

# Comparing the Oral Health Promoting Role and Knowledge of Government and Private Primary School Teachers in Mathura City

Ramen Haloi<sup>1</sup>, Navin Anand Ingle<sup>2</sup>, Navpreet Kaur<sup>3</sup>, Rahul Gupta<sup>3</sup>

<sup>1</sup>Post-graduate Student, Department of Public Health Dentistry, Kanti Devi Dental College and Hospital, Mathura, <sup>2</sup>MDS, Professor & Head, Department of Public Health Dentistry, Kanti Devi Dental College and Hospital, Mathura, <sup>3</sup>Senior Lecturer, Department of Public Health Dentistry, Kanti Devi Dental College and Hospital, Mathura

**Corresponding Author:** Dr. Ramen Haloi, Postgraduate Student, Department of Public Health Dentistry, Kanti Devi Dental College and Hospital, Delhi – Mathura Road, NH # 2, Post office – Chatikara, Mathura – 281006, Uttar Pradesh, India. Mobile no: 09634907667; E-mail: drramenhaloi@gmail.com

## Abstract

**Objectives:** To assess and compare the oral health promoting role and knowledge of Government and Private primary school teachers in Mathura city.

**Materials and Methods:** This cross-sectional study was conducted upon 650 primary school teachers who were randomly selected from the 5 zones of Mathura city. Data was collected through a self-administered questionnaire. Oral health knowledge scores were calculated and Chi-Square test was used for statistical analysis using SPSS version 17.0. Statistical significance was set at  $p \leq 0.05$ .

**Results:** Maximum government school teachers i.e 182(56 percent) had fair level of knowledge, while 305 private school teachers i.e. 93.8 percent were having good knowledge regarding oral health. A highly statistically significant difference was found between oral health knowledge of Government and Private school teachers. ( $p$ -value is 0.000) Allowing class time for students to get dental care was supported by most of the government school teachers(66.6 percent), while maximum private school teachers (55 percent) disagreed to the above mentioned fact. Resistance to accepting supervisory responsibilities also may be the result of teachers' perceptions among both government and private school teachers.

**Conclusion:** It is concluded from the study that oral health knowledge of government and private school teachers were found to be fair and good respectively. The school teachers wanted to become involved in oral health education. Training of the teachers should aim at improving their level of knowledge on oral health.

**Keywords:** Oral health, Primary school teachers, Health promotion

## INTRODUCTION

Oral health is an essential and integral component of general health<sup>1</sup> representing far more than simply a healthy mouth, a pleasing smile, and freedom from pain and infection.<sup>2</sup> It contributes positively to self esteem and personal success. Oral cavity being an important aspect of the human body, any impairment of oral health can manifest not only in the oral cavity but also elsewhere in the body.<sup>1,2</sup>

We must acknowledge the fact that with respect to health care, children are essentially unable to understand the need and provide themselves with the required health care.

They must have someone with the time, money, desire and means to take them to health care providers. Since many children lack that caregiver, they do not receive preventive and curative health care, even if it is free. Child education begins long time before the dentist meets him directly. The best place for the information is in the schools, combining the good practices in their homes.<sup>3</sup>

Teacher is the keystone of the arch of dental health education.<sup>4</sup> School teachers have traditionally been considered as potentially important primary agents of social activities, with a capability of influencing the future knowledge, attitude and behaviour of school children.<sup>5,6</sup>

Teachers form a group of special interest in the planning and implementation of oral health preventive programs as they have the advantage of getting trained and have the opportunity to influence large numbers of children and their parents.<sup>7</sup> Teachers shape the future of the country and prepare the young generation for facing life and they cannot help in imparting proper information to students, if they themselves remain misinformed. Thus the school teachers need to be made apt for the task in terms of improving and upgrading their deficient knowledge on oral health and relative usefulness of the various measures required in preventing oral health problems.<sup>8</sup>

