Tooth loss in permanent dentition in a rural population, Ninevah Governorate-Iraq.

Layla A.Makani, B.D.S, M.Sc*

Abstract:

This study was designed to investigate the prevalence of tooth loss among Iraqi population living in rural areas, Nineveh Governate.

A random sample of 746 subjects, compromising 280 males and 466 females were chosen from two villages in Nineveh Governate, their age range 5-70 years and it was divided into 6 age groups with an interval of 10 years.

The study shows that the percent of individuals with the tooth loss increase with increasing the age, also their mean of teeth loss increase with the increasing age, also their mean of tooth loss per individuals was increase significantly with the increasing age.

The result indicated that the females reported higher percent than the males, also the mean of tooth loss were higher significantly in females than males, the study revealed that the teeth loss in the upper jaws slightly higher than the lower jaw for the age group 25 years and over, while for younger age group the opposite is true.

The first molars recorded the higher percent of tooth loss among the other teeth. The study indicated that the more than 90% of the total individuals that had loss their teeth need fixed or removable prosthodontics treatment.

Key words:

Tooth loss, rural areas, permanent dentition, type of tooth.

Introduction:

The result of untreated dental caries and periodontal disease is tooth loss [1-4] also there is varieties of reasons for tooth loss as trauma, for orthodontic treatment or prosthetic appliance and others [5-6].

The data relating to tooth loss in a community are reflecting of both the extent of dental disease and adequacy of treatment of established disease.

The total tooth loss not only represent the result of oral disease but

* Lecturer in Pedodontics, Orthodontics and Preventive dentistry Department, College of Dentistry, Al- Mustansiria University.

it is also reflects to other factors as the availability and the type of dental treatment in a community, cost of type of treatment and attitudes of the individuals toward that treatment and to dental health in general[7].

Studies in adults found no differences between the sexes and the rate of tooth loss [8-9]. While other showed that women tend to have more missing teeth and more often edentulous than men [6, 10, 11].

The low socioeconomic group (defined by education, income and occupation) generally have more missing teeth and more likely to be edentulous than high socioeconomic group [12-13]. The purpose of this study was to investigate the prevalence of tooth loss among Iraqi population living in rural areas.

Materials and methods:

A random sample of 746 subjects was chosen from two villages in Ninevah Governate, their age's ranges from 5 to 70 years, Dental examinations was carried out by using plane mouth mirror under natural daylight.

Tooth loss and its distribution were recorded in a special form in addition to the age and sex. The retained roots, badly carious non-restorable teeth that were indicated for extraction were not considered as missing teeth, only the extracted and missing teeth for any reasons were recorded.

The statistical analysis of the data includes the calculation of the mean, standard deviation and percentage, analysis of the data by using t-test to determine significant differences between males and females, analysis of variance followed by Duncan's multiple range tests were used to determine the significant differences among the age groups.

Results:

The sample of 746 subjects, compromising 280 males and 466 females was divided into 6 age group with an interval of 10 years (Table 1).

Table (1): Distribution of the study sample according to age and gender

Age Group	Males	Females	Total
5-14	161	165	326
15-24	53	146	199
25-34	20	64	84
35-44	14	53	67
45-54	17	20	37
55+	15	18	33
Total	280	466	746

Table (2) displays the number of individual with each age group with loss teeth by gender. The results indicated that the percentage of individuals with tooth loss increase with increasing age. The females reported the higher percentage of individuals with loss teeth than males in age group (25-34) year and over, while younger individuals under the age of 25 years the percentage was almost equal in both sexes.

Table (2): Number and percentage of individuals with loss teeth according to gender and age

Age Group	Males		Females		Total	
	No.	%	No.	%	No.	%
5-14	10	6.21	10	6.06	20	6.13
15-24	14	26.41	37	25.30	51	25.62
25-34	8	40.00	34	53.12	42	50.00
35-44	6	42.85	34	64.15	40	59.70
45-54	11	64.7	15	75.00	26	70.27
55+	12	80.00	16	88.88	28	84.84

The number of teeth loss in each group and their mean of teeth loss per total individuals in each age group and the mean per individuals with teeth loss only are illustrated in Table (3). The results indicated that the mean of teeth loss increase with increasing age with statistically significant differences between each age groups.

