

Prevalence of dental caries among schoolchildren aged 6 – 12 years old in Tikrit city

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Abstract

The purpose of this study was to know the prevalence and pattern of dental caries in schoolchildren aged (6-12) years old in Tikrit City, by studying 200 boys and 212 girls selected randomly from 4 public primary schools in the city of Tikrit. The findings showed that 80% of the children suffer from dental caries .Males and Females are equally affected .Health education programs to improve oral hygiene practice should be considered.

Introduction

Dental caries is a major public health problem among schoolchildren (1). It is the main cause of tooth mortality, Dental caries is a highly prevalent chronic sugar – dependent infectious disease, affecting calcified tissue of the tooth and causing demineralization of the inorganic portion with subsequent destruction of the organic substance (2). The carious tooth never returns to its original state, even if it is treated. The oral cavity contains wide variety of bacteria, but only a few specific species of bacteria are believed to cause dental caries: *Streptococcus mutans* and *Lactobacilli* among them (3).

Three factors (the epidemiological triad) play a role in the development of dental caries: the host (genetic predisposition , malnutrition during teeth formation and behavior, such as dietary habits and oral hygiene practices) ;the agent (mainly *Streptococcus mutans*) ; and finally the environment (lack of fluoride in water ,lack of vitamin D and high consumption of refined sugars) (4). These factors interact to produce a variety of dental diseases at varying rates and intensities.

The factors contributing to these variations could be cultural, genetic, geographic and /or environmental in nature (5). Caries can be controlled by different measures but it can never be truly prevented. Dental caries has a worldwide distribution, regardless of sex, age, race and socioeconomic level (6).

Public Dental Health has been defined as " The science and art of preventing and controlling dental disease and promoting dental health through community effort "by the

American Dental Association⁽⁷⁾ .Methods to combat the problem of dental caries include dissemination of dental health messages ,promotion of good personal dental care and regular dental check –ups .Recognizing the importance of these strategies , in 1996 the Jeddah Primary Health Care (PHC) Directorate launched an annual health education campaign in primary schools to increase awareness among children⁽⁸⁾.

In many Arab countries ,dental caries is increasing over time ,especially since the relatively recent economic growth ,which has resulted in an increased consumption of refined sugar , higher than in other developing countries⁽⁹⁾ .Lack of awareness about oral health practices has also contributed to the increase in dental caries (10).In Morocco, Sudan, Jordan and Lebanon ,for example ,the decayed, missing, filled teeth indices (DMFT) were 2.6 , 1.1 ,0.2 and 3.6 respectively in the 1970 s and increased to 4.5 , 2.1 , 1.7 and 5.0 respectively in the 1980 s and 1999^(11,12). Also, N .Ahmed conducted a study, during autumn 2003,to provides the first post-war information of oral health in 12-year-old school children from Iraq. And he found that 62% of 392 schoolchildren had dental caries and the DMF was 1.7 (13).

The aim and objective of this study was to investigate the prevalence of dental caries among male and female of Iraqi schoolchildren aged from 6 to 12 years old living in Tikrit City .

Materials and Methods

From four primary schools in Tikrit City the study group were conducted by

a letter describing the programmer and asking to replay if willing to spare a day for dental check up .Dental examination for 50 children, were carried out per day .(412) schoolchildren aged 6-12 years old were selected for the study. Care was taken to include those children under same socioeconomic strata and those exhibiting similar dietary patterns.

The children were examined in their respective schools in an ordinary chair in broad daylight facing away from sunlight .Examination was carried out using mouth mirror and explorer . The instruments used were sterilized after every single use .The children were asked to fill a questionnaire that included the vital statistics, their knowledge about dental decay, their brushing habits, in – between meal snacking procedure and attitude toward dentists. After questionnaire was answered the children were examined for DMFT and dmft.

Results

A total 832 children (420) girls and (412) boys in the age group of 6-12 years made up the study population (Table 1).It can be observed that out of the total population ,82.0 % of the children were affected by dental caries .Distribution of dental caries according to the gender showed that 171(80.6 %) of the girls and 166(83.%) of the boys were affected with dental caries and there was no statistically significant difference between girls and boys as shown in table (2,3).Significantly higher number of girls (60%) reported good knowledge about dental caries , where as only (40%) of boys knew about it .

Determining the prevalence of dental caries is a necessary step for health care planner to identify resources needed for services in the community and to provide preventive and curative services to combat dental health problems (15).The 80.6% rate of dental caries documented for primary –school children in this study is high and it is an endemic problem of high prevalence among both sexes. Similar studies in Saudi Arabia have noted high rates of dental caries and other related tooth mortality in the range of 44%, 68% and 83% among both primary –school children and the young population in general (11-15) .The main underlying causes suspected dental caries are Poor dental care practices, dietary patterns among schoolchildren and oral

hygiene and a service shortage to these groups. Studies from other developing countries report similarly high rates.

A recent study in Panama calculated a very low rate (6.8%) of 12 –years –old schoolchildren who were caries free(16) .Another study from Brazil showed the prevalence of dental caries in 5-and 6- years old children to be 57 % and 89 % in two areas with early and late histories of fluoridation of water respectively(1).

Also Joshi from India found that 77 % of children aged 6 – 12 years old had dental caries 15). (The rate of dental caries was found to be similar between boys and girls this agrees with Joseph M R .which showed that there was no difference in the appearance of dental caries between boys and girls in Rural Kerala (7) .and agrees with Al -Sharbati (9).while disagrees with the results of Al –Shammari et al from Saudi Arabia found no difference in the appearance of dental caries between boys and girls .

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Table (1): Showing the age and sex distribution of the children surveyed.

Age group and Sex	6 years	7 years	8 years	9 years	10 years	11 years	12 years
Male	60	60	60	60	60	60	52
Female	60	60	60	60	60	60	60

Table (2): Percentage of dental caries among the boys surveyed.

Boys	Number	Percentage %
Dental caries	166	83 %
Non	34	17 %

Table (3): percentage of dental caries among girls surveyed .

Girls	Number	Percentage %
Dental caries	171	80.66%
Non	41	19.33%