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ASSESSMENT OF THE AWARENESS & PREVALENCE OF DENTAL CARIES IN SCHOOL GOING CHILDREN OF SURAT CITY

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ABSTRACT:

Background: This study is planned to assess the awareness & prevalence of dental caries in school going children of Surat city in order to provide the baseline data for planning and modifying the treatment plan in order to reduce the prevalence of dental caries.The study is designed to include 100 school going children, which will be examined by basic examination instruments and scored according to "WHO" criteria. The sample consisted of 18, 54 and 28 children in the 5-7, 8-10 and 11-13 years of age group.

Objective: To assess the awareness & prevalence of dental caries in school going children of Surat city.Dental caries is most prevalent cause of premature loss of tooth, which may sometimes, lead to orthodontic abnormalities and other problems.

Materials and Methods:100 children of both the sexes in the age group of 5 to 13 years of Surat city were examined using 'WHO' criteria.

Among 100 students 52 were boys and 48 were girls and are residing around Thiruvallur.

The sample consisted of 18, 54, and 28 children in the 5 to 7, 8 to 10 and 11 to 13 years age group respectively.The subject was examined on dental chair using mouth mirror and explorer under adequate light, prior to examination a questionnaire was filled by the subject, to rule out the personal data and oral hygiene habits.Dental caries were examined by using deft and DMFT indices respectively.

Results:

The overall prevalence of dental caries was high in the age group of 5 to 13 years children.The highest prevalence was seen in the age group of 8 to 10 years compared to 5 to 7 years and 11 to 13 years age groups. Prevalence of dental caries is almost similar in both the sexes. There is not much variation in relation to gender.

Keywords: Dental caries, sugar, dental awareness, socioeconomic status.

INTRODUCTION:

Oral health is an integral part of general health . oral health can greatly affect the genera health and on contrary, general health also influences oral health. [1] Dental caries is a disease of hard tissues of the Oral cavity characterized by episodes of demineralization and remineralization over a period of time. Dental caries can be completely prevented , if untreated can cause significant morbidity requiring lengthy and high cost treatment. [2] Dental Caries is the most common chronic childhood disease to affect mankind. It is five times more common than asthma and seven times more common than hay fever. [2,3] Dental caries is disease with variety of

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causes. The prevalence and incidence of dental caries in people is exert by diverse factors like age, gender, diet habits, and oral hygiene maintenance habits. [4] Occurrence of caries varies widely among countries and even within small areas of countries. [5] Researches show that , since the 19970s there is profound decreases in dental caries prevalence in developed countries. [6] However, in developing country the dental caries prevalence is significant which ranges from 72 % to 90%. [7] This high prevalence of dental caries mainly results of various factors like lack of adequate dental knowledge, poor oral hygiene techniques, poor dental awareness. [8] The purpose of this study was to determine the prevalence of dental caries in children with age 5-13 years in public and private schools and to evaluate the factors associated with dental caries.

MATERIAL AND METHODS:

It was a cross sectional study carried out in school going children between the ages of 5- 13years in Surat city. One hundred children of both sexes were selected from two schools randomly, 43 children from private school and 57 children from government school.

Evaluation of awareness and prevalence of dental caries was carried out. Thorough oral examination of both the dental arches of each patient was done after informed consent. The exact arrangement for conducting the examination was determined. The subjects were examined on a chair with adequate light using dental explorer and mouth mirror. All examination of the child was done by only one examiner to avoid inter-examiner variability using (WHO) diagnostic criteria. Recording of data was done by a trained person who assisted throughout the study. The same investigator was involved in interviewing and filling the pro forma who perform the oral examination. Then the examination of dental caries done using deft/dmfs and DMFT/DMFS indices respectively.

Prior to the examination for dental caries, a questionnaire was filled by the subject to find out the personal data and oral hygiene habits. The number of decayed, missing and filling teeth (deft/DMFT) were recorded and when the examiner was in doubt, no caries was recorded (d=0).

Children belonging to 5 to 7 years were classified into group I, 8 to 10 year under group II, and 11 to 13 year under group III.

The survey was conducted in 100 school going children among them 52 were boys and 48 were girls residing in Surat city. The sample was selected using a two-stage cluster sampling method. The sample consisted of 18, 54 and 28 children in the 5-7, 8-10, and 11-13 years-age group, respectively. Consent for examining the children was obtained from their respective parents.

Sampling method: Simple random sampling.

Study design: Cross sectional study.

Inclusion criteria:

Study population who satisfied following criteria were included in the study,

(1)Patients age between 5 to 13 years irrespective of sex, race, and socioeconomic status.

(2) Children should be permanent residents of Surat.

(3)Individuals who were willing and cooperative for study.

Exclusion criteria:

Patients are having complete edentulism.

