



Prevalence of Partial or Total Tooth Loss in the Monastir Region (Tunisia)

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Abstract

Contrary to popular belief, the loss of teeth with age is not inevitable, even if its prevalence increases with age, it is possible to prevent it. This thesis studies the epidemiology of extracted teeth and the prevalence of partial and total edentulism in the region of Monastir and its prosthetic rehabilitation. It also tries to identify the pathological factors associated with tooth loss and tries to compare these values with those obtained by other similar studies. Discussion of the results allowed providing an additional argument for improving the approach of dentistry in the future.

Keywords: Prevalence of edentulism; Statistics; Avulsion

Introduction

Several decades ago the loss of teeth was considered an age-related process. Every elderly person seemed irretrievably destined to lose all their teeth and as a consequence "fatally condemned to wear partial or complete dentures. The notions of tooth loss and total dentation are not available in Tunisia; this is why we propose to study the prevalence of partial or total loss of teeth in a region of Tunisia (Monastir) [1].

Material and Methods

It is a retrospective study on a sample chosen arbitrary for the years 2014; 2015 ; 2016 and 2017 from two departments of Dental Medicine in Monastir . The first is the Department

of Medicine and Oral Surgery (MCB) of the Monastir Clinic of Medicine and Dental Surgery .The second is the Department of Dental Medicine of the public health institution Fattouma Bourguiba Monastir. Retrieved of the 492 files reviewed, 448 met our inclusion criteria [2-4].

Criteria for inclusion of records

The following information must be in the patient's file:

- Name and surname sex age (from 12 years).
- Dental formula at the first consultation.
- The act performed during each appointment.

Criteria for exclusion of records

Folders with incomplete data

Results

Prevalence of Lost Teeth

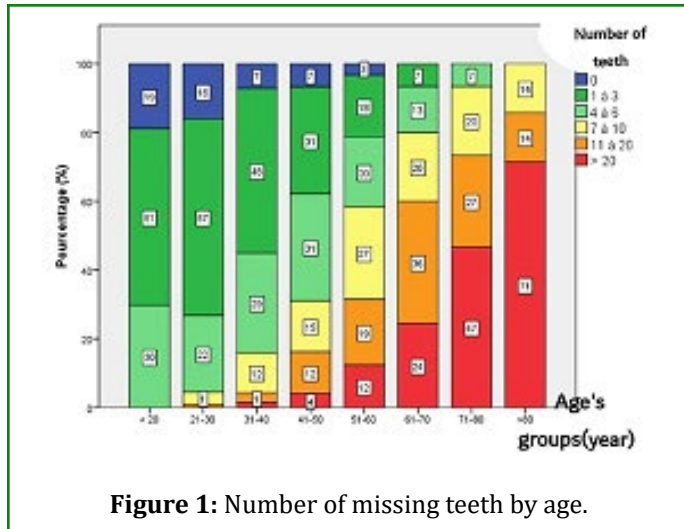


Figure 1: Number of missing teeth by age.

Young patients under the age of 30 who have lost up to three teeth representing more than 70% of the studied sample. And the more we progress in age, the more the number of lost teeth increases.

For the age group between 51 and 60, 58% lost 7 or more teeth; after the age of 60 years more than 80% of patients lost 7 or more teeth [5].

The Most Extracted Teeth

448 patients in our sample lost altogether 3014 teeth, 21% of their teeth. 52% of them lost at least one wisdom tooth, 24% the second molar and 27% for the first molar. 16% have lost one or more of their premolars 9% lost at least one canine and 12% lost one incisor or more.

Causes of Dental Extractions

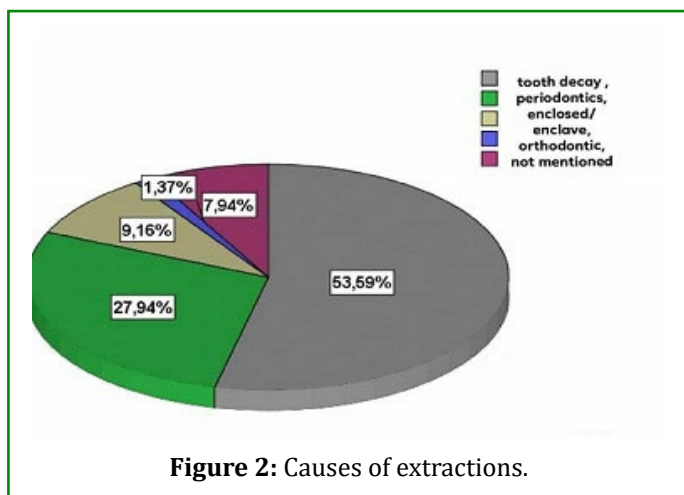


Figure 2: Causes of extractions.

