

Dental Health Status Among Adult Population in Mosul City

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Key words

Abstract

This study was done to evaluate the Oral health status (dental caries , periodontal disease and treatment needs) in mosul adult individuals the sample include 250 individuals age with ranging between 20-40 years of both

Sexes using sharp dental caries explorers with W.H.O periodontal probs to detect periodontal health by the use of DMFT index of **W.H.O (1997)** and **CPITN by W.H.O (1987)** .The mean DMFT for the total sample was (3.98 ± 0.15) which was increased with increasing age for the different age groups with significant difference in the mean DMFT for total males and females has been found.The results also showed that the total number of health 468 with a mean of 1.12 tooth /person in need of treatment is the most prevalent needed one surface filling and 308 teeth with a mean 1.01 tooth/person needed two or more surfaces filling.

According to the highest CPITN there was significant difference between male and female in calculus at $p \leq 0.05$ and shallow pockets at $p \leq 0.01$.The results also revealed that the mean number of healthy sextants for the total sample was 4.13 while for bleeding and calculus were 0.82 and 0.31 respectively. It means that the treatment need for periodontal disease is more toward oral hygiene procedure and prophylaxis as general. The dental health education program is an essential activity for promoting optimal oral health and preventing oral disease.

Introduction

The periodontal disease is one of the most wide spread disease all over the world and more prevalent among population of the developing countries .Periodontitis is a bacterial infection of all parts of the peridontium including gingiva , periodontal ligament , bone and cementum , which results in irreversible destruction to the tissue of periodontium while dental caries is an infective disease of dental hard tissues which occurs in certain localized sites in the dentition and it is am

ultifactorial in etiology . microorganism (acid),diet(containing sugar) and host (tooth) also in the presence of time factor since dental caries While there are many factors that affect prevalence and severity of dental caries and periodontal disease , the most important factors are age, sex . level place of residence , parental influences education level and socioeconomic status ^(6,7,8).

The purpose of this study was to estimate the prevalence and severity of dental

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caries and periodontal disease in adult population in mosul city which can help in planning preventive dental health program. and periodontal disease are so wide spread that almost every body in the world have one or more than one dental caries^(1,2,3).

Usually periodontal disease begins at childhood as gingivitis which increases in severity in the early "ten" years and it may lead to the development of periodontitis which is associated with pocket formation^(3,4,5).

Material And Methods

The survey was conducted during the period between October 2011 to April 2012 On 250 randomly selected in mosul city of adult people seeking for dental treatment in different departments of dental college (in mosul city) , age ranging between 20-40 years old , divided in to 2 age groups of 10 years intervals :20-30 and 30-40 years respectively .

The clinical examination was carried out by one examiner at the dental college using plane mouth mirrors , sharp dental caries explorer and W.H.O periodontal probes to detect periodontal disease.

The indices used for assessment of dental status were as follows:

1. DMFT by W.H.O methodology for caries status and treatment need (1997)⁽⁷⁾ to obtain and calculate decayed (D) ,missing (M) and filled (F) for each tooth.

2. Community periodontal index of treatment needs (CPITN) by W.H.O. (1987)⁽⁹⁾ for assessment of gingival and periodontal health status and their treatment needs. Each sextant was assigned a code number which recorded the condition of the worst affected site in the sextant .the subject were classified in to treatment need categories according to the highest code number assigned to any of the sextants in particular individual.

The statistical analysis of the data included the means, standard deviation and standard error by using ducan's multiple range test , analysis of variance (ANOVA),F test and Kruskal-wallis test .

RESULTS

The age and gender distribution of 250 subjects comprising 132 males and 118females was divided into 2 age groups with an interval of 10 years for age group (table 1) .

Table(2) showed there was no significant difference in the mean DMFT for total males (3.90) and total females (3.60) , but there was significant difference in the mean DMFT and its components between different age groups and the caries prevalence was increased with age of both sexes .

Table(3) illustrated the number of teeth in the total sample that required treatment , it showed that the treatment need for person for the total sample was in need of one surface filling , followed by two or more surface filling.

