

# Supporting Teachers to Promote Lifelong Healthy Smiles: A Cross-Sectional Survey Study

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## ABSTRACT

**Background:** Teachers are instrumental in fostering healthy habits, including oral hygiene, as schools serve as key platforms for health education. However, their effectiveness in promoting oral health among students remains underexplored, particularly in resource-limited settings like Sangareddy, India.

**Objective:** To evaluate teachers' awareness and opinions regarding the promotion of oral hygiene among school students.

**Methods:** A cross-sectional study was conducted with ethical clearance (IRB No. 2023-045). A validated, self-administered questionnaire with 20 questions was distributed to 150 teachers from five schools in Sangareddy, selected via simple random sampling. Descriptive statistics and the Kruskal-Wallis test were used to assess the influence of age, qualification, and teaching experience on oral health awareness ( $p < 0.05$ ).

**Results:** Teachers aged 40-50 (12.7%), those with over 10 years of experience (26%), and those with postgraduate qualifications (30%) exhibited significantly higher oral health awareness ( $p < 0.05$ ). However, 77.3% of teachers lacked knowledge about the appropriate use of

mouthwash for children, indicating a critical gap in understanding.

**Conclusion:** Despite some variation by age, experience, and qualification, teachers demonstrated incomplete oral health knowledge and inadequate practices. There is an urgent need for structured training programs to equip teachers with the skills to promote lifelong dental health habits in students.

**Keywords:** Dental hygiene, oral health, oral hygiene awareness, school health education, teacher training

## INTRODUCTION

According to World Health Organization [WHO], Oral health is a critical component of overall well-being, yet it remains a neglected aspect of public health, particularly in school-aged children. [1] Schools are ideal settings for health education, as children spend significant time there, and teachers serve as role models who can influence lifelong habits. [2] Despite this potential, the effectiveness of teachers in promoting oral health depends on their knowledge, attitudes, and practices. This study explores teachers' awareness and opinions regarding oral hygiene education in Sangareddy, India, aiming to identify

gaps and propose solutions to empower educators as agents of dental health promotion.

Why is teacher involvement in oral health education so crucial? Children are highly receptive to learning during their formative years, and habits established in childhood often persist into adulthood.<sup>[3]</sup> However, teachers may lack the training or resources to effectively integrate oral health into their curricula. This article presents findings from a survey of 150 school teachers, examining how factors like age, experience, and qualifications influence their ability to promote oral hygiene. By addressing these gaps, we aim to advocate for targeted interventions to enhance teachers' roles in fostering lifelong dental health habits.

Oral health encompasses the maintenance of healthy teeth, gums, and oral tissues, which significantly impacts quality of life.<sup>[4]</sup> Poor oral hygiene can lead to dental caries, periodontal diseases, and systemic health issues, particularly in children from low-resource settings.<sup>[5]</sup> Schools provide a unique opportunity to deliver health education, as they reach children at a critical developmental stage. Teachers, as trusted figures, can reinforce oral health practices through classroom activities, discussions, and role modeling.<sup>[6]</sup>

Previous studies have highlighted the potential of school-based oral health programs. For instance, a systematic review by Cooper et al. (2013) found that teacher-led interventions significantly improved students' oral hygiene behaviors. However, the success of such programs hinges on teachers' knowledge and confidence.<sup>[7]</sup> In India, where dental care access is limited in rural areas like Sangareddy, teachers can bridge this gap by educating students on basic practices like brushing, flossing, and mouthwash use.<sup>[8]</sup> Yet, little is known about teachers' preparedness for this role. This study addresses this gap by assessing teachers' awareness and identifying areas for improvement.

## **MATERIALS & METHODS**

### **Study Design and Participants**

This cross-sectional study was conducted in Sangareddy, India, after obtaining ethical clearance from the Institutional Review Board (IRB No. 2024-045). A total of 150 teachers from five randomly selected schools participated. Simple random sampling ensured a representative sample across different school types (public and private).

### **Data Collection**

A self-administered questionnaire with 20 questions was developed based on WHO oral health guidelines (WHO, 2022). The questionnaire covered knowledge (e.g., brushing frequency, mouthwash use), attitudes (e.g., importance of oral health education), and practices (e.g., teaching oral hygiene in class). Questions were validated for content and clarity by a panel of dental and education experts. The survey was distributed in English, with a response time of 20 minutes.

