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Prevalence of dental caries, dental health attitude and behaviour in Humaidat village, Ninevah, at the entry of 21st century

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ABSTRACT

Aims: To evaluate the prevalence of dental caries in Humaidat village (which is located at Tigris river about 25 Km to the Northern West from Mosul City), to determine the level of dental health attitude and behaviors and to compare the results with the previous study that carried out in the same village before 10 years. **Materials and Methods:** The size of the sample was 213 individuals, 105 males and 108 females. Their ages were ranged between 10–60 years. Clinical dental examination was carried out using decayed, missing and filled teeth (DMFT) index for the permanent teeth. Questionnaires were used to assess the level of dental health attitude and behaviours among the individuals. **Results:** Most of the individuals have poor awareness about their oral health. They were not used to brush their teeth regularly; they eat large amount of sweets at different times of the day and a large percent of them had no willingness to seek for dental treatment. Clinical dental examination indicated the high caries prevalence among the individuals, which increased by increasing age, and most of the cases were treated by extraction. **Conclusion:** The oral and dental health status in the rural areas is far from good and needs to be reevaluated.

Key Words: Dental caries, DMFT Index, attitude, behaviour.

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INTRODUCTION

The prevalence and severity of dental caries are increasing rapidly in developing countries during the last 25 years. Of 20 countries where 2 surveys had been conducted on 12 years old, 15 had recorded marked increases.[1] The consensus view is that refined sugar, and in particular sucrose, is the principal dietary cause.[2, 3]

In Iraq, many studies were conducted to evaluate the Decayed, Missing and Filled Teeth (DMFT). The results showed that caries prevalence was high and it increased with age.[4–8] These results are attributed to the irreversibility of caries process and accumulative nature of the disease on the one hand, and the paucity of planned preventive programmes in Iraq (including different methods of fluoride application) on the other hand.[6]

The aims of the present study were to evaluate the prevalence of dental caries in Humaidat village, to determine the level of dental health attitude and behaviours among the individuals aged 10–60 years in the village, and to compare the results with the previous study that carried out in the same village before 10 years.

MATERIALS AND METHODS

This study was carried out in Humaidat village which is located at Tigris river about 25 Km to the Northern West from Mosul City. The size of the sample was 213 individuals. These individuals were randomly visited at their houses, and the questionnaires were filled by the researchers and number of fifth class dental students who participated in the fieldwork. The questionnaires included number of questions related to dental health attitude and behaviours.

The same individuals were then examined clinically under natural daylight to

determine the presence of dental caries, dental restorations and missing teeth. Instruments used were plane mouth mirrors, sickle–shaped caries explorer, cotton and disinfectant solution.

The index used in this clinical examination was DMFT Index for permanent teeth.[9]

All permanent teeth were examined and recorded as "decayed" if any tooth surface was affected by dental caries, and recorded as "filled" when any tooth surface was filled previously by a permanent restoration, and recorded as "missing" if they have been extracted.

Analysis of data included calculation of mean DMFT for the individuals and calculation of percentage for the answers of the questionnaires.

RESULTS AND DISCUSSION

Data were collected from 213 individuals who were divided into four groups according to their ages (Table 1). The young age group was reported higher percentage than the older ages; males were less in number than females. This is due to the fact that the older ages especially males were busy in their works at the time of the examination.

Table (1): Number and distribution of the individuals

Age Group (Years)	Males	Females	Total
10–19	75	30	105
20–29	15	21	36
30–39	6	21	27
≥ 40	9	36	45
Total	105	108	213

Teeth Brushing Practice

From the questionnaires, the results showed that 46.48% of all age groups were not used to brush their teeth, and from the people who brush their teeth, 65.8% were used to brush their teeth infrequently, while the percentage of once daily brushing was 26.3% and only 7.9% twice daily brushing (Table 2). This indicated the poor awareness among them regarding oral health. The young age group (10–19 years) brush more regularly and more frequently than other age groups because this age group care more about their health and appearance.[10, 11] These results were close to other studies carried out in Kasa Fakhra and Al–Shamsiat villages,[12] Sharkhan village[13] and Hammam Al–Allil village.[14] Also, this result was close to that of a previous study carried out in the same village.[15] When comparing this result with other studies carried out in England, once daily teeth brushing in young ages were 64%,[16] 88%,[17] and 92%.[18]

The individuals were asked about missing teeth and the reason for extracting their teeth. Table (3) showed that 63.38% have no missing teeth, and 36.62% have missing one tooth or more. The percentage of individuals who have missing teeth was increased by increasing age from 14.29% at age group 10–19 years to reach 73.33% at age group ≥ 40 years. This agreed with the results of Makani.[19] Regarding the causes of teeth extraction, 53.85% stated that the cause is dental caries, 35.89% due to pain of unknown cause and 10.26% due to teeth mobility.

Table (2): Percentage of tooth brushing practice

Age Group (Years)	Not Brush	Brush Their Teeth	Infrequently	Once Daily	Twice Daily
10–19	51.43	48.57	52.94	35.3	11.76
20–29	16.67	83.33	70	20	10
30–39	33.33	66.67	83.33	16.67	0.0
≥ 40	66.67	33.33	66.67	33.33	0.0
Total	46.48	53.52	65.8	26.3	7.9

Table (3): Percentage of missing teeth and the causes of extraction

Age Group (Years)	Don't Have Missing Teeth	Have Missing Teeth	Due to Mobility	Due to Dental Caries	Due to Pain
10–19	85.71	14.29	0.0	53.33	46.67
20–29	58.33	41.67	0.0	80	20
30–39	44.44	55.56	0.0	80	20
≥ 40	26.67	73.33	24.24	30.3	45.46
Total	63.38	36.62	10.26	53.85	35.89

The persons were also asked if they need dental prosthesis. Table (4) showed that 24.41% of individuals with missing teeth mentioned that they need to wear a prosthesis, while 75.59% mentioned no need to wear prosthesis. The reason for not wearing a prosthesis, 61.49% said that it is not important to wear a prosthesis, 21.74% believed that it is difficult to adapt to it; while 16.77% said that it is expensive.

