**KNOWLEDGE, ATTITUDE AND PRACTICES OF ORAL HEALTH AMONG
PRIMARY SCHOOL TEACHERS IN KOTA (RAJASTHAN), AN EDUCATIONAL
CITY OF INDIA**

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ABSTRACT

Objective: To assess knowledge, attitude and practices among school teachers regarding oral health as they play a pivotal role in providing information to children.

Material and methods: This cross sectional study was carried out in selected schools of Kota, Rajasthan, India. A self-administered questionnaire was distributed to all subjects. It was developed to give information on demographic information, knowledge, attitude and behaviour of school teachers regarding oral health and treatment. Descriptive statistics were obtained and, means and frequency distribution was calculated. The data was analysed using the Statistical Package for Social Science 21.0.

Results: Response rate was 100% with 97 school teachers from various schools. Around 43% of the participants felt that bacteria were the main cause of dental caries. 62.88% felt

that brushing regularly prevents tooth decay. 77.31% teachers brushed once a day. 46.39% visited the dentists only during the dental problem; however 69% agreed that it is necessary to visit a dentist to maintain oral hygiene. 59.79% felt the necessity of training school teachers about dental health.

Conclusion: The knowledge regarding oral health among school teachers was fair. However, there is a need for improving oral health knowledge and attitude among school teachers. These improvements can be made through regular training of teachers by oral health materials, seminars and imparting oral health education as a part of regular teacher training programme.

Keywords: School teachers, Knowledge, Attitude, Oral health, Practices

INTRODUCTION

Education plays a very pivotal role in an individual's life as it empowers to differentiate between useful and harmful habits and enhances the knowledge and practices for a better life-style. School being the first level of systematic learning; may be the most essential aspect in an individual's life. In this regard, World Health Organization (WHO) in 1995 launched a Global School Health Initiative in which the importance of schools in the delivery of health education to the school-children was highlighted.¹⁻³ The number of teachers worldwide at the primary school level has been reported to be around 23.9 million. Schools provide an excellent and effective medium to enhance general and oral health awareness among children. Teachers if are well educated,

intellectually alive and interested in their jobs can play pivotal roles in any educational system and ensure success.⁴

School teachers, with their experience and interaction with students, can actively contribute to health promotion, if they receive sufficient training and support.⁵

Good oral hygiene, is an important and integral part of our general health. Nowadays, when the life expectancy has increased and people desire to enjoy a long healthy life including a healthy smile, knowledge of oral diseases is a must. More importantly when considering the fact that most of these diseases are preventable to a large extent improving the oral health of the children has become necessary. The school teachers have been considered as potentially important primary agents of socialization, given their capability of

influencing the future, knowledge, attitude and behaviour of school children.⁶ It has been shown that teachers and parents can augment dental health behaviour.⁷ Dental care can sometimes be the forgotten part of a healthy lifestyle, and while its importance is often underestimated, the need for regular dental care cannot be overstated. Healthy teeth can last us a lifetime with the proper preventive dental care.⁸

Since school teachers provide preventive information and health promotion, it is important that their own oral health knowledge is good and their oral health behaviour & attitude conforms to professional recommendations. With adequate knowledge and oral health practices and attitude, they can act as role models for lay people and the community at large by imparting health education to school children and groups.^{6,9,10} In response to the World Health Organization (WHO) guidelines in the year 1978, many countries utilized school teachers as health education promoters for school children, and to serve as alternate personnel in primary health care approach in combating preventable diseases. The seeds of prevention should be sown early in the life to have its benefits in evidence. When it

comes to the younger age group the information given by the school teachers will have better and lasting impact.¹¹ With this background in the mind the present survey was designed to assess the school teachers' knowledge regarding dental health care as they play a significant role as oral health promoters and there by acting as role models.

