

## Oral Hygiene Awareness among Engineering College Students in Dakshina Kannada

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### Abstract

*Oral health is an important factor in maintaining sound psychological and physical health. Association between knowledge and better oral health has been well documented. Objectives: This study aimed to assess the oral hygiene-related knowledge and practices among the engineering college students of Dakshina Kannada district. Method: A survey was conducted among the students of the engineering college in, Karnataka. Two hundred students were selected using a simple random sampling method and a self-constructed 20 items questionnaire was distributed to all subjects. The obtained data were statistically analyzed using the SPSS (Statistical package for social sciences). Results: This survey found that 48.7% of students had never visited a dentist for cleaning their teeth. 57.4% of them never flossed their teeth. 83.2% of them never heard of interdental brushes. 81.6% of them know that poor oral hygiene can affect systemic health. Conclusion: A substantial lack of oral hygiene understanding and limited knowledge of oral hygiene practices in engineering students. Hence, there is an urgent need for comprehensive educational programs to promote good oral health and impart education about the correct oral hygiene practices at an elementary level.*

**Keywords:** Engineering students, Knowledge, Awareness, Oral hygiene

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### Introduction

Oral Diseases are a major public health concern owing to their higher prevalence and their effects on the individual's quality of life.<sup>[1]</sup> According to the World Health Organization (WHO), "Promotion of oral health is a cost-effective strategy to reduce the burden of oral disease and maintain oral health and quality of life".<sup>[2]</sup> Periodontal diseases, dental caries, malocclusion, and oral cancer are among the most prevalent dental diseases affecting people worldwide as well as in the Indian community.<sup>[3]</sup> Dental caries, with a prevalence as high as 60-80% in children, is a major public health problem in India.<sup>[4]</sup> Oral cancer has also long been a major problem in this country.<sup>[5]</sup> The possible etiological factors leading to these oral diseases include, genetic predisposition, developmental problems, poor oral hygiene, and traumatic incidents. A large ratio of these diseases can be prevented at individual and community levels by providing oral health-

related education; thus, improving the oral health attitude and practices among the general population.<sup>[6]</sup> For example; proper brushing is essential for cleaning teeth and gums effectively. Preventive dental care is almost nonexistent in rural areas and very limited in the urban areas of India.<sup>[7]</sup> It is, therefore, essential to combat oral diseases as a preventive approach, with the focus on health education and promotion, which should be given prime importance.<sup>[8]</sup> The National Oral Health Survey, conducted in 2005, by the Indian Dental Association (IDA), highlighted that 95% of the population in India suffers from gum disease, only 50% use a toothbrush, and just 2% of the population visit the dentist.<sup>[9]</sup> A majority of the Indians are unaware of the fact that good oral health not only ensures freedom from pain and suffering associated with oral health problems, but is also essential for the overall health improvement and elevation of self-esteem, quality of life, and performance at work.<sup>[10]</sup> Many studies have shown that a lack of

knowledge among rural people and negligent behavior among urban people are causes of dental diseases. Oral hygiene is compromised by unhealthy habits like tobacco use and lack of dental specialist care. Improving oral health is still a dream come true in developing countries like India. Keeping this background in mind, the present study was conducted with the objectives of assessing the awareness and practices with regard to oral hygiene among engineering college students in Dakshina Kannada.

## Materials and Methods

A questionnaire-based survey, containing 20 questions, conducted in the month of August

### Survey questionnaire

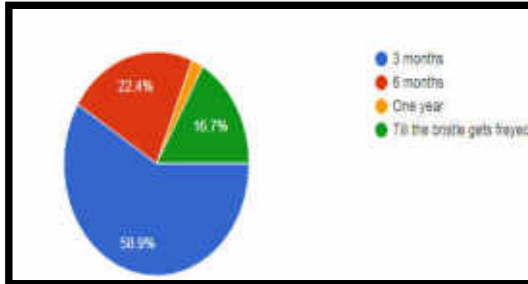
2017 was used to assess engineering students from NMAM Institute of Technology in Nitte, Karnataka. Both male and female students were included. Total engineering students, selected by random sampling, participated in the survey. To assess oral hygiene awareness, the questionnaire included questions on daily brushings habits, the method of brushing and frequency of changing the toothbrush. All the questions had multiple choice answers. Verbal consent was taken from all the individuals who were willing to participate. All answers were kept confidential. Data obtained was analyzed using the SPSS (Statistical package for social sciences).

