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RESEARCH ARTICLE

KNOWLEDGE, ATTITUDE AND PRACTICE REGARDING ORAL HEALTH AMONG GOVERNMENT SCHOOL TEACHERS OF PANCHKULA

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ABSTRACT

Context: Schools exert maximum influence on lives of children and youth; and can play a key role in supporting students health and by extension, the health of their families and communities. A teacher with sufficient knowledge on dental health can be a cornerstone in encouraging and motivating children. So, it is imperative to have teachers with good knowledge ,attitude and practices of oral health. ***Aims:*** To assess the Knowledge, attitude and practice regarding oral health among government school teachers of Panchkula. ***Settings and Design:*** A Multistage probability sampling was used. ***Methods and Material:*** The primary sampling unit comprised of Panchkula district. The teachers were selected by multistage cluster sampling method. ***Results:*** Around 91.4% female and 92% male teachers knew the fact that oral health does have a role on general health. When attitudes of teachers on oral health was assessed, it was observed that 90.7% female and all (100%) male teachers accepted the fact that maintenance of oral health is an individual responsibility. Around 86.4% female and 76% male teachers brushed their teeth twice daily and 13.6% female and 24% male teachers brushed once daily. *Conclusions:* Even though most of the teachers show satisfactory knowledge in some aspects of preventive oral health, they still lag behind in knowledge in some crucial parts of oral health. The results of this study did not show favorable performance from the teachers.

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INTRODUCTION

Childhood is the age when lifelong sustainable oral health related behaviors, beliefs and attitudes are being developed. Schools are important settings for comprehensive health promotion. Children spend considerable time in school especially during the age when their habits are formed. Children are receptive during this period and the earlier the habits are established, the longer lasting the impact. The importance of imparting lessons on hygiene to children had been recognized as early as 1878 (Gauthier, 1894). Nyswader stated that the child cannot be helped to assume responsibility for his health through campaigns carried out by specialists, sound attitudes can be developed through unified teaching and through one source of instruction, the teacher (Lang, 1989). A teacher is a person who teaches, guides, instructs, trains, or helps another in the process of understanding, learning knowledge, behavior or skills, including thinking skills (Paik, 1994). School teachers have a great potential for influencing the behavior of the child. A teacher with sufficient knowledge on dental health can be a cornerstone in encouraging and motivating children. Teachers are the pillars of any school and their role in inculcating healthy oral habits in school children cannot be over emphasized. Schools provide an ideal platform for promoting oral health as it is learnt that over 1 billion children attend schools worldwide (Kwan, 2005).

It is a well-known saying that a mediocre teacher tells, a good one explains, a superior one demonstrates but a great one inspires (Dunning, 1986). In a study, Luo *et al* had concluded that compared with parent based oral health education, teacher based oral health education has a better effect on improvement of the oral health status among school students (Luo, 2007). But this is only possible if the teacher is himself equipped with knowledge, a positive attitude and healthy oral health practices. It is a well-established fact, that school teachers have a potential role in school based oral health education so considerable importance has therefore been attributed to their oral health knowledge. Studies have indicated satisfactory knowledge of teachers regarding oral health in developed countries, but teachers in the developing countries are reported to have insufficient knowledge about oral health. Teachers having good oral health knowledge can play an important role in the implementation of various school-based health education and prevention programmes which aim at improving oral behavior and status of school children (The World Oral Health Report, 2004). However, there is paucity of literature on knowledge of government school teachers in Northern India. So, the present study was undertaken to assess oral health knowledge, attitude and practice among government school teachers of Panchkula district, Haryana.