Inadequate knowledge, skills and motivation for teachers to provide oral health education has shown unfavorable repercussions on pupil's oral health.<sup>9</sup> Surveys conducted in Minnesota, USA, among future school teachers<sup>10</sup> and in Michigan, USA, among elementary school teachers,<sup>11</sup> established that oral health knowledge of these important populations were often inadequate and inaccurate. The subjects were ill-informed and held inconsistent opinions about basic oral health related concepts. Studies in Romania, China and Saudi Arabia have reported positive attitudes among school teachers towards school based dental health education and a willingness to be involved in oral health promotion.<sup>12-14</sup> A higher level of dental knowledge was revealed among Kuwaiti school teachers than among parents, and teachers reported a positive attitude towards the prevention of dental diseases.<sup>15</sup> Among Tanzanian school teachers low levels of oral health knowledge were found, accompanied by a poor attitude towards becoming involved in dental health education.<sup>6,16</sup>

Proper and adequate oral health knowledge and practice is the key to a perfect oral health status. Oral health habits are formed early in life and the school teachers, especially primary school teachers, plays a vital role in inculcating healthy habits in their students, for which the teachers themselves need to have a good knowledge and attitude towards oral health. Thus, the more knowledgeable and conscious the school teachers become about their own oral health maintenance the more they can practice it in their life and can gradually bring a sea change in the oral health status of the society or peer group through positive oral health promotion.<sup>13,14,17</sup>

Schools all over India can be broadly divided in two major categories- Government and Private. The difference between these two can be attributed to the variation in funding and the organization behind the two sectors. The lack of proper teaching aids, time, lack of supervision and the low funding are the main drawbacks in the government schools. Hence the purpose of the study was to assess and compare the oral health promoting role and knowledge of Government and Private primary school teachers in Mathura city.

## MATERIALS AND METHODS

According to the list obtained from Basic Shiksha Adhikaari office there were 167 primary schools in Mathura city of which 125 were Private and 42 were Government. The total strength of primary school teachers in Mathura city was found to be 1700 including both Government and Private schools. Mathura city is divided into 5 geographical zones – central, north, south, east and west. Area representing each zone are - Goverdhan chauraha, Krishna-nagar, Goverdhan road, Dhoulai Pyaou and Vrindavan respectively.

### Inclusion Criterion

- All the available subjects who were in the age range of 15-64 years and willing to participate in the survey.

### Exclusion Criterion

- Subjects not willing to participate in the survey and those who were absent on the day of examination.

## SAMPLE SIZE ESTIMATION

Based upon the pilot study sample size was estimated and it was found to be 600 as the minimum sample size with 5% acceptable margin of error and 95% confidence interval. A slightly higher sample size of 650 was selected to compensate for any kind of permissible error and to increase the accuracy of the study.

## SAMPLING METHODOLOGY

In order to cover the total sample size of 650, 130 primary school teachers from each of the five zones were randomly selected out of which 65 teachers were from Government primary schools and 65 teachers from private primary schools.

## DATA COLLECTION

A pretested proforma containing structured close ended questionnaire including 16 questions was prepared both in English and Hindi for ease and convenience of primary school teachers. Out of the 18 questions 12 questions were regarding oral health knowledge and 6 questions were regarding oral health promoting role of primary school teachers. The questionnaire was handed over to the school teachers and sufficient time was given to them to complete the form. It was later checked by the investigators to confirm that none of the questions were left unattempted.

Each knowledge question had 2 options-Yes/No for which score 1 and 0 was given respectively. The total score was calculated and was divided into three categories. Score 0-5 were categorized as Poor knowledge, 6-8 were categorized as Fair and 9-10 as Good knowledge category.

### Statistical Analysis

All the collected data was entered in the Microsoft Word Excel Sheet 2007 version and processed using the SPSS 17 Version for the descriptive analysis and statistical tests of significance. Chi-Square test was applied for comparison of oral health knowledge among Government and Private primary school teachers.

## RESULTS

The age of the School teachers from both Government and Private schools ranged from 21-55 years, with mean age of Government and Private school teachers were 31 years and 27 years respectively (Table 1). In total 173(53.2%) were males and 152(46.8%) were females among the Government school teachers. Among the Private school teachers 48(14.8%) were males and 277(85.2%) were females.