MATERIAL AND METHODS

The current cross sectional study was carried out in Kota City of Rajasthan state, India. Before the start of study approval was obtained from the selected schools and a letter was sent to the selected schools explaining the purpose of the study and the procedures that would be fulfilled during this conduct. The principal of each school was asked to inform teachers about the study and permission was obtained from the interested school teacher's about the study. Ethical clearance was obtained to conduct the study from the institutional review board. A self-administered questionnaire was distributed to all subjects. The questionnaire was pre tested with a convenience sample of 50 school teachers. The questionnaire was modified based upon responses and the survey format was finalized. It was developed to give

information on demographic information, knowledge, attitude and behaviour of school teachers regarding oral health and treatment. Assessment of oral health knowledge included items on effects of brushing and using fluoride on dentition, meaning of bleeding gums and how to provide protection against it, meaning of dental plaque and its effects, effects of sweets and soft drinks on teeth. Assessment of attitude was done with questions pertaining to reason for visiting dentist, frequency of visit, driving factor for the visit, reasons for not visiting/disliking dentist and approach of dentist towards practice. Assessment of oral health behaviour included brushing activity, reason for visiting dentist. Oral health awareness and behaviour were analyzed in relation to age, sex, qualification, income etc.,

The sample size was derived based on the sample size equation based on pilot study. One of the investigators was always available during the completion of the questionnaire, and the participants were encouraged to approach him whenever they needed clarification at any point. Descriptive statistics were obtained and means and frequency distribution was calculated. The data was analysed using

the Statistical Package for Social Science 21.0 (SPSS 21.0, Chicago, USA).

RESULTS

Table 1: Distribution according to on socio-demographic characteristics

Variables	Frequency	Percentage
Age		
< 25 years	29	29.89
25 to 40 years	36	37.11
> 40 years	32	32.98
Education Level		
Graduate	28	28.86
Postgraduate	69	71.13
Teaching Experience		
5 years or less	24	24.74
5 to 10 years or less	59	60.82
More than 10 years	14	14.43

Table 2: Assessment of Dental Health Knowledge

Variables	Frequency	Percentage
Etiology of tooth decay		
Excess sugar consumption	42	43.29
Bacteria	32	32.98
Lack of brushing	07	07.21
Not aware	06	06.18
Methods of preventing tooth decay		
Proper diet	10	10.30
Regular brushing	61	62.88
Regular visit to dentists	24	24.74
Not aware	02	02.06
What do you understand by bleeding gums		
Normal gums	15	15.46
Inflamed gum	66	68.04
Gum recession	10	10.30
Not aware	06	06.18
Measures to prevent bleeding gums		
Proper oral hygiene practice	55	56.70
Change in food	22	22.68
Use medications	15	15.46
Not aware	05	05.15

Fizzy drinks cause teeth problems		
Yes	33	34.02
No	62	63.91
Don't know	02	02.06
Fluoride makes teeth stronger?		
Yes	78	80.41
No	18	18.55
Don't know	01	01.03
Smoking/Tobacco causes oral and dental diseases		
Yes	69	71.13
No	24	35.82
Don't know	04	04.12

Table 3: Attitude towards oral health

Variables	Frequency	Percentage
It is necessary to train school teachers about dental health		
Yes	58	59.79
No	36	37.11
Don't know	03	03.09
Do the oral health is related to the general body health?		
Yes	43	44.32
No	38	39.17
Don't know	16	16.49
Do you think regular it is necessary to visit dentist to maintain oral hygiene		
Agree	69	71.13
Disagree	21	21.64
Don't know	07	07.21
Milk teeth important as permanent teeth		
Agree	53	54.63
Disagree	33	34.02
Don't know	11	11.34
School curriculum should include dental health education		
Agree	61	62.88
Disagree	33	34.02
Not aware	03	03.09

Table 4: Oral health practices

Variables	Frequency	Percentage
Frequency of brushing the teeth per day (How many times you brush)		
Less than once	00	00
Once	75	77.31
Twice	22	22.68
After every meal	00	00
Oral hygiene method used (How you brush)		
Brush+toothpaste		
+Interdental aids	86	88.65
Brush+toothpaste +	06	06.18
Mouthwash	04	04.12
Brush+toothpaste	01	01.03
+Dental floss+		
Mouthwash+		
Interdental aids		
Duration of brushing		
Less than a minute	26	26.80
1-2 mins	34	35.05
More than 2 min	37	38.14
Frequency of changing tooth brush		
1-3 months	32	32.98
3-6 months	46	47.42
After 1 year	19	19.58
Never change	00	00
Type of brush		
Hard	27	27.83
Medium	39	40.20
Soft	23	23.71
Not aware	08	08.24