MATERIALS AND METHODS

The present study was conducted to assess Knowledge, Attitude and Practice of government school teachers of Panchkula district, Haryana. The ethical clearance was obtained from the ethical committee of Swami Devi Dyal Hospital and Dental College, Barwala, Panchkula prior to the start of the study. Permission to conduct the study was obtained from the District education officer of Panchkula. A 25 item closed ended questionnaire was used to assess the oral health related knowledge, attitude and practice among government school teachers of Panchkula district, Haryana. The questionnaire was reviewed by experts and ensured content validity. Pilot study was done to determine the reliability of the survey questions in the present scenario. A pilot study was undertaken on 30 government school teachers to calculate the prevalence of dental caries, which came out to be 60%. Sample size was calculated at 95% confidence level with 5 % allowable error. A multistage probability sampling was used. The primary sampling unit comprised of Panchkula district. The teachers were selected by multistage cluster sampling method and all the teachers who were available on the day of examination in the schools were examined till the desired sample size was achieved. A weekly schedule was prepared well in advance by informing and obtaining permission and consent from the authorities. The study was carried out during the months of March 2018 to August 2018. Percentage were calculated for each of the categories.

RESULTS

Majority of school teachers 207(54.5%) were postgraduates. Both Trained graduate teachers 79(20.8%) and Junior basic teachers 94(24.7%) were almost comparable in number. 192(50.5%) teachers belonged to rural areas, followed by111 (29.2%) from the peri urban areas. Least number of teachers were from urban areas i.e.77 (20.3%)
Table 4 describes knowledge of teachers on oral health. Around 91.4% female and 92% male teachers knew the fact that oral health does have a role on general health. Around 18.6% female and 35% male teachers concluded that irregular tooth brushing causes decay and 81.4% female and 65% male teachers concluded that it causes all the listed dental problems. About 4.3% female and 7% male teachers concluded that dental problems are due to eating sweets and ice-creams and 11.8% female and 12% male teachers agreed for improper brushing. Only 1.4% female teachers concluded that dental problems are due to not rinsing the mouth. Around 82.5% female and 81% male teachers pertained to the fact that all the factors cause dental problems. Around 17.2% female and 22% male teachers concluded that brushing properly can prevent problems and 82.8% female and 78% male teachers concluded that all the listed factors are important in prevention of dental problems. About 80.4% female and 57% male teachers knew that a clean mouth can prevent tooth decay. Around 91.8% female and 89% male teachers knew that a dentist can clean and polish their teeth. 1.4% female teachers pertained to the fact that regular cleaning of mouth can prevent bleeding from gums,6.4%female and 7% male teachers said that it prevents the loss of teeth and 26.1% female and 31% male teachers concluded it can prevent bad smell. About 66.1% female and 62% male teachers accepted that regular cleaning of teeth can reduce all the above mentioned oral health problems.

About 13.9% female and 12% male teachers said that they get information about health of teeth from doctor, dentists and nurses, 2.5% female and 3% male teachers got information from newspapers, magazines and books or pamphlets. Around 1.4% female teachers accepted that their source of information was T.V. and radio where as 82.2% female and 85% male teachers agreed that friends and family are their major sources. Around 86.8% female and 80% male teachers agreed to a relation between tobacco chewing and oral cancer. About 91.4% female and 89% male teachers agreed to a relation between dental caries and consumption of sugar.

Distribution of study subjects according to attitude scores: When attitudes of teachers on oral health was assessed, it was observed that 90.7% female and all (100%) male teachers accepted the fact that maintenance of oral health is an individual responsibility. Around 84.3% female and 84% male teachers had visited the dentist. Among these ,65.7% female and 51% male teachers visited for pain,2.9% female teachers visited for filling,28.6% female and 45% male teachers visited with the reason of decayed teeth and 8% female and 4% male teachers visited for extraction. About 77% female and male teachers accepted that periodical dental visit is required to maintain good oral health. Around 74.3% female and 63% male teachers accounted for clean, bright teeth as the reason for brushing teeth.20% female and 29% male teachers concluded that prevention of caries and bleeding gums was the prime reason.5.7% female and 4% male teachers gave the reason to get rid of foul breath. Around 86.4% female and 76% male teachers brushed their teeth twice daily and 13.6% female and 24% male teachers brushed once daily. About 57.1% female teachers and 60% male teachers used toothbrush and toothpaste to clean their teeth. 42.9% female and 40% male teachers used toothbrush and toothpowder to clean their teeth. Around 60% female and 42% male teachers did brush their teeth both in horizontal and vertical directions,31.4% female and 32% male teachers did use vertical strokes,8% male teachers used horizontal strokes where as 8.6% female and 8% male teachers used circular strokes.

