

# Oral Health Knowledge, Attitude and Practices Among School Teachers in Kurnool – Andhra Pradesh

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## ABSTRACT

**Introduction:** Teacher plays pivotal role in any educational system and if they are well educated, intellectually alive and take keen interest in their job, then only success is ensured. Present study was done with an aim to know the knowledge, attitude and practices among school teachers regarding oral health.

**Methods:** closed ended questionnaire was filled by 500 school teachers chosen by stratified random sampling.

**Results:** Response rate is 100 % with 250 school teachers from Govt and privates schools. No statistical significant results were found based on age , sex, type of school and income when it comes to knowledge and attitude , but statistical significance was found based on income ( $p < 0.05$ ) when compared with behavior of school teachers with better practices on oral health seen as the monthly income increases.

**Conclusion:** Overall oral health knowledge attitude and behavior is poor among school teachers

**Keywords:** Knowledge; Attitude, School teacher; Oral health, Practices

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## INTRODUCTION

Among the greatest of all services that can be rendered by men to Almighty God, is the education and training of children, so that they can foster by grace in the way of salvation, growing like pearls of divine bounty in the shell of education and will be one day the jewel in the crown of abiding glory. The teacher is a dynamic force of the school. A school without teacher is just like a body without the soul, a skeleton without flesh and blood, a shadow without substance. There is no greater need for the cause of education today than the need for strong manly men and motherly women as teachers for the young. As social engineers, the teachers can socialize and humanize the young by their man-like qualities (1).

School teachers, with their educational experience and contact with students, can actively contribute to student's health pro-

motion, provided that they receive enough training and support to do so (2). Knowledge of oral diseases and more importantly about the fact that most of these diseases are preventable to a large extent is a major vehicle for improving the oral health of the children. School teachers have traditionally been considered as potentially important primary agents of socialization, with a capability of influencing the future, knowledge, attitude and behavior of school children (3). Documented evidence shows that teachers and parents can augment dental health behavior (4).

Good oral hygiene, including healthy teeth and gums, is an important part of our general health. Nowadays, people are living longer, and they want to enjoy a long healthy life which of course includes a healthy smile. Dental care can sometimes be the forgotten part of a healthy lifestyle, and while its importance is often underes-

timated, the need for regular dental care cannot be overstated. Healthy teeth can last us a lifetime with the proper preventative dental care (5).

Due to this trend, over the past 20 years a significant amount of emphasis has been made on prevention. Oral health knowledge, behavior and its practice are the important ways of keeping our teeth and gums healthy, avoiding the need in the future to experience for more extensive health problems. It is the key to a healthy life and the sooner it starts the better, no matter what your age (6).

Since school teachers provide preventive information and health promotion, it is important that their own oral health knowledge is good and their oral health behavior and attitude conforms to professional recommendations. With proper knowledge and oral health behavior, they can play an important role in the health education of school children and groups, (7-10) and act as role models for lay people and the community at large.

The aim of this study is to determine knowledge, attitude and behavior of school teachers regarding oral health as they play a pivotal role in providing information to children and there by acting as role models.

**MATERIALS AND MEHTODS**

The present study was conducted in Kurnool district which was former capital city of Andhra Pradesh. A total sample size of 500 school teachers residing in Kurnool was randomly chosen. A multistage stratified random sampling technique was used to select the sample with an aim to insure generalization of the results.

Both private and government school teachers were involved in the present study with the purpose to know the information regarding knowledge, attitude and behavior concerning oral health in Kurnool town. The Kurnool town is divided into 3 geographical areas. According to the addresses of schools available, every two schools were

grouped into one of these area i.e., one government and one private school in each geographical area. Each school is considered as one stratum irrespective of whether it was a government or private school. From each stratum (school) required sample was proportionately allocated and randomly teacher’s who are interested were considered in the present study.

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 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. A total of 500 school teachers 250 from government and 250 from private schools were chosen. It nearly constituted 191 male teachers and 309 female teachers.