**Table 1: Distribution of the study subjects according to age among Government and Private school teachers**

Age	Government	Private	Total
20-30yrs	144 (44.3%)	204 (62.8%)	348 (53.5%)
31-40yrs	151 (46.5%)	102 (31.4%)	253 (38.9%)
41-50yrs	29 (8.9%)	16 (4.9%)	45 (6.9%)
51yrs and above	1 (0.3%)	3 (0.9%)	4 (0.6%)
Total	325 (100%)	325 (100%)	650 (100%)

Among the Government school teachers, 212(65.2%) were postgraduate, 107(32.9%) were graduate; and 6(1.8%) were having education up to high school. While the maximum number of Private school teachers i.e. 267(82.2%) were postgraduates and 58(17.8%) were graduate (Table 2).

**Table 2: Distribution of the study subjects according to Level of Education among Government and Private school teachers**

Education	Government	Private	Total
Post graduate and above	212 (65.2%)	267 (82.2%)	479 (73.6%)
Graduate	107 (32.9%)	58 (17.8%)	165 (25.3%)
High school	6 (1.8%)	0	6 (0.9%)
Total	325 (100%)	325 (100%)	650 (100%)

The maximum Government and Private school teachers i.e.52.6% and 65.8% respectively had an experience of 0-5 years (Table 3).

### Distribution of Knowledge Score among School Teachers of Government and Private Schools

Maximum government school teachers i.e 182(56%) had fair level of knowledge, while 305 private school teachers i.e. 93.8% were having good knowledge regarding oral health (Table 4).

**Table 3: Distribution of the study subjects according to teaching experience among Government and Private school teachers**

Teaching experience	Government	Private	Total
0-5 years	171 (52.6%)	214 (65.8%)	385 (59.2%)
5-10 years	104 (32%)	80 (24.6%)	184 (28.3%)
10-15 years	39 (12%)	21 (6.5%)	60 (9.2%)
15-20 years	11 (3.4%)	10 (3.1%)	21 (3.2%)
Total	325 (100%)	325 (100%)	650 (100%)

**Table 4: Distribution of knowledge score among school teachers of Government and Private schools**

Knowledge score	Government	Private	Total
Good	137 (42.1%)	305 (93.8%)	442 (68%)
Fair	182 (56%)	20 (6.2%)	202 (31%)
Poor	6 (1.8%)	0	6 (0.9%)

However, a statistically significant correlation was found between oral health knowledge of Government and Private school teachers as demonstrated in Table 5. (p-value is 0.000) On correlating knowledge with other variables viz. age, sex, education and years of experience, statistically significant result was found between knowledge and education of study subjects of both Government and Private schools.

**Table 5: Correlation between knowledge among Government and Private school teachers**

Knowledge	Government	Private	Total	P value
Good	137	305	442	0.000*
Fair	182	20	202	
Poor	6	0	6	
Total	325	325	650	

\*Significant (pso.05)

### Role of Teachers in Promoting Oral Health

Respondents were instructed to indicate the extent to which they agree or disagree with the statements regarding the responsibilities that are sometimes expected of school teachers. A scale ranging from strongly agree to strongly disagree and finally narrowing it down to agree/disagree was used to tabulate the results (Table 6).

## DISCUSSION

Frazier has stated that “given an existing body of scientific knowledge about measures for preventing oral diseases..... society has a responsibility to educate its youngsters about these measures”<sup>18</sup>

Good oral health can improve general health and quality of life thereby contributing to improve self confidence and social interaction. School teachers have always been

