

The incidence of tooth loss and restorations in Al-Shamsiat Village

Nadira A Hatim¹
BDS, MSc (Assist Prof)

Ammar Kh Al-Nori
BDS, MSc (Assist Lect)

Sawsan H Al-Jubori
BSc, MSc (Assist Lect)

Department of Prosthetic Dentistry
College of Dentistry, University of Mosul

ABSTRACT

The aim of this research is to investigate the incidence of tooth loss, distribution of tooth loss in the oral cavity, the incidence of smoking habits and its relation to tooth loss and to evaluate the motivation of patients to replace their missing teeth and their attitude toward the type of replacement, either fixed or removable in rural area (Al-Shamsiat village) in Ninevah Governorate.

A sample of 500 individual aged 15–70 years was selected randomly and examined using special chart prepared for this study.

The results showed that 337 subjects were with partially missing of teeth. Three subjects (3.96%) with complete loss of teeth and the rest (160 subjects, 32%) were complete natural teeth. The study showed that there is no significant relationship between smoking and tooth loss. The motivation of patients was toward the type of prosthesis that are made mostly of removable acrylic type.

A high percentage of population (64.86%) desire to replace their missing teeth in the village, which reflect the need of dental health, and dental treatment in the community.

Key Words: Tooth loss, survey, restoration survey.

الخلاصة

إن الهدف من هذا البحث كان لمعرفة معدل حدوث فقدان الأسنان الدائمة لمرضى قرية الشمسيات في محافظة نينوى ومعدل حدوث عادة التدخين وعلاقتها بفقدان الأسنان وتقدير رغبة المرضى لتعويض الأسنان المفقودة وتوجههم نحو نوعية التعويض الثابت أو المتحرك.

جرت الدراسة على عينة من ٥٠٠ شخص تتراوح أعمارهم بين ١٥-٧٠ سنة؛ تم فحصهم باستخدام استمارة خاصة تم إعدادها لهذه الدراسة.

أظهرت النتائج أن ٣٣٧ شخص لديهم فقدان جزئي للأسنان، ٣ أشخاص (بنسبة ٣.٩٦%) لديهم فقدان كامل للأسنان و ١٦٠ شخص (بنسبة ٣٢%) ليس لديهم أي فقدان للأسنان. كما أظهرت النتائج أن علاقة التدخين مع فقدان الأسنان غير معنوية إحصائياً. رغبة المرضى تجاه نوعية التعويضات التي عُملت هي من نوع المتحرك المصنوع من الأكريل الراتنجي.

كذلك بينت نتائج هذه الدراسة رغبة المرضى العالية (٦٤.٨٦%) لتعويض الأسنان المفقودة في القرية، والتي تعكس الحاجة إلى حملات صحية دورية لأهالي القرية.

INTRODUCTION

The total loss may not only represent the results of oral and dental disease, but it also reflected the availability and the type of treatment and dental health care in the

community because the tooth loss is the end result of untreated dental caries and periodontal disease.⁽¹⁻⁵⁾

Many studies have been done to identify the factors associated with tooth loss,

age of patient, smoking habit, probing attachment loss, dental caries, medical condition of the patient and the availability of health services.⁽⁶⁻⁸⁾

Treating edentulous patient might go far behind than just filling an empty span in the oral cavity, a psychological convenience as well as a psychological fulfillment of the demand must be attached with the patient desire which is of great influential value on the success of the treatment, in order to better identify and meet their dental need.⁽⁹⁾

One of the major issues in restoring missing teeth is the type of appliance and the patient attitude toward it, a partially edentulous patient may accept to use a removable partial denture in spite of preferring to have a fixed bridge.⁽¹⁰⁻¹⁴⁾

The aim of the present research was to investigate the prevalence of tooth loss and distribution of tooth loss in the oral

cavity, the prevalence of smoking habit and its relation with loss of teeth and to evaluate the motivation of patients to replace their missing teeth and their attitude toward the type of replacement, either fixed or removable in Al-Shamsiat village.

