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Research Article

Study of oral hygienic practices and oral health status among school children in Jabalpur, Madhya Pradesh: a cross-sectional study

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ABSTRACT

Background: Oral hygiene should be educated and practiced at early age as it is one of the determinants of the health state later in one's life. Considering the fact that there is the rise in the number of dental problems in school going children, the present study was undertaken to find out the oral hygienic practices among school going children and assess their oral health status.
Methods: A cross sectional study carried out in 150 school children from two schools near medical area Jabalpur (75 from each school)between the age group of 10-15 years. A p-value of <0.05 was considered statistically significant for applied statistical tests.
Results: The present study showed that only 34 % children had habit of brushing both time morning and at night before going to bed. Only 22% of children used correct brushing technique. Most common malpractice among children was eating chalk 12%. Regarding oral health status of school children dental caries 54.7% followed by dental cavities (52.7%) were most common problems found.
Conclusions: Oral hygienic practices were poor needs educational motivation regarding duration of brushing, appropriate way to brush the teeth, and use of mouthwash.

Keywords: Dental caries, Oral health, Oral hygiene

INTRODUCTION

Oral health is important for appearance, sense of well-being and also for overall health and oral health can affect quality of life directly and has been linked to sleeping problems, as well as behavioural and developmental problems in children.[1,2] Hygienic oral health practices are necessary from a young age to ensure positive long term dental health and hygiene.[3] Oral health may be defined as a standard of health of the oral and related tissues which enables an individual to eat, speak and socialize without active disease, discomfort or embarrassment and which contributes to general wellbeing and the oral health of children is important towards their overall wellbeing.[4,5] Dental carries and periodontal problems are due to poor oral hygiene practices.[1-3]

Oral health is an integral part of general health; therefore, its disregarding will give rise the negative health and social consequences.[6,7] Oral health status is often determined by the amount deposited on the surfaces of teeth and poor oral hygiene introduced as a predisposing factor to periodontal diseases and in contrast, healthy oral behaviours reduce the amount of deposits particularly plaque on the surfaces of teeth.[6-8] With developing country like India, dental hygiene is poor with inadequate and improper brushing of teeth, no washing of mouth after intake of sweets, increased consumption of refined sugar and sweetened foods. Very extensive and

comprehensive National Health Survey conducted in 2004 throughout India has shown dental caries in 51.9% in 5 year-old children, 53.8% in 12 year-old children.[3] Oral hygiene should be educated and practiced at early age as it is one of the determinants of the health state later in one's life. Considering the fact that there is the rise in the number of dental problems in school going children. Hence, the present study was undertaken to find out the oral hygienic practices among school going children and assess their oral health status.

METHODS

A cross-sectional study was conducted to assess the oral health status and hygienic practices among school children of medical area Jabalpur. Institutional ethical clearance was obtained prior to the study. Two schools around medical area were purposely selected. An informed consent for the participation of school children were obtained from the head of the school. Children fulfilling the following criteria: age between 10-15 years, so that they can easily understand and answer the questionnaire were included in study. Subjects with mixed dentition and those with acute infections of the oral cavity were excluded from the study. The purpose of the survey was informed and explained to the participants and those who voluntarily agreed to participate in the survey were asked the questionnaire and also the oral health examination was carried out.

Out of 450 children between age 10-15 yrs in both schools, 150 children fulfilling the above mentioned criteria 75 from each school were picked up by simple random sampling method so our sample size was of 150 and Study was carried in year 2014 in 6 month duration from 1st July to 31st December 2014 and total ten visits five for each school were paid for oral health survey, data collection and compilation.

Information was also collected through interviews with the children. A specially designed proforma on oral hygiene practices including regularity of cleaning the teeth, aids and agents used for this purpose and also frequency of brushing. The second part consisted of clinical examination for dental caries and treatment needs as described by WHO (1997) for oral health surveys.[5] Caries was examined under natural day light using mouth mirrors and CPI probes.

Statistical analysis

All the analysis was done using SPSS 14 version. A p-value of <0.05 was considered statistically significant. Chi-square test was used to compare the proportions between the groups.

RESULTS

54.7% (82 students) were male and 45.3% (68 students) were female. Majority of students in our study were of lower 51.7% followed by lower middle class 32.7% and only 8% were from middle class.

Table 1: Oral hygienic practices among school going children.

Frequency of brushing	Frequency	Percentage
Morning	115	76.6
Morning +evening	34	22.7
After every meal	1	0.7
Technique of brushing		
Only horizontal	117	78.0
Correct (both horizontally and vertically)	33	22.0
Habit of mouth rinsing or Gargling after meal		
No	65	43.3
Occasionally	37	24.7
Regularly	48	32.0
Malpractices among children		
Chalk	18	12.0
Soil	1	0.7
Formite	3	2.0
Tooth picking	1	.7
Chewing gum	2	1.3
Change of brush with correct frequency		
Yes	56	37.3
No	94	62.7
Habit of sweet milk at night		
Sweet milk at night not followed by bush	81	54.0
Sweet milk at night followed by brush	15	10.0
Don't consume milk before sleep	24	16.0
Occasionally consume irregular brushing status	30	30.0
Brushing matter		
Tooth paste+ brush	130	86.7
Tooth powder+ brush	8	5.33
Tooth paste+ finger	0	0
Tooth powder+ finger	1	0.7
Others (coal, ash neem twang)	11	7.3
Both indigenous material and toothpaste	7	4.7

Various questions regarding the oral hygienic practices and oral health were asked. Result showed that only 34 % children do brushing both time morning and at night before going to bed. Only 37% children replace brush with correct frequency. Only 22% of children use correct brushing technique. Most common malpractice among children was eating chalk 12%. Regarding practice of milk intake at night followed by bushing was only 10% while 54% do not brush after taking milk at night.

