Original Article

Assessment of Knowledge and Their Perceived Role as Oral Health Educators among Government School Teachers in Tirupur District

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Abstract

Introduction: Oral health is vital for overall well-being. As oral health educators, school teachers have successfully improved students' oral health. The World Health Organization endorses "Health-promoting schools" to create a healthy environment for living, learning, and working. The study assesses government school teachers' knowledge and perceived roles as oral health educators in the Tirupur district. **Methodology:** A 3-month observational study was conducted among 507 government school teachers of the Tirupur district using a pretested questionnaire. The schools were randomly selected, and all the school teachers of the selected schools participated in the study after obtaining a consent form. Each teacher was approached individually by the investigator; questionnaires were distributed and collected back on the same day. **Results:** School teachers have 60% knowledge about periodontal disease and 42.4% about fluoride. About 96.8% of teachers suggested that awareness dental camps and workshops could be organized and that unhealthy foods should be banned near schools. School teachers like to play passive roles in oral health education, and there is a high agreement rate (91.7%) to integrate oral health topics with subjects taught in classrooms. **Conclusion:** School teachers can be trained in oral hygiene so that they disseminate information to future society. This may encourage them to maintain good oral hygiene and reduce the incidence of oral diseases by using dental services.

Keywords: Fluoride knowledge, oral health educators, periodontal disease, school teachers

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Introduction

Oral health is a vital part of overall well-being. It is a public health concern due to its high prevalence and significant impact on physical, emotional, and economic aspects.[1] Good oral hygiene practices are vital in preventing oral diseases in India, where traditional treatments have had limited success. Emphasizing primary prevention would be efficient and cost-effective.[2]

Dental health education (DHE) is cost-effective and best implemented in schools. Prevention is better than cure, and preventive procedures are being executed in various parts of society.[3] Oral health education is crucial for maintaining good oral health. Teachers play a critical role in promoting oral hygiene practices among children. The establishment of school-based oral health promotion programs in India is essential.[4]

The impact of dental caries on school children is more pronounced in developing countries, making oral health education essential. The WHO promotes healthy living, learning, and working through its Global School Health Initiative, advocating for "health-promoting schools" to improve the health of students, personnel, and families.[5] Teachers are crucial in promoting oral health and can educate and positively influence students' oral health behaviors. Initiatives and programs have been implemented to train and educate school teachers on oral health promotion, with guidelines on sugar intake provided to protect oral health. In 1995, the WHO introduced a program promoting general health through

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schools, and by 2007, a school oral health program was adopted in Gulu, including education, screening, and teacher training.[6]

The National Oral Health Program, established by the Ministry of Health and Family Welfare, is dedicated to ensuring that high-quality oral healthcare is accessible and affordable for all. A key focus is on promoting oral health education and training school teachers to serve as dental health ambassadors. This initiative was launched in 1986 by the Indian Dental Association and was later integrated into the National Health Policy in 1995.[7,8]

Teachers play a crucial role in promoting oral health among school children by providing clear information, integrating oral health into the curriculum, promoting healthy habits, and encouraging dental checkups. Schools in India should conduct regular training and education programs to ensure children have the necessary knowledge about oral health. Teachers should be trained to conduct health education programs and incorporate oral health into the curriculum. Using school personnel for oral health education can improve instruction continuity, lower costs, and provide valuable support for healthy behaviors. The study aims to assess government school teachers' knowledge and their perceived roles as oral health educators in the Tirupur district.

Methodology

Study population and sampling procedure

Using a stratified cluster sampling method, the schools were selected from a list obtained from local authorities in the Tirupur district, Tamil Nadu, India. A total of 507 government school teachers from Tiruppur district were randomly selected for a cross-sectional questionnaire study. Before the study, permissions were obtained from the schools and authorities, and the teachers were fully informed about the research purpose. Consent was obtained before data collection, and participants were assured of confidentiality.

Inclusion criteria

- The teachers who teach primary, middle, secondary, and higher secondary school students working in government schools were included in this study.

Exclusion criteria

- Teachers, were not present on the scheduled date of the survey and were not willing to participate
- Teachers who were undergoing teacher training courses in the schools
- Teachers who have attended any dental awareness programs.