20.7% female and 31% male teachers apply the toothpaste to the full length of bristles, 65% female and 48% male teachers did apply toothpaste to half length of bristles and only 14.2% female and 21% male teachers used a peanut sized amount. Nearly 71.4% female and 58% male teachers did press the paste between the bristles, where as 28.6% female and 42% male teachers did not press the paste between the bristles. About 73.6% female and 75% male teachers agreed to rinsing their mouth after meals. Around 83.6% female and 81% male teachers did clean their tongue and all of them used a tongue cleaner. About 25.7% female and 12% male teachers used a fluoride containing toothpaste where as 74.3% female and 88% male teachers did not know as to whether their toothpaste contained fluoride or not. Nearly 47.8% female and 46% male teachers said that they visited a dentist when they had bleeding gums where as 51.4% female and 54% male teachers agreed to never having such a problem.

DISCUSSION

Oral health education is one of the effective preventive mean of creating awareness about dental diseases. In the present study, government schools were selected. Such schools in addition to catering to children of lower socioeconomic strata offer certain administrative advantages and a favourable framework for development and implementation of health programmes Moreover there is a uniformity in standards of appointment of government school teachers which is usually not seen among private school teachers. In the present study, majority of the teachers were females (73.7%) as compared to males. This can be attributed to the fact that teaching is a profession dominated by females. The results were similar to a study conducted by Mary *et al*. (2013) (Mary, 2013) on school teachers in Chennai, in which majority (68.5%) of the teachers were females. Most (54.5%) of the teachers in the present study were post graduates. These findings were in accordance with Maranhao *et al*. (2014) who conducted a study on school teachers in Maceio, Brazil, in which majority (50.7%) were post graduates. One reason for increased number of PGT teachers in our study could be that we came across more senior grade schools. Contrary to this, studies conducted by Shodan M Raj *et al* (2014) and Ali Hossein Mesgarzadeh *et al* (2009) showed that most of the teachers were graduates. In the present study, 50.5% teachers belonged to rural areas, and 29.2% of teachers belonged to peri urban areas. This could be attributed to the fact, that in India more than 70% of the people reside in rural areas [(12)]In the present study, none of the females were smoking. Similar were the results from the study by Erick PN *et al* . (2013) on 1732 school teachers of Botswana in 2013 where only 0.4% females were smoking tobacco.

Distribution of subjects according to age and gender Table 1

GENDER	25-34yrs N=36 (%age)	35-44yrs N=184(% age)	≥45yrs N=160 (% age)	TOTAL N=380 (% age)
FEMALE	32 (11.4)	150(53.6)	98(35)	280 (100)
MALE	4 (4)	34(34)	62(62)	100(100)

Distribution of subjects according to qualification Table 2

TYPE OF TEACHERS	N	(% age)
JUNIOR BASIC TEACHERS(JBT)	79	20.8
POST GRADUATE TEACHERS (PGT)	207	54.5
TRAINED GRADUATE TEACHERS(TGT)	94	24.7
TOTAL	380	100.0