Table 2: Oral health problems among school going children.

Oral health problems	Frequency	Percentage
Dental caries	82	54.7
Cavity	79	52.7
Staining	33	21.9
Abscess formation	5	3.3
Mouth ulcers-	19	12.6
Bad breath	21	13.9
Gingivitis	20	13.2
Sensitivity	35	23.2
Pain while chewing	21	13.9
Malocculsion	26	17.2
Tonsillitis	30	19.9
Reason for which dental clinic visit were carried out		
Braces	3	2.0
Crown filling	2	1.3
Dental pain	21	13.9

A greater percentage of the students 86.7% practiced brushing with tooth brush and tooth paste and few used finger & tooth powder 0.7%. 11% students use indigenous material like neem twang, coal, and 4.7% students use both indigenous material as well as toothpaste. Only 32% answered that they always do regular gargling after meal while 24.7% children rinse sometimes and majority of them 43% never rinse. Regarding oral health status of school children dental caries 54.7% followed by dental cavities 52.7% were most common problem found. Other common problems found were tooth sensitivity 23.2% and dental pain while chewing 13.9%. 17.2% students reported that they would under gone dental clinic visit and most common reason for dental clinic visit was dental pain 13.9% and 2% students' undergone frequent dental visits for braces. 82.8% stated that they had never visited a dentist (Table 2). When association of dental caries and oral hygienic practices was studied it was found significantly associated with frequency of brushing (p value 0.003) and habit of brushing at night after consumption of sweet milk (p value 0.01). Also habit of rinsing mouth or gargling was found to be significantly associated with dental caries (p value 0.004) (Table 3).

DISCUSSION

This cross-sectional study was conducted to determine the association between oral hygienic practices and oral health status. Frequency of morning brushing was found 76% which is higher than study conducted in Nepal by Barat P et al reported it being 60%.[9]

In terms of brushing, only 22% of the participants reported correct practice, which is similar to the studies conducted across the globe. Mehta et al showed only 11% of the participants practiced the correct method of brushing.[10] Studies have reported that the concept of correct method of brushing develops over the years in an individual.

Table 3: Association of dental caries with hygienic practices.

Oral hygienic habits	Dental caries		P value
	Not Present	*Present*	
Frequency of brushing morning	60(52.2%)	55(47.8%)	0.003*
Morning +evening	7(20.6%)	27(79.4%)	
After every meal	1(100%)	0	
Technique of brushing			
Only horizontal	58(49.6%)	59(50.4%)	0.05
Correct (both horizontally and vertically)	10(30.3%)	23(69.7%)	
Habit of mouth rinsing or gargling after meal			
no	37(56.9%)	28(43.1%)	0.04*
occasionally	13(35.1%)	24(64.9%)	
regularly	18(37.5%)	30(62.5%)	
Habit of sweet milk at night			
Sweet milk at night not followed by bush	33(40.7%)	48(59.3%)	0.01*
Sweet milk at night followed by brush	6(40.0%)	9(60.0%)	
Don't consume milk before sleep	17(70.8%)	7(29.2%)	
Occasionally consume	12(33.3)	18(66.7%)	
Brushing matter			
Tooth paste+ brush	66(46.5%)	76(53.5%)	0.235
Tooth powder+ brush	2(25.0%)	6(75.0%)	
Tooth paste+ finger		0	
Tooth powder+ finger		1(100%)	

The observed rate is lower than with the studies conducted by Sara Dakhili et al who reported it being 90%.[11] These differences in observation could be due to the research methodological differences in the studies and also the socio-cultural and demographic variations within and between countries.

According to our research more than 37% change the brush in correct frequency whereas a study conducted in

Pakistan reported similar percentage.[12] A Study conducted in India, showed higher percentage with regard to correct frequency of changing brush.[13] This difference in practice may be a result of higher knowledge in oral hygiene. That means those who have adequate knowledge on the importance of brushing, practice the habit of changing their brush at the appropriate time. A greater percentage of the students (86.7%) practiced brushing with tooth brush and tooth paste similarly observed by Suprabha BS, Rao A.[14] 54.7% students had dental caries in our study, in a similar study by Amin et al found it 68.9% among school going children.

In our study oral hygienic practices like frequency of brushing, habit of gargling, and consumption of sweet milk at night was found significantly associated with dental carries similar observation were made by Amin and Al-Abad BM et al found that poor oral hygiene practices, lack of parental guidance and appropriate dental health knowledge with frequent exposure to cariogenic foods in addition to socio-demographics are the main risk factors for dental decay among the surveyed students.[15] A study carried by Sullia Taluk found lower prevalence of dental carries among children brushing teeth twice and using tooth paste and brush.[16] According to our study 82.8% had never visited a clinic for oral health problem while 54.7% students had dental caries in our study showed a large gap between oral problems and health seeking behavior regarding oral health problems.

CONCLUSION

Oral hygienic practices regarding importance of brushing, frequency of brushing, frequency of changing the brush, were poor needs educational motivation regarding duration of brushing, appropriate way to brush the teeth, and use of mouthwash. More over our study showed a large gap between oral problems and health seeking behavior regarding oral health problems hence comprehensive community-focused oral health care intervention that includes oral health education in elementary schools and homes to increase general oral health awareness is strongly recommended.

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