Study questionnaire

The self-administered questionnaire had multiple-choice items categorized into six sections as follows:

- Section I (4 items) – Demographic data such as gender, age, work experience, and education status
- Section II (3 items) – Perceived oral health knowledge
- Section III (21 items) – Knowledge of periodontal disease and fluoride assessed by a five-point Likert scale ranging from disagree to agree
- Section IV (7 items) – Their adequacy to teach dental health topics
- Section V (5 items) – Their agreement in doing their role as teachers in promoting oral health
- Section VI (9 items) – Steps they suggest that could be undertaken to promote oral health in the future.

Pilot study

Before starting the pilot study, a 49-item questionnaire was translated into the local language and validated with a 100% congruency percentage. The content validity index for individual items (ICVI) was calculated as I-CVI = 0.97. The questionnaire was pilot-tested with 50 school teachers, and its reliability was confirmed through various tests, including Cronbach's alpha and test–retest methods. The questionnaire was then refined based on the feedback received from the pilot study, and the school teachers involved in the pilot study were excluded from the final study.

The total sample size was calculated to be 469, which was rounded up to 500 to avoid bias.

Study procedure

The schools were randomly selected, and all the school teachers of the selected schools participated in the study after obtaining a consent form. The study was carried out for 3 months. Each teacher was approached individually by the investigator, and questionnaires were distributed and collected back on the same day. Anonymity was guaranteed, and participants were encouraged to ask for assistance if needed.

Scoring

The questions were assigned one point each for the correct answer and zero points for the wrong answer.

Statistical analysis

Results were presented as numbers and percentages of respondents for each question and were analyzed using IBM, SPSS Statistics, version 26 (Chicago, Illinois, United States). We used descriptive statistics to analyze data: frequencies, percentages, means, and standard deviation (SD) were calculated on responses to questions.

Results

Pie Chart 1 shows more than half (65%) were female and 35% were male among study participants; based on the age of the study participants, 26 (5%) were 25–29 years, 39 (8%) were 30–34 years, 102 (20%) were 35–39 years, 112 (22%) were 40–44 years, 105 (21%) were 45–49 years, 123 (24%) were >50 years [Pie Chart 2].

Based on the designation of the study participants, 37% were secondary grade teachers, 30% were graduate teachers, 24% were postgraduate teachers, and 9% were headmasters [Pie Chart 3]. Based on the teaching experience of the study participants, 9% have 1–5 years, 18% have 6–10 years, 27%

have 11–15 years, 29% have 16–20 years, and 17% have 20+ years of experience [Pie Chart 4].

Stacked Bar Chart 1 demonstrates a good grasp of gum (periodontal) disease among teachers, where 82% agreed with the statement that periodontal disease can lead to the loss of bone that supports the teeth, and 84% decided that slight bleeding on brushing is an early sign of periodontal disease. Similarly, 43.7% disagreed that a virus causes periodontal disease, 57% disagreed that a hard toothbrush is more effective than a soft one and 53% disagreed that people get gum disease only because they don't clean their teeth.

Results show that 85% of the teachers responded correctly that fluoride makes tooth enamel more resistant to decay, and 63% agreed that fluoride is an essential nutrient for bones and teeth. The following responses were disagreed by the study participants 53% disagreed that fluoride shows the location of plaque on teeth, 62% disagreed that fluoride cleans teeth, 54% disagreed that fluoride makes teeth whiter and 57% disagreed that fluoride cuts down on bacteria in the teeth [Stacked Bar Chart 2].

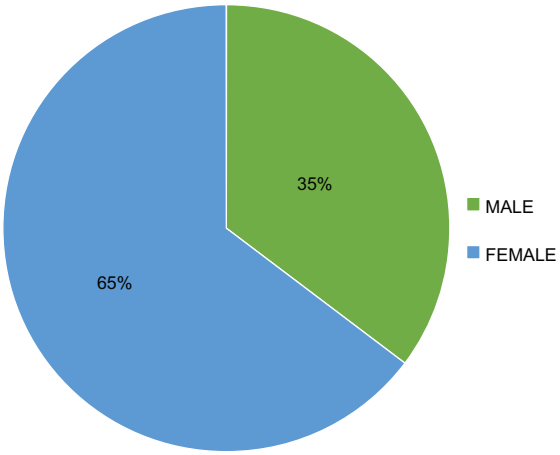
Results state the greater acceptance of their roles as oral health educators in oral health promotion in which 94% of teachers said they will refer students with dental problems to the dentist [Stacked Bar Chart 3].

