

Oral Health Status and Knowledge, Attitude, Practice towards Dental Caries and Periodontal Diseases Prevention among School teachers in Bangalore North-4

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ABSTRACT:

Background: School teachers are considered as important mediators of change, with a capability of influencing the knowledge, attitude and behaviour of school children. Hence this study was done to assess the oral health status and knowledge, attitude and practices (KAP) towards dental caries and periodontal diseases and their prevention among school teachers in Bangalore North-4.

Methods: A cross-sectional study was conducted among 210 school teachers from 16 high schools of Bangalore North-4, Karnataka, India. The KAP towards dental caries and periodontal diseases and their prevention among school teachers were collected using a pre-tested questionnaire and their oral health status was recorded using World Health Organization (WHO) oral health assessment form 1997.

Results: The results indicated that more than 80% of teachers knew the main risk factors for dental caries. However, only 26.7% of teachers had knowledge on signs of gum disease and the role of fluoride in dental health was known to only 12.9% of teachers. Though over 90% of teachers agreed on following oral hygiene practices, 83% of them had caries experience with a mean decayed, missing, filled teeth (DMFT) of 2.46, over 72% had periodontal issues, and nearly 27.1% of them needed prosthesis. It was also observed that 80% of teachers did not involve in school-based dental health education programmes and about 69% did not notice absenteeism of children due to dental problems.

Conclusion: Overall knowledge and attitudes of school teachers towards oral health was inadequate and poor, for which teacher training programmes within a school setting are recommended, which in turn would influence the oral health promotion of children.

Keywords: KAP, Oral health promotion, School teachers.

INTRODUCTION

Oral health is an essential part of general health. Oral health promotion is considered a priority in children because of the high caries risk at this age.¹ The importance of prevention should be inculcated early in the life of children to have its benefits. Schools provide an ideal platform for oral health promotion. School is a place where children learn things easily and it forms an important cluster of the larger community. Schools are the perfect setting where oral health instructions can be incorporated in the curriculum.² According to Kenney, a school administrator, "school have a tremendous capacity to be supportive of

programs involving preventive health and preventive dentistry for children".³

School teachers have traditionally been considered as potentially important mediators of change, with a capability of influencing the knowledge, attitude and behaviour of school children. School teachers, thus play a pivotal role in providing oral health education to children and thereby acting as role models. School teachers, who spend appreciable amount of time with the children, are to be improved in order to inculcate sound knowledge and ideal practices among the young minds.⁴ Thus improving the oral health knowledge of the school teachers will be

fruitful as they have an access to a large population of children.

With this background in the mind the study was conducted among school teachers with an aim to assess the oral health status and knowledge, attitude and practices regarding dental caries and periodontal diseases prevention.

METHODS

Study design: The present study was a questionnaire based, descriptive, cross sectional study.

Study setting: The study was conducted in the high schools of Bangalore North-4

Selection of participants: For administrative convenience the Bangalore district is divided into Bangalore North and Bangalore South zones. Each zone is again divided into four subdivisions. The present study was conducted in high schools of Bangalore North-4 subdivision. The list of schools was procured from the Board of Education Office, Bangalore North-4. There were total of 201 high schools in Bangalore North-4 subdivision, during the academic year 2014-2015. By simple random sampling (lottery method), a total of sixteen schools were selected for the study. All the teachers from schools who agreed to participate were included in the study. Thus the study population consisted of 210 school teachers from 16 high schools of Bangalore North-4.

Data collection: The KAP towards dental diseases and prevention among school teachers were collected using a pre-tested questionnaire and their oral health status was recorded using World Health Organization (WHO) oral health assessment form 1997. A pilot study was conducted on 30 school teachers for pre-testing the questionnaire and to determine feasibility of the study. Cronbach's Alpha calculated for the questionnaire was 0.75.