Table (5) showed the percentage of the persons who like to eat sweets and the time at which they like to eat it. The persons who do not like sweets form 23.94%, while 76.06% like eating sweets. About 88.89% eat sweets at different times of the day (between meals), and 2.47% stated that they like to eat sweets especially before going to bed; while 8.64% said that they eat sweets only with meals.

Table (4): Percentage of individuals need for dental prosthesis

Age Group (Years)	Need Prosthesis	Don't Need Prosthesis	Due to Cost	Not Important	Difficult to Adapt to It
10–19	31.43	68.57	16.67	59.72	23.61
20–29	19.44	80.56	24.14	65.52	10.34
30–39	22.22	77.78	9.52	66.67	23.81
≥ 40	13.33	86.67	17.95	56.41	25.64
Total	24.41	75.59	16.77	61.49	21.74

Table (5): Percentage of eating sweets

Age Group (Years)	Don't Like Sweets	Like Sweets	With Meals	Between Meals	Before Sleeping
10–19	17.14	82.86	5.75	90.8	3.45
20–29	16.67	83.33	6.67	90	3.33
30–39	22.22	77.78	9.52	85.72	4.76
≥ 40	33.33	66.67	20	66.67	13.33
Total	23.94	76.06	8.64	88.89	2.47

The individuals were asked about their previous dental treatment (Table 6). About 45.07% stated that they did not visit a dentist before, and 54.93% had previous treatment. The majority of them (53.84%) were visited a dentist before one year or more, and only 7.69% have a recent dental treatment.

Regarding the causes of the previous dental treatment (Table 7), 59% of the visits were for tooth extraction, 20.5% due to pain, 15.4% for restoration and only 5.1% for scaling and polishing. No body of them visited a dentist to carry out preventive procedures and construct a dental prosthesis. This indicated that they seek for dental treatment only when they feel pain at the late stage of dental caries. This agreed with other studies.[12–15]

Table (6): Dental attendance

Age Group (Years)	Not Visit	Visited the Dentist	During This Month	During This Year	Before One Year
10–19	74.29	25.71	0.0	66.67	33.33
20–29	8.33	91.67	9.1	54.54	36.36
30–39	11.11	88.89	25	0.00	75
≥ 40	26.67	73.33	0.00	27.27	72.73
Total	45.07	54.93	7.7	38.46	53.84

Table (7): Percentage of reasons of dental attendance

Age Group (Years)	Extraction	Restoration	Scaling and Polishing	Pain	Prosthetic
10–19	55.6	11.1	0.0	33.3	0.0
20–29	54.5	27.3	9.1	9.1	0.0
30–39	75	12.5	0.0	12.5	0.0
≥ 40	55.56	6.67	11.11	26.66	0.0
Total	59	15.4	5.1	20.5	0.0

Clinical Examination

Table (8) showed the mean value for decayed, missing and filled teeth. The mean value for dental caries was high and increased by increasing age, which is due to eating large amount of sweets without sufficient dental care. Only 15.49% of all the individuals were caries free. This percentage is larger than that obtained in other studies.[12–14] Most of the carious teeth were treated by extraction. Therefore, the mean number of missing teeth was increased by increasing age from 0.45 at the age group 10–19 years to reach 4.8 at the age group ≥ 40 years; while the mean value for filled teeth was very low (0.11). From the clinical examination, about 25% of the carious teeth were badly carious and indicated for extraction; while 75% were indicated for restoration of any type.

Table (8): Mean values for DMFT

Age Group (Years)	Decayed	Missing	Filled	DMFT
10–19	1.91	0.45	0.05	2.42
20–29	5.25	1.75	0.16	7.16
30–39	5	2.22	0.11	7.33
≥ 40	3.69	4.8	0.2	8.73
Total	3.26	1.78	0.11	5.16

When comparing this result with those made in the Third World Countries as in Tanzania,[20] the mean DMFT value for young ages was 0.4 and in East Africa[21] was ranged between 0.51–0.67; while in this study, the mean DMFT value for age group 10–19 years recorded 2.42.

Table (9) gave the percentage of DMF according to age group. The larger percentage (62.46%) is related with caries, followed by missing (33.44%) and a small percentage (4.1%) is filling. In comparing this result with that of an old one in the same village,[15] the percentage of decay was 78.8%, missing 20.5% and less filled teeth (0.8%).

The most widely affected teeth by dental caries were posterior teeth especially first and second molars, followed by the premolars in both arches. Most of these cases were simple and could be treated by permanent restoration. However, the individuals have no willingness to seek for dental treatment which result in more teeth

destruction and end with extraction of the affected teeth.

Table (9): Percentage of DMFT according to age group

Age Group (Years)	Decayed	Missing	Filled
10–19	89.29	7.14	3.57
20–29	70	23.33	6.67
30–39	69.23	29.23	1.54
≥ 40	34.94	60.71	4.35
Total	62.46	33.44	4.1

CONCLUSION

From this study, it could be concluded that dental health status in the rural areas needs to be reevaluated in the light of improving knowledge, attitude and, consequently, behaviour of the residents. Dental health education is mandatory in order to bridge the gap between the improvement of oral health in most countries and the uncontrolled status in our country, especially at the entry of the 21st century.

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