The result reveals that sources of information about oral health among teachers were 84% in the dental office, followed by 73% from mass media (TV/Internet/radio), 62% from magazines and books, 55% from newspapers, 40% from friends, family, neighbors and 39% from the general clinic or physician which is shown in Table 1.

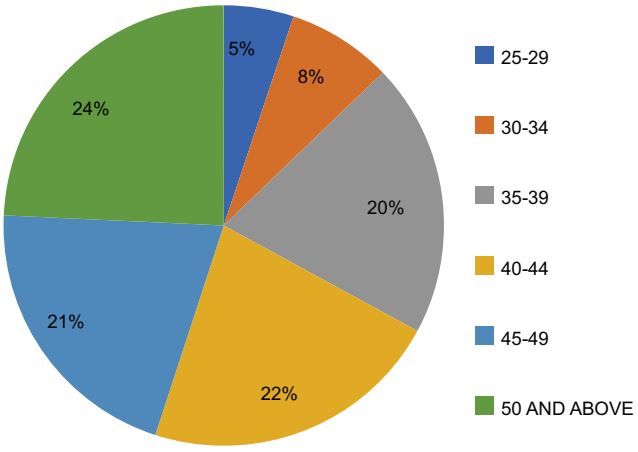
Results express that the main reasons for maintaining good oral hygiene were to prevent tooth decay (21%), bad breath (45%), and gum disease (21%). Less than 10% said the other reasons such as to reduce dental care costs, enhance appearance, or set an example for children [Table 2].

Results show that the methods of dental caries prevention are brushing regularly with toothpaste as the most important thing to do, followed by reducing sugar consumption and regular dental visits. Less than 10% considered the use of a fluoride mouth rinse, pit and fissure sealant, dental floss, and fluoridated water as important [Table 3].

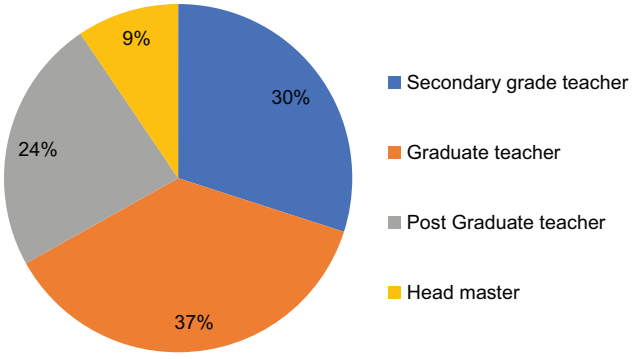
Results show a high agreement (>90%) in five of the seven topics that could be integrated into their classes, which is summarized in Table 4.



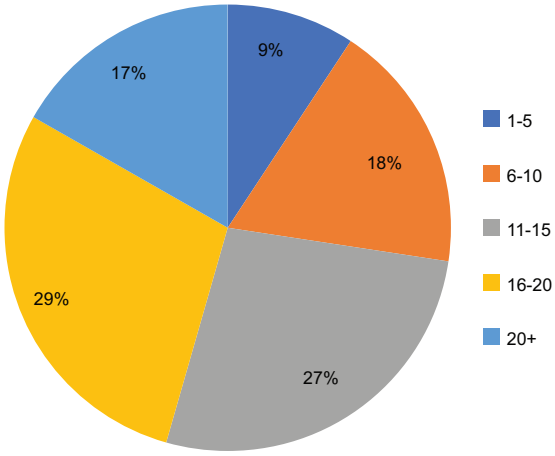
Pie Chart 1: Gender distribution of school teachers