Out of the 655 extracted teeth, 54% were extracted because of carious involvement (34% at the end-of-root stage and 20% less dilapidated caries), 28% for periodontal involvement (13% pericoronitis) and 25% periodontal disease causing high tooth mobility and alveolar lysis up to the apical third). 9% were included or enclosed teeth (all wisdom teeth), 1% was extracted for orthodontic reasons and 8% were extracted without mentioning the cause.

Causes of Dental Extractions by Age

For patients under 30 years of age, the main causes of tooth extraction have been carious lesion, inclusion and pericoronitis. In the age group between 31 and 40 years, carious lesions were responsible for 73% of extractions, a figure that will decrease from one age group to another until reaching 22% for patients older than 80 years old. There is also a gradual increase in periodontal disease as a cause of tooth extraction, from 2% for the between age group 31 and 40 to 78% after the age of 80 [6].

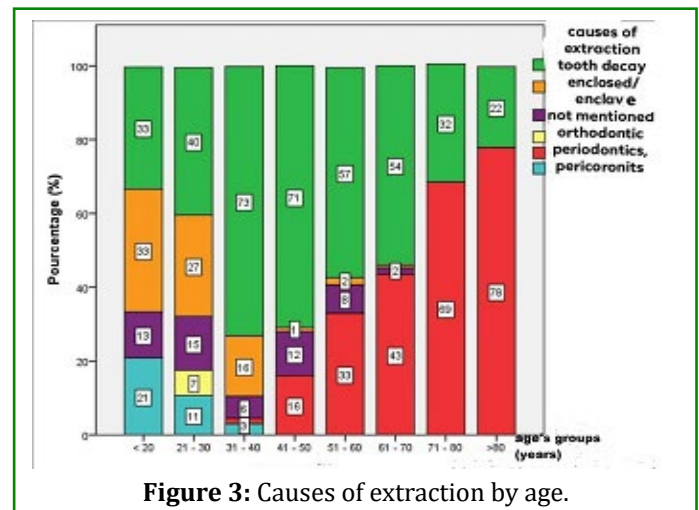


Figure 3: Causes of extraction by age.

Prevalence of Total Edentation

Total edentation	Frequency	Percentage
No total edentation	420	93.8
Total maxillary edentum	8	1.8
Total mandibular edentum	8	1.8
Bimaxillary total edentation	12	2.7
Total	448	100.0

Table 1: Frequency of total edentation.

Of the 448 patients studied, 6.5% had total edentation (uni or bimaxillary) figure 13 page 24 figure 14 page 25.

Analysis and Discussion

Complete Dentition

By analyzing the prevalence of complete dentition (32) teeth

	≤20 years	21-30 years	31-40 years	41-50 years	51-60 years	61-70 years	71-80 years	≥ 80 years
FBM	21.7	18.6	10.3	9.5	5.3	0	0	0
MCB	14.3	13.2	3.3	3.1	0	0	0	0
Total	18.92	16.07	7.25	6.76	3.37	0	0	0

Table 2: Prevalence of patients with complete dentition (32 teeth) as a function of age for each department.

	≤20 years	21-30 years	31-40 years	41-50 years	51-60 years	61-70 years	71-80 years	≥ 80 years
FBM	95.7	84.7	51.3	33.3	15.8	0	0	0
MCB	64.3	75.5	50	12.5	15.6	0	0	0
Total	83.78	80.36	50.72	24.32	15.73	0	0	0

Table 3: Prevalence of patients with complete dentition (28 teeth) as a function of age for each Department.

But after excluding the wisdom teeth from our analysis, the results turn out to be significantly more promising for age groups under 30 years old with more than 80% of subjects who maintained their 28 teeth after end of care.

Number of Teeth in the Mouth:

From Figure 4, which represents the average number of teeth maintained according to age, it can be said that before the age of 50 the number of teeth remaining in the mouth (more than 26 teeth) is acceptable.

But after 50 years there is a loss of 3 to 6 in every 10 years until having an average of 11 teeth for subjects who are more than 80 years old.

Compared with results conducted in Sweden, these figures are very close except that the last country avoided the fall after 50 years and kept an average number of over 20 teeth until the age of 80, a value that Japan has also achieved thanks to a companion named "campaign 8020" launched in 1992 and whose objective was to give the means to the Japanese

the results are very shocking. Only 8.48% of our sample maintained a complete dentition after the end of their dental care, even the age group (<20 years) and (21-30 years) did not exceed 20%.

population to reach the age of eighty with twenty healthy teeth in the mouth and therefore a masticatory effectiveness.