Questionnaire was distributed to all subjects. It was developed to give information on demographic information, knowledge, attitude and behavior of school teachers regarding oral health and treatment (11,12). Assessment of oral health knowledge included items on effects of brushing and using fluoride on dentition, meaning of bleeding gums and how to protect 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, how frequently, driving factor for the visit, reasons for not visiting/ disliking dentist and approach of dentist towards practice.

Assessment of oral health behavior included brushing activity, reason for visiting Dentist. Subjects were asked to respond to the each item according to response format which is a closed coded one. Subjects received full explanation of how to score their responses and were made fully aware regarding responses. Further more, one of the investigators was always available at the time of completion of questionnaire.

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.

Oral health awareness and behavior were analyzed in relation to Age, Sex, School type and Income.

Data was collected from all 500 school teachers and percentages were calculated for each response. For statistical purposes, mean scores were calculated. For knowledge questions, each correct answer was given score 1 and score 0 is given for wrong answer and same is for attitude. For behavior questions for each correct answer score 1 is given and score 0 is given for wrong answer. Data was analyzed using SPSS statistical program and appropriate statically tests were applied.

**RESULTS**

Response rate of present study is 100 percent with all the school teachers agreed for the study and there was no mistake in filling the questionnaire, so nothing was rejected. Table 1 shows the distribution of school teachers. In the present study we have collected data equally from both private and school teachers i.e., 250 each. Age of school teachers divided into 4 different groups ranging from 21 – 30 yrs, 31 – 40 yrs, 41 – 50 yrs and 50 and above for statistical purposes. Majority of school teachers are in between the age group of 31 – 40 yrs (35%) and least is age group above 50 yrs (11%). Among sex majority of the participants are females (61.8%). Regarding income we have divided the school teachers into 4 groups based on monthly income. Group A: 5000/-, Group B : 5000-10000/-, Group C : 10000 – 20000/-, Group D : > 20000/-. Highest number of respondents come under Group A (37%) followed by Group D (28.4%) and least is Group B (15.6%).

Table 2 shows the responses regarding questions on knowledge. Regarding gum bleeding 62% responded that it is inflammation of gums. 45% of school teachers believe that vitamin C protect gingival tissues from bleeding whereas 38.8% re-

sponded using tooth brush, paste and floss protects gums from bleeding. Regarding questions what is plaque and what is calculus only 28.8 % school teachers responded correctly by saying plaque means soft debris on teeth and only 30% said calculus means hard debris on the tooth. Regarding what does dental plaque leads to 36.4% school teachers responded as staining of teeth followed by 24.4% as dental caries. Nearly 86.6% responded that consumption of sweets affect to dental health and also 78.2% believe that consumption of soft drinks also affect dental health in bad way. 84.4% believe that health of the mouth and dentition affects health of body. One of the important findings is that nearly 90.8% school teachers believe that treatment of toothache is as important as any other organ in the body. Regarding prevention of dental decay 86.6% believe that proper brushing prevent tooth decay and also 47.2% felt that fluoride strengthened the teeth and prevents dental decay. Regarding prevention of periodontal problems 73.2% felt that brushing prevents periodontal disease and also felt that dental floss (60.4) prevents periodontal disease. Regarding the question which is the best method to prevent dental decay 40.4% felt that visiting dentist regularly every 6 months prevents dental

decay followed by brushing and flossing (36%).

58.6 % visit dentist when they are in pain followed by other reasons, 69.4% felt that regular visit to dentist is necessary for proper care of the teeth and also most common driving factor to visit dentist is toothache (51.2%) followed by dentists advice (22.2%). Surprisingly 49% responded there is no specific reason for dislike visiting dentist which is followed by high cost, fear and no time. Regarding prevention school teachers felt that dentist concentrate more on treatment (45.6%) than prevention of dental disease (Table3).