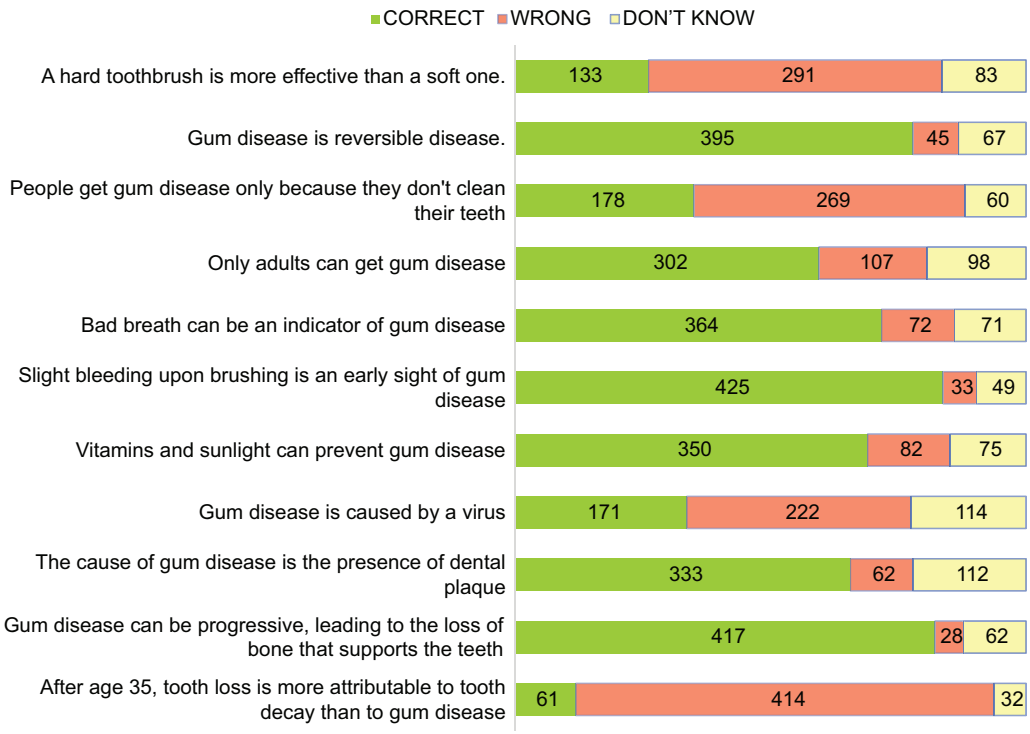
Pie Chart 2: Age distribution among school teachers



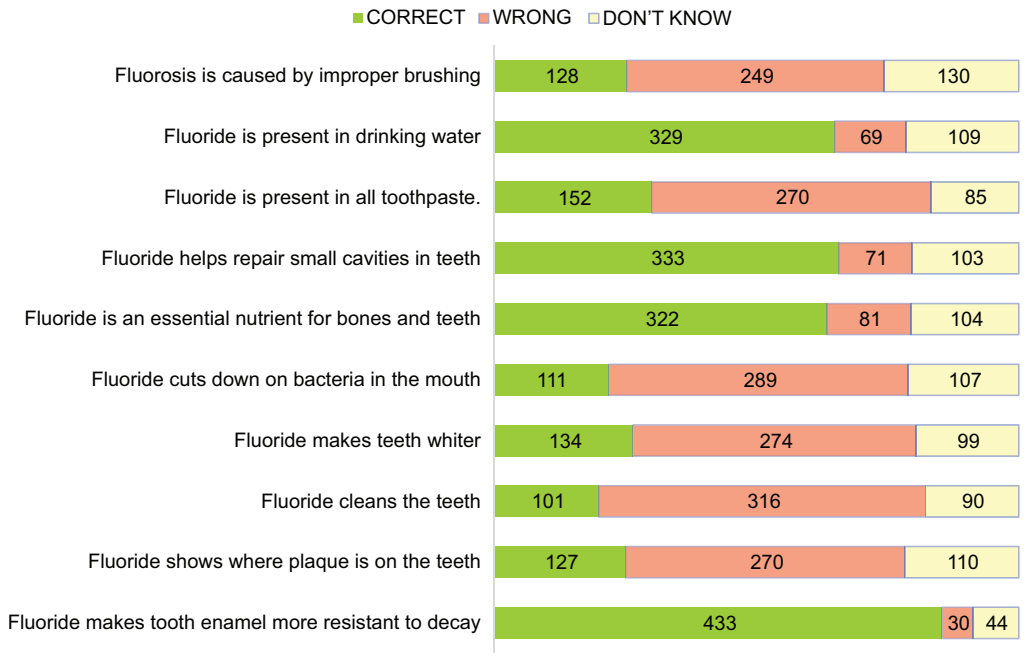
Pie Chart 3: Designation of school teachers