1) Do you brush your teeth daily?	10) Do you think there is a need to visit dentist when there is bleeding gums?
i) yes	i) yes
ii) no	ii) No
if yes	11) Do you think it can be treated?
2) How often do you brush your teeth?	i) Yes
i) once daily regularly	ii) No
ii) twice daily regularly	12) Do you think coffee/tea causes staining of teeth?
iii) once daily irregularly	i) Yes
iv) sometimes	ii) No
3) What kind of tooth brush do you use?	13) Do you know that there is a branch in dentistry called periodontics which is specialized in treating the gums?
i) Soft	i) Yes
ii) Medium	ii) No
iii) Hard	14) Have to heard of interdental brush or proxa brush?
iv) Not Sure	i) Yes
4) How often do you change your tooth brush?	ii) No
i) 6months	15) Do you complain of bad breath?
ii) one year	i) yes
iii) 3months	ii) No
iv) till bristle gets frey	if yes
5) Which type of brushing technique do you think is good for oral hygiene?	16) Do you think you need to consult a dentist for bad breath?
i) Horizontal Stroke	i) yes
ii) Vertical Stroke	ii) No
iii) Roll Stroke	17) Do you smoke?
iv) Not Aware.	i) yes
6) Do you use dental floss?	ii) No
i) sometimes	18) According to you smoking can cause:
ii) Yes. I use them daily	i) Bad Breath
iii) No I am not aware of it	ii) Staining
7) How often do you use mouth wash?	iii) Gum Diseases
i) Never	iv) All Of These
ii) once in a week	19) Do you know what is plaque?
iii) once a day for 2 weeks	i) Yes
iv) as prescribed by the dentist	ii) No
8) How often do you visit your dentist for cleaning teeth?	20) Can poor oral hygiene can effect systemic health?
i) Once in 3 months	i) Yes
ii) Once in 6 months	ii) No
iii) Once in an year	iii) Not sure
iv) Never visit	
9) Do you think cleaning the teeth by dentist can cause the removal of enamel?	
i) yes	
ii) No	
iii) I don't know.	

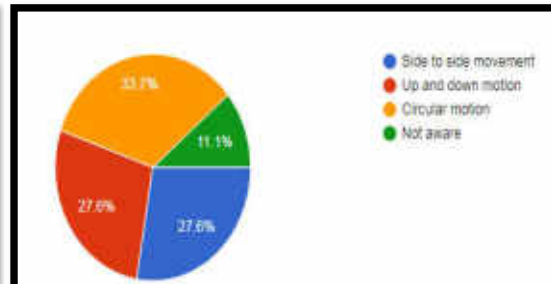
## Results

A total of 200 subjects were included in the survey. All the subjects included in this survey

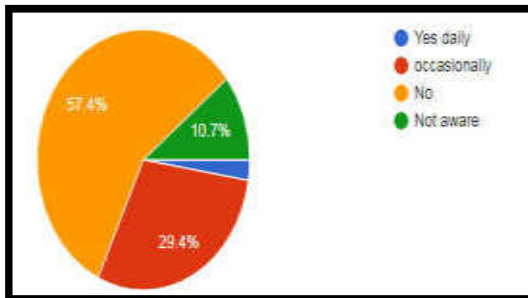
were engineering students from Nitte engineering college in Mangalore.