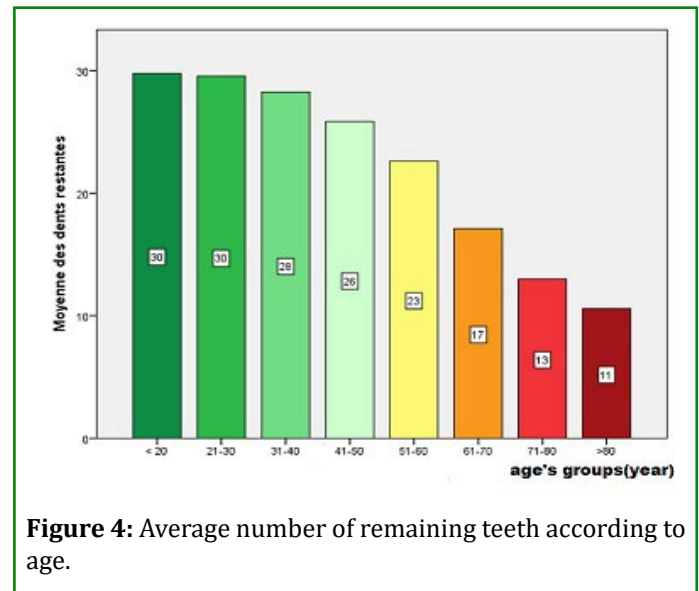


Figure 4: Average number of remaining teeth according to age.

	≤20 years	21-30 years	31-40 years	41-50 years	51-60 years	61-70 years	71-80 years	≥ 80 years
FBM	30±1.6	30±1.7	28±3.7	26±6.2	24±6.6	18±9.3	15±10.7	10±8.1
MCB	29±1.5	29±2.4	28±3.9	25±6.3	19±8.1	16±10	12±10	12±9.2
Total	30±1.6	30±2.1	28±3.8	26±6.3	23±7.5	17±9.5	13±9.8	11±7.6

Table 4: Average remaining teeth by age for each department.

• Comparison with Other Countries

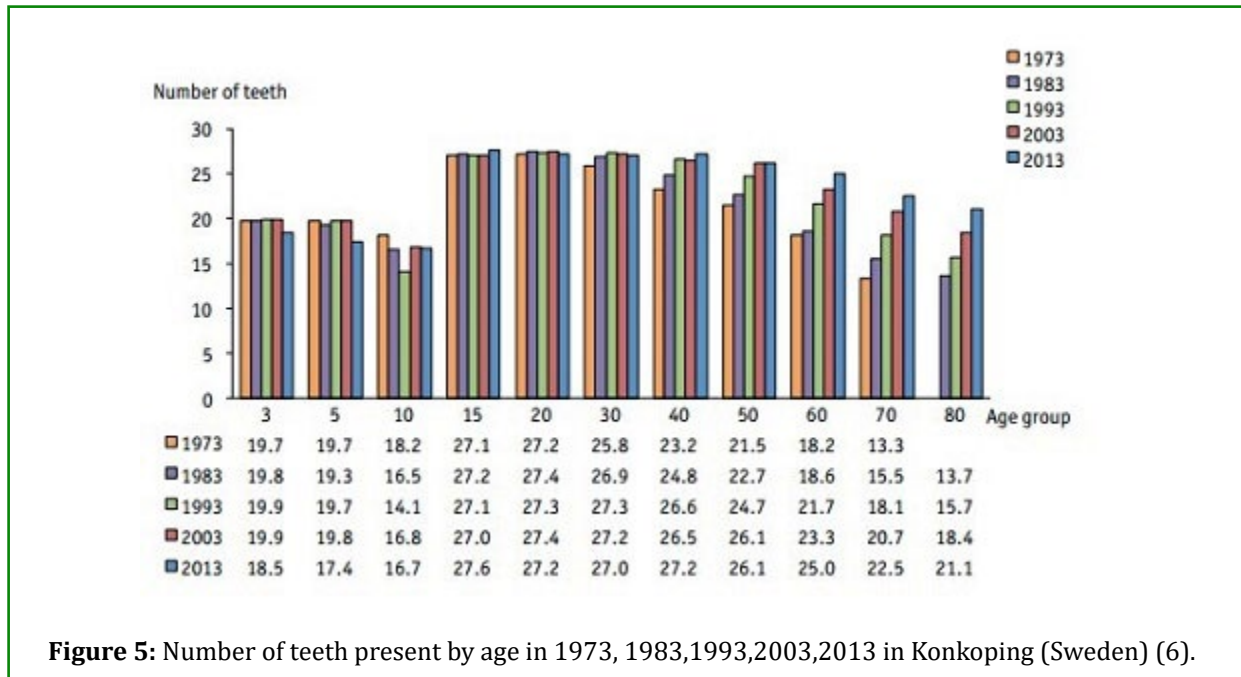


Figure 5: Number of teeth present by age in 1973, 1983,1993,2003,2013 in Konkoping (Sweden) (6).