Pie Chart 4: Teaching experience of school teachers



Stacked Bar Chart 1: Knowledge of periodontal disease

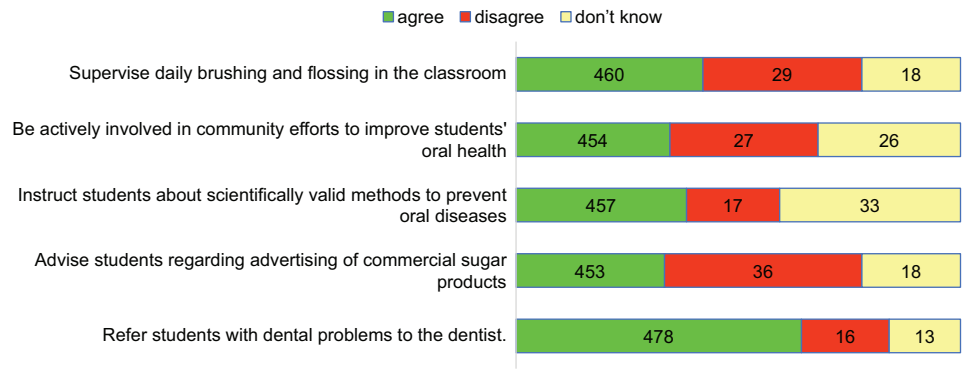


Stacked Bar Chart 2: Knowledge of fluoride

Results illustrate what teachers perceive as their roles in oral health education. Most agree that their role is to refer students with dental problems to the school nurse and to advise students about sugar consumption. It appears that teachers do not see themselves playing an active role in dental activities such as supervising daily brushing and flossing and weekly fluoride rinsing [Table 5].

Discussion

The Ministry of Health and Family Welfare, Government of India, accepted the principle "The National Oral Health Policy" in year 1995. It plans to extend minimum oral health to the entire Indian population. The policy gave special emphasis to preschool children, primary and secondary



Stacked Bar Chart 3: Role of teachers in oral health promotion

Table 1: Sources of information about oral health among school teachers

Sources	*n*	%
Dental Office/clinic	425	83.8
Magazines or books	316	62.3
Newspapers	277	54.6
Friends/Neighbours/Family	201	40
TV/Radio/Internet	370	73
General physician/clinic	198	39

Table 2: Reasons for maintaining good oral hygiene among school teachers

Reasons for maintaining good oral hygiene	*n*	%
To prevent bad breath	230	45.36
To prevent tooth decay	107	21.1
To prevent gum disease	198	39
To enhance the appearance	44	8.6
To reduce dental care costs	45	8.8
To set an example for children	49	9.6

Table 3: Methods of caries prevention in children among school teachers

Methods	*n*	%
Make regular dental visits	133	26.2
Reduce sugar consumption	120	23.6
Use dental floss at least once a day	26	5.1
Have fissure sealants applied to teeth	15	2.9
Use a fluoride mouth rinse and fluoridated water	17	3.3
Brush regularly with toothpaste	195	38.4

school children, expected and nursing mothers, and the increasing geriatric population. It has also emphasized oral health education and the training of trainers. Oral health education chapters should be included in the school curriculum.

Teachers have the potential to contribute positively to the process of developing and maintaining an effective school oral health program. School teachers as dental health educators have many advantages over dental professionals.[9] They can instruct all school-attending children rather than only seeking dental care.

School teachers have a daily influence on children at a time when the students are mounting their value systems. The close relationship built in classrooms allows teachers to individualize information to suit each child. The teachers are more skilled in education psychology than dental professionals and they can help their students to seek dental help at an early stage when the cost is low, but the effectiveness is more. The only possible disadvantage may be the inadequate background of teachers for providing oral health education as mentioned by Loupe and Frazier[10] and Peterson and Eshen.[11]

Mohanty *et al*. 2021 conducted a study that shows that almost 68.2% of the respondents advocated "school-based activities" for oral health promotion. Nearly 36.4% said "Include dental information in the school curriculum.[12] Similarly, our study shows that 92.7% suggested a regular dentist visit to the school and 97.6% said dental health education should be included in the primary school curriculum, which may improve the promotion of oral health in the future.

Depending on local infrastructure and available resources, schools can adopt various approaches to promote oral health education in Tamil Nadu. Some schools have incorporated several initiatives (RBSK, Hospital on Wheels) simultaneously, while others have built on an existing established system of good practice.[13] This is also reflected in our study which shows that more than 90% of teachers show a positive attitude toward the promotion of oral health in the future.

