

To Find Out the Causes of Extraction of Teeth in the Patients Coming to the Department of Oral and Maxillofacial Surgery at Kantipur Dental College Teaching Hospital and Research Center from January 2014 to December 2018

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1. Abstract

Objective: The main objective of this study is to find out the reasons for the extraction of the teeth on patients visiting to the Department of oral and maxillofacial surgery at Kantipur Dental College Teaching Hospital and Research Centre from 2014 January 1st to 2018 December 31st.

Materials and Methods: The patients came to the department of oral and maxillofacial surgery department during the year 2014 January to 2018 December for the extractions were retrospectively analyzed for age, sex and the reasons for the extractions were found out.

Results: 18720 extractions were performed in 18720 patients. Here we selected the patients who went only single tooth extraction, so the extraction number of tooth and patient number are same. An age range of 10 to 110 years of patients were included. In patients, Dental caries (20%) seem to be the most common cause in case of males and wisdom tooth (19%) is the most commonly extracted tooth in case of females seen in our study. RCT failure (0.76%) is the least common cause for extraction in case of males and cystic lesion (0.84%) is the least common cause for extraction in case of females.

Range of 18-110 years with a mean (\pm standard deviation) of 34.8 (13.3) was observed. Most of the patients were in the 21-30 years age group accounting for 35.7% of cases. The difference in proportions of reasons for tooth extraction between the gender was statistically significant ($P = 0.02$; $df = 24$). The difference in the reasons for extraction among the age groups was statistically significant ($P < 0.001$; $df = 132$).

Conclusion: Dental caries and wisdom teeth extraction is the most common cause for the extraction of teeth in the patients coming at the department of oral and maxillofacial surgery in Kantipur dental college teaching hospital and research center. Dental caries is the preventable disease, hence there is need of more awareness programmes for preventing the disease and even simple fillings only can save the teeth in large scale. Periodontal diseases also can be prevented or cured so that we can save the teeth of the patients. Most of the people have low income, so they want to go for extraction instead of saving them.

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3. Introduction

Nepal being the developing country, we find most of the people going dental extraction even the teeth can be saved. Tooth extraction is the most common surgical procedure performed in the oral and maxillofacial surgery department. Extraction seems to be simple procedure but it has significant impact in quality of life in individual's life. Quality of general health and psychological consequences is totally hampered after extraction of tooth [2,3]. Globally, tooth loss has become a global public health concern [3,4]. In spite of being preventable, dental caries has become the most common cause for extractions of teeth [5,6]. Similarly in our study too dental caries is the common cause for extraction of teeth and wisdom teeth being the second cause where as in other studies periodontal cause being the second cause for the extraction of tooth.

Oral hygiene status of the patients, education level, socio-economic status and individual quality of life always determines the extraction of tooth [3,5,7]. Not only has this, in today's world eating pattern of population had much bad impact in oral hygiene which also have great role in extractions [8,9]. Different kinds of oral diseases and etiological factors exhibit inter-and intra-regional variations [10]. Very few studies are found about extraction in our country and this seems to be the first entity to the best of our knowledge (Table 1).

Table1: Distribution of teeth extracted by age and gender

Age groups (years)	Gender				Total
	Male		Female		
	No.	%	No.	%	
10-20	916	12.23	1500	13.35	2416
21-30	950	13.00	1250	11.00	2200
31-40	1167	16.00	1676	15.00	2843
41-50	1064	14.00	2500	22.25	3564
51-60	851	11.36	970	8.63	1821
61-70	1150	15.00	1650	14.69	2800
71-80	550	7.00	782	7.90	1332
81-90	501	7.00	650	5.78	1151
91-100	324	4.32	250	2.22	574
101-110	6	0.06	4	0.02	10
Total	7488	100.00	11232	100.00	18720

3. Materials and Methods

With the permission from Hospital and through consent of patients we collected the records of patients, who had undergone extractions of teeth at the department of oral and maxillofacial surgery in Kantipur Dental College Teaching Hospital and Research Center between January 2014 and December 31, 2018 were retrieved. It is purely Dental college with 100 bedded medical unit. It is located in central part of city where patients come from all over the country.

