

## ORIGINAL RESEARCH

# Oral Health Acquaintance, Approach and Practices among Schoolteachers in Bhopal, Central India

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## ABSTRACT

**Background:** Education of oral health awareness to schoolchildren is important. School teachers can play a major role in imparting knowledge of the causes and prevention of common oral diseases. A school-based program is most effective because children are approached at a time when their health habits are forming.

**Aims:** This study was aimed to assess the acquaintance, approach and practices of schoolteachers toward oral hygiene and oral health in Bhopal city.

**Materials and methods:** Present study is cross-sectional, questionnaire-based, stratified random sampling technique was used to obtain the desired sample size. Three hundred and five teachers were selected from 14 different schools of Bhopal city.

**Results:** Around 130 (83.9%) of the teachers of private schools alleged oral health plays an imperative role in general health but 82 (54.7%) of government schoolteachers only agree to foresaid fact regarding oral health and overall health ( $\chi^2 = 40.294$ ,  $df = 3$ ,  $p < 0.001$ ). A total of 96 (61.9%) of the teachers in private and 44 (29.3%) of teachers in government schools used fluoridated toothpaste and 31 (20%) and 40 (26.7%) of the teachers used nonfluoridated toothpaste and the remaining were not concerned about the status of toothpaste, whether fluoridated or nonfluoridated ( $\chi^2 = 40.722$ ,  $df = 5$ ,  $p < 0.001$ ).

**Conclusion:** Teachers essentially need to be invigorated to improve their responsiveness on sound oral health information, approaches and behaviors. This will facilitate their role as school oral health education providers.

**Keywords:** Oral health, Teachers, KAP.

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## INTRODUCTION

Tiny Teeth Do Big Jobs! Teeth are important for eating, talking and having a nice smile.<sup>1</sup> Prevention of two major oral health problems, dental caries and periodontal disease can be achieved by transforming the oral health behaviors of schoolchildren. For the improvement of comprehensive oral habits in childhood, prominence elementary needs to be placed on promotion of dental knowledge. Health education, traditionally and suitably, one of the cornerstones of preventive dentistry, has over the years involved

considerable investments in terms of resources, like time, energy, personnel and economics. However, there has been a burden of justified criticism, due to lack of evidence-based effectiveness.<sup>2</sup>

A new approach to health promotion launched as a tripartite project by the WHO regional office for Europe, the European Commission and the Council of Europe is of paramount interest. It was set-up to establish a group of model schools that would demonstrate the impact of health promotion at school environment. The schools involved in the project would then disseminate their experience and information to the health and educational sectors influencing the policies and practices in school health promotion at the national and international levels. The basis of its success is the integration of health promotion in all aspects of the school daily mundane. Thus, health promotion becomes an essential component of all curriculum activities, since the curriculum is structured to enable the students to review aspects of health in variable and innovative ways throughout their school careers.<sup>3</sup>

Education of oral health awareness to schoolchildren is vital. Schoolteachers can play a major role in conveying knowledge of the causes and prevention of common oral diseases. According to the National Oral Health Care Programme (NOHCP), whenever teachers brushed their teeth, students followed and it became a routine exercise of daily brushing of teeth in guided manner. National Education Policy (1986) too has similar mandate and it encourages linkage between education and health and healthy habits. Shaping ways of life and personality development of school children during elementary education is the key responsibility of schoolteachers.<sup>4</sup>

An oral health preventive program was initiated and implemented by a group of volunteer dentists from 1994 to 1998 in Santa Fe, Argentina. Four different types of schools were selected, with a total of around 600 children, 42 teachers and one health officer. Success on school-based programs depended on teacher participation.<sup>5</sup>

Three middle schools randomly chosen from the urban district of Deyang city were divided into three groups: teacher-based group (group T), parents-based group (group P) and the control group (group C). Oral health education sessions were conducted for teachers (group T) and parents (group P) of these children. Students obtained oral health

knowledge through their teachers (group T) or their parents (group P), brushed their teeth twice daily. No oral health education session was carried out in the control group. In that study Luo et al had concluded that compared with parents-based oral health education, teacher-based oral health education has a better effect on improvement of the oral health status among middle-school students.<sup>6</sup>

A school-based program is most effective because children are approached at a time when their health habits are forming.<sup>7</sup> Aiming to extend the benefits of the importance of the oral health to the children through the teachers in Bhopal city, this study was aimed to assess the knowledge, attitude and practices of schoolteachers toward oral hygiene and oral health in Bhopal city.