Angelopoulou *et al*. in 2015[14] conducted a comparative clinical study showing school-based oral health education programs will have statistically significant results through experiential learning (81.7%) than traditional lecturing (78.9%) and a survey conducted by Jain *et al*. in 2016[15] among school teachers found that 77% of school teachers have basic knowledge about oral health and suggested that experiential learning is an effective school-based oral health education method for improving oral hygiene in primary school

Table 4: Adequacy of teachers teaching dental health topics

Oral health topics	Yes	No	Not applicable
Relating good dental health to proper diet	501 [98.8]	4 [0.8]	2 [0.4]
Increasing proficiency in brushing and flossing	421 [83]	51 [10]	35 [7]
Developing a sense of pride in good oral health	484 [95.5]	13 [2.6]	10 [1.9]
Understanding the processes and reasons for tooth decay	477 [94.1]	24 [4.7]	6 [1.2]
Appreciating the services a dentist can provide	460 [90.7]	28 [5.6]	19 [3.7]
Understanding the processes and reasons for periodontal disease	469 [92.5]	36 [7.1]	2 [0.4]
Process of eruption and shedding of teeth	452 [89.1]	40 [8]	15 [2.9]

Table 5: Suggestion of school teachers about the steps that could be undertaken to promote oral health in the future

Steps	Acceptance %
Dental health education should be included in the primary school curriculum.	97.6 [495]
All teachers should have training in dental health education.	91.1 [462]
Supervise the use of weekly fluoride mouth rinse in class.	77.5 [393]
Regular visits by the dentist.	92.7 [470]
Awareness camps and workshops could be organized in schools.	96.6 [490]
Community-based oral health education programs.	95.4 [484]
The additional supply of free oral hygiene aids would have motivated the children to maintain good oral hygiene.	95.4 [484]
A ban on the sale of unhealthy or harmful foods and substances in the close vicinity of the school.	96.6 [490]
Conducting competitions on national oral health days in school.	94.4 [479]

children. A study conducted by Mohanty *et al*. in 2021[12] shows that the major roadblock was a "lack of awareness" by 47.7% and that responses from government school teachers in Delhi gave insight regarding the basic need for further subject-specific oral health education programs as a key to changing the current scenario. Future seminars and workshops remain the mainstream to appraise the knowledge for school staff. Gurung *et al*. in 2023,[16] conducted a study among school teachers in Dharamshala City, Himachal Pradesh, and found that only 67% of school teachers have basic knowledge about proper oral hygiene practices and suggested that efforts should be encouraged to educate teachers about modern preventive dentistry for translation of oral health promotion among school children. Continued dental education and teachers' training programs remain the best way to impart scientific oral health knowledge to teachers to improve their oral health practices and reduce the burden of oral diseases. In accordance, our study shows similar results: 96.9% of school teachers suggested that awareness camps and workshops could be organized by schools and 91.1% of school teachers suggested that all teachers should have training in dental health education to promote oral health in the future.

In our study, 97.6% of school teachers suggested that dental health education should be included in the primary school curriculum. Similarly, a study conducted at Kanakapura Taluk, Bengaluru Rural District conducted by Chandrashekhar *et al*., in 2011,[17] found that 64.9% of school teachers have average knowledge about oral health and he suggested that each school should hire a dental health instructor to deliver essential knowledge about oral hygiene to the teachers as well as children and the subject matter should be included in the curriculum so that cognizance concerning oral hygiene is well combined with the teachers as well children.

The WHO indicated that the insufficiency of the teaching techniques and educational kits used for training classes remained one of the reasons for the decrease in the excellence of teaching. Additionally, it revealed that the best teaching technique is one that can allow providers to perform services correctly, and it depends to a certain extent on the learners.[18]

A genuinely good teacher never stops studying. The health tutoring in school today and tomorrow will be only good if teachers are accountable for its performance.[19]

In the current study, 85.4% of school teachers were aware that fluoride makes tooth enamel more resistant to decay in the Tiruppur district. These results are similar to the findings of the study conducted by Sekar *et al*., where around 74.5% of the respondents knew the protective action of fluoride against dental caries. They also believed that preventive treatment apart from dental treatments is essential as children develop caries at a younger age.[20] This is due to the awareness spread in the commercial advertisements about fluoride's role in preventing caries.