MATERIALS AND METHODS

The study was conducted in Al-Shamsiat village of Ninevah Governorate. Five hundred adults aged 15–70 years were randomly selected.

Clinical examination was carried out in the school of the village using dental unit, dental probe and mirror. An information relevant to this study was recorded by using special chart prepared for this study (Figure 1). The results were statistically analyzed by using chi-square test.

Name:	Age:	Sex:
Occupation:		
Systemic Disease:		
Smoking: Yes: No:		
Missing Teeth:		
Teeth Need Conservative Treatment:		
Causes of Extraction:		
Caries:		
Periodontal Disease:		
Trauma:		
Others:		
Previous Prosthesis:		
Removable:	Fixed:	
Acrylic:		
Chrome Cobalt:		
Treatment: In the Village:	Out of the Village:	

Figure (1): Diagnosis and examination chart

RESULTS AND DISCUSSION

There were 500 individuals comprising 219 (43.8%) males and 281 (56.2%) females. The population sample was divided into sex and age groups, as shown in Table (1) and Figure (2).

Table (2) and Figure (3) showed the number and percentage of subjects according to missing teeth, sex and age group. Three hundred thirty seven subjects

(67.4%) were with partially missing teeth, and 3 subjects with completely missing teeth. The rest 160 subjects (32%) were with complete natural teeth. Regarding the number of patients with missing teeth, it appears that a highly significant difference ($p < 0.001$) of 35–44 age group and a significant difference ($p < 0.05$) of 15–24 age group. These findings were comparable with other study.⁽¹⁵⁾

Table (1): Distribution of the subjects by age and sex

Age Group (Years)	Males	Females	Total
15-24	34	48	82
25-34	28	62	90
35-44	25	35	60
45-54	37	57	94
55-64	42	56	98
65-70	53	23	76
Total	219	281	500

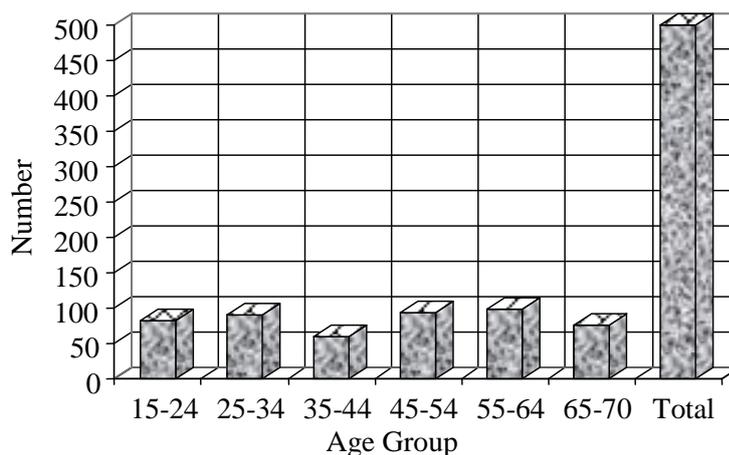


Figure (2): Distribution of subjects according to age group

Table (2): Number and percentage of subjects according to missing teeth and sex of patient

Age	Sex	Missing Without Prosthesis		Missing With Prosthesis		Completely Edentulous		Total	
		No.	%	No.	%	No.	%	No.	%
15-24	M	1	0.2	0	0	0	0	1	0.2
	F	8	1.6	0	0	0	0	8	1.6
	T	9	1.8	0	0	0	0	9	1.8
25-34*	M	12	2.4	1	0.2	0	0	13	2.6
	F	18	3.6	7	1.4	0	0	25	5.0
	T	30	6.0	8	1.6	0	0	38	7.6
35-44**	M	21	4.2	2	0.4	0	0	23	4.6
	F	18	3.6	2	0.4	0	0	20	4.0
	T	39	7.8	4	0.8	0	0	43	8.6
45-54	M	30	6.0	2	0.4	1	0.2	33	6.6
	F	45	9.0	3	0.6	0	0	48	9.6
	T	75	15.0	5	1.0	1	0.2	81	16.2
55-64	M	38	7.6	1	0.2	0	0	39	7.8
	F	51	10.2	2	0.4	1	0.2	54	10.8
	T	89	17.8	3	0.6	1	0.2	93	18.6
65-70	M	50	10.0	3	0.6	1	0.2	54	10.8
	F	21	4.2	1	0.2	0	0	22	4.4
	T	71	14.2	4	0.8	1	0.2	76	15.2

M: Male; F: Female; T: Total.