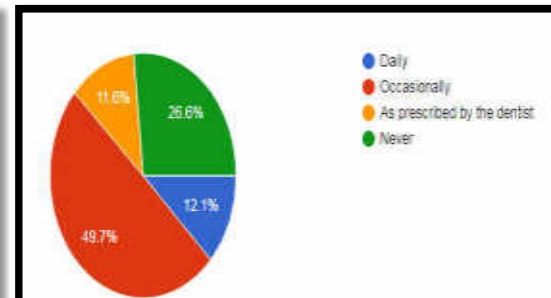
Graph 1- Duration of change of toothbrush



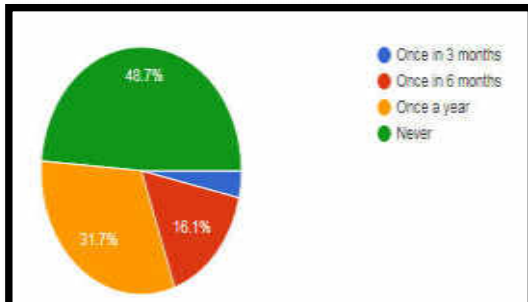
Graph 2 – Brushing technique



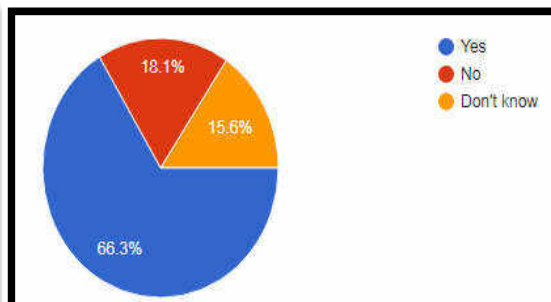
Graph 3- Usage of dental floss



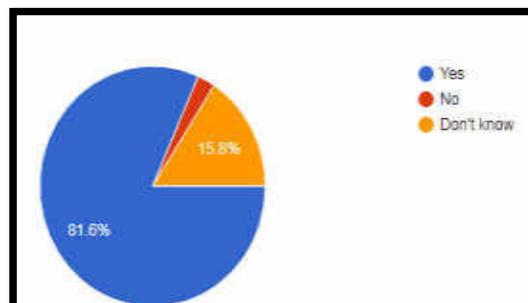
Graph 4- usage of mouth wash



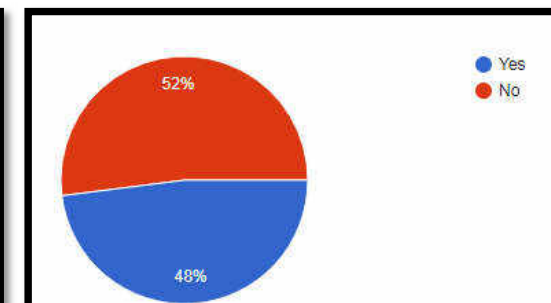
Graph 5- Visiting the dentist for cleaning the teeth.



Graph 6- Need to visit the dentist when there is bleeding gums.



Graph 7 – Need to consult a dentist for bad breath



Graph 8 – Association between poor oral hygiene and systemic health

Out of the 200 students who participated in the study, the majority (50.8%) of the participants brushed once a day and 41.7% of the students brushed twice daily. Nearly 23.6% of the students always used soft toothbrush whereas 63.8% used a medium toothbrush.

Nearly 58.9% of the students changed their toothbrushes once in 3 months and 22.4% once in 6 months 16.7% says they change their toothbrush when the bristles get frayed (graph 1). 33.3% of students think circular motion for brushing is good for maintaining oral hygiene 27.6% think side to side movement and up and down motion for brushing is good for maintaining oral hygiene (graph 2). Regarding the use of mouth wash, around 49.7% of students used mouth wash occasionally. 26.6% of students never used mouth wash. 12.1% of them used mouth wash daily. Only 11.6% of them used mouth wash as prescribed by the dentist (graph 4). Around 29.4% have occasionally used dental floss and 57.4% have never flossed their teeth (graph 3). 46.2% of students think that cleaning of teeth by a professional will not cause any damage to the teeth enamel. 41.7% of the students do not know if cleaning the teeth by the dentist will lead to enamel loss. 12.1% of them think it will lead to enamel loss. Almost 48.7% of the students had never visited a dentist in their lifetime for cleaning their teeth, whereas 31.7, 16.1% had consulted a dentist once a year and once in 6 months respectively (graph 5).