Mota *et al*. 2016[21] conducted a study among Pre-Primary and Primary School Teachers in Mumbai, India stating that 45.0% of the teachers were unaware of fluoridated toothpaste while 78.9% of them were unaware of school water fluoridation programs. In the present study, nearly half of the school teachers demonstrated incomplete knowledge of fluoride by stating that fluoride shows the location of plaque on teeth (47%), fluoride cleans teeth (42%), fluoride makes teeth whiter (46%) and fluoride cuts down on bacteria in the teeth (43%) and unaware of fluoridated toothpaste (70%).

The result of the current study shows inadequate (42.4%) knowledge of school teachers regarding the role of fluorides in the oral cavity. However, similar to this, studies conducted in Pondicherry,[20] Belarus[22] and Davangere[23] showed adequate knowledge of school teachers concerning caries preventive effect of fluoride as <50% of the study participants in all three studies were well aware of the effect of fluoride in dental caries prevention.

Shodan *et al*. conducted a study among school teachers in Dharwad, India in 2012 showing the knowledge about the prevention of Gum disease is 68.78%.[24] Similarly, our study shows that 60% of school teachers are aware of periodontal disease.

CC Azodo *et al*. in 2015[25] conducted a study which showed 29.8% of participants considered periodontal disease as the main cause of tooth loss among adult Nigerians. The perceived manifestations of the periodontal disease reported were mainly gum bleeding 35.1% and swollen gum 20.5%. It is contrary to our study reports the manifestations of the periodontal disease were mainly gum bleeding 83.8% (425) and halitosis 71.7% (364). This may be because more than half of the school teachers are >40 years of age and have personal experience with gum disease in India.

School teachers' knowledge regarding the causes and prevention of gum disease was found adequate as most of them of well aware of various causes and preventive measures of gum disease because 45% of study participants were >45 years of age. This result is in contrast with the study done in Davangere where only 14.7% of teachers marked irregular tooth brushing as a cause of gum disease.[23]

Recommendations

In Tamil Nadu, school dental nurses will promote good oral health practices, prevent dental diseases, and ensure children grow up with healthy smiles. They will educate, prevent, and engage with the community, becoming an essential part of the healthcare system. Dental professionals should organize educational sessions and provide materials to increase teachers' awareness about oral hygiene, and intersectoral coordination and public health policy development can significantly impact the oral health of school children.

Limitation

The limited sample size and specific population included in the study raise questions about the validity of the results and their differences. As a result, it is difficult to generalize the effectiveness of the findings to all populations. Additionally, variations in the implementation of the experiential program between different schools could be another confounding factor.

Conclusion

School teachers can be trained in oral hygiene to promote good oral health among students and the overall school community. However, teachers in a study showed limited knowledge of oral health. It is suggested to incorporate oral health education in the curriculum and provide regular training for teachers by dental professionals. Dental camps at school premises and workshops on oral health aspects could also be beneficial in improving teachers' knowledge and practice of oral health. Coordination between school authorities, parents, dental care providers, and funding agencies is important for implementing these training programs. Efficient oral hygiene is essential to avoid dental issues, and awareness about oral cleanliness procedures is necessary for everyone.

Ethical statement

The study was approved by the Institutional Review Board of Vivekanandha Dental College for Women on 27.07.2023.