The study involved self-administration of a pre-tested structured closed ended questionnaire consisting of 21 questions to the school teachers. The first section of the

questionnaire composed of demographic data such as teachers' ID number, age and gender. The second section consisted of 8 questions to evaluate knowledge regarding dental diseases and their prevention. In the third section, attitude was assessed by 5 questions which included the information regarding the importance of teeth in their teaching curriculum, teacher training programmes on dental health education and their responsibility towards dental health of the children. The fourth section consisted of 8 questions to evaluate the teachers' oral health practices. The teachers were asked to fill the questionnaire and an average time of 10 minutes was taken to complete the questionnaire. Anonymity of the respondents was assured. In accordance with the WHO criteria, intraoral examinations of the teachers were carried out with a mouth mirror and a Community Periodontal Index probe (CPI probe) by a trained calibrated dentist. Intra-examiner variability was assessed and the kappa coefficient was found to be 0.85. The duration of the study was two months from August 2014 to September 2014.

Ethical approval and Statistical analysis: Informed consent was obtained from the school teachers before the start of the study. The ethical clearance was obtained from Institutional Review Board. The data collected was compiled using Microsoft excel sheet and was subjected to statistical analysis using SPSS version 20.0 and $P < 0.05$ was considered statistically significant. Frequency distribution, number, percentage was calculated. The descriptive statistics and statistical significance of any difference was determined using Chi square test.

RESULTS

Among 210 school teachers 85 were males and 125 were females (Figure 1) with mean age of 43 years.

Knowledge:

Table 1 shows the percentage distribution of school teachers according to their knowledge

towards dental diseases which indicates that more than 80% of teachers knew the main risk factors for dental caries. However, only 12.9% of teachers knew about the role of fluoride tooth pastes in prevention tooth decay (Figure 2).

Figure 1: Gender-wise distribution of school teachers

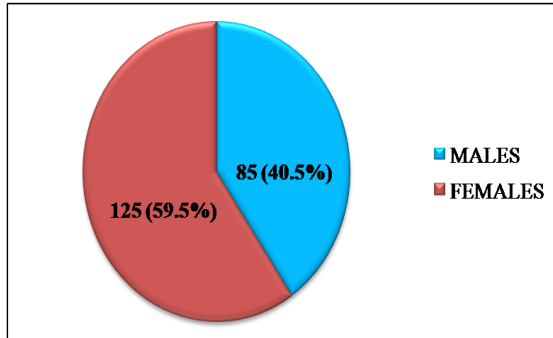


Table 1 also reveals that 109 female teachers responded that sweets affect dental health as compared to 64 male teachers and it was statistically significant ($P = 0.024$). Many of the teachers thought that cleaning teeth every day (61%) would prevent gum disease.

However a very few respondents (26.7%) believed that bleeding of gums on brushing teeth is the sign of gingival disease and 59% of teachers said that it is due to improper brushing (Figure 3).

Figure 2: Knowledge among school teachers about the use of fluorides in tooth pastes

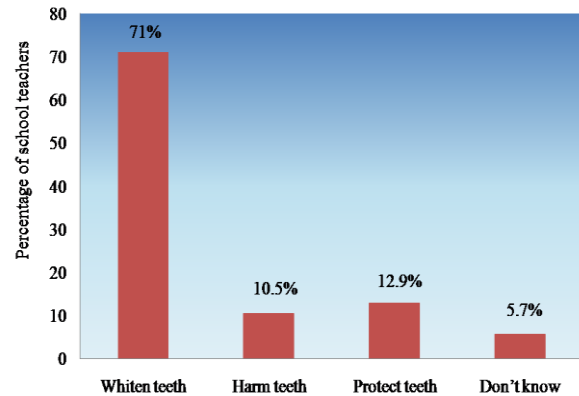
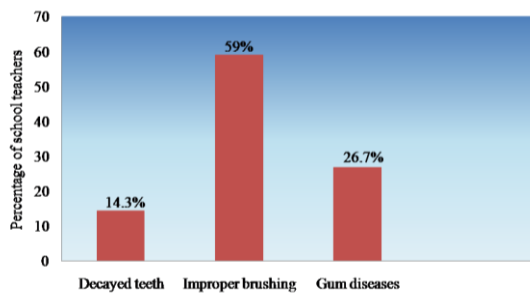