**Table 6: Perceived role of Government and Private primary school teachers in promoting oral health**

Teachers should	Government school teachers		Private school teachers	
	Agree	Disagree	Agree	Disagree
Should refer students with dental problems to the dentists	71.9%	28.1%	93.6%	6.4%
Advice students regarding advertising of commercial sugar products.	47%	53%	72.9%	17.1%
Instruct students about scientifically valid methods to prevent oral diseases	78%	22%	88.6%	11.4%
Allow class time for students to get dental care.	66.6%	33.4%	45%	55%
Be actively involved in community efforts to improve students' oral health	74%	26%	60%	40%
Supervise daily brushing and flossing in the classroom	7.6%	92.4%	12.1%	87.9%

considered as an important agent of socialization, havin the ability to influence the knowledge, attitude and behavior of schoolchildren.<sup>19-20</sup> In Mathura, there were no data available on the comparison of oral health promoting role and knowledge of Government and Private school teachers. Therefore, an epidemiologic survey was conducted to assess and compare the oral health promoting role and knowledge of Government and Private primary school teachers in Mathura city. The final sample consisted of a total of 650 study subjects out of which 325 were from Government primary schools and 325 were from Private primary schools.

#### **Distribution of the Study Subjects According to Age among Private and Government School Teachers**

In our study, among the Government schools, the maximum number of school teachers i.e. 151(46.5%) were from the age group 31-40 years and 204(62.8%) study subjects from Private school teachers were from 20-30 years of age. In the study conducted by Shodan M Raj et al<sup>5</sup> the school teachers had a mean age of 40.1 years with 69% of them being between the ages of 31-40. According to Harold D et al<sup>6</sup> the average age was 35.2 years and the maximum teachers were of between 36-40 years. In the study conducted by Benley George et al<sup>1</sup> the maximum teachers i.e. 37.5% were of between 30-39 years. According to Syed Yawar Ali Abidi et al<sup>21</sup> the maximum teachers i.e. 82% belongs to the age group of 20-40 years. In the study conducted by Ali Hossein Mes Garzadeh et al<sup>22</sup> the maximum teachers (41.8%) were 41-50 years of age. In the study conducted by Marianna Virtanen et al<sup>23</sup> the maximum teachers were 51-55 years of age. In the study conducted by Nazeer Khan et al<sup>24</sup> the maximum teachers belonged to the age group of less than 30 years.

#### **Distribution of the Study Subjects According to Gender among Private and Government School Teachers**

In our study among the total study subjects of 650, 221 were males and 429 were females. Among the Government schools maximum school teachers (53.2%) were males while in the Private schools maximum teachers were females (85.2%). In the studies conducted by Syed Yawar Ali Abidi et al<sup>21</sup>, Marianna Virtanen et al<sup>23</sup>, Shodan M Raj

et al,<sup>5</sup> Benley George et al,<sup>1</sup> Harold D et al<sup>6</sup> and Paul Lang et al,<sup>11</sup> most of the school teachers were females. On the contrary, according to Ali Hossein Mes Garzadeh et al<sup>22</sup> the maximum teachers (52%) were males.

#### **According to the Education among Private and Government School Teachers**

In our study, most of the teachers of the Private schools were found to be post graduates, few graduates but none of the teachers had an education level only up to high school which was similar to the findings of the study conducted by Benley George et al.<sup>1</sup> On the other hand, among the Government school teachers, most of them were post graduates, few graduates and only some had a qualification up to high school. On the contrary, studies conducted by Shodan M Raj et al<sup>5</sup> and Ali Hossein Mes Garzadeh et al<sup>22</sup> showed that most of the study subjects were graduates.

#### **According to Years of Experience among Private and Government School Teachers**

In our study among the total study subjects of 650, the maximum school teachers from both Government and Private schools had an experience ranging from 0 to 5 years which was in accordance to the study conducted by Syed Yawar Ali Abidi et al.<sup>21</sup> On the other hand according to Harold D et al,<sup>6</sup> in the median of the years of experience was found to be 9.5 years. According to Paul Lang et al,<sup>11</sup> the median years in teaching of most of the school teachers were found to be 19 years while in the study conducted by Ali Hossein Mes Garzadeh et al<sup>22</sup> the years of experience for maximum study subjects (90%) was found to be 10-20 years.