* Significant difference between males and females ($\chi^2 = 0.73$, d.f = 3, $p \leq 0.05$).

** Highly significant difference between males and females ($\chi^2 = 12.56$, d.f = 3, $p \leq 0.01$).

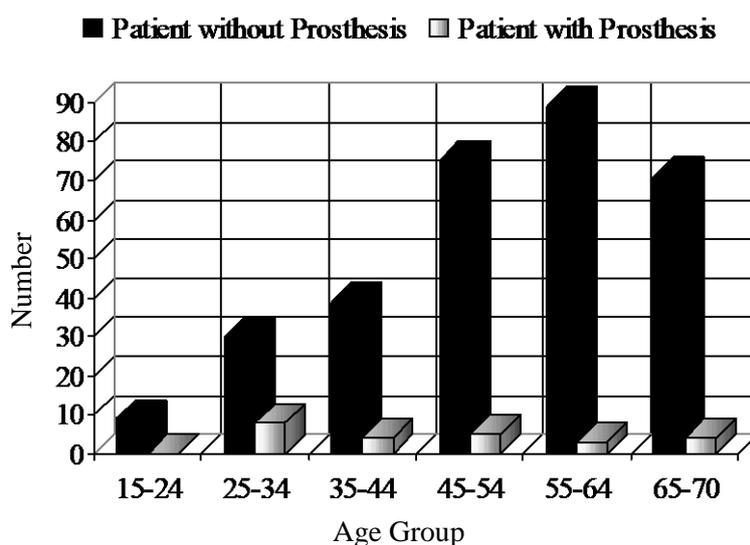


Figure (3): Distribution of partially edentulous subjects with and without prosthesis

Table (3) showed the number of patients with missing teeth in relation to smoking habit. No significant difference was found regarding the number of subjects with missing teeth with smoking habit and others without smoking habit. This finding was in agreement with Axelsson and Lindhe.⁽⁶⁾

of patients toward replacing their missing teeth is very low,⁽¹³⁾ and the people who had dental prosthesis mostly made of acrylic removable prostheses (96%) of total patients with prosthesis and few percentage of fixed prosthesis (4%) which reflect the low education level of people in the village.⁽¹⁶⁻¹⁸⁾

Table (4) showed that the motivation

Table (3): Number of subjects with missing teeth in relation to smoking habit

Age	Sex	Missing Teeth With Smoking		Missing Teeth Without Smoking		Smoking Without Missing		No Smoking Without Missing	
		No.	%	No.	%	No.	%	No.	%
15-24	M	1	0.2	0	0	9	1.8	23	4.6
	F	1	0.2	7	1.4	1	0.2	19	3.8
	T	2	0.4	7	1.4	10	2.0	42	8.4
25-34	M	7	1.4	7	1.4	10	2.0	12	2.4
	F	8	1.6	18	3.6	7	1.4	18	3.6
	T	15	3.0	25	5.0	17	3.4	30	6.0
35-44	M	15	3.0	9	1.8	5	1.0	9	1.8
	F	12	2.4	9	1.8	3	0.6	14	2.8
	T	27	5.4	18	3.6	8	1.6	23	4.6
45-54	M	16	3.2	8	1.6	7	1.4	6	1.2
	F	14	2.8	35	7	2	0.4	8	1.6
	T	30	6.0	43	8.6	9	1.8	14	2.8
55-64	M	20	4.0	20	4	0	0	3	0.6
	F	19	3.8	36	7.2	1	0.2	1	0.2
	T	39	7.8	56	11.2	1	0.2	4	0.8
65-70	M	24	4.8	31	6.2	0	0	1	0.2
	F	10	2.0	13	2.6	0	0	1	0.2
	T	34	6.8	44	8.8	0	0	2	0.4

M: Male; F: Female; T: Total.

