

# Knowledge, Attitude, and Practices of School Teachers toward Dental Caries and Prevention in Tirupati City, Andhra Pradesh

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## Abstract

**Background:** The most significant period of a child's life is spent at school, and it is here that their lifetime beliefs and habits develop. A school-based program is most effective because children are approached at a time when their health habits are forming. Teachers are considered as role models to transmit values of life. To instill, healthy preventive oral habits, the teachers themselves need to have a good knowledge and attitude toward oral health. **Aim:** The aim of this study was undertaken with the objective of assessing the knowledge, attitude, and practices of school teachers toward dental caries and prevention. **Materials and Methods:** This was a cross-sectional survey conducted among school teachers in Tirupati city. A pretested structured questionnaire related to dental caries and its preventive measures were used, and 100 teachers were assessed on their knowledge on oral health, attitude, and practices regarding their personal oral health, attitude regarding dental caries in children, and status of oral health education (OHE) at the schools. **Results:** Around 55% of the participants felt that bacteria and sugars are the main causes of dental caries. Around 57% of the teachers brushed twice daily. However, only 58% of the participants felt it is necessary to visit the dentist regularly. While 86% of the teachers expressed the need for OHE programs at the school level, only 43% agreed that it is their duty to impart OHE to the students. **Conclusion:** The knowledge and attitude of school teachers about dental caries and its current preventive methods seem to be incomplete. As a pedodontist, there is a need to educate the teachers regarding oral healthcare in children and to update their knowledge by conducting OHE programs within a school setting, and further studies should be done to assess their awareness levels and make the necessary changes in further education modules.

**Keywords:** Attitude, dental caries, knowledge, school teachers

## INTRODUCTION

Oral health surveys show that dental caries and periodontal disease form the most common dental problems among the Asian population.<sup>[1]</sup> The importance of imparting lessons on hygiene to infants and preschool children had been recognized as early as 1878.<sup>[2,3]</sup> According to Kenney, a school administrator, "school have a tremendous capacity to be supportive of programs involving preventive health and preventive dentistry for children."<sup>[4]</sup> The most significant period of a child's life is spent at school, and it is here that their lifetime beliefs and habits develop.<sup>[5]</sup> A school-based program is the most effective because children are approached at a time when their health habits are forming.<sup>[6-9]</sup>

Teachers are considered as role models to transmit values of life.<sup>[10]</sup> The number of primary school teachers around worldwide has been reported to be around 23.9 million.<sup>[11]</sup> To instil healthy preventive oral habits, the teachers themselves

need to have a good knowledge and attitude toward oral health.<sup>[12]</sup> The lack of adequate training of teachers can be a significant barrier to the success of school health dental programs, which can in fact result in adverse effects on the health of students.<sup>[13]</sup> The literature on teachers' knowledge and attitudes suggests that a further investigation is required to confirm the previous findings and to determine whether the regional differences occur in the acquisition of oral health concepts by these individuals.<sup>[14]</sup> Hence, the objective of this study was to assess the knowledge, attitude, and oral health practices among school teachers in Tirupati city, Andhra Pradesh, India.

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**Aim**

The aim of the present study was to evaluate the levels of knowledge and attitude of school teachers toward dental caries and its prevention in Tirupati.

**MATERIALS AND METHODS**

This study was a cross-sectional questionnaire survey of primary school teachers in Tirupati. The present survey was conducted among the teachers in various schools of Tirupati, with a sample size of 100. Teachers, who were willing to participate, were included in the study. A pretested structured questionnaire related to dental caries and its preventive measures were given to the teachers. The questionnaire was formulated to ascertain the level of knowledge of oral health and their determinants such as educational qualification and years of experience. The questionnaire consisting of 20 self-administered questions designed to evaluate the knowledge, attitudes, and practices of school teachers regarding their oral health and dental treatment were distributed among the teachers. Data were recorded, and results were tabulated in the form of graphs and pie diagram.

**RESULTS**

The results were tabulated, and the percentage (100%) was calculated, and conclusions were drawn. This survey presented a comprehensive overview of the knowledge, attitudes, and practices of school teachers toward dental caries and prevention in Tirupati schools.

Figure 1 shows a graph which describes the knowledge and attitude of teachers toward oral health. All the teachers in the study knew the fact that oral health does have a role in general health. Around 50% of teachers were with postgraduate level of education, and around 35% of the teachers were holding ≤5 years of school teaching experience. About 57% of the teachers were with a knowledge related to the importance of brushing twice daily, and about 40% of the teachers were aware of the ideal duration of toothbrushing (2 min).