Table 5: Knowledge and attitudes toward professional dental care

Variables	Frequency	Percentage
How often you go to the dentist?		
Every 6-12 months	22	22.68
Occasionally	28	28.86
During dental pain	45	46.39
Never visited	02	02.06
Why you visited dentists last time?		
Decayed teeth	60	61.85
Gum problems	26	26.80
Malaligned teeth	08	08.24
Others	03	03.09
Reason you may not like visiting the dentist again?		
Fear	45	46.39
Expensive	34	35.05
Availability	16	16.49
Unfriendly nature of dentist	02	2.06
Dentists explained you about procedures before treatment?		
Yes	74	76.28
No	22	22.68
Don't know	01	01.03
Did the dentists educate you regarding importance of oral hygiene?		
Yes	65	67.01
No	32	32.98
Don't know	00	00

Response rate was 100 % with 97 school teachers from various schools. Table 1 shows the sociodemographic distribution of the teachers. The teachers were divided in the age group of <25 years, 25-40 years and >40 years. The least number of teachers were in the <25 years group (29.89%). Most of the teachers (71.13%) had done their post graduation. Regarding their teaching experience, most of the

teachers (60.82%) had an experience of 10 years or less, while only 14.43% teachers had an experience of 10 years or more. Table 2 shows the assessment of the responses given regarding dental health knowledge. Most of the teachers had good knowledge about dental health. 62.8% teachers believed that regular brushing helps prevent tooth decay and 71.13% were aware that smoking and tobacco causes various dental and oral diseases. 68% of the teachers understood that bleeding gums refers to inflammation in the gums and 56.7 % were aware that proper oral hygiene practices can help prevent bleeding gums. 80.41% felt that fluoride strengthens the teeth.

Out of 97 subjects, 59.79% agreed to the fact that there is a necessity to train teachers about oral health care and it should be included in the school curriculum. However, there was a mixed response when asked whether oral health affects general health. 71.13% agreed that regular dental checkups are a must to maintain proper oral hygiene (Table 3). Awareness regarding oral hygiene practices was however fair as 77.31% teachers brushed once a day and 88.65% used only toothbrush and tooth paste for maintain their oral hygiene. Only 1.03%

did brushing, used mouth wash, dental floss and interdental aids for maintaining oral hygiene. Almost half of the teachers (47.42%) changed their brush in the ideal time period of 3-6 months (Table 4). The most common reason for the teachers to visit a dentist was due to pain (46.39%) and decayed teeth (61.85%). Most of them also agreed to the fact that the dentists explained the procedure before the treatment (76.28%) and also explained about the oral hygiene practices (67.01%) (Table 5).

DISCUSSION

Teachers play an important and pivotal part in a child's life. The most important period of a child's life is spent at school, where lifetime beliefs and habits are said to develop. Also the knowledge and skills required to attain their future goals and nurture their inner hidden potentials are acquired during this golden period. Education is greatly needed today, more than the need for strong manly men and motherly women as teachers for the young. The children spend most of their time with their teachers during schooling and follow what they do and say. School teachers can influence a large number of children, thereby playing a major role in the planning and implementation of oral

health preventive programs. It is therefore important that they have good oral health knowledge and their oral health behaviour conforms to the expectation of the population.¹² In local educational sector, health promotion has not yet attained a significant importance and school curriculums lack integration of importance of general as well as oral health issues. However, some of the private schools, have occasionally conducted some basic oral health awareness and dental check-up surveys at their own expense and self interest.^{2,13} Similarly, the teachers are not trained for disseminating oral health knowledge to their students since such health educational courses are not including during their respective courses.