No significant difference between males and females ($\chi^2 = 1.717$, d.f = 33, $p > 0.05$).

Table (4): Number of subjects with replacement of missing teeth and the type of replacement

Sex	No. of Partially Edentulous Patients	Acrylic Partial Denture	Cr/Co Partial Dentures	Fixed	Total
Male	161	9	0	0	9
Female	176	14	0	1	15

Cr/Co: Chrome-cobalt

Tables (5) and (6), and Figures (4) and (5) showed the followings:

- a) A high percentage of partially missing teeth in anterior segment of maxillary arch of female and male groups in relation to mandibular arch, and a high percentage of missing teeth in posterior segment of mandibular arch of both female and male groups in relation to maxillary arch.^(15, 17-19)
- b) No significant difference between the incidence of replacing the anterior se-

gment, and posterior segment for both females and males. This finding was in disagreement with Bazirgan and Isaac,⁽¹⁷⁾ and this may be due to that Bazirgan and Isaac's study was done in Baghdad while our investigation was done in Al-Shamsiat village (rural area). So, aesthetic value is much important of concern at urban if compared with rural area.

Table (5): Number of female subjects with missing teeth and replacement according to age distribution

	Upper Anterior		Lower Anterior		Upper Posterior		Lower Posterior	
	Miss.	Rep.	Miss.	Rep.	Miss.	Rep.	Miss.	Rep.
15-24	1	1	0	0	2	1	6	0
25-34	3	2	1	1	8	2	13	2
35-44	2	1	1	0	7	0	10	1
45-54	7	1	2	0	15	0	24	1
55-64	6	0	4	1	17	1	26	1
65-70	3	0	3	1	7	0	9	1
Total	22	5	11	3	56	4	88	6

Miss.: Missing; Rep.: Replacement.

Table (6): Number of male subjects with missing teeth and replacement according to age distribution

	Upper Anterior		Lower Anterior		Upper Posterior		Lower Posterior	
	Miss.	Rep.	Miss.	Rep.	Miss.	Rep.	Miss.	Rep.
15-24	0	0	0	0	0	0	1	0
25-34	3	1	0	0	5	0	6	0
35-44	2	1	0	0	9	1	12	0
45-54	3	0	1	1	12	1	16	0
55-64	5	0	3	1	13	0	18	0

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65-70	8	0	4	0	19	1	22	2
Total	21	2	8	2	58	3	75	2

Miss.: Missing; Rep.: Replacement.

According to Table (7), a high percentage of population (64.86%) desire to replace their missing teeth in the village, which reflect the need for dental health *Al-Rafidain Dent J* Vol. 4, No. 2, 2004

It is recommended that education program of dental health, building a health center in Al-Shamsiat village providing with dental specialty and dental equipment is mandatory.