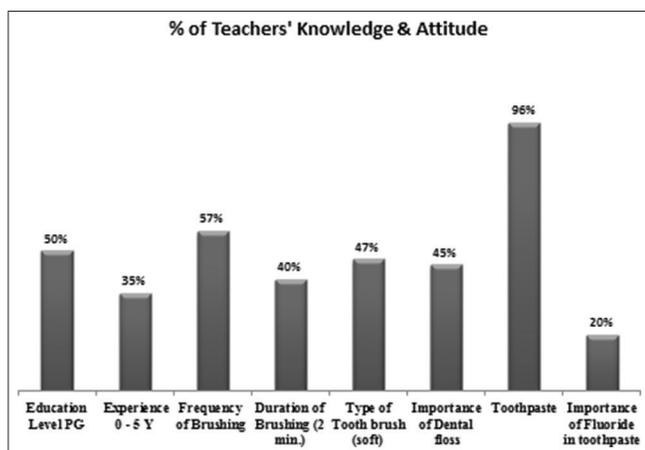


Figure 1: Percentage of teachers' knowledge and attitude part I.

When questioned about the right type of toothbrush to be used, 47% of the teachers concluded it as soft toothbrush. Regarding the usage of dental floss, 45% of the school teachers had appropriate knowledge about it. Around 96% of the school teachers advocated the usage of toothpaste as a dentifrice, and only 20% of the teachers were knowledgeable about fluoride being incorporated in the toothpaste for therapeutic effects.

Figure 2 shows a graph that expresses the knowledge and attitude of school teachers toward causes of dental caries and its prevention. Only 30% of the teachers were aware of the causes of tooth decay, and around 34% of the teachers had an idea regarding the preventive measures to be considered in controlling tooth decay. When the school teachers were questioned about the importance of frequency of dental visits, 58% of them were with a fair idea concerning the visits.

On stressing the imperative need for incorporation of oral health education (OHE) programs in school-based teaching curriculum, 43% of the teachers agreed with the proposal. About 86% of the teachers expressed their awareness in connection with the importance of OHE programs in their schools, and around 84% of the teachers showed their interest in attending OHE training programs. Of all the school teachers assessed, only 34% of them had a knowledge related to the existence of pedodontist as a specialization.

Figure 3 depicts a pie diagram describing the knowledge of school teachers about the causation of dental caries. Around 45% of the school teachers attributed the consumption of sugars for the causation of tooth decay, and about 15% of the teachers were in opinion that improper and irregular toothbrushing contributed to the dental decay. Only 10% of the questioned teachers were blessed with knowledge about the role of microorganisms in dental caries occurrence.

**DISCUSSION**

Preprimary and primary schools have a great potential for influencing the health behavior of the child.<sup>[15-18]</sup> During this period, the child goes through active developmental stages.

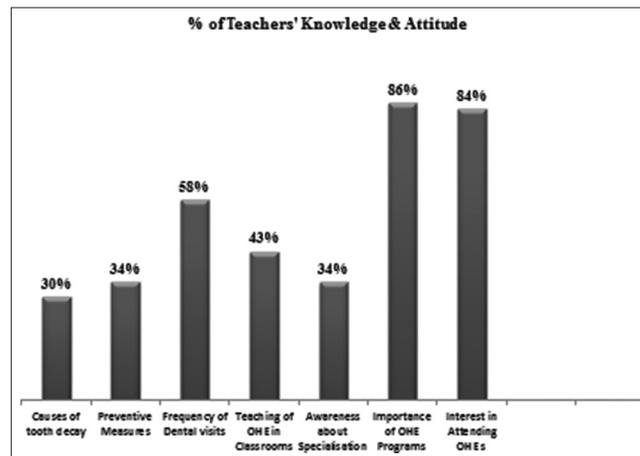
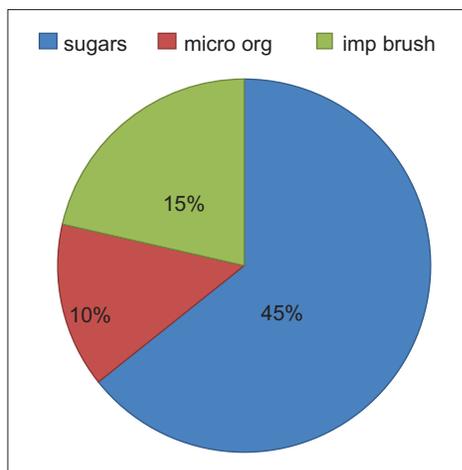


Figure 2: Percentage of teachers' knowledge and attitude part II.