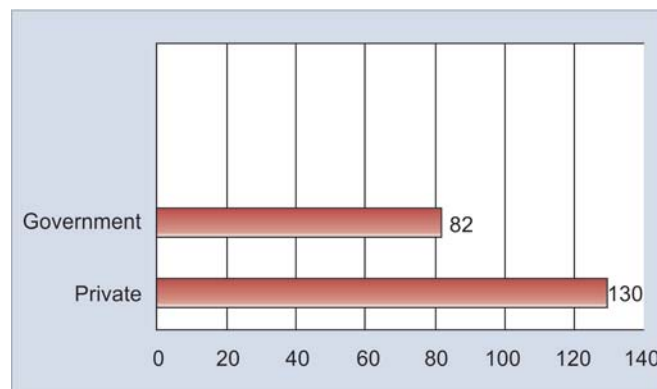
## MATERIALS AND METHODS

This was a cross-sectional questionnaire study. Permission for the study from the concerned authorities (heads of the various schools) and a written consent from the schoolteachers were obtained. The required data, for conducting this study, was collected using a pretested printed questionnaire. Performa was taken from the questions to the teachers by Raju et al.<sup>8</sup> Then after that the questionnaire was pilot tested for feasibility and validity. Based on the pilot study using the sample size equation, the sample was derived.

A stratified random sample of 305 was taken that was representative of all the teachers of Bhopal city. Bhopal city is divided into 14 zones according to the Bhopal Municipal Corporation and then from the zone lists of all the schools were obtained. Subsequent to which using a lottery method all the teachers in the schools that were selected were included in the study. Teachers of 14 schools of both private and government schools were surveyed. Questionnaires only that were completed and volunteered were included in the final sample for analysis. Data was analyzed using SPSS version 11.5. Frequencies and percentages were calculated. Chi-square test was done in order to test for group differences among the variables. The p-value of <0.05 was considered statistically significant.

## RESULTS

The following is the findings of the study conducted among teachers of both private and government schools of Bhopal city. The total numbers of study participants were 155 private and 150 government schoolteachers. Questionnaires were completed by 55 male and 250 female teachers with a mean age of 26 and 29 respectively. There were 130 (83.9%) of the teachers of private schools believed oral health plays an important role in general health but 82 (54.7%) of government schoolteachers agree to the above. The details



**Graph 1:** Teachers response to importance of oral health in general health

of the above are graphically represented in Graph 1. Knowledge about oral health among the teachers is enumerated in Table 1.

There were 96(61.9%) of the teachers in private and 44(29.3%) of teachers in government schools used fluoridated tooth paste and 31(20%) and 40(26.7%) of the teachers used non-fluoridated tooth paste and the remaining did not know whether they used fluoridated tooth paste or not ( $\chi^2 = 40.722$ ,  $df = 5$ ,  $p < 0.001$ ). A total of 45.2 and 46.7% of the private and government schoolteachers knew what floss is ( $\chi^2 = 7.388$ ,  $df = 1$ ,  $p = 0.025$ ).

Oral health practices among teachers are tabulated in Table 2.

Teachers' response about oral health education is charted in Table 3.

## DISCUSSION

A stratified random sample of 305 teachers from 14 schools was taken that was representative of all the teachers of Bhopal city. There were nearly half of the teachers who did not have knowledge about caries and gum diseases. The above was in agreement with the study by Nazeer et al<sup>7</sup> in which 297 male schoolteachers were selected randomly from 16 public schools, using stratified cluster random sampling. Also studies by Nyandindi et al<sup>9</sup> and Khan et al<sup>10</sup> have showed incomplete knowledge of schoolteachers about oral diseases.

These responses highlight the need to give basic oral health promotion through well-structured oral health education programs.

In the present study, there is a daily tooth-brushing practice by all the teachers. This is in accordance with the study by Astrom et al<sup>11</sup> a study on teacher trainees, in which most of them had reported daily tooth brushing. It indicates that the teachers perform good oral hygiene practices and an intense oral promotion program would help them to impart their knowledge to the schoolchildren.

**Table 1:** Knowledge about oral health among the teachers

Question	Private teachers n (%)	Government teachers n (%)	Chi-square value	df	p-value
<i>How can you prevent dental problems?</i>					
Avoid sweets and sticky foods	11 (7.1)	3 (2)	15.421	8	0.051
Brushing regularly	31 (20)	18 (12)			
Rinsing after every meal	39 (25.2)	29 (19.3)			
Regular visit to a dentist	12 (7.7)	18 (12)			
All of the above	72 (46.5)	81 (54)			
<i>Do you know that clean mouth can prevent tooth decay?</i>					
Yes	131 (84.5)	108 (72)	9.586	2	0.008
No	24 (13.5)	41 (27.3)			
<i>Regular cleaning of mouth can prevent</i>					
Bleeding from gums	11 (7.1)	8 (5.3)	3.668	5	0.598
Loosening of gums	12 (7.7)	14 (9.3)			
Loss of teeth	7.1 (11)	17 (11.3)			
Bad smell	20 (12.9)	24 (16)			
All the above	91 (58.7)	86 (57.3)			

- Ninety-six (61.9%) of the teachers in private and 44 (29.3%) of teachers in government schools used fluoridated toothpaste and 31 (20%) and 40 (26.7%) of the teachers used nonfluoridated toothpaste and the remaining did not know whether they used fluoridated toothpaste or not ( $\chi^2 = 40.722$ ,  $df = 5$ ,  $p < 0.001$ )
- A total of 45.2% and 46.7% of the private and government schoolteachers knew what floss is ( $\chi^2 = 7.388$ ,  $df = 1$ ,  $p = 0.025$ )

