Periodontal Disease Awareness among Engineering Students in Nashik

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ABSTRACT

Background: Engineering students represent large, educated and professional group of people which are more prone to stress and periodontal diseases. Consequently, the purpose of this study was to investigate the knowledge about periodontal oral health and the knowledge of the causes of inflammatory periodontal diseases among engineering students. This study provides data for future research and allows comparisons with engineering students’ oral health knowledge in other nations

Aim: To investigate the knowledge about periodontal oral health and periodontal diseases among engineering students in Nashik.

Materials and methods: Two hundred engineering students were recruited randomly into this cross-sectional study. The recruited students were all from the levels of first and final year. A previously prepared structured questionnaire was distributed to the participants by the researcher. The format of the questionnaire (Table 1) consists of 10 questions to assess the students’ knowledge regarding the periodontal disease causes, signs, symptoms, preventive measures, and relations to general health.

Results: Many participants demonstrated poor knowledge of periodontal disease signs, causes, preventive measures and relations to general health, systemic disease and smoking.

Conclusion: The level of awareness in the professional students of engineering fields is not enough and presents a sorry picture. As dentists, we have to keep reinforcing the importance of correcting all aspects related with brushing and flossing along with the importance of regular check-ups.

INTRODUCTION

Periodontal disease, including gingivitis and periodontitis, is considered to be one of the most common diseases among population and, if left untreated, can lead to tooth loss.1 The main cause of periodontal disease is bacterial plaque although many other factors such as hormonal changes, diabetes, poor nutrition, smoking and stress may affect the initiation and progression of gingival and periodontal diseases.2 The development of the common periodontal diseases depends mainly on human behaviour, and the control of these diseases is greatly supported by the fact that the etiological factors are well documented.3

Effective plaque control is an essential part in the treatment of inflammatory periodontal diseases.4 Many studies showed that effective plaque control for each person cannot be achieved without interactive motivation that includes educational and informative knowledge for the patient about periodontal diseases, their initiating factors and the major role of dental plaque as the initiating cause for inflammatory periodontal changes.5 Nettleton6 emphasised the need for offering patients accurate information so that they can make an educated decision about their own behaviour and actions. Oral disease can be considered a public health problem due to its high prevalence and significant social impact. Chronic oral disease typically leads to tooth loss, and in some cases has physical, emotional and economic impacts; physical appearance and diet are often worsened, and the patterns of daily life and social relation are often negatively affected. These impacts in turn lead to reduced welfare and quality of life.

1. Poor oral and dental health has also been linked to heart and lung disease, diabetes, stroke, low-birth weight, and premature births. Often, diseases give their first warning signs in the form of oral problems.
2. 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.
3. Majority of the population in Southeast Asian region do not have specific trends to visit qualified health facilities. This may be due to socioeconomic and educational factors, but lack of knowledge and false perception is also very important.

KEYWORDS plaque, gum disease, periodontitis, brushing technique, interdental aids

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Health is a universal human need for all strata of society. General health cannot be maintained without good oral health. The mouth is regarded as the gateway to the body and acts as a mirror that reflects the status of general health. Oral health plays an important role to maintain the overall health. There is evidence that the oral health depends on social, biological, and environmental factors. Recent literature study reveals a strong relation between the effects of chronic oral inflammation and general health. Periodontal diseases have been linked to systemic diseases; and similarly systemic diseases can also have an impact on oral health. There is a bidirectional relationship that exists between the two. Knowledge of oral health is considered to be an essential prerequisite for health-related behavior. Budding health professionals and engineers belong to the strata of society considered to have a better knowledge and awareness than the general population, but assessment of actual status demands a proper channel study.

In India, the oral health system is in a transitional developmental stage, and systemic data collection is needed to plan oral health care for the public. Comprehensive preventive programmes for oral health care are still lacking in India, and more dental health education is needed to improve oral health standards among Indian population.

By reviewing the available literature, it appeared that we lack data concerning the effect of the student’s level of studies and study discipline (i.e. humanities or scientific faculties) on oral health knowledge. These factors might have a great influence on student’s knowledge through the types of courses they submit, and the effects of these courses on the information which could be delivered to them, or from their colleagues in different faculties at the university.

Little is known about the oral health knowledge among university students from developing countries such as India in comparison with those from developed countries although such knowledge is an indication of the efficacy of applied dental health education programs. Oral health knowledge related to periodontal diseases has a major role in the treatment and prevention of the disease among children, adolescents, and adults including university students.

Engineering students represent large, educated and professional group of people which are more prone to stress and periodontal diseases. Consequently, the purpose of this study was to investigate the knowledge about periodontal oral health and the knowledge of the causes of inflammatory periodontal diseases among engineering students. This study provides data for future research and allows comparisons with engineering students’ oral health knowledge in other nations.

**MATERIALS AND METHODS**

Two hundred engineering students were recruited randomly into this cross-sectional study. The recruited students were all from the levels of first and final year. The study was approved by KK Wagh Engineering College, Nashik and participants consent was obtained before being recruited into the study.

A previously prepared structured questionnaire was distributed to the participants by the researcher. All participants were provided with full explanation of the study and the questionnaire. Medical and dental terms of the questionnaire related to causes, signs and symptoms of periodontal diseases were also explained to them during the study. Once completed, each questionnaire was double-checked to make sure that all the items were answered and participants were requested to complete any missing data. The data were processed by the computer after auditing, reviewing and coding the completed questionnaires for data processing and analysis.

**Questionnaire Design**

A preliminary questionnaire with close ended questions was developed. The questionnaire included items regarding causes, signs, symptoms and preventive measures of periodontal disease. For each question given, the participant responded to the question by selecting one of two responses, namely, yes or no.