63% responded that they are brushing twice per day with 92.4 % use tooth brush and paste for brushing the teeth in the morning. Regarding when do you brush your tooth which combines both people who brush once per day and twice a day. 68% brush teeth before going to bed followed by 31.8% in the morning. 39.4% school teachers change there tooth brush every 3 months followed by 26.8% every 2 months. Also 44.6 % brush there teeth more than 2 minutes followed by 41.2 % for 2 minutes (Table 4).

No statistical significance was found when

it come to knowledge and attitude based on income, but significant difference (P<0.05) was found among subjects when behavior is compared with four income groups with improved behavior seen as the monthly income increases. (Table 5)

**DISCUSSION**

Teachers play a pivotal role in developing children as good role models to transmit values of life and ways of life in the school as also outside the school. According to national oral health care policy there is proposal to train school teachers regarding how to prevent dental diseases and also to provide proper resource material for training purposes (13). So Present cross sectional study were done in school teachers with an aim to know the existing knowledge, attitude and practices regarding oral health so that what steps we can take to train the teachers and in turn improve there knowledge and habits. Sample size of present study was 500 with equal distribution among both private and government schools and response rate is 100%. Since we have taken prior permission from the school teachers and also one of our representatives always present at the time of filling the survey format and that led to no mistake in giving the responses.

45% of school teachers believe that vitamin C protect gingival tissues from bleeding which is similar to other study done by Paul Lang et al (14). Reason for this could be traditionally it is believed that vitamin C or citrus fruits helps prevent gum bleeding and most of the school teachers felt that vitamin C is more effective compared to brushing with tooth paste. But only 38.8% responded using tooth brush, paste and floss protects gums from bleeding where as in other study done by Paul Lang et al (14) 69.6% agree with the brushing and flossing prevents the gum diseases which is more compared to present study which suggest the point that oral health knowledge is poor among school teachers. In present study certain questions were asked like what does gum bleeding mean? What is plaque and calculus which were not asked previously in other studies done on adult as searched in the literature but these ques-

**Table 1: Distribution of school teachers based on Demographic Characters**

		Number	Percentage
Age	21-30 years	128	25.6
	31-40 years	175	35
	41-50 years	142	28.4
	> 50 years	55	11
Sex	Male	191	38.2
	Female	309	61.8
Income	Up to 5000	185	37
	5000-10000	78	15.6
	10000-20000	95	19
	> 20000	142	28.4
Type of school	Govt	250	50
	Private	250	50

**Table 2: Knowledge among school teachers**

Question	Options	Number	Percentage
What does gum Bleeding means	Healthy gum	29	5.8
	Inflamed gum	303	60.6
	Gum recession	95	19
	I do not know	73	14.6
How do you protect yourself from gum bleeding	Using tooth paste, brush and dental floss	194	38.8
	Using soft food	21	4.2
	Using vitamin C	227	45.4
	I do not know	58	11.6
What is Dental Plaque	Soft debris on tooth	142	28.4
	Staining of teeth	131	26.2
	Hard debris on tooth	127	25.4
	I do not know	100	20
What is calculus	Soft debris on tooth	75	15
	Staining of teeth	92	18.4
	Hard debris on tooth	180	36
	I do not know	153	30.8
What does Dental plaque lead to	Inflammation of gum	140	20.8
	Staining of teeth	182	36.4
	Dental caries	122	24.4
	I do not know	92	18.4
Do sweets affect Dental health	Yes	433	86.6
	No	63	12.6
	Don't know	4	0.8
Do soft drinks affect Dental health	Yes	391	78.2
	No	97	19.4
	Don't know	12	2.4
Does the health of Mouth and Dentition impact the health of the body	Yes	424	84.8
	No	53	10.6
	Don't know	23	4.6
Treatment of Tooth ache is as important as any	Yes	454	90.8
	No.	29	5.8
	Don't know	17	3.4
Brushing teeth prevents dental decay	Yes	433	86.6
	No	49	9.8
	Don't know	18	3.6
Using fluoride strengthens the teeth	Yes	236	47.2
	No	231	46.2
	Don't know	33	6.6
Using tooth brush helps preventing periodontal diseases	Yes	366	73.2
	No	96	19.2
	Don't know	38	7.6
Using Dental floss helps preventing periodontal diseases	Yes	302	60.4
	No	80	16
	Don't know	118	23.6
In your opinion, which one of these is the best method for prevention of tooth decay	Limiting sugary snacks	33	6.6
	Using fluoridated water and dental products with fluoride	31	6.2
	Chewing sugarless gum	27	5.4
	Brushing and flossing	180	36
	Visiting Dentist every 6 months	202	40.4
	Don't know	27	5.4
	3 months	197	39.4
>3 months	78	15.6	
For how long do you brush your teeth	< 1 minute	14	2.8
	1 minute	56	11.2
	2 minutes	207	41.4
	>2 minutes	223	44.6