The data which was collected was tabulated by using a computerized spreadsheet (Microsoft Excel 2010; Microsoft, Redmond, Wash, SPSS version 16.0) and it was analyzed by using descriptive statistics.

RESULT:

The survey was conducted for 100 school children of 5 to 13 years age. Out of study population 18 (18%) belong to group I, 54 (54%) belong to group II, 28 (28%) belong to group III.(Table 1)(Graph 1)

Caries prevalence and age

Group I students (18) showed 55.55% of prevalence, Group II students (54) showed 74.07% of prevalence, , Group III students (28) showed 71.42% of prevalence.

Caries prevalence and gender

The total number of children were 100 aged 3 to 15-year-old were included in the study. 52 were boys and

48were girls. The mean DMFT scores for male were 2.15 ±2.09 whereas the mean DMFT scores for female were 2.26 ±2.31. There was no statistically significant difference in the caries prevalence between the two sexes

(p-value= 0.122).(Table 2)(Graph 2)

Caries Prevalence and Dental Awareness

The caries prevalence and severity was more in children who did not have dental awareness

(55.60%) compared to those who had dental awareness (39.0%)

Caries prevalence and different dentition

The DMFT/DMFS was significance in mixed and permanent and mixed dentition, while the value of dmft/dmfs was not significance in primary and mixed dentition. (Table 3)

Caries Prevalence and Sugar consumption

the caries prevalence is 69.13% in students who eat the chocolates and 47.36% in students who do not eat chocolates.

Caries Prevalence and Socioeconomic Status

The caries prevalence was higher (66%) in children from very low income households and lower in higher income households. In the primary and mixed dentitions, the

difference in caries prevalence between on basis of socio economic status was highly significant(p value < 0.001). However, no significant difference in caries prevalence and severity was seen in permanent.(Table 4)

DISCUSSION:

Dental caries is most common infectious disease among the children. Regardless of recent scientific advancement dental caries is major health problem in public. Compare to developed country the dental caries incidence is more in developing country due to change in life style and dietary habits [9]. Dental Caries initiation and progression can be affected by various biological and social factors [10].In 21st decade the most common associated factors are socioeconomic status, oral hygiene habits, eating habits [11]. This is in conjunction with findings in this study. In developed countries there are evidences of reduction in prevalence in dental caries. This is due to availability of fluoride tooth paste , awareness in oral hygiene maintenance and amount of sugar consumption, organization of various dental health programs, advancement in preventive method of dental caries.

The caries prevalence in the present study was 74.07% in the 8-10-year-age group. Rao et al [12]. reported a prevalence of 82.2% in the 7-8-year-age group and a 82.6% in the 9-10-year-age group. The prevalence in the 11-13-year-age group (71.47%) was much higher than that observed by Mishra and Shee [13]. (60.41%) and Chopra et al [14]. (61.88%). Damle and Patel [15]. (79.48%).

In the this study the number of boys is slightly higher than the girls. Dental caries was slightly more prevalent in boys (75%) than in girls (68.75%) which indicates that dental caries show some predilection for sex. Same findings can be seen in Zerfo Wski M et al study [16]. But inverse results were shown by MS Ullah et al but in that study the age of the children was 12 years [17].In this study the index value shows the contrary association between the socioeconomic status and dental caries. The dmft,dmfs,DMFT scores increased with reduction in socioeconomic status . This shows similarity with Shama s et al [18].

International researches comparison shows the strongest correlation between sugar consumption and dental caries development. A study by Sreebny [19]. using data on sugar provided in various countries and data on caries prevalence obtained from WHO for 6-year-old children in 23 nations and 12-year olds in 47 nations, showed that the availability of less than 50 gms sugar per person per day in a country was always associated with deft or DMFT scores of less than three. Gustaffson et al [20]. Winter and Rule and Shetty and Tandon [21] shows similar findings. In this study, a highly significant relation was found between sugar consumption and caries prevalence.

CONCLUSION:

The prevalence of dental caries and its relation with various risk factors was

measured in 100, 5-13 year old school going children of Surat city. It can be concluded from the study that,

- The prevalence of dental caries was high in 5-13 year age group; with highest prevalence among the 8-13 year age group.
- The dental caries prevalence was high in girls compared to boys, but there was no significant difference in the caries prevalence between the two sexes.
- The prevalence of dental caries was lower in children belonging to high socioeconomic status than children belonging to lower socioeconomic status.
- The sugar consumption found to be highly significant with prevalence of dental caries.

Higher prevalence of dental caries is suggestive of a greater need to create awareness among population regarding the prevention of dental caries and maintenance of oral hygiene. It is essential that dental caries should be avoided as far as possible as it ultimately affect our overall health. various oral health related programs and public and school health education programs should be organized.