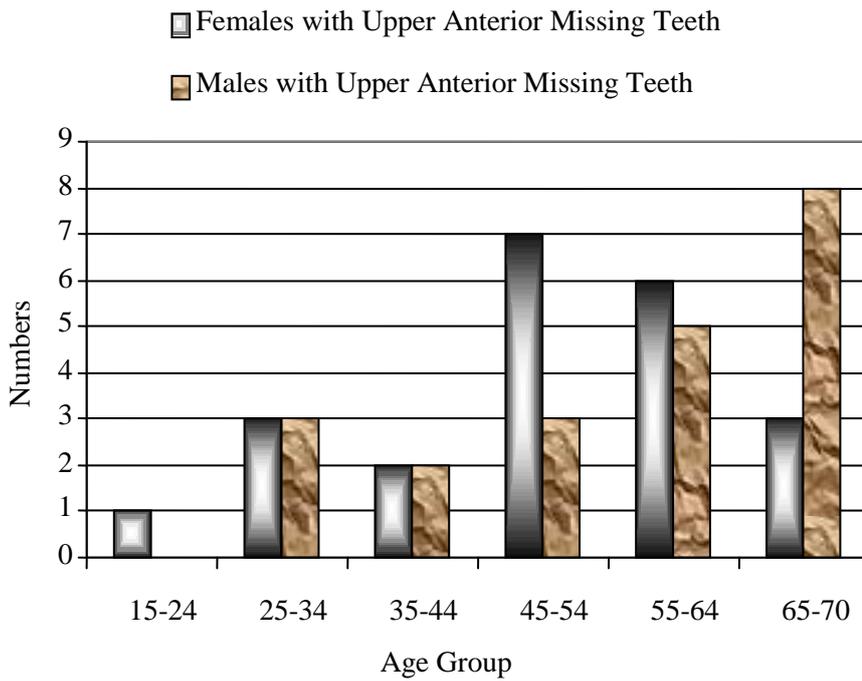


Figure (4): Distribution of upper anterior missing teeth in relation to age and sex

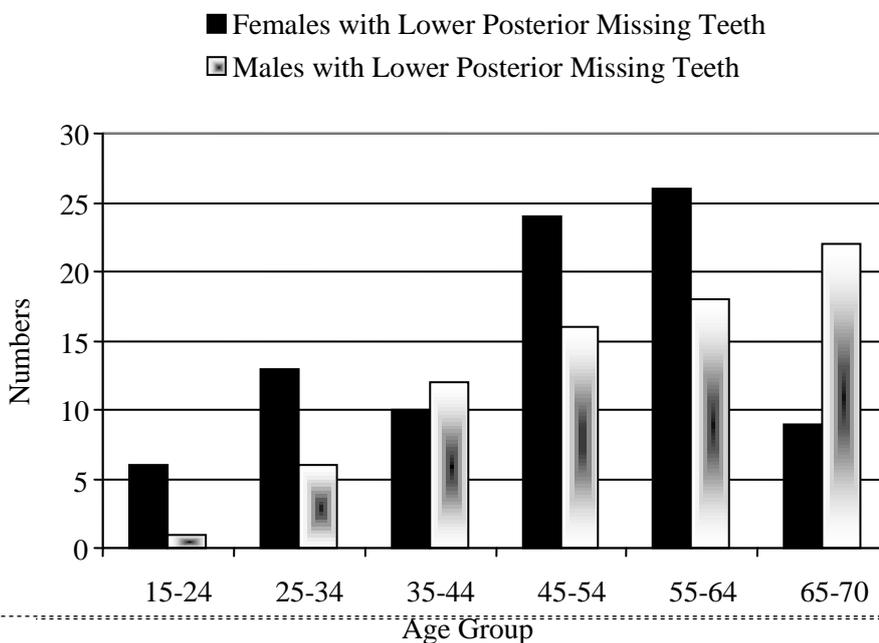


Figure (5): Distribution of lower posterior missing teeth in relation to age and sex

Table (7): Distribution of subjects according to their desire of replacement their missing teeth

Age	Sex	No. of Patients		
		Without Prosthesis	Like to Replace in Village	Like to Replace Out of Village
15-24	M	1	1	0
	F	8	6	0
25-34	M	12	7	0
	F	18	13	0
35-44	M	21	123	0
	F	18	11	0
45-54	M	30	12	0
	F	45	34	0
55-64	M	38	26	0
	F	51	37	0
65-70	M	50	33	0
	F	21	11	0
Total		313	203	0

M: Male; F: Female.

Total percentage of patients desiring replacement = 64.86%.

CONCLUSIONS

The missing of teeth appeared to be significant in 15-24 age group and highly significant of 35-44 age group.

No significant difference in tooth loss between smoking and non-smoking patients, and no difference in the incidence of replacing the anterior and posterior segments for both sexes.