Table(4) Showed that the total sample distributed according to the highest CPITN code by age and sex .it has been found that only(88) person are healthy in all age groups and the highest value was in the age group (30-40) years .the most frequently periodontal condition was calculus .it has been found the significant difference between males and females for calculus of $p \leq 0.05$, and deep pocket , at $p \leq 0.01$.

Table (5) Showed the mean number of healthy sextant for all age groups were nearly the same , while bleeding code was decreased with increasing age the mean number for calculus and pocket sextants was increased with age but not for all age groups.

Females tended to have health and had less bleeding and calculus sextants compared to males .

Table(6) demonstrated the distribution of sample in need to oral hygiene education scaling and those with no need for treatment more than half of the sample showed no need to any type of periodontal treatment (score 0) and less than half of sample need oral hygiene instruction.

DISCUSSION

Caries experience was measured by the DMFT index , while is valid , simple and reproducible index for assessment of dental caries .this method ensures that the data collected in a wide range of environment is comparable .it is also provides a standard measurement of oral disease and condition as base for planning and evaluating oral health.(8)

The results of this study have shown that there was increase in caries prevalence with increasing age for both sexes. this increase in caries experience with age may be attributed to differences in dietary habits.

The results of this study have also shown ,that there was no significant difference in the mean DMFT values for total males and total females this was in accordance with studies conducted in developed and developing countries^(10,11).

Concerning treatment needs , it has been shown the majority of the sample required one surface filling followed by 2 or more surface filling. this was in contrast with study conducted on adult population on in Spain^(11,12).

The world wide acceptance of the CPITN which has proved to be simple and effective method for measuring and minority the prevalence and severity of periodontal disease at the community level^(13,14).

The CPITN has been increasingly adopted in dental health services and has proven to be a useful tool for planning and monitoring periodontal treatment and

establishing population periodontal health goals^(14,15).

Results also revealed that there was a significant difference between males and females in calculus at $p \leq 0.05$ and pocket more than 5mm depth at $p \leq 0.01$ level females tended to have higher percentage of healthy gingiva .this may be due to the fact that there were differences in practice of oral hygiene between sexes , girls tend to practice better oral hygiene ⁽¹⁵⁾.

The results showed that calculus was the most frequently observed periodontal condition in the total population while in the age group 30-40 years the periodontal condition most frequently observed was shallow pocket.The findings of this study suggested that periodontal disease prevalence range from low to moderate , when compared with other studies .

The prevalence of gingival bleeding was lower in the first age group and higher in the second age groups ,also the mean number of health sextants for two age groups are nearly the same as the bleeding which will decrease with increasing age .it was in agreement with other studies^(16,17).

The results indicated that treatment need for periodontal disease is more toward oral hygiene procedure followed by scaling.

CONCLUSION

Dental caries and periodontal disease are very important public health problems in the most of developing countries therefore , an efficient dental health care instruction program showed be constructed to achieve an acceptable standard of oral hygiene , so dental health education program for those people is an essential activity for promoting establishing and maintaining optimal oral health and preventing oral diseases .

While the need for treatment was concentrated on instruction in oral hygiene and prophylaxes which can be developed by dental hygiene staff.

❖ **Table(1): Distribution of the sample according to age and sex.**

Age(year)	Male no.	Female no.	Total no.
20-30	68	64	132
30-40	64	54	118

❖ **Table(2): the mean DMFT and its components.**

age	Sex	No.	DMFT		DT		MT		FT	
			mean±SD	SE	mean±SD	SE	mean±SD	SE	mean±SD	SE
20-30	Male	68	1.69±1.92	0.12	1.21±1.42	0.11	0.13±0.20	0.02	0.12±1.02	0.02
	Female	64	1.49±1.92	0.22	1.20±1.63	0.41	0.21±0.41	0.11	0.35±1.12	0.23
	Total	132	3.16±3.48	0.34	2.41±3.05	0.52	0.34±0.61	0.5	0.56±2.14	0.25
30-40	Male	64	2.21±1.21	0.11	3.21±2.81	0.41	0.40±1.23	0.21	0.60±1.69	0.35
	Female	54	2.13±1.20	0.21	4.32±3.61	0.72	0.81±1.21	0.21	0.37±0.52	0.08
	Total	118	4.34±2.41	0.32	7.53±6.42	1.13	1.21±2.54	0.42	0.97±2.21	0.43
Total	Males	132	3.90±4.33	0.32	7.53±6.42	1.13	1.21±2.54	0.41	0.97±2.21	0.30
	Females	118	3.60±3.12	0.43	5.52±4.24	1.10	0.42±1.62	0.32	0.72±1.63	0.31

SD: Standard Deviations

SE: Standard Error

❖ **Table (3)** :Dental Treatment Need .