Table 1: Knowledge among school teachers

Questions	Options	Males		Females		Total		χ^2 Value	P value
		N	%	N	%	N	%		
Do sweets affect Dental health?	Yes	64	30.5	109	52.5	173	82.5	7.457	0.024*
	No	18	8.5	16	7.6	34	16.2		
	Don't know	3	1.5	0	0	3	1.4		
Maximum tooth decay will be caused by?	Bread	0	0	0	0	0	0	0.846	0.35
	Chocolate	77	36.6	108	51.4	185	88.1		
	Tea	8	3.8	17	8.1	25	11.9		
	Don't know	0	0	0	0	0	0		
Best way to protect against gum diseases is	To clean the mouth everyday	56	26.6	72	34.3	128	61.0	2.024	0.364
	To take vitamins regularly	9	9.4	21	10	30	14.3		
	To eat less sweets	20	9.5	32	15.2	52	24.8		
	Don't know	0	0	0	0	0	0		
Does the health of mouth and dentition impact the health of your body?	Yes	60	28.6	100	47.6	160	76.2	2.578	0.275
	No	19	9.1	18	8.5	37	17.6		
	Don't know	6	2.8	7	3.4	13	6.2		
Treatment of dental diseases is as important as any other diseases.	Yes	70	33.4	104	49.5	174	82.9	0.026	0.873
	No	15	7.1	21	21	36	17.1		
	Don't know	0	0	0	0	0	0		

* Statistically significant, Chi square test applied

Figure 3: Knowledge about the signs of gum diseases on brushing teeth



Attitude:

Table 2 reveals that only 27.1% of teachers (17 male and 40 female teachers) agreed that their responsibility should include care for dental health, referring the students to a dentist if needed and supervising tooth brushing in school. Most of the school teachers (80%) demonstrated negative attitude towards their own involvement in school-based dental health education programmes and about 69% did not notice absenteeism of children due to dental problems (Figure 4 and 5).

Figure 4: Attendance of school teachers for any training programme on dental health education

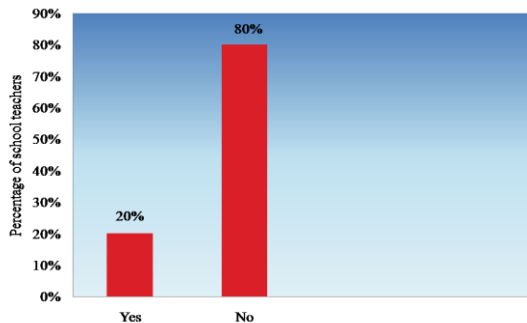
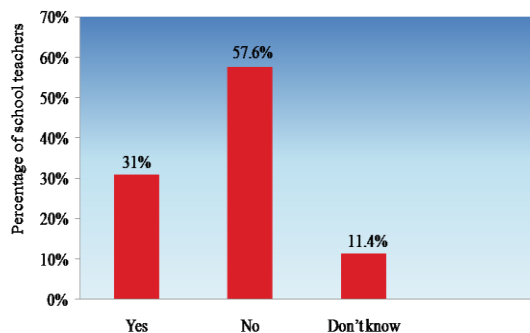


Figure 5: School teachers' observation of students missing school because of dental pain

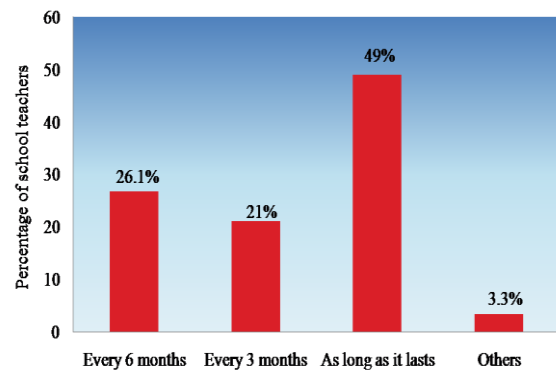


Practices:

Table 3 shows the oral hygiene practices of the school teachers. Over 90% of teachers used tooth paste and tooth brush to clean their teeth.

About 116 female teachers were using tooth brush and tooth paste for cleaning teeth in comparison to 83 male teachers. However, only 31% of teachers brushed their teeth twice daily and 21% of the teachers change their tooth brush for every 3 months (Figure 6). About 12% of teachers had history of cigarette smoking.