**Table 2:** Oral health practices among teachers

Practices	Percentage	Chi-square value	df	p-value
<i>Frequency of cleaning of teeth</i>				
Once	33 (21.3)	37.692	6	<0.001
Twice	76 (49)			
More than twice	16 (10.3)			
After every meal	31 (20)			
<i>Frequency of changing a brush</i>				
Once in 3 months	108 (69.7)	38.027	7	<0.001
Once in 6 months	52 (33.5)			
Yearly once	25 (16.1)			
When bristles fray	22 (14.2)			
Do not know exactly	9 (5.8)			

**Table 3:** Teachers' response about oral health education

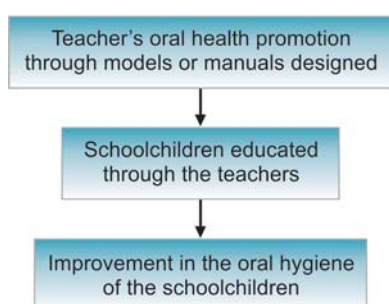
Oral health education	Percentage of private school teachers	Percentage of government school teachers	Chi-square value	df	p-value
<i>Attempt to give oral health education</i>					
Yes	120 (77.4)	71 (47.3)	29.782	2	<0.001
No	34 (21.9)	78 (52)			
<i>If yes then: What kind of oral health education?</i>					
Education about teeth types, functions, structure, eruption	22 (14.2)	17 (11.3)			
Education about brushing, good dietary habits, injurious oral habits	66 (42.6)	37 (24.7)			
Education about tooth decay, gum diseases, irregular teeth, their causes treatment and prevention	45 (29)	23 (15.3)			
<i>Students response to oral health education</i>					
Favorable	115 (74.2)	34 (22.7)			
Unfavorable	7 (4.5)	43 (28.7)			
<i>Oral health education benefits children</i>					
Yes	143 (92.3)	128 (85.3)	4.986	2	0.083
No	10 (6.5)	21 (14)			

Our findings have showed that more than half of the private schoolteachers and nearly half of the government schoolteachers have attempted to give oral health education. The study by Nazeer et al,<sup>7</sup> very few teachers were involved in giving lectures about preventive measures and oral diseases, nevertheless more than 90% of them agreed that these types of lectures were beneficial to the students as in our study. It is in contrast to the study by Raju et al,<sup>8</sup> where a maximum number of individuals that is 92% made an attempt to give education related to teeth and mouth. Although most of the teachers in this study have not imparted oral health education to the children, there were a majority who had responded that oral health education is beneficial for the children. The above results are parallel to the studies done by Loupe MJ and Frazier PJ,<sup>12</sup> Nazeer et al<sup>7</sup> and Raju et al.<sup>8</sup> The results achieved suggest an encouraging tendency toward an improvement in the level of oral health care among the schoolchildren. They point out the need of intensifying the preparation of schoolteachers in oral health topics (Tables 2 and 3).

## CONCLUSION

The schoolteachers need to be motivated to increase the awareness among them, that oral health does play an important role in general health. The respondents need to improve their knowledge of dental problems and the reasons for the same. There is a need to improve their oral hygiene practices through promotion of other oral hygiene practices like floss apart from the regular methods for maintenance of a clean mouth. Although not all the teachers have attempted to give oral health education to their children, almost all of them have agreed that it benefits children. There should be an attempt made by the teachers for oral health education to the children.

A simple oral health education manual can be designed for the teachers to answer the educational needs of the pupils.<sup>13</sup> This study highlights the need to tailor oral health counseling of teachers.<sup>14</sup> There needs to be an increased oral health promotion of the teachers so that they can help in an improvement of the growing child's oral health, leading to a disease-free mouth.



## A Recommended Health Promotion Model for the Teachers

Few of the websites for materials, for teacher oral health education are as follows:<sup>15</sup>

1. [www.oralhealthkansas.org](http://www.oralhealthkansas.org)
2. [www.ucsfchildcarehealth.org](http://www.ucsfchildcarehealth.org)
3. <http://science-education.nih.gov/supplements/nih2/oral-health/default.htm>
4. <http://www.ada.org/public/education/teachers/smilesarts/index.asp>
5. [www.amazon.com](http://www.amazon.com)
6. <http://www.lookmom.com/eprogram.html>
7. <http://www.dhss.mo.gov/oralhealth/OralHealthEducation.html>

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14. Kasila K, Poskiparta M, Kettunen T, Pietila I. Oral health counseling in changing schoolchildren's oral hygiene habits: A qualitative study. *Community Dent Oral Epidemiol* 2006;34: 419-28.
15. Early Childhood and School Oral Health Curricula and Resources. [www.oralhealthkansas.org/pdfs/Curricula%20and%20Resources.pdf](http://www.oralhealthkansas.org/pdfs/Curricula%20and%20Resources.pdf) – Similar.

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