Patients aged 10 years to 110 years were included who went extraction of only one tooth at that time. Patient's age, gender, year

of presentation, presenting complaint, type of tooth and reason for extraction were documented.

Reasons for extraction of tooth were reclassified into the following categories:

1. Caries
2. Wisdom tooth (pericoronitis)
3. Orthodontic purpose
4. Patient's request
5. Preprosthetic purpose
6. Supernumerary
7. Aesthetic
8. Periodontal disease
9. Cystic lesions
10. Trauma

RCT failure (Table 2, 3 and 4)

Table2: Distribution of extracted teeth by gender

Reasons	Gender				Total
	Male		Female		
	No.	%	No.	%	
Caries	1501	20.00	1764	16.00	3265
Periodontal diseases	325	4.00	705	6.00	1030
Pre-prosthetic	800	11.00	1245	11.00	2045
Wisdom teeth (impacted teeth)	1145	15.3	2095	19.00	3240
Orthodontics	1250	17.00	1795	16.00	3045
Trauma	105	1.4	250	2.00	355
RCT failure	57	0.76	250	2.00	307
Patient request	1050	14.02	1233	11.00	2283
Cystic lesion	120	1.60	95	0.84	215
Aesthetics	455	6.07	750	7.00	1205
Supernumerary	680	9.00	1005	9.36	1685
Total	7488	100.00	11232	100.00	18720

Table3: Distribution of reasons for tooth extraction

Reasons	Number	Percentage (%)
Caries	3265	17.44
Periodontal disease	1030	5.50
Wisdom teeth	3240	17.08
Orthodontics	3045	16.26
Pre-prosthetics	2045	11.00
Trauma	355	2.00
RCT failure	307	2.00
Patient request	2283	12.19
Cystic lesion	215	1.14
Aesthetic	1205	6.43
Supernumerary	1730	9.00
Total	18720	100.00

Table4:Distributionof reasonsfor teethe extractionbyage

Reasons	AgeGroups										Total
	10-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-110	
Caries	405	1347	715	1310	100	525	55	32	10	3	1030
Periodontal	25	3	310	200	75	92	10	0	315	0	2045
Pre-prosthetic	0	0	27	54	2	212	731	825	194	1	2045
Wisdomteeth	915	615	1258	310	100	42	0	0	0	0	3240
Orthodontics	830	210	48	850	225	0	0	0	0	0	3045
Trauma	5	2	45	45	17	141	50	50	0	0	355
RCTfailure	5	10	55	35	3	7	7	5	0	0	307
Patient request	31	3	195	55	564	1225	115	25	60	6	2283
Cystlesion	5	1	5	1	5	35	163	0	0	0	215
Aesthetics	15	2	180	702	10	321	17	3	0	0	1250
Supernumerary	80	7	10	3	720	200	134	395	5	0	1685
Total	2416	2200	2852	3564	1821	2800	1332	1151	574	10	18720

4. Discussion

Tooth extraction is one of the most frequently performed procedures in the department of oral and maxillofacial surgery department [14]. Tooth loss may affect the quality of life and it is an important marker of oral hygiene and it may predict other conditions such as cardiovascular events and poor cognitive function [15]. Moreover, it may be an indication of patients' disposition and access to oral care [3,4].

There was a slight female predominance, which is in agreement with other studies [1,4], but in discordance with the report by Byahatti and Ingafou [16]. The slight female predominance may be due to the better health-seeking behavior of females compared to their male counterparts [17,18]. A comparison of the mean age of the patients displayed no statistically significant difference for sex. Majority of the patients were in the third decade of life in case of males and 4th decade of life in case of females, which contrasts with the report of Chrysanthakopoulos and Vlassi, who reported the fourth decade of life as the modal decade of presentation in a study conducted in Greece [19]. However, it is in agreement with the report of Saheeb and Sede [1]. This may suggest geographical variations in the pattern of presentation among patients having dental extractions.