**Table 3: Attitude among school teachers**

Question	Options	Number	Percentage
How often do you visit dentist	Regularly	81	16.2
	When in pain	293	58.6
	Occasionally / never	126	25.2
Are regular visits to dentist necessary	Yes	347	69.4
	No	133	26.6
	I don't know	20	4
Driving factor for your last result	Toothache	256	51.2
	Advice from friends	24	24
	Dentists advice	111	22.2
	Other reasons	109	21.8
Reason behind not visiting/dislike visiting dentist	Fear	84	16.8
	High cost	98	19.6
	No clinic near by	27	5.4
	No time	46	9.2
	No specific reason	245	49
Dentist cares about treatment but not prevention	Yes	228	45.6
	No	195	39
	I don't know	77	15.4

tions were asked in school children. 62% responded that gum bleeding means inflammation of gums, 28.8 % school teachers responded correctly by saying plaque means soft debris on teeth and only 30% said calculus means hard debris on the tooth. Regarding what does dental plaque

leads to 36.4% school teachers responded as staining of teeth followed by 24.4% as dental caries which is very low compared to study done by Bondarik Elena et al (15), which may be due to lack of knowledge regarding dental plaque since knowledge regarding dental plaque is low in present

**Table 4 : Behavior among school teachers**

Question	Options	Number	Percentage
How often do you brush your teeth	Once per day	159	31.8
	Twice per day	315	63
	More than twice per day	26	5.2
What do use for cleaning your tooth	Brush +tooth paste	462	92.4
	Dental floss	17	3.4
	Mouth wash	18	3.6
	Tooth picks	2	0.4
	Others	1	0.2
When do you brush your teeth	Morning	159	31.8
	Noon	1	0.2
	Before going to bed	340	68
	Other times		
How frequently do you change your tooth brush	1 month	91	18.2
	2 months	134	26.8

study. Nearly 86.6% responded that consumption of sweets affect dental health which is more compared to 61.3 % (14) and 75% as reported by Poul Erik Peterson et al (16). The reason for the same in present study is lack of knowledge regarding dental plaque and most of the teachers still believe sugar causes dental problem compared to other factors in oral cavity which is same like general population in India. 78.2% believe that consumption of soft drinks affect dental health in bad way which is much high compared to other study by Poul Erik Peterson et al (16) is 57 %. The reason for this could be now a days it has been established by many news papers and TV channels that soft drinks consist of fertilizers and acids which are harmful to both oral cavity and in general health of a person. 84.4 % believe that health of the mouth and dentition affects health of body which is similar to other study (17). 86.6% believe that proper brushing prevents tooth decay which is consistent with other studies (14). 47.2% felt that fluoride strengthened the teeth and prevents dental decay which is much less compared to other done in other places by Bondarik Elena, Leous Petr (15). The reason for this is there is lack of awareness and promotion by dentists in our country regarding beneficial effects of fluoride compared to other western countries where importance of fluoride is known since preference for prevention is more in those countries. Regarding prevention of periodontal problems 73.2% felt that brushing prevents periodontal disease and also felt that dental floss (60.4) prevents periodontal disease which is similar to other studies (14-16). Regarding the question which is the best method to prevent dental decay 40.4% felt that visiting dentist regularly every 6 months prevents dental decay followed by brushing and flossing (36%) which is much less compared to other studies (15, 16). As already explained there is lack of awareness regarding importance of dental plaque among school teachers compared to other studies mentioned above.

