χ^2 = 69.294, Degrees of freedom = 5,							

Table 1. Number and percentage of extracted teeth in relation to Patient's age and gender

P< 0.001

Table 2 shows that the main cause of extraction in all age groups (63.4%), representing periodontal diseases followed by caries and its sequelae (residues fracture crowns root and endodontic failure), periodontal extraction was performed. The disease was dominant in the age groups over 40 years (14.6%). Prosthetic causes (9%) showed that the combination of caries and periodontal diseases (5.8%) explained eruption problems (mainly impact) (5.1%) and orthodontic causes (1.3%). Trauma was the least common cause of extraction (0.2%).

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Age groups	10-19	20-29	30-39	40-49	50-59	> 60 Yr.*	Total	%
Reasons								
Root remnants	17	84	151	88	118	98	556	34.9
Caries	36	98	90	92	52	42	410	25.6
Combination**	1	31	21	21	14	5	93	5.8
Failed endodontics	1	11	9	8	5	9	43	2.7
Periodontal diseases	0	6	12	55	98	62	233	14.7
Prosthetic reasons	1	11	8	45	39	39	143	9.0
Orthodontic reasons	13	8	0	0	0	0	21	1.3
Eruption problems	6	41	22	11	1	0	81	5.1
Trauma	0	2	0	1	0	0	3	0.2
Others	0	3	3	0	0	0	6	0.4
Total	75	295	316	321	327	255	1589	100

Table 2. Reasons for extraction in relation to patient's age

*Years; **Combination of caries and periodontal diseases; χ^2 = 5.65; Degrees of freedom =70; P<0.001

Caries and sequelae are the main cause of extraction in both sexes. The differences between men and women (P <0.001). The percentage of caries removal was 39.5% in female patients and 23.9% in male patients. In men, more teeth were extracted due to periodontal diseases (11.4%) than women (3.2%), followed by prosthetic reasons, as in women (6.3%) and men (2.6%).

Table 3a. Distribution of	extracted teeth	in upper arc	h according	to tooth type&	most common
	rea	sons for extr	action		

looth	Central	Lateral	Canine	P1ª	ΡZD	1 ^{≋t} Molar	2 ^{nα} Molar	3 ^{rα} Molar	lotal
Reason									
Caries ^c	20	36	38	79	90	146	80	44	533
Combination	4	9	4	4	1	6	9	5	42
Periodontal	10	12	10	8	12	10	20	6	88
diseases									
Eruption problems	0	0	5	0	0	1	0	20	26
Prosthetic reasons	9	6	13	10	12	8	8	2	68
Orthodontic reasons	0	0	0	10	2	0	0	0	12
Total	43	63	70	111	117	171	117	77	769

^a First premolar; ^b Second premolar; ^c Caries and its sequelae; p< 0.001</p>

Table 3a showed the most commonly removed tooth in the upper arch, the first molar on both sides (22.2%), and caries were the main cause of their extraction. Subsequently, the second molars and second premolar (15%) of the same proportion and the central teeth represented the least extracted teeth in the upper arch (5.5%).

Table 3b. Distribution of extracted teeth in lower arch according to tooth type& most common reasons for the extraction

Tooth	Central	Lateral	Canine	P1ª	P2⁰	1 ^{≋t} Molar	2 ^{no} Molar	3 ^{ro} Molar	Total
Reasons									
Caries ^c	11	21	26	54	68	155	92	49	476
Combination	0	1	2	7	8	13	13	7	51
Periodontal	21	28	17	11	11	21	21	15	145
diseases									
Eruption	1	0	0	0	0	0	0	54	55
problems									
Prosthetic	7	11	13	16	8	13	5	2	75
reasons									
Orthodontic	0	0	0	9	0	0	0	0	9
reasons									
Total	40	61	58	97	95	202	131	127	811

In the lower arch, similarly, the first molars were the most frequently extracted (24.9%) and were mostly extracted for decay. The second molars then (16%) represented the least extracted teeth (4.9%) as shown in Table 3b.

DISCUSSION:

The causes of tooth loss are affected by cultural differences between countries. Eating habits even in different regions in the same country⁹⁻¹⁰. In Pakistan, there are a limited number of epidemiological studies reporting the causes of tooth extraction. The results of this study showed the reasons for the inferences in Pakistan. The process of dental caries and sequelae are the main cause of extraction, representing 63.4%, similar to many other studies from India and other parts of the world¹¹⁻¹². The number of caries removal in women was higher than in men (39.5% versus 23.9%), which was in agreement with Alesia and Khalil and Thomas and Al-Maqdassy¹³. The higher extraction rate in women may be due to the greater emphasis on the management of dental problems compared to men. Our findings were different from Aida et al who reported a higher percentage of extraction in males due to caries, and McCaul et al. (60.6% for males and 48.1% for females). In this study, periodontal diseases are the second cause of extraction; 14.6% according to many studies and unlike other studies in Germany, Canada and Jordan¹⁴. The percentage of tooth loss due to periodontal diseases was higher in males than in females (11.3% vs. 3.2%), consistent with Thomas and Al-Magdassy, who found that periodontitis was higher in male patients than in female patients. (43.1% and 16.8%). Our results showed that caries is the main cause of extraction in all age groups included in the study, and that many studies have findings. Periodontal diseases are described by Reich and Hillerand de Aida e.t al¹⁵. The first molars were the most frequently extracted teeth in both the upper and lower arches; this finding, mainly extracted due to caries, was similar as in many studies. The first molar tooth is the first permanent tooth that emerges in the oral cavity, and this may be the reason for premature exposure to tooth decay and more exposure to the other molars.