#### **Distribution of the Study Subjects According to their Knowledge Score of Government and Private School Teachers**

Out of 650 study subjects, 442 (68%) school teachers had good knowledge regarding oral health, of which maximum teachers i.e. 305 (93.8%) were from Private Schools which is in accordance to the studies conducted by Shodan M Raj et al,<sup>5</sup> Paul Lang et al,<sup>11</sup> Bondarik Elena et al,<sup>25</sup> Benley George et al<sup>1</sup> and Petersen P E et al<sup>26</sup> where maximum study subjects had a good knowledge regarding oral health.



Among the total study subjects, maximum number of school teachers i.e. 182 (56%) from Government schools had a fair knowledge regarding oral health. Furthermore, no such study was found where the study subjects were categorized based on the above mentioned three different categories of levels of knowledge as done in our study.

On correlating knowledge with other variables viz. age, sex, education and years of experience, statistically significant result was found between knowledge and education of study subjects of both Government and Private schools. On the contrary, in a study conducted by Shodan M Raj *et al*<sup>5</sup>, no statistically significant difference was found between the knowledge of graduate and post graduate school teachers. This study revealed a statistically highly significant correlation between Government and Private school teachers regarding oral health knowledge.

### Role of Teachers in Promoting Oral Health

Maximum private school teachers were in favour of advising students regarding advertising of commercial sugar products, while contradictory view was found in case of government school teachers. Allowing class time for students to get dental care was supported by most of the government school teachers. On the other hand maximum private school teachers disagreed to the above mentioned fact. Resistance to accepting supervisory responsibilities also may be the result of teachers' perceptions among both government and private school teachers which was in accordance with the previous study conducted by Paul Lang *et al.*<sup>11</sup> Having teachers observe the operation of such programs might allay their apprehensions about supervision.

### SUMMARY AND CONCLUSION

From the results of the study it was concluded that a difference in oral health related knowledge was found between government and private school teachers. This difference in knowledge level might be due to the difference in education level between both types of school teachers.

The teachers responded positively to becoming involved in the oral health education of the children, and they can undoubtedly become the key persons in this activity. However, if the school teachers are provided with proper training, educational materials and support from dentists experienced in public health, they can bring a sea change in the knowledge, attitude and behavior of the students of our country.