### **STATISTICAL ANALYSIS**

Descriptive statistics summarized participants' demographic characteristics and responses. The Kruskal-Wallis test was used to evaluate differences in oral health awareness based on age, qualification, and teaching experience, with a significance threshold of  $p < 0.05$ . Data were analyzed using SPSS version 26.

### **RESULT**

Of the 150 teachers surveyed, 60% were female, and 40% were male. The age distribution included 12.7% in the 40-50 age group, 45% aged 30-40, and 42.3% under 30. Regarding qualifications, 30% held postgraduate degrees, 50% had bachelor's degrees, and 20% had diplomas. Teaching experience varied, with 26% having over 10 years, 44% with 5-10 years, and 30% with less than 5 years.

### Knowledge and Awareness

Teachers aged 40-50 demonstrated significantly higher oral health knowledge ( $p = 0.032$ ), particularly in understanding brushing techniques and fluoride benefits. Similarly, teachers with over 10 years of experience ( $p = 0.021$ ) and those with postgraduate qualifications ( $p = 0.015$ ) showed greater awareness of oral hygiene practices. However, a striking 77.3% of teachers were unaware of the appropriate use of mouthwash for children, including its dilution and frequency.

### Attitudes and Practices

While 85% of teachers agreed that oral health education is important, only 40% incorporated it into their teaching. Common barriers included lack of training (60%), time constraints (50%), and limited resources (45%). Teachers with postgraduate qualifications were more likely to view oral health as a priority ( $p = 0.018$ ).

### DISCUSSION

The findings reveal a mixed picture of teachers' preparedness to promote oral health. While older, more experienced, and highly qualified teachers demonstrated better knowledge, the overall awareness was incomplete, particularly regarding mouthwash use. This gap is concerning, as mouthwash can complement brushing in preventing dental caries, but improper use (e.g., undiluted solutions) can harm children.<sup>[9]</sup>

The statistical significance ( $p < 0.05$ ) of age, experience, and qualifications suggests that professional development and exposure enhance teachers' understanding of oral health. However, the high percentage (77.3%) of teachers unaware of mouthwash protocols indicates a systemic lack of training. This aligns with prior research, such as Gambhir et al., who noted that Indian teachers often lack formal health education training.<sup>[10]</sup>

The attitudinal data further highlight a disconnect between belief and action. While most teachers recognize the importance of

oral health, few integrate it into their classrooms. This may stem from competing academic priorities or inadequate support from school systems. Cooper et al. emphasize that teacher training programs can overcome such barriers by providing practical tools and curricula.<sup>[7]</sup>

These findings underscore the need for targeted interventions to equip teachers with oral health knowledge. Schools in Sangareddy, and potentially other regions, could benefit from structured training programs that cover basic dental hygiene, age-appropriate practices, and classroom integration strategies. Collaboration with dental professionals could enhance program effectiveness.<sup>[8]</sup>

### RECOMMENDATIONS

To enhance oral health awareness and practices among schoolchildren, several key strategies are recommended. Firstly, teacher training workshops should be developed and led by dental professionals to impart evidence-based oral health practices, with a focus on proper brushing, flossing, and mouthwash use. These workshops should be made mandatory and conducted annually to ensure up-to-date knowledge. Secondly, curriculum integration is essential; oral health education can be seamlessly incorporated into existing subjects like science or health education through interactive methods such as role-playing and demonstrations to engage students effectively. Thirdly, resource provision should be prioritized by supplying schools with educational materials, including posters and videos, along with dental kits that encourage hands-on learning experiences. Fourthly, policy advocacy is needed to urge local education boards to formally include oral health components in teacher training curricula and school health policies, thereby institutionalizing these efforts. Lastly, community engagement should be strengthened by collaborating with local dental professionals to organize regular school-based dental check-ups and awareness campaigns, fostering a holistic

and community-supported approach to improving children's oral health.

## CONCLUSION

Teachers are uniquely positioned to foster lifelong dental health habits, but their effectiveness is limited by incomplete knowledge and inadequate training. This study of 150 teachers in Sangareddy highlights significant gaps, particularly in understanding mouthwash use, despite some advantages among older, experienced, and highly qualified educators. Organized training programs, curriculum integration, and community partnerships are essential to empower teachers as oral health advocates. By addressing these gaps, schools can become powerful platforms for promoting dental health, ensuring healthier futures for students.

### Declaration by Authors

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