Distribution of subjects according to location of schools Table 3

LOCATION		N	(% age)
URBAN		77	20.3
PERIURBAN		111	29.2
RURAL		192	50.5
TOTAL		380	100.0

Knowledge Score of Teachers Table 4

	FEMALE	MALE
Q.1. Has oral health got any role on general health?		
(i) Yes	256(91.4%)	92(92%)
(ii) No	24(8.6%)	8(8%)
(iii) Don't know	-	-
Q.2. What does irregular tooth brushing cause?.		
(i) Decay	52(18.6%)	35(35%)
(ii) Gum disease	-	-
(iii) Bad breath	-	-
(iv) Nothing	-	-
(v) All of the above	228(81.4%)	65(65%)
Q.3. Why do we get dental problems? .	12(4.3%)	7(7%)
(i) Eating sweets and ice-creams	33(11.8%)	12(12%)
(ii) Not brushing properly	4(1.4%)	0
(iii) Not rinsing the mouth	-	-
(iv) Not regularly visiting the dentist	231(82.5%)	81(81%)
(v)All of the above		
Q.4. How can we prevent dental problems? (i) Avoiding sweets and sticky foods	-	-
(ii) Brushing properly	48(17.2%)	22(22%)
(iii)Mouth rinsing after meals	-	-
(iv) Regularly visiting a dentist	-	-
(v) All of the above	232(82.8%)	78(78%)
Q.5. Do you know that clean mouth can prevent tooth decay? (i) Yes	222(80.4%)	57(57%)
(ii) No	55(19.6%)	43(43%)
Q.6.Do you know that a dentist can clean and polish your teeth? (i) Yes	257(91.8%)	89(89%)
(ii) No	23(8.2%)	11(11%)
Q.7. What can be prevented by regular cleaning of mouth? (i) Bleeding from gums	4(1.4%)	0
(ii) Loosening of gums.	-	-
(iii) Loss of teeth	18(6.4%)	7(7%)
(iv) Bad smell	73(26.1%)	31(31%)
(v) All of the above	185(66.1%)	62(62%)
Q.8. From what source do you get information about health of teeth?	39(13.9%)	12(12%)
(i) Doctor, dentist and nurses	7(2.5%)	3(3%)
(ii) Newspaper, magazine, books or pamphlets	4(1.4%)	0
(iii) Television and radio	230(82.2%)	85(85%)
(iv) Friends and family		
Q.9. Is there a relation between oral cancer and tobacco chewing? (i) Yes	243(86.8%)	80(80%)
(ii) No	4(1.4%)	4(4%)
(iii) Don't know	33(11.8%)	16(16%)
Q.10. Is consumption of sugar and dental caries related?(i) Yes	256(91.4%)	89(89%)
(ii) No	20(7.2%)	3(3%)
(iii)Don't know	4(1.4%)	8(8%)

Attitude Score of Teachers Table- 5

ATTITUDE SCORE OF TEACHERS	FEMALE	MALE
Q.1. Do you think maintaining healthy mouth is an individual responsibility?		
(i) Yes	254(90.7%)	100(100%)
(ii) No	26(9.3%)	0
Q.2. Have you visited a dentist before?		
(i) Yes	236(84.3%)	84(84%)
(ii) No	44(15.7%)	16(16%)
Q.3. If yes than for what reason		
(i) Dental pain.	184(65.7%)	51(51%)
(ii) Filling	8(2.9%)	0
(iii) Decay	80(28.6%)	45(45%)
(iv) Extraction	8(2.8%)	4(4%)
(v)Another. reason (specify)….	-	-
Q.4. Do you think it is required to visit a dentist periodically to maintain the oral health?		
(i) Yes	217(77.5%)	77(77%)
(ii) No	6322.5%)	23(23%)
Q.5. Reason for brushing teeth?		
(i) Clean bright teeth	208(74.3%)	63(63%)
(ii) Prevention of caries and bleeding gums	56(20%)	29(29%)
(iii) Prevention of oral ulcers	0	4(4%)
(iv) To get rid of foul breath	16(5.7%)	4(4%)