Table (3): The mean and standard deviation of teeth loss per total individual and per individual with teeth according to the age

Age group	No. of teeth loss	Mean ± SD Per total individual	Mean ± SD per individual have teeth loss only
5-14	29	0.08 ± 0.38 A	1.45 ±1.68 A
15-24	79	0.39 ± 0.71 B	1.54 ±1.73 A
25-34	122	1.45 ± 2.00 C	2.9 ±2.41 B
35-44	227	3.38 ± 4.07 D	5.67 ±4.10 C
45-54	182	4.91 ± 5.61 E	7.00 ±5.32 D
55+	370	11.21 ± 8.57 F	13.21 ±6.94 E

Mean with the different letters is statistically significant (P<.05)

The differences for sexes and in mean of teeth loss per total individuals in each age group are shown in Table (4). The results reported that the females have high mean teeth loss that males with high significant differences between them for age groups (25-34) years and over,while the there was no significant differences between them at age groups (3-14) and (15-24) years.

Table (4): The mean and standard deviation of teeth loss per total individual according to gender and age.

Age Groups	Males	Females
5-14	0.08 ± 0.35	0.09 ± 0.41
15-24	0.37 ± 0.70	0.40 ± 0.71
25-34	1.05 ± 1.83 *	1.57 ± 1.90
35-44	2.42 ± 3.65 *	3.45 ± 4.18
45-54	4.70 ± 5.47 *	5.10 ± 5.70
55+	10.26 ± 7.61 *	12.00 ± 8.68

** Statistical test (T-test), significant (P <.01)*

Table (5) shows the percentage of teeth loss in both jaws and for different type of teeth .The study revealed that the teeth loss in upper jaws is slightly higher than the lower jaws for the total group and for age group (25-34) years and over , while for younger age the opposite is true.

Table (5): Percentage of teeth loss according to both jaw and for different type of teeth.

	5-14	15-24	25-34	35-44	45-54	55 +	Total
7 7		10.12	15.57	17.18	17.58	17.83	16.25
6 6	34.48	22.78	19.67	19.38	20.3	21.62	21.11
54 45		3.79	11.47	11.45	9.89	8.10	9.01
321 123	3.44	3.79	3.27	5.28	7.69	7.29	6.04
Upper Jaw	37.93	40.00	50.00	53.30	55.49	54.86	52.42
7 7	3.44	21.51	16.39	13.65	15.3	15.40	15.26
6 6	58.62	31.60	23.77	23.78	18.13	19.46	22.79
54 45		6.32	9.83	8.37	7.69	7.02	7.53
321 123				0.88	3.29	3.20	1.98
Lower jaw	62.07	60.00	50.00	46.70	44.51	45.14	47.58

The first molars upper and lower recorded the higher percentage of teeth loss among the other teeth for total age group and especially in younger age groups .While the lower anterior teeth reported the lower percentage of teeth loss.

The percent of individuals who had loss teeth and need prosthodontics treatment are shown in Table (6). The result indicated that more than 90% of the total individuals that had loss their teeth need fixed or removable prosthodontics treatment and this percentage rise to more than 96% for younger age group under 25 years.

teeth need prosthodontics treatment (fixed or removable) (90%) and the percentage rise to more than (96%) for younger age group under 25 years, the main reason for no replace the missing teeth may be due to the high cost of treatment or may be due to the unavailability of dental services in rural areas. In addition to that many individuals consider is not important to replace the missing teeth specially when one , two teeth are missing in each arch and not affect the esthetics of the individuals, or may be feel difficulty in wearing prosthesis appliances specially the removable ones

References:

1. Nordstorm G,Bergman B,Tillberg A,Osterlind P: A comparison of Oral health in 70-year old city chorts in Umea northern Sweden in 1981 and 1990, Oral problems-dental and periodontal status .Sweden Dental Journal 1995;19:195-199
2. Marcus S, Drury T, Brown L, Zion G: Tooth retention and tooth loss in the permanent dentition of adults. United States 1988-1991. J Dent Res 1996;75:684
3. Locker K, Ford J, Leak J: Incidence and risk factors for tooth loss in appellation for older Canadian. J Dent Res 1996;75:783
4. Hijdenkari T,Parrinen T,Helenius H :Missing teeth and lost teeth of adults aged 30 years and over in South Western Finland. Comm Dent Health 1996; 13:215-222.
5. Owen HA: Single lower incisor extraction. JCO 1993;27:153-161
6. Aldelaimi TN, Jawad K, shabeeb AH: Loss of permanent teeth and prosthodontics treatment need in Anbar Population. J College of Dentistry 2001;10:32;35
7. Burt BA: Influence for change in the dental health status for populations, a historical prospective. J Pub Hlth Dent 1978;38: 272-288
8. Baerum P, Holst D, Rise J: Dental health in trondelay 1983. Oslo, Directorate of health 1985.
9. Ambjornsen E: Remaining teeth, periodontal condition, oral hygiene and tooth cleaning habits in dentate old age subjects. J Clinical Periodontology 1986; 13:583-589.
10. Ainemo J: Changes in the frequency of edentulous and use of removable Dentures in the adults, population of Finlands 1970-80. Comm Dent Oral Epidermoid 1983;11:122-126
11. Al-Wehab A: Tooth loss in the permanent dentition of adults and elderly in Baghdad city. Jordan Dent J 1998;13(2):23-27
12. Brown RH, Treasure ET: Inequities in Oral health implication for the delivery of care and health promotion. New Zeland Dent J 1992;88:132-138
13. Chen M: Oral health of disadvantaged population in Cohen L, Gift H, eds. Oral health promotion in sociodental sciences an action , Copenhagen , Munksgae 1995
14. Burt BA: Trends in caries prevalences in North America children. Int Dent J 1994;4:403-413
15. Pitts NB, Palmer J: The dental caries of 5,12 and 14 years old children in Great Britain survey coordinate by the British association for the study of Community Dentistry in 1991/92,1992/93 and 1990/91. Comm Dent Hlth 1994;11:42-52
16. Anerud A, Loe H, Boysen H, Smith M: The natural history of periodontal disease in man,

changes in gingival health and oral hygiene before 40 years of age. J Periodontal Res 1979; 14:526-540.

17. Soada Infrin J, Barnes DE: Epidemiology of oral disease differences in national problems. Int Dental J 1979;29:183-190
18. Barmes DEC: Epidemiology of dental diseases. J of Clinical Periodontology 1977; 4:80-93.
19. Peterson PE, RaZenamiheja N: Oral health status of children and adults in Mgdegasco. Int Dent J 1996;46:41-47
20. Rahimal AK: Profile of periodontal condition in selected west Malaysian adults. Singapore Dent J, 1994;19; 4-7
21. Baelum V manji F, Fejeskov V, Wanzala P: Validity of CPITNS , assumption of hierarchical occurrence of periodontal conditions .Comm. Dent Oral Epidemiology 1993;21:347-353
22. Micheelis W, Bauch J: Oral health of representative samples of Germans examined in 1989 and 1992. Comm Dental Oral Epidemiology 1996;24:62-68
23. Brickley MR, Tanner MI, Evans DJ: Prevalence of third molars in dental practice attenders aged over 35 years. Comm Dental Hlth 1996;13:223-227
24. Frandsen A: Changing patterns of attitudes and oral health behavior. Int Dent J. 1985;35:384-390
25. Frencken EF, Turin GJ, Koig KG, Ruiken MH, Elvens HJ: Prevalence of caries, plaque and gingivitis in an urban and rural Tanzania child population. Comm Dental Oral Epidemiology1986;14:161-164
26. Khamrco TY: A comparative study of oral health status among urban and rural school children in Nineveh Governate-Iraq. Al-Rafidine Dental Journal 2001;1:7-15
27. Van Wyk C, Ferrman AG, Staz J: Tooth survival in institionalized elderly cape coloreds from the Cape peninsula of South Africa. Comm Dent Oral Epidemiology 1977;5:185-189