**Figure 3:** The knowledge of School teachers about the causation of dental caries.

The role of teachers during these developmental stages of the child is very important. Hence, school teachers can play a major role in OHE programs at school levels. Schools have tremendous capacity to be supportive of programs involving preventive dentistry for children.<sup>[19]</sup> It was found that teachers traditionally have educated children regarding oral health and often participated in school-based prevention programs.<sup>[20]</sup>

The aim of this study was to assess the oral health knowledge and attitudes of school teachers toward dental caries and its prevention by administering self-administered questionnaires. The use of self-administered questionnaires has its own limitations. We have tried to overcome the bias by recording the data confidentially and explaining to the participants the importance of the survey before filling the questionnaire. Moreover, this method of collecting data has been previously tested and has shown adequate reliability.<sup>[6,16,21,22]</sup>

In relation to the educational level, the majority of the surveyed teachers possessed college and postgraduate degrees, which was also observed in other studies.<sup>[23,24]</sup> These findings are also in corroboration with the results obtained in a similar design of study conducted by Beiruti which concluded that teachers with higher education had better knowledge on the oral hygiene practices than the teachers with diploma education.<sup>[25]</sup>

### Attitudes

All the teachers were aware of the importance of a healthy mouth. Almost 58% of the teachers visited the dentist if there was a problem. This observation was very similar to the study conducted by Almas *et al.*<sup>[26]</sup> and Lang *et al.*<sup>[6]</sup> However; the teachers were pretty knowledgeable regarding the importance of regular dental visits. This was in concurrence with the study conducted by Ramroop *et al.*<sup>[13]</sup> and Chikte *et al.*<sup>[27]</sup>

### Practices

Knowledge and practices in connection with brushing teeth, usage of appropriate toothbrush, and advocating toothpaste

as suitable dentifrice were quite satisfactory. Almost all the teachers used toothbrush and toothpaste to clean their teeth. Around 43% of teachers brushed their teeth once daily, 57% do brush twice daily. The results are similar to the study conducted by Chikte *et al.*<sup>[27]</sup> In the present study, the teachers exhibited knowledge on brushing techniques. This was on par with the study conducted by Almas *et al.*,<sup>[26]</sup> who also said the teachers, showed high level of knowledge regarding brushing.

About 55% of the respondents were unaware of the usage of dental floss. These results indicate that improvement in knowledge toward the use of dental floss is needed, as floss helps to remove plaque and other debris interdentially. Intervention to increase the knowledge and subsequent use of flossing is essential and is in agreement with other studies.<sup>[28]</sup> Similar opinion was seen in the study conducted by Mota *et al.*<sup>[29]</sup> where the percentage of teachers using floss was very low.

### General

Fluoride-containing compounds have been used in preventing incipient carious lesions since the early 1900s. Hence, it was deemed essential to determine the knowledge and attitudes of school teachers toward the subject of fluorides. This knowledge was very little known to teachers surveyed in this study, a finding similar to other studies.<sup>[22]</sup> While < half (around 20%) of the teachers knew about the therapeutic effects of fluoridated toothpastes.

Only 43% of the respondents strongly agreed that it is the duty of school teachers to impart OHE to the students, and around 84% of the teachers expressed their interest in attending OHE programs and enlightening themselves. More than 50% of the teachers did not impart any OHE to the students. These statistics are in concurrence with the study carried out by Sekhar *et al.*<sup>[10]</sup>

In relation to the etiology of dental caries, the present study found an unsatisfactory knowledge about multifactorial dental caries, which is in agreement with literature.<sup>[23,30]</sup> In this regard, around 45% of the respondents attributed the consumption of sugars for the causation of tooth decay, and about 15% of the teachers were in opinion that improper and irregular toothbrushing contributed to the dental decay. Only 10% of the questioned teachers were blessed with knowledge about the role of microorganisms in dental caries occurrence. Different results were found in other studies reported that the onset of the tooth decay process is due to the multifactorial etiology of dental caries.<sup>[24,30]</sup>

### Limitations

The results of this sort of questionnaire-based surveys should always be viewed with caution. There is a possibility of creation of bias especially

1. When the respondents are aware that the survey is being conducted by dental specialists
2. When filling favorite responses to the questions in the questionnaire.

## CONCLUSION

Even though most of the teachers presented with satisfactory knowledge in some aspects of preventive oral health, they still lag behind in knowledge in some crucial parts of oral health. 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. At present, the school curriculum has topics on oral health and its importance. Teachers can be considered to educate and motivate schoolchildren in maintaining their oral health. Efforts should be made to involve all teachers to educate and teach the child.

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## Conflicts of interest

There are no conflicts of interest.

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