

Tooth Loss in Adult Urban Population in Ramadi City, Iraq

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Abstract

Objective: this study determines the number and percentage of tooth loss according to age, gender, cause, and types of teeth.

Patients and Methods : 1557 urban adults of 30, 50 and 75 years old from Ramadi city were examined according to the criteria used by WHO (1998). Statistical analysis was done using SSP methods under $P < 0.05$ which considered statistically significant.

Results: Percentage of tooth loss among these age groups was 17.01, 36.16, and 46.83 respectively. Females significantly have higher percentage of tooth loss (51.47) than that of males which was (48.33). 62.17% of the total sample have tooth loss due to dental caries, where as 35.39% was due to periodontal disease and 2.445 was due to other causes including orthodontic treatment and trauma. The higher number of tooth loss due to dental caries was found in the age group of 30 which constitute 57.13 %, while in 49.55% of age group 75 was due to periodontal disease. According to types of teeth, first permanent molar constitute the higher percentage of tooth loss which was 26.81.

Conclusion: this study showed that percentage of tooth loss was high, so improvement of dental health care, attitude and behavior of people was needed in addition to promotion of regular dental visit including early examination and treatment of dental diseases.

Key Words: Tooth loss, Dental caries, periodontal disease, tooth type, adult population

Introduction:

Dental caries and periodontal disease are wide spread and often under-recognized and treated. Both are considered as common conditions that cause the majority of tooth loss (Wayne et al., 2001). A case of tooth loss defined as an individual who had lost one or more teeth (excluding third molar) due to caries. In developing countries with little restorative care, and despite the decline in caries cavitations, dental caries still the predominant cause teeth (excluding third molar) due to caries. In developing countries with little restorative care, and despite the decline in caries cavitations, dental caries still the predominant Cause of tooth loss in addition to the inappropriate treatment in some countries (Kim et al., 1991).

The standered of dental health in many countries depend on the attitude of the people to the dental care, and the original society response to the management of dental caries

and the dental care, and the original society response to the management of dental caries andperiodontal disease was by extraction of the tooth. Regarding the cause, studies showed that severe periodontal disease was significantly cause tooth loss (Baelum et al., 1991), but it had been observed that this disease supersedes dental caries as a cause of tooth loss in only a few studies (Fejerskov, 1995; Mathews et al., 2001). Edentulousness results at a time of life when the the ability to adapt both physiologically and psychologically is diminished (Rabius, 1992).Natural teeth are mechanically more efficient than complete denture and the more natural teeth that present, the better is the mechanical function of the dentition (Oosterhaven et al., 1988). Teeth have another function particularly related to aesthetic and social interaction; missing anterior teeth are one of a number of possible sources of dissatisfaction with aesthetic (Cushing et al.,

1986), so loss of teeth will affect on confident, restrict food choice, enjoyment, daily living activity and appearance (Davis et al., 2001).

Populations with poor oral hygiene could be expected to suffer from severe periodontal disease, tooth loss and gingivitis gave rise to steadily progressing periodontal destruction led to the conclusion that the main cause of tooth loss after the age of 34-40 was periodontal disease (WHO, 1978). This study aimed at the assessment of the prevalence of tooth loss among group of population in ramadi city to the west of Iraq and to determine the percentage according to the cause and type of teeth.

Subjects and Methods:

This study was done to determine the pattern of tooth loss in a random sample of 1557 adults aged 30, 50 and 75 years in Ramadi city. These age groups were chosen according to the goals of WHO (1998). The sample of this study consisted of 830 females and 727

males' adults attending the dental health center at ramadi city was randomly selected. Examination was done using mouth mirrors, tweezers and dental probes under artificial light. Statistical analysis was done using SSP methods under the $P < 0.05$. The goals of WHO was:

- 1- 50% of 30 years old have more than 20 teeth sound unfilled
- 2- 75% of 50 years old have more than 20 teeth
- 3- 33% of adult over 75 years have teeth
- 4- 10% over 75 years have more than 20 teeth

Results:

Table 1, demonstrate the distribution of the sample according to age and gender, it consisted of 41.23%, 34.68% and 24.09% for the age groups of 30, 50 and 75 respectively. It shows that females constitute 53.31% while males constitute 46.96%.

Table (1): The distribution of sample according to age and gender

Age group	Female		Male		Total	
Year	No.	%	No.	%	No.	%
30	354	55.14	288	44.86	642	41.23
50	282	52.22	258	47.78	540	34.68
75	194	51.73	181	48.27	375	24.09
Total	830	53.31	727	46.69	1557	100.00

Table 2, shows the number and percentage of tooth loss in the three age groups, the percentage among those of 75 is 46.83 which was significantly higher than that of other age groups, followed by age group 50 which is 36.16 and that of age group 30 constitute 17.01. Regarding gender, females had more tooth loss in age group (51.47 %) than males

(48.53%), while males in age group 30 had higher percentage of tooth loss (51.12%) than females (48.88), where as the highest percentage of tooth loss was showed among females of age group 75 which constitute about 52.49% . Results also show that the older females were significantly associated with tooth loss.