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Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Peres MA, Macpherson LM, Weyant RJ, Daly B, Venturelli R, Mathur MR, *et al.* Oral diseases: A global public health challenge. Lancet 2019;394:249-60.
2. Naidu J, Nandlal B. Evaluation of the effectiveness of a primary preventive dental health education programme implemented through school teachers for primary school children in Mysore City. J Int Soc Prev Community Dent 2017;7:82-9.
3. Blinkhorn AS. Dental health education: What lessons have we ignored? Br Dent J 1998;184:58-9.
4. Nakre PD, Harikiran AG. Effectiveness of oral health education programs: A systematic review. J Int Soc Prev Community Dent 2013;3:103-15.
5. Kwan SY, Petersen PE, Pine CM, Borutta A. Health-promoting schools: An opportunity for oral health promotion. Bull World Health Organ 2005;83:677-85.
6. National Oral Health Policy | MOH Knowledge Management Portal. Available from: http://library.health.go.ug/community-health/oral-health/national-oral-health-policy. [Last accessed on 2024 May 19].
7. Kothia NR, Bommireddy VS, Devaki T, Vinnakota NR, Ravoori S, Sanikommu S, *et al.* Assessment of the status of national oral health policy in India. Int J Health Policy Manag 2015;4:575-81.
8. Akera P, Kennedy SE, Obwolo MJ, Schutte AE, Lingam R, Richmond R. Primary school teachers' contributions to oral health promotion in urban and rural areas of the Gulu District, Northern Uganda: A qualitative study. BMC Oral Health 2022;22:211.
9. Singh H, Chaudhary S, Gupta A, Bhatta A. Oral health knowledge, attitude, and practices among school teachers in Chitwan district, Nepal. Int J Dent 2021;2021:9961308. [doi: 10.1155/2021/9961308].
10. Loupe MJ, Frazier PJ. Knowledge and attitudes of schoolteachers toward oral health programs and preventive dentistry. J Am Dent Assoc 1983;107:229-34.
11. Peterson PE, Esheng Z. Dental caries and oral health behaviour situation of children, mothers and school teachers in Wuhan, People's Republic of China. Int Dent J 1998;48:210-6.
12. Mohanty V, Jain S, Grover S. Oral healthcare-related perception, utilization, and barriers among schoolteachers: A qualitative study. J Indian Soc Pedod Prev Dent 2021;39:154-8.
13. National Oral Health Programme (NOHP) | National Health Mission Tamil Nadu, Department of Health & Family Welfare Govt. of Tamil Nadu, India. Available from: https://www.nhm.tn.gov.in/en/node/6110. [Last accessed on 2024 May 31].
14. Angelopoulou MV, Kavvadia K, Taoufik K, Oulis CJ. Comparative clinical study testing the effectiveness of school based oral health

education using experiential learning or traditional lecturing in 10 year old children. BMC Oral Health 2015;15:51.
15. Jain S, Bhat N, Asawa K, Tak M, Singh A, Shinde K, et al. Effect of training school teachers on oral hygiene status of 8-10 years old government school children of Udaipur City, India. J Clin Diagn Res 2016;10:C95-9.
16. Gurung D, Bhardwaj VK, Fotedar S, Thakur AS, Vashisth S. Assessment of oral health practices of school teachers in Dharamshala City, Himachal Pradesh. Tanta Dent J 2023;20:124.
17. Chandrashekhar BS, Vanishree N, Jayakumari HL, Mohan AN, Gupta N. Knowledge, attitude and practices towards oral health among school teachers of Kanakapura Taluk, Bengaluru Rural District. J Indian Assoc Public Health Dent 2011;9 Suppl 3:S654.
18. Ehtesham H, Safdari R, Mansourian A, Tahmasebian S, Mohammadzadeh N, Pourshahidi S. Management of the essential data element in the differential diagnosis of oral medicine: An effective step in promoting oral health. J Educ Health Promot 2020;9:255.
19. 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;4:7.
20. Sekhar V, Sivsankar P, Easwaran MA, Subitha L, Bharath N, Rajeswary K, *et al*. Knowledge, attitude and practice of school teachers towards oral health in Pondicherry. J Clin Diagn Res 2014;8:C12-5.
21. Mota A, Oswal K, Sajnani D, Sajnani A. Oral health knowledge, attitude, and approaches of pre-primary and primary school teachers in Mumbai, India. Scientifica 2016. p. 1-8. [doi:10.1155/2016/5967427].
22. Elena B, Petr L. Oral health and children attitudes among mothers and school teachers in Belarus. Stomatologija Baltic Dental and Maxillofacial Journal 2004;6:40-3.
23. Maganur PC, Satish V, Marwah N, Vishwas TD, Dayanand MC. Knowledge, attitudes, and practices of school teachers toward oral health in Davangere, India. Int J Clin Pediatr Dent 2017;10:89-95.
24. Shodan M, Prasad KV, Javali SB. School teachers' knowledge of oral disease prevention: A survey from Dharwad, India. J Investig Clin Dent 2012;3:62-7
25. Azodo CC, Umoh AO. Periodontal disease awareness and knowledge among Nigerian primary school teachers. Ann Med Health Sci Res 2015;5:340-7. [doi: 10.4103/2141-9248.165257].