



Causes of Permanent Teeth Extraction in Relation to Age: A Study from Qassim Region, KSA

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Abstract

This Cross sectional study was conducted in Qassim University female dental clinics, with the objectives to determine the causes of tooth extraction in relation to age group, as well as the commonest tooth for the extraction, according to the exclusion criteria 181 female subjects were included in the study, the results was, the highest age group found in 30- 39 (34.8%) The major cause for teeth extractions, is Caries (73%) in young age group followed by periodontal diseases (16%), as the patients getting elder, while prosthodontics (10.5%) is the least reason for extractions. The most common tooth for extraction is the left first lower molars (8.3%) due to caries. As a causative agent.

Keywords: Tooth Extraction; Qassim University; Causes of Extraction

Introduction

Tooth extraction is one of the most frightening procedure in a daily dental practice [1,2]. The fear is belonging to the expected pain that may associated with this procedure, in addition to the fact that the procedure would end up with losing of tooth, which can affects the speech, mastication and aesthetics [3,4], the feeling, which could leads to provoke anxiety stimulation [5]. All these psychological and functional factors let tooth extraction to be the least favourable option of treatment in dentistry, so other conservative options should be considered before leaping to the extraction. However, some conditions could justify tooth extraction, and sometimes being the only option of treatment.

The most cause of dental extraction in many studies is the dental caries [3,4,6,7]. Being, the main reason of extraction in young age groups and periodontal disease in the older age group [8,9].

Causes of teeth extraction differs from areas to areas worldwide [4,10] so, study of teeth extraction' etiology in specific area, is

so important as it can aid in reducing the number of extracted teeth by managing the causes of extraction with adequate dental care and preventive oral health programs [11]. Such as patients education, use of floride as well as encouraging the regular dentist's visit.

Causes behind teeth extraction were largely studied both nationally and internationally, there are many Studies that conducted in many countries [4,6,10,12-19] nevertheless, analogous of such studies were done in both governmental and private sectors in many areas in Saudi Arabia [3,20-26], but there is no report from Qassim area, therefor, the aim of this study is to investigate the causes of tooth extractions and its relation to age among the female patients attended Qassim University Dental Clinic., and its results can be taken for planning of oral health preventive program.

Subjects and Methods

A cross-sectional study was conducted in Qassim university, KSA female dental clinic in Qassim Region, after getting ethical approval from the Research Ethical committee of Faculty of Dentistry, Qassim University, with the reference number of # 6059/2020.

The records were retrieved from patient’s files who have attended the clinics from July 2019 to February 2020. The inclusion criteria was all adult female patients attending Qassim dental clinic with age above of 10 years old with indication for extraction of Permenant teeth. while the exclusion criteria was any retained primary teeth and impacted teeth indicated for extraction.

A total 181 subjects were included in this study. subjects were divided into six groups, according to the age, (10-19), (20-29), (30-39), (40-49), (50-59), and (>60 years) respectively. While the causes of extraction were divided into three categories which are caries, periodontal diseases and prosthodontic reasons, orthodontic reasons were not included, because there is no orthodontic treatment services in the clinic.

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 each variables were computed separately.

The Chi-square test was used for comparisons between age groups, tooth that extracted and reason of extractions. A difference with a $p < 0.05$ was considered statistically significant.

Results

A total number of 181 subjects were included in this study all of them were female. Table 1 showed the descriptive statistics with patient’s age ranged from 10 to > 60 years old.

The highest age group and percentage were in group 30 - 39 (34.8%) followed by > 60 (20.4%) years old, while the lowest age and percentage was in the group of 10 - 19 (2.8%) years.

Table 2 showed that dental caries was the most common cause of the tooth extraction of this study (73.5%) followed by periodontal disease (16.0%) and prosthetic reason (10.5%).

While the most common tooth for extraction was #36 (8.3%) and #46 (6.1%) and the least extracted tooth was #12, #43 (0.6%).

Table 3 showed that, caries is the most common reason for teeth extraction among all patients in all age groups epically 30 - 39 (30%) while periodontal problem was the second common reason in > 60 (6.62%) and 40 - 49 (4.41%) age groups. Also, prosthodontics reason cause was considered as a high cause of tooth extraction in > 60 age group (6.0%).

When the data subjected to statistical analysis there were statistically significant difference between age groups and extraction reasons at level of $p < 0.05$.

When the data subjected to statistical analysis there were statistically insignificant difference between age groups and tooth extracted number at level of $p < 0.05$.

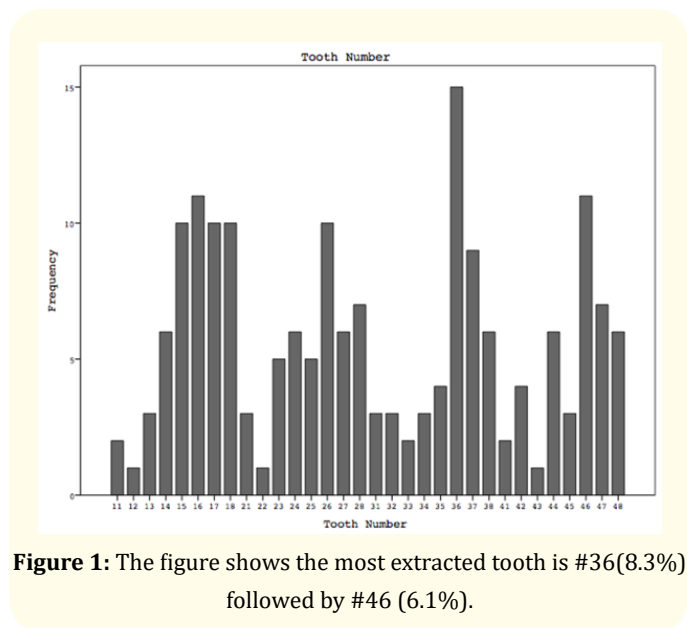


Figure 1: The figure shows the most extracted tooth is #36(8.3%) followed by #46 (6.1%).