Practice score of teachers Table-6

PRACTICE SCORE OF TEACHERS	FEMALE	MALE
Q.1. How often do you brush your teeth? (i) After every meal	-	24(24%)
(ii) Once per day	38(13.6%)	76(76%)
(iii) Twice per day	242(86.4%)	-
(iv) More than twice per day	-	
Q.2. How do you clean your teeth? (i) Brush and toothpaste	160(57.1%)	60(60%)
(ii) Brush and tooth powder	120(42.9%)	40(40%)
(iii) Finger and tooth powder	-	-
(iv) Neem sticks	-	-
(v) Others (specify)…….	-	-
Q.3. How do you brush your teeth? (i) Horizontal strokes	0	8(8%)
(ii) Vertical strokes	88(31.4%)	32(32%)
(iii) Both horizontal and vertical strokes	168(60%)	42(42%)
(iv) Circular strokes	24(8.6%)	8(8%)
Q.4. What amount of paste you apply on your brush? (i) Full length of bristles	58(20.7%)	31(31%)
(ii) Half-length of bristles	182(65%)	48(48%)
(iii) Pea sized amount	40(14.2%)	21(21%)
Q.5. Do you press the paste in between the bristles? (i) Yes	200(71.4%)	58(58%)
(ii) No	80(28.6%)	42(42%)
Q.6. Do you rinse your mouth after meals? (i) Yes	206(73.6%)	75(75%)
(ii) No	74(26.4%)	25(25%)
Q.7.Do you clean your tongue? (i) Yes	234(83.6%)	81(81%)
(ii) No	46(16.4%)	19(19%)
Q.8. How do you clean your tongue? (i) Tongue cleaner	234(83.6%)	81(81%)
(ii) Finger	-	-
(iii) Toothbrush	-	-
(iv)Any other specify	-	-
(V) No response	46(16.4%)	19(19%)
Q.9. Do you use toothpaste containing fluoride? (i) Yes	72(25.7%)	12(12%)
(ii) No	-	-
(iii) Don't use tooth paste	-	-
(iv) Don't know	208(74.3%)	88(88%)
Q.10.If gums are bleeding what do you do? (i) Stop brushing	2(0.8%)	0
(ii) Go to see a dentist	134(47.8%)	46(46%)
(iii) Never had this problem	144(51.4%)	54(54%)
(iv) Don't know what to do	-	-

Tobacco use is not an acceptable norm among females, because of the social taboo attached with it in India (Bala, 2006). The knowledge scores of both the males (92%) and females (91.4%) were comparable regarding the role of oral health on general health which was similar with a study conducted by Maganur PC *et al.* (2017) in Davengere, in which the scores were above 98%. About 4.3% female and 7 % male teachers concluded that dental problems are due to eating sweets and ice -creams. About 11.8% females and 12% males agreed for improper brushing. Only 7.4% concluded that dental problems are due to not rinsing the mouth. 82% of teachers pertained to the fact that all factors cause dental problems, in contrast to the study by Maganur PC *et al* . (2017) in which only 16.7% teachers agreed to the above fact. In a study by Vishwanathaiah *et al.* (2017) in Davengere, all the subjects knew that a dentist can clean and polish their teeth, which was similar to the results in our study, in which 91.8% females and 89% males also agreed to the above statement. In the present study, around 66.1% female teachers and 62% male teachers said that the regular cleaning of mouth can prevent all the listed dental problems, as was also seen in a study by Kompalli *et al* . (2013) on teachers of Khammam. Around 80.4 % female teachers and 57% male teachers knew that a clean mouth can prevent tooth decay. These results were in contrast to the findings of Naidu *et al* . (2014) in which 24.6% of teachers had given an appropriate response. Around 91.4% female and 89% male teachers agreed to the fact that consumption of sugar is related to dental caries which was similar to the results in a study done by K Mahmoud *et al* . (2005) in North Jordan (87%). In a study by Paik D *et al.* (1994) among Koreans, all teachers responded that mass media (television, newspapers and magazines) were more important sources of oral health information than were dentists. In another study by Lang P *et al* (1989) among elementary school teachers in two areas of Michigan, the most important source of oral health information was Dental clinic (82.3%), followed by magazines\books (7.4%) and friends/ neighbor's /family (8.2%). In the present study, friends and family (83%) were more important sources than the mass media or dental clinic. In a study by Dileep CL *et al* (2006) among teachers in Kalyanpur locality of Kanpur, a majority (88.6%) of the teachers knew about the harmful relationship between tobacco and cancer, as was also seen in the present study where 86% female and 80% male teachers were aware. This suggests that there is more necessity for propagation of awareness about tobacco and oral cancer among school teachers. When attitudes of teachers on oral health was measured, it was observed that all the male teachers (100%) and 90.7% female teachers accepted the fact that maintenance of oral health is individual responsibility as was also seen in the study by Maganur *et al.* (2017), in which also 100% teachers agreed to the above fact.