Comparable to some previous studies, mandibular teeth were more often extracted than maxillary teeth although other studies observed that maxillary teeth were more often extracted [3,20,21,22]. The propensity of food and plaque accumulation to occur more around the mandibular teeth, thus increasing susceptibility to caries formation, may be responsible for this observation [23]. In our study we didn't compare between maxillary and mandibular teeth extraction.

DCS were the reasons for extraction in a little over half of the extractions done. This is in sharp contrast with earlier reports by other Nigerian authors, where caries and its sequelae were the reasons for extraction in an overwhelming majority of extractions done. On the other hand, it is similar to the account of Leso-

lang et al [24] and Byahatti and Ingafou [16], who reported caries and its sequelae as the reasons for extraction in 47.9% and 55.9% of extractions done, respectively. Indeed, caries and its sequelae were the most common reasons for extraction observed in all age groups <60 years of age. The most frequently extracted teeth due to caries and its sequelae were the molars, with the lower left first molar being the most commonly extracted tooth. Treatment preference for carious tooth is often extraction rather than conservation, especially where among patients of low socioeconomic status [25,26].

Orthodontic reason was the second most frequent reason for dental extractions in this study. Although previous studies in Southwestern Nigeria revealed periodontitis as the most frequent reason for extraction caries was the most commonly encountered reason for extraction in this study [27]. Orthodontic was the reason for extraction in 17% of extractions done; this is much lower than the proportions observed by Lesolang et al. but higher than figures reported by Alesia and Khalil [4,24]. The reason for increasing orthodontic extraction may be due to increased number of patients willing for orthodontic treatment. A retrospective study among a suburban Southwestern Nigerian population reported periodontal disease as a reason for extraction in a higher proportion of the patients (24.6%) [28]. This may be a reflection of the changing pattern of dental extraction in Nepal. The increasing consumption of refined food among the population and improved oral hygiene might have led to a reduction in the proportion of extractions due to periodontal disease and a corresponding increase in the proportion of extractions secondary to caries and its sequelae. Periodontal disease was the major reason for extraction among patients in the 7th decade of life and above.

Recurrent pericoronitis was the third most common reason for extractions, accounting for almost as many extractions as periodontal disease. Tooth impaction represented 15% in males and 19% in females for the reasons of extractions among Patients visiting in our department patients which is quite significant [27] Significantly, the proportion of teeth extracted on account of

pericoronitis secondary to third molar impaction is much higher than the values reported from other parts of country [1,3,27]. However, it is still lower than values reported from the western world where prophylactic extraction of impacted third molars is relatively common [29,30].

Trauma was the least common reason for dental extractions; the majority of extractions done due to trauma was mostly among patients in the 3rd to 4th decade of life. Notably, trauma was not recorded as a cause of extraction in patients older than 70 years. This may be due to the relatively sedentary lifestyle and generally less involvement in assault or interpersonal violence of people with increasing age [34]. Most teeth extracted due to trauma were the anterior teeth; this may be because of their location in a relatively less protected region.

Cystic lesion were less causative factor for extractions in this study, which is comparable to other studies [3,27]. However, this is quite low compared to studies from the western world, [35]. Other reasons for extraction observed in this study include failed root canal therapy, prosthetic reasons, and supernumerary teeth, patients request due to economic status and aesthetic cause. Although these accounted for a comparatively small proportion of the cases seen, the percentages observed are comparable to previous studies [4].

5. Conclusion

DCS were the major reasons for tooth mortality in this study, especially among patients in the third and fourth decades of life. This highlights the importance of dental caries in public health. To stem this trend, we recommend urgent inclusion of oral healthcare in the existing primary healthcare system of our region, improved accessibility of oral healthcare facilities by deploying mobile dental facilities, intensification of oral healthcare awareness campaigns, increased recruitment of dental experts, and fluoridation of community water supply. Furthermore, a research designed to explore the reasons for late presentation among dental patients should be instituted. Nepal being the poorest country in the world, people here prefer to go for extraction even that can be safe. Due to low income even teeth that can be restored, patients they don't want to save.

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