58.6 % visit dentist when they are in pain/toothache followed by other reasons which is very high compared to other study by



**Table 5 ANOVA test for comparison in the mean percentage scores for Knowledge, attitude and Behavior based on income**

	Income	n	mean	SD	F value	Significance
<b>Knowledge</b>	Group A	185	8.967	3.192	0.58120645	0.6532
	Group B	78	8.628	2.481		
	Group C	95	9.147	2.534		
	Group D	142	8.767	2.398		
<b>Behavior</b>	Group A	185	9.670	1.501	2.6181	0.04
	Group B	78	10.079	1.552		
	Group C	95	10.031	1.267		
	Group D	142	10.063	1.589		
<b>Attitude</b>	Group A	185	7.989	2.090	0.7213	0.521
	Group B	78	8.192	2.412		
	Group C	95	8.326	2.358		
	Group D	142	8.288	2.081		

Ling Zhu et al (17) is 19 %. The reason for this is in developing countries traditionally pain is the main motivating factor for visiting the dentist or doctor which you can see similarly in school teacher and also you can make out from results that oral health knowledge is poor among school teachers which is shown in their attitude also. 69.4% felt that regular visit to dentist is necessary for proper care of the teeth which is in consistent with various studies (14, 16). Most common driving factor to visit dentist is toothache (51.2%) compared to other study is 19 % by Ling Zhu et al (17) followed by dentist's advice (22.2%). Reason is same as above since knowledge among school teachers in poor regarding oral problems and they tend to see toothache as major factor for visiting dentist and not bothered about any preventive measures. 49% of school teachers responded that there is no specific reason for dislike visiting dentist which is followed by high cost, fear and no time which is similar to other study (18).

Regarding behavior 63% responded that they are brushing twice per day which is similar to other studies done by Ling Zhu et.al (17). 92.4 % use tooth brush and paste for brushing the teeth in the morning which is similar to other study done by Benoit et al, who use brushing the teeth with the tooth paste (19). 39.4% school

teachers change there tooth brush every 3 months followed by 26.8% every 2 months which is less compared to other study done by Ling Zhu et al (17) which may be because of the income factor since many of the school teachers belong to group A where per monthly income is low and people of low socio economic strata tend to save money in what ever way it is possible. 44.6 % brush there teeth more than 2 minutes followed by 41.2 % for 2 minutes which is similar to other studies done by Ling Zhu et al (17).

Also no statistical significant results were found when results are compared based on age, sex, income and type of school for knowledge and attitude. But based on income significant results were found in the behavior of school teachers regarding oral health. As the income of school teachers increased oral health behavior was better compared to people of low income group. Similar results were found in other studies done by (20-22).

**CONCLUSION**

Overall oral health knowledge attitude and behavior is poor among school teachers with many of them not knowing importance of dental plaque, effect of fluoride in reducing dental caries. There attitude is much similar to general population with many of them would like to visit dentist

when they are in pain and does not know any other problem affecting oral cavity other than toothache. There is disparity among study population regarding knowledge and oral health practices since many of them responded as having better oral health practices, but we can not conclude actual picture since we have not measured oral cavity parameters. There is tremendous need for improving oral health knowledge and attitude among school teachers improving knowledge regarding various problem of oral cavity and also regarding prevention of dental diseases. These improvements can be made through regular training of school teachers by oral health materials, seminars and other such methods. These steps in turn help them and also utilize these teachers in imparting oral health education to the children, since we all know they are the role models for the school children and success of society at large.

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