In a study by Al-Beiruti N (1997) among school teachers in the Syrian Arab Republic,69.5% teachers reported that they visited the dentist when they had toothache, which was similar to the results (65.7%) in our study. In a study by Tanwir F (2008) *et al* among adult Pakistani, over 80% seldom or never visited a dentist. This was much lower in the present population being 16%. This could be linked to the disparity in the literacy rates among the two areas (54% versus 83%). Regarding the regularity of dental visit, 77% of both the male and female teachers in the present study agreed it was necessary. Similar findings were seen in the study by Kumar S *et al* (2012) on school teachers (INDIA) in which 73.4% female and 79.5% male teachers gave an affirmation. In our study, 86.4% female and 76% male teachers responded that they were brushing twice daily where as 68% teachers conceded to the above statement in a study done by Sajjad *et al* . (2016) in Rawalpindi, Pakistan. In a study by Tanwir *et al* . (2008) more than 70% used a toothbrush but in the present study, almost all (100%) teachers used toothbrush. Most (60%) of the teachers brushed their teeth in both horizontal and vertical strokes, as was also seen in a study by Kompalli *et al* (2013) in Khammam (62%). In this study, only14.2% female and 21% male teachers said that they used pea size amount of toothpaste on their brush. This could be attributed to the psychosocial belief that using larger amounts of toothpaste produced greater impact. Contrary to this, 72% teachers used this amount in a study by Maranhao MC *et al.* (2013) on primary school teachers in Maceo, Brazil. In the present study, 73.6% female and 75% male teachers rinsed their mouth after meals, as was also seen in a study by Maganur PC *et al.* (2017) where 69%

teachers agreed to rinsing their mouth after meals. If gums were bleeding,47.8% female and 46% male teachers agreed to going and seeing a dentist, which were in accordance with the results of Mary *et al* (2015)(51% females and 55 % males). Studies regarding oral health status and KAP among teachers have shown positive results from countries like Romania and Saudi Arabia [(26)]. Contrary to this, studies from Minnesota, parts of India and Tanzania have shown lower levels of knowledge among school teachers [(27)].Even though most of the teachers show satisfactory knowledge in some aspects of preventive oral health, they still lag behind in knowledge in some crucial parts of oral health. The results of this study did not show favorable performance from the teachers. Most of the oral health promotion programs are targeting the school children only, sidelining this other most important group. In view of the present study results, there is a need to take measures in this regard and conduct oral health awareness programs for the teachers as well. There is a definite and immediate need for teacher training programs on basic oral health knowledge. Further workshops are recommended to improve their existing knowledge. All the teachers should be trained at regular intervals, comprehensively regarding importance of oral health and creating awareness on oral health promotion for their students with the help of health care personnel or organizations.

CONCLUSION

In the present study, the school teachers show satisfactory knowledge in some aspects of preventive oral health, but they still lack appropriate knowledge regarding oral health issues, hence their capability to disseminate oral health education to the students' needs consideration. The encouraging thing is that teachers are willing to work for oral health education. All the teachers should be trained at regular intervals, comprehensively regarding importance of oral health and creating awareness on oral health promotion for their students with the help of health care personnel or organizations. Teachers can be considered to educate and motivate schoolchildren in maintaining their oral health. This can help them to spread the importance of and need for better health in the community.

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