Nearly 66.3% of them feels there is need to visit a dentist when there is bleeding of the gums (graph 6). 18.1% of them feels there is no need to visit a dentist for bleeding gums. 15% of the students do not know whether to see a dentist or not for bleeding gums. Nearly 79.4% of students think bleeding gums can be treated by a dentist, 16.1% of them do not know if it can be treated. 32.3% of the students know that there is a branch called periodontics which is specialized for treating gum problems. 40.4% of the students think there is no branch which is specialized in treating the gums. 27.3% do not know such a branch exists in dentistry. Regarding interdental brushes, 83.2% of the students never heard of it. 16.8% of the students have heard about it. Nearly 36.9% of them thinks coffee/tea can cause staining of the teeth. 28.8% of them do not think it will cause

staining and 34.3% do not know whether it will cause staining or not. When it comes to bad breath, 71.1% of the students do not a complaint of bad breath. 28.3% of them complain about it. nearly 52% of them thinks there is no need to consult a dentist for bad breath and 48% of them think one should visit a dentist for bad breath (graph 7). Nearly 85.3% of students say that they do not smoke. 14.7% say they do. Almost 78.8% of the students think that smoking can cause bad breath, staining of the teeth and gum diseases. 10.9% of them thinks smoking cause only bad breath. 61.2% of the students know about dental plaque and 38.8% says they do not know what dental plaque is. 81.6% thinks that poor oral hygiene will affect systemic health. 15.8% do not know whether it will affect or not (graph 8).

## Discussion

Various studies have been conducted to assess the knowledge, attitude, and practices on oral hygiene in students in professional colleges.<sup>[4,5,6]</sup> Student community all together play a vital role in bringing about a behavioral change in society.<sup>[7]</sup> With this in view, the present study was conducted to assess oral hygiene-related practices and knowledge among engineering college students in Dakshina Kannada. Among these students, 50.8% brushed once a day which was less when compared with the study by Kumar<sup>[7]</sup> (66%). A more percentage (67%) of students brushed twice daily in studies done by Kakkad et al,<sup>[8]</sup> and Peltzer and Pengpid<sup>[9]</sup> in comparison to our study (only 41.7%). Few studies also reported similar observation to ours.<sup>[10,11,12]</sup> This may be attributed to the lack of oral health knowledge or negligence due to a busy study schedule. Only 23.6% of the subjects use a soft brush, which is less than that observed among Zhu *et al;* 's subjects<sup>[10]</sup> where 27% of the sample uses the same. In the present study, approximately 58.9% of the students changed their toothbrush within 1 to 3 months in contrast to a higher percentage (80%) seen in engineering and MBA/BBM students of Bengaluru.<sup>[12]</sup> The attitude of regularly changing toothbrush was much lower (10%) in law students of Chennai<sup>[7]</sup>. This infers that these students are unaware of the fact that prolonged usage of toothbrushes not only decreases the

effectiveness in the cleaning of plaque but also causes trauma to gingival tissue. They should be educated about the importance of changing of the toothbrush at regular intervals. It is noteworthy that 27.6% of all the professional students brushed their teeth using the horizontal method that might result in compromised tooth structure and gingival health which is significantly less than the study done by Zhu et al; in 2005<sup>[10]</sup> where 60% of the sample did the same.

