

Caries experience and treatment needs of primary dentition in Shrkhan village

Tarik Y KHAMRICO*
Rayia J AL-NAIMI**

ABSTRACT

The aim of this field investigation was to determine the prevalence and treatment needs of dental caries of primary dentition in (466) child aged (4-12) years old in the village of Shrkhan.

Examination of the teeth was performed according to the basic method of the oral health survey of WHO for the year 1997.

Results showed that the mean dmft for (4-6) years old was (2.63) and it was decreasing with increasing age to (1.19) in 10-12 years old.

There was a decline in dental caries with age, this was statistically significant at (5%) level, while no significant differences in dental caries experience was found between males and females.

The prevalence of rampant caries in age group (4-6) years was (11.3%), the females reported a higher prevalence than males (16.6% and 5.4%) respectively.

A high percentage of children were found in need of dental treatment. Majority of them needed one surface restorations, followed by two or more surface restorations, extractions than pulp care.

The findings of this study indicated that this group of children needed a preventive and treatment program.

Key Words: Primary dentition, prevalence, villages.

الخلاصة

إن الهدف من هذه الدراسة كان لمعرفة مدى انتشار التسوس في الأسنان اللبنية والحاجات العلاجية لمجموعة من الأطفال تتراوح اعمارهم بين (٤ - ١٢) سنة في قرية الشريخان . تم فحص الاسنان حسب توصيات منظمة الصحة العالمية لسنة ١٩٩٧ .

اظهرت النتائج بان التسوس (dmft) يقل بازدياد العمر بفرق معنوي واحصائي حيث كان (٢,٦٣) بعمر (٤ - ٦) سنوات. واصبح (١,٨٢) لعمر (٧ - ٩) سنة وهبط إلى (١,١٩) لعمر (١٠ - ١٢) سنة ولم تظهر النتائج وجود فرق معنوي واحصائي بين الذكور والاناث . كان التسوس المتفشي (rampant caries) منتشر بنسبة (١١,٣ %) للمجموعة الأولى (العمر ٤ - ٦ سنة) واظهرت الاناث اصابة اكثر من الذكور (١٦,٦ % و ٥,٤ %) على الترتيب . الحاجات العلاجية للاطفال كانت عالية واكثرهم احتاج الى ترميم الاسنان باستعمال حشوات لسطح واحد تبعها حشوات لسطحين او اكثر ثم قلع الاسنان واخيراً معالجة لب السن . إن الطريق الأمثل لمعالجة حالة التسوس تكون باتباع طرق الوقاية الاولية واستعمال الفلور بالاضافة الى التثقيف الصحي القومي للعامة .

*Tarik Yousif KHAMRICO ; BDS, DDPH(RCS), MSc : Assistant Prof.

**Rayia Jasim AL-NAIMI; BDS, MSc: Assistant Lecturer.

Department of Pedodontics, Orthodontics, & Preventive Dentistry, College of Dentistry, University of Mosul, Mosul, IRAQ.

INTRODUCTION

Recognition of the pattern and the prevalence of dental caries for specific age groups and for each type of dentition (primary and permanent teeth) will be of great help in planning the preventive and treatment program for them.

The information available about dental caries prevalence and treatment need in primary dentition in Iraqi children are scanty, most of these studies were carried out to estimate the prevalence of dental caries for children below (6) years⁽¹⁻⁴⁾, or for school children living in the major cities⁽⁵⁻⁷⁾.

In terms of the pattern of the caries in primary dentition many studies have shown that caries most affects primary molars followed by maxillary incisors⁽⁸⁻¹⁰⁾, and that the occlusal surfaces are more often attacked by caries than either approximate or smooth surfaces⁽¹¹⁻¹³⁾.

The aim of the study was to determine the pattern and the prevalence of dental caries and treatment needs of primary dentition for children aged (4-12) years olds in a rural area.

MATERIALS AND METHODS

A random sample of (466) child aged (4 -12) years old of both sexes were examined either in their houses or in the villages primary school under natural day light. Examination of the teeth was performed according to the basic method of the oral health survey of WHO⁽¹⁴⁾. Diagnosis of dental caries was performed using plan mouth mirrors and sickle shaped explorers, recording of dental caries was performed using dmft index. Rampant caries was diagnosed and recorded if the child had a minimum of (5) dmft value of which there was at least (2) anterior teeth with smooth surface caries⁽¹⁵⁾.

The statistical analysis of data included the following:

- 1-Mean and standard deviation for dmft.
- 2-Calculating the frequencies.
- 3-Analysis of variance followed by Duncan's Multiple Range Test was used to determine the significant differences among the age groups. The differences were considered significant when the probability was less than 5% level ($p < 0.05$).

RESULTS

The distribution of the sample by age and sex is shown in table (1).

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

Age	Male	Female	Total
4 - 6	38	42	80
7 - 9	74	50	124
10 - 12	137	125	262
Total	249	217	466

The sample was composed of (466) child (249 males and 217 females) aged (4-12) years. The children were divided into (3) age groups namely (4-6) years, (7-9) years and (10-12) years.

Table (2) demonstrates the mean dmft for the 3 age groups.