Age Group	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10-19	5	2.8	2.8
	20-29	24	13.3	16.0
	30-39	63	34.8	50.8
	40-49	21	11.6	62.4
	50-59	31	17.1	79.6
	>60	37	20.4	100.0
	Total	181	100.0	100.0

Table 1: Shows the most frequent age group had teeth extraction is (30-39) years old group (34.8%).

Extraction Reasons		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Caries	133	73.5	73.5	73.5
	Periodontal Problem	29	16.0	16.0	89.5
	Prosthetic Problem	19	10.5	10.5	100.0
	Total	181	100.0	100.0	

Table 2: Shows the most frequent cause of teeth extraction is caries (73.5).

Age Group		*Extraction Reasons Crosstabulation			
Count		Extraction Reasons			Total
		Caries	Periodontal Problem	Prosthetic Problem	
Age Group	10-19	5	0	0	5
	20-29	21	2	1	24
	30-39	55	4	4	63
	40-49	10	8	3	21
	50-59	28	3	0	31
	>60	14	12	11	37
Total		133	29	19	181

Table 3: Shows the relation between age groups and extraction reasons.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	50.065 ^a	10	.000
Likelihood Ratio	50.289	10	.000
Linear-by-Linear Association	20.372	1	.000
N of Valid Cases	181		

a. 10 cells (55.6%) have expected count less than 5. The minimum expected count is 52.

Table 4: Chi-Square Test shows there is a significant relation between age groups and extraction reasons.

Discussion

This study was conducted in Qassim University, female dental clinics which are a teaching dental clinics provides dental treatment, under supervision of well-trained dental female staffs, for a sizable number of different age groups of female populations in Qassim area, one of the interesting things in this study is that the subjects were just females, whom, gender-wise were known with Their assiduous behavior in taking care of their dentition [27,28] in addition of their lacking to have a bad oral habit like a cigarette

smoking in a conservative community like Qassim, so they can prevent themselves from the disastrous effect of tobacco on the oral hygiene [29], for these couple of factors, dental extraction may be less common than in male population.

Dental extraction should be considered as the last resort of treatment of the affected teeth, but still it may be the only one option in certain cases.

Teeth extractions had a large geographical and cultural differences between various countries as well as region within a country, so this type of such study is so important [27,30].

There are many studies relating to the causes of dental extractions have been found in different countries [4,6,10,12-19], and a few of such studies were done in Saudi Arabia [3,20-26], but to our Knowledge, this recent study is the first study considering teeth extraction causes in Qassim area.

The main goal in dentistry is to maintain full dentition for the patient throughout life. accordingly, this study was designated to find the most age groups going to the extraction in relation with the cause of extraction and the most tooth extracted number.

From our findings ; it's clearly showed that Significant age groups differences were noted as the highest age group found in 30 - 39 (34.8%) followed by > 60 years old (20.4%), in comparison with Jizan study The highest age group and percentage were in group 20 - 29 years old (33.3%) with the caries as causative factor for extraction [20], with the difference between the 2 studies that the former includes just female subject and the latter for both male and female.

It was reported that (various age groups in Saudi Arabia demonstrate a high prevalence and greater severity of caries) [11]. Our recent study is clearly showed that dental caries is the most common cause of extraction (73.5%), In accordance with other studies in the same context as it has been proved that it is also the highest cause of teeth extraction among Jizan subjects (33.3%) [20]. Riyadh 51% [3], south-western region (Al-Baha) city 62% [21]. This can conclude that caries is the major cause of teeth loss in early age.

The second most cause of extraction is periodontal diseases, which is increased as the subjects become elder (16.0%), the highest percentage was found in the age group > 60. This is in agreement with the investigations of the previous studies [4,20,24].

The prosthetic reason of dental extraction is the procedure aiming to prepare a mouth to subsequent receiving of a constructed denture [31], in this study, this reason came with the least percentage (10.5%) with clear relation to certain age group (>60 year old) that match the study that was done in Jordon [27].

Other reasons of the extraction like orthodontic reasons is not included in this study for the reason that the clinic doesn't supply orthodontic treatment and this study will be useful if it is done in orthodontic specialist clinic in Qassim area.

The lower first molars is the first tooth to erupt the reason which increase their incidence of the caries risk [13,14] and this may be behind our finding that, the most common tooth for extraction is #36 (8.3%) followed by #46 (6.1%) and the least extracted tooth are #12, #43 (0.6%), the result was agreed with study done in Madina Munawara [26] and contrary to the study done by Farah Naz [32] in which, left Maxillary 2nd molars was the common extracted tooth, the author explained the reason that the position of the tooth let it less accessible for proper brushing in addition to the difficulty in treating these teeth properly if they become carious.

Conclusion

From this cross sectional study with just female subject, it can be concluded that:

- The major cause for teeth extractions, is Caries followed by periodontal disease while prosthodontics is the least reason for extractions.
- As the patients getting older periodontal disease consider a common cause of extraction.
- The most common tooth for extraction is the first molars due to caries.

Further studies may be needed with larger sample size, and inclusion of both male and female subjects.

Conflict of Interest

The authors declare that there is no conflict of interest.

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