Table (2): Number and percentage of sample with tooth loss according to age and gender

Age group	Female		Male		Total	
Year	No.	%	No.	%	No.	%
30	1050	48.88	1098	51.12	2148	17.01
50	2346	51.38	2220	48.62	4566	36.16
75	3104	52.49	2810	47.51	5914	46.83
Total	6500	51.47	6128	48.53	12628	100.00

Table 3, explain the cause of tooth loss among these age groups, it shows that 62.17% of the total tooth loss was due to dental caries, followed by 35.39% occur due to periodontal disease and 2.44% due to other causes like orthodontic treatment mainly in age group 30 year). Data of this study shows that in

57.13% of age group 30, the main cause of tooth loss was dental caries, where as in the age group 75, the main cause of tooth loss was due to periodontal disease which constitutes 49.55% and it shows that the percentage increases with increasing age.

Table (3): Number and percentage of sample according to the cause of tooth loss

Age group	Due to caries		Due to periodontal disease		Due to other cause (Orthodontics)	
Year	No.	%	No.	%	No.	%
30	553	57.13	51	09.25	38	5.9
50	313	32.33	227	41.20	0.0	0.0
75	102	10.54	273	49.55	0.0	0.0
Total	968	62.17	551	35.39	38	2.44

F= 15.198, P< 0.05 significant

Table 4, shows the percentage of tooth loss according to types of teeth, it was found that the first molar the first permanent molars constitutes the highest percentage (26.8%) followed by the third permanent molars

(19.2%) and then second permanent molars (17.3). where as the lowest percentage was among the canines (14.1%) followed by the central and lateral incisors which constitutes 6.5% and 6.2% respectively.

Table (4): Number and percentage of tooth loss according to types of teeth

Tooth type	30 year		50 year		75 year		Total	
	No. %		No. %		No. %		No. %	
Central incisor	12	1.5	227	27.5	587	71.1	826	6,5
Lateral incisor	24	3.0	168	21.0	623	76.4	815	6.2
Canine	12	2.3	114	22.0	394	75.8	520	4.1
First premolar	26	2.6	390	38.5	527	52.0	1013	8.0
Second premolar	234	16.0	576	39.2	659	44.3	1469	11.6
First molar	810	24.0	1350	40.0	1219	36.1	337	26.8
Second molar	408	18.7	798	36.5	979	44.8	2185	17.3
Third Molar	552	22.8	942	40.0	927	38.3	2421	19.2
Total	2148	17.0	4565	36.2	5915	46.8	12628	100.0

F=16.206, P<0.05 significant

Discussion:

In the current study, dental caries was responsible for 62.17% of tooth loss, and periodontal disease accounted for 35.39% and 2.44% due to other causes like orthodontic treatment, this was in agreement with Manji et al.(1988), and is more than that found by Trovik et al.(2000) where dental caries accounted for 40% of tooth loss, and 24% due

to periodontal disease. Also, results of this study was found to be more than that found by Mathews et al.(2001) which was 24.8% due to caries, where it is less due to periodontal disease as a cause(61.8%) and less regarding other causes(13.2%). According to age groups, caries was the primary reason in patients of 10-45 years old, while periodontal disease dominated among adults more than 45 years olds. With increasing age, periodontal disease assume greater importance as a cause of tooth loss (Murray, 2001), but dental caries still the predominant cause (Kim et al. 1991; Oliver and Brown 1993). This was true for all teeth types except incisors, for which periodontal disease was observed.

This study demonstrated that more teeth were loss due to caries in women than in men, while the reverse was true for teeth lost due to periodontal disease; this was in agreement with Manji et al. (1988). Data of this study shows that being older or being female was significantly associated with tooth loss. Strategies should be aimed at preventing the decline to the onset of tooth loss to minimize the resultant disability where tooth loss occurs (Fejerscove, 1995).

Dental caries is an alternating process of destruction and repair, so clinician and educated patient must combine their efforts (Beal, 1991), and objective should be directed toward the reduction in the rate of progress of periodontal disease to a level compatible with tooth survival for life (DOH, 1994). As knowledge and skills increased, attention turned to the preservation of teeth and treatment of caries by restoration rather than extraction, so the dental attitude to extraction of teeth needs to change (Murray, 2001).

The population strategy must likely to benefit periodontal health because a reduction overall plaque per year will reduce the level of periodontal disease; this will lead to extraction of fewer teeth (Sheiham, 1991). Dentate adults are more apprehensive about the prospect of edentulousness and to delay it, and slowing the process of tooth loss (Todd and lader, 1991). Caries remains the most important cause of tooth loss through out adult life. There fore, caries prevention and maintenance of restorations of great importance at all ages (McCaul et al. 2001). Although dental caries and periodontal disease are preventable, many persons do not receive regular dental care. The more effective measures for prevention, that used in dental health preventive programs includes; dental heath education and promotion, regular dental visits and early examination, tooth brushing, early treatment of initial caries and gingivitis, scaling of calculus, uses of fluoride tooth paste and anti plaque agents like

chlorhexidine gluconate mouth rinse and others, all lead to reduce the prevalence of tooth loss in such population.

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