Figure 6: Frequency of changing tooth brush



Oral health status of school teachers:

Table 4 reveals the oral health status of the school teachers. About 83% of them had dental caries with a mean decayed, missing, filled teeth (DMFT) of 2.46, over 72% had gingival and periodontal diseases, 47% were having malocclusion and nearly 27.1% of them needed prosthesis.

DISCUSSION

This research was conducted to assess the knowledge, attitude, and practices towards dental caries and periodontal diseases prevention and oral health status among school teachers of Bangalore North-4.

Knowledge:

In the present study nearly 82.5% responded that consumption of sweets affect dental health (Table 1) which is in accordance with 86.6% and 75% as reported by Manjunath G et al (2013)¹ and Poul Erik Peterson et al (2000).⁵ In this study, the teachers knew that most of the tooth decay was due to chocolate and sticky food which was in accordance with the study conducted by Tangade et al (2011).⁴ The teachers knew that if mouth is cleaned every day it could be well protected from gum diseases but they were not aware of the signs

of gingival diseases. Teachers were also not aware about the role of fluoride tooth pastes in protecting the teeth from decay which was in contrast to the studies conducted by V Ramroop et al (2011)⁶ and Tangade et al

(2011).⁴ This shows the lack of knowledge regarding gingival diseases and some aspects of prevention of tooth decay among the school teachers.

Table 2: Attitude among school teachers

Question	Options	Males		Females		Total		χ^2 Value	P value
		N	%	N	%	N	%		
Responsibility of the teachers should include	Care for dental health	31	14.8	38	18.0	69	32.9	9.670	0.139
	Refer to dentist	20	9.5	20	9.5	40	19.0		
	Supervise tooth brushing	0	0	1	0.5	1	0.5		
	All options	17	8.1	40	19.1	57	27.1		
	First & second	16	7.6	22	10.5	38	18.1		
	First & third	0	0	4	2.0	4	1.9		
	Second & third	1	0.5	0	0	1	0.5		
Does your teaching curriculum include education regarding teeth and its importance to children?	Yes	79	37.6	118	56.2	197	93.8	0.185	0.773
	No	6	2.9	7	3.4	13	6.2		

Chi square test applied

Table 3: Practices among school teachers

Questions	Options	Males		Females		Total		χ^2 Value	P value
		N	%	N	%	N	%		
Do you use toothpaste to clean your teeth?	Yes	83	40.0	116	55.2	199	94.8	2.395	0.206
	No	2	1.0	9	4.3	11	5.2		
How often do you brush your teeth?	Once daily	60	29.0	85	40.5	145	69.0	0.159	0.762
	Twice daily	25	12.0	40	19.1	65	31.0		
	More than twice daily	0	0	0	0	0	0		
How do you generally clean your teeth?	Finger	0	0	1	0.5	1	0.5	2.012	0.366
	Toothbrush	83	40.0	117	56.0	200	95.2		
	Others	2	1.0	7	3.4	9	4.3		
Do you use tobacco?	Yes	27	13.0	0	0	27	12.9	45.56	<0.001*
	No	58	27.6	125	60.0	183	87.1		
On having a toothache you use,	Home remedy	12	5.8	18	8.5	30	14.3	1.384	0.501
	Visit dentist	73	34.8	105	50	178	84.8		
	Others	0	0	2	1	2	1.0		

* Statistically significant, Chi square test applied

Table 4: Oral Health Status of school teachers

Components	%	Mean DMFT	SD
Decayed	57.2	2.46	1.562
Missing	31.1		
Filled	38.6		
Dental fluorosis	2.9		
Periodontal disease	72.0		
Prosthetic needs	27.1		
Malocclusion	47.2		

SD=Standard Deviation

Attitude:

In the present study most of the teachers (80%) had never attended any training programmes on dental health education which indicates negative attitude. This finding is in accordance with the study conducted by Nayandindi U et al (1996)⁷ where low level of oral health knowledge was found, accompanied by a poor attitude towards becoming involved in dental health education among Tanzanian school teachers. About 56.7% of teachers in the present study did not notice students missing school because of dental problems. This is similar to the study conducted by Sai Sankar A.J. et al (2013)² where 49.5% of teachers did not notice students missing school because of dental pain.