Compared with the results of Sweden and the United States, Tunisia does not show a big difference in the mean of the teeth maintained for the age categories below 60 years, but for the age group 61-70 years, the Tunisian lost 5 more teeth than Swedish and 8 more teeth for the subjects aged 71 to 80 years.

the teeth (54%) were extracted because of the complications of the carious lesions , the failures of endodontic care attempts and the unavailability of patients for far between and numerous appointments .Periodontal disease was the second leading cause of tooth extraction with a percentage of 28%.

Causes of Dental Extractions

Regarding the causes of tooth extraction, more than half of

• Comparison with Other Countries

%	Tunisia	Canada 1996 (5)	Brazil 2012 (4)	Jabon 2006 (1)	Saudi Arabia 2013 (2)
Tooth decay	53.59	28.9	38.4	32.7	50.2
Periodontic	24.73	35.9	32.4	41.8	8.2 4
Pericoronitis	3.21				
Enclosed/ enclave	9.16	11.2	6.4		17.6
Orthodontic	1.37	7.4	5.7	1.2	18.2
Not mentioned	7.94	7.4	9.9	13.6	0.13
Traumatic		0.8	2.6	10.6	0.13
Prosthetic		3.6	3.6		4.5
Total	100%	99.5%	100%	100%	99%

Table 5: Comparison of the causes of tooth extraction with other countries.

For tooth decay, Saudi Arabia had a similar figure in 2013 (50.2%), while in Canada and Japan caries was the second leading cause of tooth extraction after periodontitis.

Causes of Dental Extractions by Age

Before age 40, the main cause of extraction was carious lesion with a progressive increase in percentage with age (up to 73% between 31 and 40 years), dental inclusion was

the second cause of extraction followed by pericoronarity. After age 40, there is a progressive decline in the percentage of the carious lesion to reach 22% after the age of 80, and at the same time a gradual increase in periodontal diseases to reach 78% after the age of 80 years.

• Comparison with other countries

%	Tunisie < 20 ans	Canada 1996 13-19 years(5)	Brésil 2012 15-19 years(4)	Jabon 2006 15-24 years (1)
Tooth decay	33	9.7	67.2	32.9
Periodontic	0	0	0	2.34
Pericoronitis	21	15.4		
Enclosed/ enclave	33	36	28.1	
Orthodontic	0	35.4	0	8.14
Not mentioned	13	2.4	4.7	56.62
Traumatic		0.6	0	
Prosthetic		0	0	
Total	100%	99.5%	100%	100%

Table 6: Comparison of causes of tooth extraction with other countries (Young age).

%	Tunisie > 60 years	Canada 1996 > 59 years(5)	Brésil 2012 > 64 years(4)	Jabon 2006 > 64 years (1)
Tooth decay	30	33.1	24.6	29
Periodontic	70	46.5	50.7	54
Pericoronitis	0	0		
Enclosed/ enclave	0	0.2	0	
Orthodontic	0	0.2	7.7	0
Not mentioned	0	8.7	5	17
Traumatic	0	0.6	2.1	
Prosthetic		10.6	9.9	
Total	100%	99.5%	100%	100%

Table 7: Comparison of the causes of tooth extraction with other countries (advanced age).

At a young age (< 20 years), in Tunisia, Canada and Brazil, one-third of dental extractions involved an enclosed or enclosed tooth. For tooth decay, Tunisia had a similar value in Japan 33%. For pericoronarity, Tunisia had a estimation close to that of Canada. But for the order of dental extractions, periodontal diseases first followed by tooth decay [7].

Total Edentation

Out the 448 patients studied, 6.25% had total edentulism (uni or bimaxillary). (40% women and 60% men) These patients can be divided according to age into 3 groups:

• Before the age of 50

Total edentulism is rare or non-existent (only 2.7% of patients between 41 and 50 years old)

• Between 51 and 70 years old

This is the age at which we begin to have total toothlessness in our sample with a percentage less than 15%.

• After 70 years

This is the most affected age group, 1 in 2 patients is toothless total.

Prosthetic Rehabilitation

Only 8% of patients who lost more than 20 teeth had an

adjunctive partial denture in the mouth, and 14% of those who lost between 11 and 20 teeth. Only 21% of patients with total edentulous (uni or bimaxillary) have total dentures in the mouth. But if we take also in consideration patients during prosthetic treatment, we notice that 60% of patients with total edentulousness (uni or bimaxillary) are either wearing a removable prosthesis or are still during the prosthetic treatment, we can say that prosthetic rehabilitation total or large edentation is acceptable but could be better.

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