Table (2): Mean dmft by age and sex

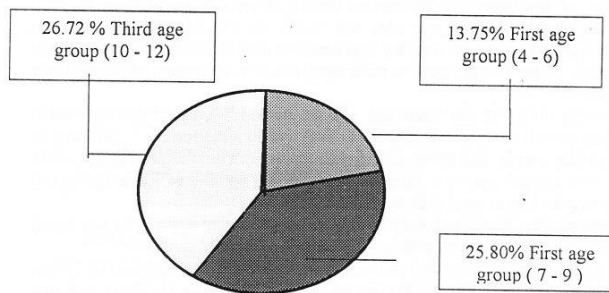
Age	Mean dmft Female	S. D	Mean dmft Male	S. D	Mean dmft for total Male + Female	S.D
4-6	2.91 A	2.51	2.32 A	2.50	2.63 A	2.51
7-9	1.72 B	1.87	1.89 A	2.31	1.82 B	2.14
10-12	1.1 C	1.63	1.29 B	1.92	1.19 C	1.76

Age group F value = 4.12 ($p < 0.05$) Means with the same letter are statistically not different ($p > 0.05$)

Mean dmft for the (4-6) years old age group was (2.63), it became (1.82) in the (7-9) years old age group and (1.19) in the (12-14) years olds. There was statistically significant difference in mean dmft between the (3) age groups, the difference was statistically significant at (5%) level.

No significant sex difference in dental caries experience was found between total males and females. Figure (1) shows us the percentage of caries free children for the (3) age groups respectively.

Figure (1): Percentage of caries free children in the 3 age groups



It was (13.75 %) for (4-6) years olds, it increased to (25.80%) in (7-9) years olds and it became (26.72 %) in (10-12) year olds. Caries free children for all age groups were (24%). The prevalence of rampant caries in age group (4-6) years was (11.3 %), the females reported a higher prevalence than males (16.6 % and 5.4%) respectively.

Table (3) illustrates the treatment needs for the three age groups and for the total sample by frequency and mean per-child. One surface restoration was the highest type required for the total sample and in age groups (4-6) (10-2) years, while in the age group (7-9) years two or more surface restoration was the highest required treatment, a considerable number of children required extractions and pulp care.

Table (3): The treatment needs for the 3 age groups and the total sample

Treatment Need	4 - 6 Year		7 - 9 Year		10 - 12 Year		Total	
	Frequency	Mean Per Child	Frequency	Mean Per Child	Frequency	Mean Per Child	Frequency	Mean Per Child
One Surface Restoration	101	1.27	97	0.78	266	1.01	460	0.99
Two or More Surface Restoration	80	1	106	0.85	123	0.47	308	0.66
Pulp Care	5	0.06	19	0.15	9	0.03	33	0.07
Extraction	9	0.11	25	0.2	28	0.1	61	0.13

For the total sample, the mean treatment per child was (0.99) one surface restoration and (0.66) two or more surface restorations, while the extraction and pulp care were (0.13, 0.07) respectively.

DISCUSSION

Results of this study have shown that mean dmft for 4-6 year olds was (2.63) it decreased to (1.82) in 7-9 year olds and (1.19) for (10-12) year olds, with a statistically significant age difference, this decrease in mean dmft with age is due to the exfoliation of the primary teeth at older ages, this is in agreement with the results of other studies^(5,7,16).

The mean dmft for the three age groups was much less than that reported in other studies carried out in the city center of Baghdad and Mosul^(5,7), this may be attributed to the reason that these studies were carried out in urbanized areas, while this study was carried out in a rural area where the pattern of sugar intake and availability may be less in rural than in urban areas^(17,18).

No statistically significant sex difference in dental caries experience was found between total males and females, this is in agreement with other studies^(3,5,19,20).

The percentage of caries free children for the total sample was 24% (13.75% at (4-6) year olds, (25.80%) for (7-9) years of age and 26.72% for 10-12 years of age. The increase in the percentage of caries free children with age is related to the reduction in the caries experience of the primary dentition as they exfoliate. The results of the caries free children in this study are similar to the study carried out by Mahmood⁽⁵⁾ but they are more than that reported by Khamrco and Salman⁽⁷⁾, this may be attributed to the slight differences in the age classification of the children, in addition to differences in residence areas.

Rampant caries was prevalent in (11.3%) of the total (4-6) years old sample with females showing a higher percentage (16.6%) than males (5.4%). This percentage is similar to that reported in another study⁽²¹⁾ but it is higher than other studies^(2,3,22), this type of caries is recognized as being a particularly severe form of the disease in young children, it carries a significant morbidity and is costly to treat⁽²³⁾.

Children with caries in maxillary anterior teeth are suggested to experience a greater severity of caries in other surfaces as well, and to have a greater risk of developing new lesions^(24,25,26).

The treatment needs for the (3) age groups was high, one surface restoration was the most prevalent treatment need in the first and the third age group, while two or more surface restorations was the highest treatment need among the second age group, this may be due to the cumulative nature of dental caries that may involve other surface such as inter-proximate areas, while in the third age group it became less due to exfoliation and extraction of the primary teeth. The result of one surface restoration as being the most prevalent is in agreement to other studies⁽¹¹⁻¹³⁾ but it is in contrast to the results of Khamrco and Salman⁽⁷⁾ that found that two or more surface restoration was the highest treatment need.

Filled primary teeth were not observed during the clinical examination of the children, the main component of the dmft was the decayed portion and when the teeth become badly broken down and painful the children in the village prefer to extract.

This picture indicates that therapeutic dentistry is much restricted, in addition to poor dental knowledge and a negative attitude towards oral health and not knowing the importance of the primary dentition.

The use of restorative dentistry alone has proved relatively unsuccessful in reducing the prevalence of dental disease^(27,28).

The children are in need of a dental preventive and curative program. The priority should be given to primary preventive programs that include instructing the students to carry out thorough and regular tooth brushing and using fluoride dentifrice, use of systemic or topical fluoride application, as fluoride tablets or fluoride mouth rinse, fissure sealant and health education programs to change their food eating habits (sugar consumption).

This can be achieved in school setting program, were it is possible to reach a large number of school students with well planned preventive measures in addition to regular attendance to dental clinic to carry out some preventive and conservative treatment.

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