To test its validity the questionnaire was presented to arbitrators from the teaching staff of the Faculty of periodontology department, MGV KBH Dental College and Hospital; accordingly, reformulation of some of the terminology was carried out and some of the answers that are common errors were added.

The final form of the questionnaire (Table 1) consists of 10 questions to assess the students’ knowledge regarding the periodontal disease causes, signs, symptoms, preventive measures and relations to general health.

To test its reliability, the questionnaire was distributed to 10 students in the Faculty of Dentistry. The students completed the test twice on two occasions separated by 5 days, and the reproducibility of the answers ranged between 90% and 100% which indicated adequate reliability and stability of the questionnaire. It took most of the participants 5–7 minutes to complete the questionnaire.

**RESULTS**

The results are illustrated in Fig. 1.

**DISCUSSION**

Most of the people are unaware about the relationship between oral hygiene and systemic diseases such as cardiovascular disease and diabetes. Therefore, oral hygiene has mostly remained as an ignored and unrealised social problem. A significant amount of emphasis is now being given for prevention of diseases rather than the treatment aspect. So, proper knowledge of preventive oral
health and proper oral hygiene practice becomes the important way for maintaining good dentition. In this survey, we studied the status of awareness in that section of society which is considered to have a better knowledge and awareness than general population. This survey was therefore initiated with a prime focus to determine the oral health awareness levels among the engineering students in KK Wagh Engineering College in Nashik district.

The aim of this study was to compare the oral health knowledge of engineering students. The literature lacks studies about oral health knowledge regarding periodontal disease among engineering students in India. This study is of prime importance in this field as it is the first one to explore this area among engineering students and among Indian university students.

Engineering students are a good representative sample for the population since they reflect education, socioeconomic conditions, acculturation, psychological stress, eight which can affect their oral health behaviour and status.

It does worth comparing the oral health knowledge between different specialties from different countries, and this might cast the light on the weaknesses in the oral health education programs and allow improving such programmes.

Table 1 Final form of the questionnaire.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Do you know any gum diseases (periodontitis)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Have you ever visited any dentist for any gum disease?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Have you noticed any halitosis or teeth mobility or bleeding gums ever in your mouth?</td>
<td></td>
<td></td>
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<tr>
<td>4</td>
<td>Do you know any causes for gum diseases?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Do you know common tooth brushing technique?</td>
<td></td>
<td></td>
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<tr>
<td>6</td>
<td>Do you know that bleeding gums is the most indicating sign of periodontal disease?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Do you know the use of interdental aids?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Do we get rid of bad breath by using mouthwashes?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Have you noticed any type of deposits in your teeth? Soft /hard/I don’t know</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Is periodontal disease a risk factor for systemic diseases?</td>
<td></td>
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</table>

Figure 1 Results of the questionnaire.
In present study, participants showed lack of observation of any type of deposit either soft or hard on their teeth as 86% students did not observe any type of deposits on their teeth. This shows that they are not aware of plaque or any idea about caries process. Also participants shown lack of knowledge about gum diseases and very short amount of participants vested dentist ever, this shows lack awareness about oral health.

Only 9%, the subjects were aware about interdental aids. In contrast, Hamilton and Coulby in 1991 found that a high percentage (44%) of the sample in north eastern Ontario used dental floss. The reason for this may be educational programme that is carried out in Canada, which lacks in our society. This emphasises the urgent need for educating and motivating the public to use this efficient method for oral health care.

Very less students visits regularly their dentist regularly though a comparatively higher number of professionals (43%) visited dentist over a period of 1 year, which was in par with the studies by Behbehani and Shah (49%), Petersen et al. (37%), and Al-Hussaini et al. (44%) but was better than the study conducted by Johani (12.8%).

The participants also showed good knowledge about mouthwashes, as 41% participants agreed that using mouthwash bad breath can be resolved. This shows positive effect of mass media in day to day life. Hence use of mass media should be increased to increase the awareness.

The results of our survey surprisingly revealed that the well-educated professionals who are going to become the foundation of our modern society stands nowhere better than rest of the general population based on their educational knowledge whereas some results might be given intentionally by the students. But the level of awareness and knowledge about the oral health and oral diseases in these professionals is not very encouraging.

The above mentioned findings in the literature might explain why many participants demonstrated poor knowledge of periodontal disease signs, causes, preventive measures, and relations to general health, systemic disease and smoking.

These findings make it necessary to carry out more research on India oral health knowledge and behaviour as well as to improve their oral health care education systems.

Emphasis on dental health care and education should be developed and maintained during early school education in order to improve the oral health knowledge of adults later on. Oral health education should also be included and emphasised in university curriculums for engineering students during their study. It is well known that the oral health of parents reflects on their children and that their attitudes and knowledge affect their children. Hence, educating adults and students seems among the means to improve the oral health knowledge and behaviour of the nation in future. Therefore, pre-university and university curriculum and education about dental health care might be an important factor that can influence the oral health knowledge and attitudes of student’s not related to dental field.

Limitations

There is no other previous study of its kind for this region from which a comparison can be drawn. Also, there is no study which compares the level of awareness among the professional students of engineering.

CONCLUSION

Standards of oral health awareness are very poor in India, with a large proportion of the population being affected due to poor socio-economic conditions and many people have never even been to a dentist. The results obtained in our survey are an eye opener for the dental faculty not only in Nashik region but also throughout the country. From the results of our survey, we conclude that the level of awareness in the professional students of engineering fields is not enough and presents a sorry picture. As dentists, we have to keep reinforcing the importance of correcting all aspects related with brushing and flossing along with the importance of regular check-ups.

The task of spreading this awareness needs to be extended beyond our clinic to general masses, including school children, working and nonworking population, and even the professional students.

REFERENCES