<i>types of dental treatment</i>	No. of teeth	Treatment need
<i>one surface of filling</i>	467	1.22
<i>two or more surface filling</i>	379	0.91
<i>extraction</i>	18	0.07
<i>pulp care</i>	12	0.01
<i>crown or removal replacement</i>	232	0.43

❖ **Table (4):** number and percentage of sample distributed according to highest CPTIN code by age and sex.

<i>Age(year)</i>	20-30			30-40		
<i>Sex</i>	Male	Female	Total	Male	Female	Total
<i>No.</i>	49	13	62	14	10	24
<i>No.</i>	21	7	28	9	7	16M < .001
<i>%</i>	11.9	14.2	12.4	18.3	19.7	18.9 > 0.05
<i>1No.</i>	13	4	17	3	1	4M < 0.001
<i>%</i>	7.7	1.1	8.0	2.0	1.3	1.4F < 0.01
<i>2No.</i>	13	2	15	3	2	5M < 0.05
<i>%</i>	7.5	3.0	6.6	4.7	5.5	5.0F > 0.05
<i>3No.</i>	3	1	4	2	1	3M < 0.05
<i>%</i>	1.1	0.62	1.0	1.7	1.5	1.7F > 0.05
<i>4No.</i>	0	1	1	1	0	1M < 0.05
<i>%</i>	0.0	1.2	0.2	1.1	0.0	0.6F > 0.05

Scores: 0:healthy1:Bleeding2:aculas3:Shallow Pockets4:Deep Pocke Ns: Not significant

❖ **Table (5):** mean number of sextants affected person for each stage of disease by age & sex .

<i>Age(year)</i>	20-30			30-40		
<i>Sex</i>	M	F	T	M	F	T
<i>No.</i>	49	13	62	14	10	24
<i>0 mean ± SD</i>	1.78	1.62	1.42	1.82	1.63	1.52
<i>1 mean ± SD</i>	0.93	0.82	0.54	0.91	0.22	0.94
	0.92	0.87	0.93	0.98	0.99	0.89
<i>2 mean ± SD</i>	0.21	0.11	0.42	0.12	0.23	0.12
	1.12	0.72	2.31	0.8	1.31	1.21
<i>3 mean ± SD</i>	0.08	0.12	0.09	0.19	0.14	0.23
	0.14	0.31	0.25	1.21	1.04	0.91
<i>4 mean ± SD</i>	0.00	0.20	0.03	0.02	0.00	0.03
	0.00	0.22	0.13	0.12	0.00	0.16

Scores:0:healthy 1:bleeding 2:calculus 3:shallow 4:deep pocket
 M:male F:female T:total
 SD: Standard Deviation

Table (6): periodontal treatment need expressed as percentage of sample distributed according to type of treatment required by age and sex.

Age(year)	20-30			30-40		
	Sex	M	F	T	M	F
No.	49	13	62	14	10	24
mean \pm SD0	21	9	30	8	7	15
	17.3	20.2	62.3	22.3	11.3	18.4
mean \pm SD1	40	14	54	12	9	21
	23.2	29.3	23.2	25.4	18.4	22.6
mean \pm SD2	23	5	28	9	4	13
	16.3	12.2	14.1	23.2	22.4	23.0
mean \pm SD3	0	1	2	1	0	2
	0.0	2.3	0.8	3.2	0.0	2.1

Treatment need :

0:no need 1:oral hygiene instruction 2:scaling

3:oral hygiene instruction

Scaling : M:male F:female T:total SD: Standard Deviation

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