The motivation of patient toward replacing their missing teeth is very low and the people who had dental prosthesis mostly made of acrylic removable prosthesis, although a high percentage of population desire to replace their missing teeth in the village, which reflect the need for dental health and dental treatment in the community.

REFERENCES

(١) خمركو، طارق يوسف. دراسة مقارنة صحة الفم والأسنان بين طلاب المدارس في المدينة والريف في محافظة نينوى، العراق. مجلة الرافدين لطب

الأسنان. ٢٠٠١؛ ١: ٧-١٥.

- 2) William SA, Summers RM, Ahmed IA, Prendergast MG. Caries experience, tooth loss and oral health related behaviors among Bangladeshi women resident in West Yorkshire, UK. *Community Dent Health*. 1996; 13(2): 150-160.
- 3) Aldelaimi TN, Jawad K, Shabeeb AH. Loss of permanent teeth and prosthodontic treatment need in Anbar population. *J Coll Dent*. 2001; 10: 32-35.
- 4) Ong G, Xeo JF, Bholes S. A survey of reason for extraction of permanent tooth in Singapore. *Community Dent Oral Epidemiol*. 1996; 24(2): 124-127.
- 5) Marcus SE, Drury TF, Brown LJ, Zion GR. Tooth retention and tooth loss in the permanent dentition of adults. *J Dent Res*. 1996; 75: 684-695.
- 6) Axelsson P, Lindhe J. Relationship between smoking and dental status in 35, 50, 65 and 75 years old

- individuals. *J Clin Periodontol.* 1998; 25(4): 297-305.
- ٧) الشيخ عبدال، عبد الخالق؛ خمركو، طارق يوسف. حالة صحة الفم والأسنان في قرية شريخان. مجلة كلية طب الأسنان/ جامعة بغداد. ٢٠٠٠؛ ٥: ١٥٠.
- 8) Davies W. An oral health survey in Southern China in 1997. *J Dent Res.* 2001; 80: 1451-1453.
- 9) Intisar KF. The impact of psychoneurotic status of complete denture wearers and some other factors on patient satisfaction. MSc thesis. College of Dentistry. University of Baghdad. 2000.
- 10) Owall BE, Taylor RL. A survey of dentition and removable partial dentures constructed for patients in North America. *J Prosthet Dent.* 1989; 61: 466-470.
- 11) Hussain FM. Survey of removable partial denture wearers in relation to age, sex and Kennedy Classification of edentulous areas. *Iraqi Dent J.* 2001; 27: 243-254.
- 12) Widstorn E. Loss of teeth and the frequency and condition of removable and fixed dentures in Finnish immigrants in Sweden. *Swed Dent J.* 1982; 6: 61-65.
- 13) Hatim NA, Al-Jubori SH, Al-Nori AKh. Prevalence of Kennedy Classification in partially edentulous patients from Al-Shamsiat village in relation to sex and age. *J Coll Dent.* 2002; 11: 147-155.
- 14) Maupome G, MacEntee M. Prosthodontic profile in relation to economic status, social network and social support in an elderly population living in-dependently in Canada. *J Prosthet Dent.* 1998; 80(5): 598-601.
- 15) Al-Weheb A. Tooth loss in the permanent dentition of adult and elderly in Baghdad City. *Jordan Dent J.* 1998; 13: 23-27.
- 16) Lin H, Corbet E, Zhang A. Tooth loss, occluding pairs and prosthetic status of Chinese a built. *J Dent Res.* 2001; 80: 1991-1995.
- 17) Bazirgan H, Isaac G. Partial denture patient. Part I. Incidence of using removable partial denture. *Iraqi Dent J.* 2000; 25: 301-313.
- 18) Vermeulen AH, Keltjens HM, Kayser AF. Ten-year evaluation of removable partial dentures: Survival rates based on treatment, not wearing and replacement. *J Prosthet Dent.* 1996; 76: 267-272.
- 19) 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.
- 20) Makani LA. Tooth loss in permanent dentition in a rural population, Nine-vah Governorate-Iraq. *Al-Muastan-siria Dent J.* 2004; 1: 1-9.

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