This study presented a comprehensive view of the oral health knowledge, attitude and practices of school teachers representative of Kota city of Rajasthan state in India. All the subjects in our study were well educated to highly educated teachers by majority attaining either a bachelor's degree or post graduation. This was in contrast with the findings of various similar studies.^{2,12,14} The mean age of the teachers in the present study was 34 years, similar to other studies, where the mean age is around 30 years.^{6,15} Only

14.43% of the teachers in the present study had an experience of 10 years or more, which is in contrast with the findings of Vidya Sekhar et al.¹² Around 75% of the teachers knew that bacteria and excess sugar consumption together leads to tooth decay, which is different from the findings of other similar studies, where sugar consumption was considered the main etiological factor by the teachers.^{6,16,17} 43.29% of the teachers considered sugar consumption the main factor, which is much lower than the findings of Manjunath et al., (86.6%).⁶ However it is much higher than the findings of Vidya Sekhar et al., who reported that 47% of the teachers considered bacteria and sugar to be the main factor for tooth decay.¹²

In present study questions were asked like what does gum bleeding mean? 68.04% of the teachers responded that it is the inflammation of the gums. This was quite higher than the findings of Manjunath et al., (62%).⁶ When they were asked about the methods to prevent gingival inflammation, 56.70% responded in favour of maintaining a good oral hygiene. Regarding the knowledge about whether fizzy drinks cause any tooth problems, 63.91% responded that such drinks do not cause any problems related

to the teeth. This was different from the findings of Manjunath et al., Dawani et al., and Peterson et al., who reported a considerably high percentage of teachers who were aware that such fizzy drinks lead to tooth decay and other problems.^{2,6,18} The reason for this could be more awareness of the teachers in these particular regions by many news papers and TV channels which show that soft drinks consist of fertilizers and acids which are harmful to both oral cavity and in general health of a person. However, the same was not observed in the present study. 80.41% believed that fluoride strengthens the teeth, which is much higher than the findings of Manjunath et al., who reported that only 47.2% of the teachers agreed about the role of fluoride. This finding was quite similar to the finding of Vidya Sekhar et al., who reported that 74.5% teachers know that fluoride protects against tooth decay. Knowledge about fluoride could be shared with the parents where there is a higher incidence of dental caries among the children.

59.79% of the teachers agreed that training regarding oral health knowledge is a must and should be included in the school curriculum. They also emphasized

that regular dental visits are a must to maintain oral hygiene but 46.39% visited the dentist only during dental pain. This is higher than the finding of Ling Zhu et al., but lowers the findings of Manjunath et al.^{6,19} The reason for this can be attributed to the fact that traditionally pain is the main driving factor for consulting the dentist or doctor in developing countries and this can be seen similarly in the school teachers. Also when questioned about their personal oral hygiene practices, only 22.68% brushed twice daily, which is much lower than the findings of Vidya Sekhar et al., and Manjunath et al.^{6,12} However, it is quite similar with the findings of Kompalli et al.¹⁴ Most of them used only brushing as the method for maintain the oral hygiene (88.68%) and about one fourth of them completed their brushing in less than a minute. When asked about the type of brush to be used 40.20% used brushes of medium softness, which was quite low when compared to the findings of Vidya Sekhar et al.¹² Only 44.32% responded that oral health is related to general health as well. Most of the teachers had visited the dentist only due to decayed teeth (61.85%). 76.28% also agreed to the fact that their dentist did explain the treatment process before

initiating the treatment and also educated about the oral hygiene practices.

Young children should be regularly monitored in all aspects to shape and mould their character. The school teacher plays a crucial role and not only imparts knowledge and moral values to the children but can also educate the parents to improve their children's health by advising them on monitoring brushing and eating habits of the children. Oral health education chapters should be included in the school curriculum. At parents and teachers meetings, stress should also be laid on the type of meals and snacks being sent to the children at school. Inculcating good eating habits is necessary as obesity, diabetes; hypertension is affecting individuals at a very young age due to the advent of eating junk foods, which are a risk factor for obesity and also for dental diseases. Thus, it is the collective responsibility of the teachers and the parents to monitor the children's diet. In each school regularly one hour can be devoted for socially useful and productive work and can be used for learning proper brushing techniques and other oral hygiene habits. Sometimes a dentist may be called to promote oral health education during that hour.

CONCLUSION

Most teachers showed a positive attitude towards school-based oral health education and promotion and insisted on the need for receiving relevant and compulsory training and inclusion of dental health care knowledge in the school curriculum to enhance their understanding related to oral health issues. The teachers displayed healthy oral hygiene practices but in regard to routine dental visits, very few affirmed on regular dental visits. Sample size of the study population must be increased and many areas in India need to be covered to get a real picture of the knowledge, attitude and awareness of the school teachers, the basic educators.

Conflicts of Interest

The authors declare no conflict of interest.

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