In spite of being engineering students only 2.5%, the subjects used dental floss and 16.8% have heard about interdental brushes. Hamilton and Coulby found that a high percentage (44%) of the sample in northeastern Ontario used dental floss.<sup>[13]</sup> The reason for this may be the educational program that is consistently carried out in Canada, where oral health instructions are included annually in-class teaching, and specially trained dental assistants present lessons on oral health principles and prevention of dental disease in schools which lacks in our society.

While a good brushing technique is important, mouthwashes are often recommended to help control plaque in the present study daily the use of mouth wash was (12.1%) which is comparable with the findings of the study done in Multan (14.5%)<sup>[12]</sup> Dentists play a major role in maintaining overall dental health. Nearly 16.1% of the population had at least visited their dentist once in < 6 months which was consistent with the result of studies by Doshi et al; and Al-Hussaini et al;<sup>[14]</sup> Almost 48.7% of individuals had never been to a dentist, which was in consonance with the study done by Gopi Krishna et al;<sup>[12]</sup> among engineering students of Bengaluru. A still lower percentage of professional students (31 %) had visited a dentist within 1 year, though 3.5% were in the opinion that one should visit a dentist once in 3 months. 12.38.8% percent of them surveyed do not know what dental plaque is? This reflects the poor awareness among the engineering students regarding early diagnosis of periodontal diseases and thereby maintenance of overall oral health. Also, 41.17% of them are in a doubt that oral prophylaxis by a dentist can cause enamel loss. Only 66.3% thinks that there is a need to visit the dentist when there are bleeding gums. Studies of Nagarajan and Pushpanjali in India

Tervonen and Knuttila, and Kallio *et al*; showed that most of the patients did not notice bleeding from gums.<sup>[13]</sup> In our study, 79.4% of them thinks that bleeding gums can be treated. The rest of the people there is a lack of proper knowledge about the connection between bleeding gums and gingivitis. Only 32.3% of them know that there is a branch in dentistry called periodontics which is specialized in treating gums. A study reported that people tend to underestimate their dental treatment needs, the discrepancy being most distinct in the field of Periodontology. Another study revealed that self-reporting of periodontal health was not successful as many people who had some indications of the periodontal diseases appeared to be unaware of their condition and also appeared not to have been informed nor were being treated for it.<sup>[13]</sup> The significantly higher percentage of students (71.7%) has no bad breath problems and only 48% of them think that there is a need to consult a dentist for bad breath. This study is in contrast with that of an epidemiologic survey of the general population of Japan where 24% of the individuals examined complained about bad breath.<sup>[11]</sup> In a study by 18.61% of the engineering students of Jaipur used to smoke tobacco, as reported by Shavi et al;<sup>[13]</sup> and the values were comparable with our study. Most of the people surveyed (81.6%) are aware of the relationship between oral hygiene and systemic diseases such as cardiovascular disease and diabetes. Many diseases show their first appearance through oral signs and symptoms and they remain unchanged or untreated because of this missing awareness. This study was limited by the survey design being self-reported behaviors which may have led to over-reporting of oral hygiene practices. The psychological and socioeconomic factors were not taken into consideration. Moreover, a small sample size of 200 students may limit the generalizing of the data.

## Conclusion

Knowledge with respect to oral health among the engineering students in Dakshina Kannada is not very good regarding using a toothbrush and dental floss. There is also neglect among the students regarding their oral hygiene though most of them know that poor oral hygiene can lead to systemic problems. Most of them still

believe that oral prophylaxis by a dentist leads to enamel loss and unaware of a branch called periodontics in dentistry. This shows the lack of oral health knowledge in these students. We, as dental health professionals, should instill a more positive attitude toward visiting a dentist regularly. Oral health promotion programs providing education regarding, effective maintenance of oral hygiene, proper brushing techniques and usage of dental floss can go a long run in improving oral health among the students.

**Conflict of Interest:** None declared

**Source of Support:** Nil

**Ethical Permission:** Obtained

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