Practices:

In this study over 90% of teachers used tooth paste and tooth brush to clean their teeth (Table 3) which was similar to the study conducted by Manjunath G et al (2013)¹. However, only 31% of teachers brushed their teeth twice daily and 21% of teachers change their tooth brush every three months whereas Tangade et al (2011)⁴ and Gupta N et al (2015)⁸ reported 40% and 44.4% respectively.

Oral health status

In the present study the mean DMFT of school teachers was 2.46 ± 1.56 which was in accordance with the study conducted by Simratvir M et al (2011)⁹ which reported the mean DMFT of 2.03 ± 1.93 .

In this study prevalence of dental fluorosis was 2.9% whereas the study conducted by Singh P et al (2015)¹⁰ reported the prevalence of 6.8%. This study revealed that 72% of school teachers were having gingival and periodontal

diseases. This is similar to the study conducted by Haloi et al (2015)¹¹ where majority of school teachers showed the evidence of gum diseases with high prevalence of loss of attachment.

Certain limitations must be appraised while elucidating the results. In the present study, small sample size and cross sectional study design were considered as limitations. However, based on the results of the study it can be recommended that the teacher training programmes which include an evidence-based approach to dental health education in a school setting must be implemented, which in turn would influence the oral health promotion of children.

CONCLUSION

In the present study, overall knowledge, attitude and practice of school teachers towards oral health was inadequate and poor in some of the aspects such as gum diseases and dental caries prevention. The most prevalent oral health problems among school teachers were dental caries and periodontal diseases.

REFERENCES

1. Manjunath G, Kumar NN. Oral Health Knowledge, Attitude and Practices Among School Teachers in Kurnool – Andhra Pradesh. J Oral Health Comm Dent 2013;7(1):17-23.
2. Sai Sankar AJ, Sreedevi E, Suresh Babu M, Naveen V, Rajavardhan K. School Teacher's Knowledge Regarding Dental Health. Indian Journal of Dental Sciences 2013;5(2):155-8.

3. Pai V, Sequeira PS, Rao A, Kundabala M. Dental awareness among kannada and English medium primary school teachers in Mangalore city. *J Indian Assoc Public Health Dent* 2006; 7:7-12.
4. Tangade PS, Jain M, Mathur A, Prasad S, Natashekara M. Knowledge, Attitude and Practice of Dental Caries and Periodontal Disease Prevention among Primary School Teachers in Belgaum City, India. *Pesquisa Brasileira em Odontopediatria e Clínica Integrada* 2011;11(1):77-83.
5. Peterson PE, Aleksejuniene J, Christensen LB, Eriksen HM, Kalo I. Oral health behavior and attitudes of adults in Lithuania. *Acta Odontol Scand* 2000;58:243-48.
6. Ramroop V, Wright D, Naidu R. Dental Health Knowledge and Attitudes of Primary School Teachers toward Developing Dental Health Education. *West Indian Med J* 2011;60 (5):577-80.
7. Nayandindi U, Milen A, Palin-Palokas T, Robison V. Impact of oral health education on primary school children before and after teachers' training in Tanzania. *Health Promotion International* 1996;11:193-201.
8. Gupta N, Vanishree N, Rao A, Sequeira P, Bullappa D, Naveen N. Assessment of the relationship among the oral health status, oral hygiene practices, and habits of school teachers in Mangalore city. *J Indian Assoc Public Health Dent* 2015;13:274-9.
9. Simratvir M. A study to assess the role of teachers in the promotion of oral health in developing countries. *Journal of Education and Ethics in Dentistry* 2011;1(1):33-6.
10. Singh P, Singh I, Gupta ND, Tewari RK, Agrawal N, Yadav P. Oral Health Knowledge, Attitude, Practices and Oral Health Status among School Teachers in and Around Lucknow, UP. *Journal of Dental and Medical Sciences* 2015;14(7):111-6.
11. Haloi R, Ingle NA, Roy BK, Kaur N, Gupta R. Oral Health Status and Treatment Needs Among Government and Private Primary School Teachers in Mathura City. *J Oral Health Comm Dent* 2015;9(1):10-5.

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