CONCLUSION:

The most common causes of tooth extraction in young patients aged <20 years are orthodontic reasons and advanced caries. Impaction, advanced caries and prosthetic causes were the most common causes in middle-aged patients (20-40), while periodontal diseases, advanced caries and subsequent prosthetic causes were the most common in elderly patients over 40 years

Therefore, the implementation of effective educational programs on caries prevention is essential to increase awareness among young populations from primary schools and to reduce the rate of tooth loss due to caries.

REFERENCES:

- Avila-Ortiz, G., Chambrone, L., & Vignoletti, F. (2019). Effect of alveolar ridge preservation interventions following tooth extraction: A systematic review and meta-analysis. *Journal* of clinical periodontology, 46, 195-223.
- Clementini, Marco, Agnese Agostinelli, Walter Castelluzzo, Federica Cugnata, Fabio Vignoletti, and Massimo De Sanctis. "The effect of immediate implant placement on alveolar ridge preservation compared to spontaneous healing after tooth extraction: Radiographic results of a randomized controlled clinical trial." *Journal of clinical periodontology* 46, no. 7 (2019): 776-786.
- Aguilar-Durán, Laura, Rui Figueiredo, Ramón Seminago, Francisco J. Roig, Carlos Llorens, and Eduard Valmaseda-Castellón. "A metagenomic study of patients with alveolar osteitis after tooth extraction. A preliminary case-control study." *Clinical oral investigations* (2019): 1-10.
- 4. Berton, Federico, Fulvia Costantinides, Roberto Rizzo, Anna Franco, Jenny Contarin, Claudio Stacchi, Michele Maglione, Erika Visintini, Andrea Di Lenarda, and Roberto Di Lenarda. "Should we fear direct oral anticoagulants more than vitamin K antagonists in simple single tooth extraction? A prospective comparative study." *Clinical oral investigations* 23, no. 8 (2019): 3183-3192.
- Ohba, Seigo, Yoshinori Sumita, Yuya Nakatani, Sawako Noda, and Izumi Asahina. "Alveolar bone preservation by a hydroxyapatite/collagen composite material after tooth extraction." *Clinical oral investigations* 23, no. 5 (2019): 2413-2419.
- Xu, Yamei, Mengnan Xia, Tao Chen, Yao Yang, Gang Fu, Ping Ji, and Qingqing Wu. "Inferior alveolar nerve transection disturbs innate immune responses and bone healing after tooth extraction." *Annals of the New York Academy of Sciences* (2019).
- Lemes, Carmen Helena Jacques, Wellington Luiz de Oliveira da Rosa, Camila Leal Sonego, Bianca Jacques Lemes, Rafael Ratto Moraes, and Adriana Fernandes da Silva. "Does laser therapy improve the wound healing process after tooth extraction? A systematic review." *Wound Repair and Regeneration* 27, no. 1 (2019): 102-113.
- 8. Llanos, Alexandre Hugo, Vítor Marques Sapata, Ronald E. Jung, Christoph H.

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Hämmerle, Daniel S. Thoma, João Batista César Neto, Claudio Mendes Pannuti, and Giuseppe Alexandre Romito. "Comparison between two bone substitutes for alveolar ridge preservation after tooth extraction: Cone-beam computed tomography results of a noninferiority randomized controlled trial." *Journal of clinical periodontology* 46, no. 3 (2019): 373-381.

- Corning, Patrick J., and Brian L. Mealey. "Ridge preservation following tooth extraction using mineralized freeze-dried bone allograft compared to mineralized solvent-dehydrated bone allograft: A randomized controlled clinical trial." *Journal of periodontology* 90, no. 2 (2019): 126-133.
- 10. Ulu, Murat, Osman A. Etöz, Ahmet E. Demirbaş, Fatma Gülfeşan Yıldırım Çanakçı, and Hüseyin Akçay. "Effect of warming of local anesthesia on pain and anesthesia duration before wisdom tooth extraction." *Cukurova Medical Journal* 44, no. 3 (2019): 1-1.
- 11. Fukuzawa, Satoshi, Keika Hoshi, Toshihiro Okamoto, and Tomohiro Ando. "Development and Validation of Oral Bleeding Risk Scoring System (OBRS) for Predicting Post-toothextraction Bleeding in Patients Undergoing Treatment with Warfarin: A Single Centre Study." *Tokyo Women's Medical University Journal* (2019): 2018001.
- 12. Stumbras, Arturas, Povilas Kuliesius, Gintaras Januzis, and Gintaras Juodzbalys. "Alveolar Ridge Preservation after Tooth Extraction Using Different Bone Graft Materials and Autologous Platelet Concentrates: a Systematic Review." *Journal of oral & maxillofacial research* 10, no. 1 (2019).
- 13. Mergoni, Giovanni, Paolo Vescovi, Pietro Passerini, Roberta Maestri, Domenico Corradi, Roberto Sala, and Paolo Govoni. "Effects of zoledronic acid and dexamethasone on early phases of socket healing after tooth extraction in rats: A preliminary macroscopic and microscopic quantitative study." *Medicina oral, patologia oral y cirugia bucal* 24, no. 3 (2019): e339.
- 14. de Oliveira Puttini, Igor, Pedro Henrique da Silva Gomes-Ferreira, Danila de Oliveira, Jaqueline Suemi Hassumi, Paulo Zupelari Gonçalves, and Roberta Okamoto. "Teriparatide improves alveolar bone modelling after tooth extraction in orchiectomized rats." Archives of oral biology 102 (2019): 147-154.
- 15. Papadopoulou, Alexandra K., Spyridon N. Papageorgiou, Stavros A. Hatzopoulos, Anastasios Tsirlis, and Athanasios E. Athanasiou. "Alveolar ridge alterations in the

maxillary anterior region after tooth extraction through orthodontic forced eruption for implant site development: a clinical CBCT study." *European journal of orthodontics* 1 (2019): 10.