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TABLES:

Table 1

Group	Age In Years	Total Students	Distribution(%)
I	5-7	18	18%
II	8-10	54	54%
III	11-13	28	28%

Graph 1

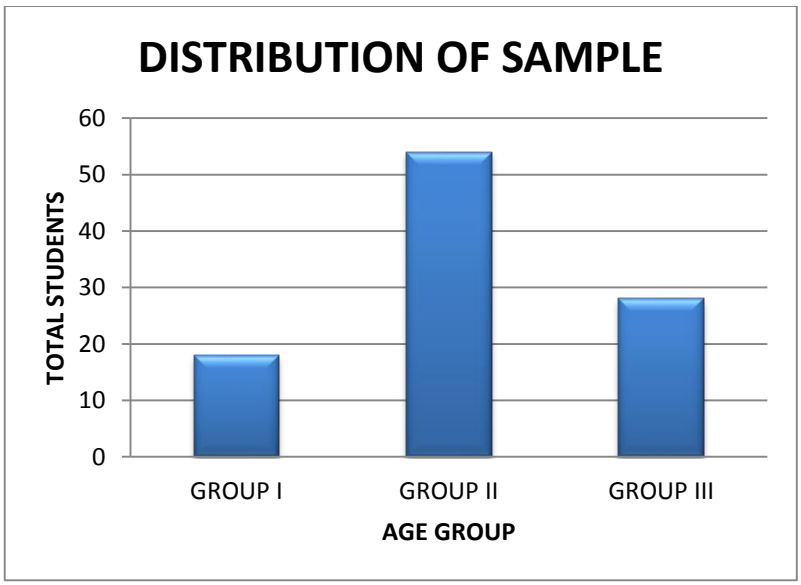

Table 2

		CARIES FREE STUDENTS	STUDENTS WITH CARIES	PREVALANCE OF CARIES
MALE	52	13	39	75.00%
FEMALE	48	15	33	68.75%
TOTAL	100	28	72	72.00%

Graph 2

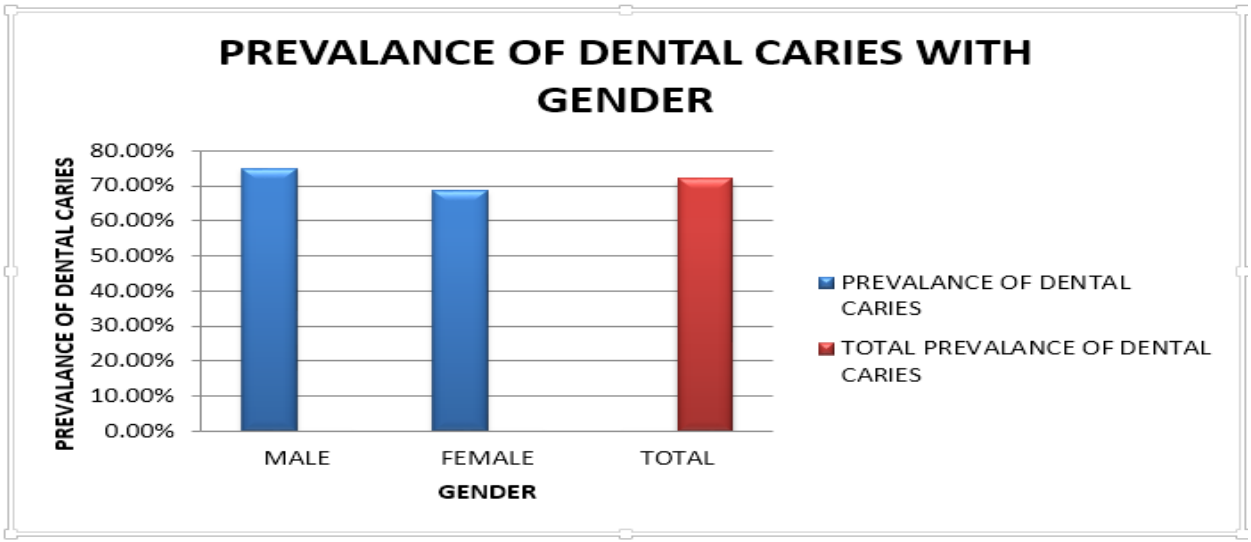

Table 3:

Dentition	Dentition	P Value	Significance
Primary	Mixed	>.05	Not Significant
Mixed	Permanent	<.001	Highly Significant

Table 4:

Socio Economic Status	Primary Dentition	Mixed Dentition		Permanent
	dmfs	Dmfs	DMFS	DMFS
<4K	5.60±11.720	3.92±7.525	0.56±1.503	1.53±2.128
4-09K	3.01±6.719	2.84±4.895	0.58±1.286	1.71±2.333
10-15K	4.30±8.382	1.77±3.833	0.58±1.660	1.23±2.100
>20K	3.77±7.403	2.48±6.126	0.20±1.457	1.56±2.316
P Value	<.001	<.001	>.05	
Significance	Highly Significant	Highly Significant		Not Significant