### REFERENCES

1. Dr. Benley George, Dr. Joseph John, Dr. S. Saravanan, Dr. I. Meignana Arumugham. Oral health knowledge, attitude and practices of school teachers in Chennai, *Journal of Indian Association of Public Health Dentistry* 2010; 15:85-90.
2. Dr. Utkal Mohanty, Dr. Hari Parkash, Dr. Nitin Khuller, Dr. Basavaraj. Oral health status of school children in Murad Nagar, U.P., *Journal of Indian Association of Public Health Dentistry* 2009; 14:33-37.
3. Danila Ioan, Evghenikos Adina, Petersen PE, Salavastru C, Stan A Oral health-Teachers behavior change- A major factor of progress, *The Journal of Preventive Medicine* 2005;13(1-2):108-115.
4. J. M Dunning, Principles of dental public health. 4<sup>th</sup> edition, 1986, Harvard University Press, Cambridge.
5. Dr. Shodan M Raj , Dr. Prasad K VV, Dr. Javali S B. Factors affecting the knowledge on prevention of oral diseases among school teachers of Dharwad City, A survey from India. *Webmed Central dentistry* 2011; 2(2):4-13.
6. Harold D., Sgan-Cohen, Samia Saadi and Amir Weissman. Dental knowledge and attitudes among Arab school teachers in Northern Israel, *International Dental Journal* 1999; 49:269-274.
7. Anne Nordrehaug Astrom, Watiti Jackson and Ibrahim E. A. T. Mwangosi. Knowledge, beliefs and behavior related to oral health among Tanzanian and Ugandan teachers trainees, *Acta Odontologica Scandinavica* 2000; 58:11-18.
8. Vinaya Pai. Dental awareness among Kannada and English medium primary school teachers in Mangalore city, *Journal of Indian Association of Public Health Dentistry* 2006;7:7-12.
9. Ibrahim E.A.T. Mwangosi, Urusuline Nyandindi. Oral health related knowledge, behaviors, attitudes and self-assessed status of primary school teachers in Tanzania, *International Dental Journal* 2002;52:130-136.
10. Glasrud P H, Frazier P J. Future elementary school teachers' knowledge and opinions about oral health and community programs, *Journal of Public Health Dentistry* 1988; 48:74-80.
11. Lang W. P., Woolfolk M. W. and Faja B. W. Dental health knowledge and attitudes of elementary school teachers in Michigan, *Journal of Public Health Dentistry* 1989; 49(1):44-50.
12. Petersen P E, Danila I, Samoila A. Oral health behavior, knowledge and attitudes of children, mothers and school teachers in Romania in 1993, *Acta Odontologica Scandinavica* 1995; 53:363-368.
13. Petersen P E and Esheng X. Dental caries and oral health behavior situation of children, mothers and school teachers in Wuhan, People's Republic of China, *International Dental Journal* 1998; 48:210-216.
14. Al-Tamami S. and Petersen P. E. Oral health situation of school children , mothers and school teachers in Saudi Arabia, *International Dental Journal* 1998; 48:180-186.
15. Petersen P E, Hadi R, Al-Zaabi F S. Dental knowledge, attitudes and behavior among Kuwaiti mothers and school teachers, *The Journal of pedodontics* 1990;14:158-164.
16. Nyandindi U, Palin-Palokas T, Milen A. Participation, willingness and abilities of school teachers in oral health education in Tanzania, *Journal of Community Dental Health* 1994; 11:101-104.
17. Amjad H. Wyne, Badar M. Al-Ghorabi, Yahia A. Al-Asiri, Nazeer B. Khan. Caries prevalence in Saudi primary school children of Riyadh and their teachers' oral health knowledge, attitude and practices, *Saudi Medical Journal* 2002; 23(1):77-81.
18. Frazier P J. School-based instruction for improving oral health; closing the knowledge gap, *International Dental Journal* 1980; 30:257-268.
19. Mullins R, Sprouse W. Dental health knowledge of elementary school teachers in Bowling Green, Kentucky, *Journal of American Society of Preventive Dentistry* 1973; 3:60-65.
20. Kenney J B. The role and responsibilities of schools in affecting dental health status-a potential yet unrealized, *Journal of Public Health Dentistry* 1979; 39:262-267.
21. Syed Yawar Ali Abidi. Knowledge about the management of avulsed tooth among Karachi school teachers, *Pakistan Oral and Dental Journal* 2010; 30(2):515-520.
22. Ali Hossein Mes Garzadeh. Evaluating knowledge and attitudes of elementary school teachers on emergency management of traumatic dental

- injuries: A study in an Iranian urban area, *Oral Health and Preventive Dentistry* 2009; 7:297-308.
23. Marianna Virtanen, Mika Kivimaki, Marko Elovainio, Anne Linna. Neighborhood socioeconomic status, health and working conditions of school teachers, *Journal of Epidemiology and Community Health* 2007; 67: 326-330.
  24. Nazeer Khan, Badr Al-Zarea, Mo'azzy Al-Mansour. Dental caries, hygiene, fluorosis and oral health knowledge of primary school teachers of Riyadh, Saudi Arabia, *Saudi Dental Journal* 2001; 13(3):128-132.
  25. Bondarik Elena, Leous Petr. Oral Health and Children Attitudes among Mothers and Schoolteachers in Belarus, *Baltic Dental and Maxillofacial Journal* 2004; 6: 40-3.
  26. Poul Erick Petersen, Zhou Esheng. Dental caries and oral health behavior situation of children, mothers and schoolteachers in Wuhan, People's Republic of China, *International Dental Journal* 1998; 48:210-216.

**How to cite this article:** Ramen Haloj, Navin Anand Ingle, Navpreet Kaur, Rahul Gupta. "Comparing the Oral Health Promoting Role and Knowledge of Government and Private Primary School Teachers in Mathura City". *International Journal of Scientific Study*. 2014;1(5):9-14.

**Source of Support:** Nil, **Conflict of Interest:** None declared.