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Assessment Of Preventive Dental Care Among Dental Students In India: A Knowledge, Attitude, And Education Study

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ABSTRACT

Aim: Knowledge and oral health behavior of dental students plays an important role in oral health education of patients and community at large. It is therefore important that their own oral health behavior conforms to expectations of the population. Hence, the aim of the present study was to evaluate the oral health knowledge, attitude, and education among dental students.

Materials and Methods: In the present study an online survey was distributed to 1500 dental students from eight dental colleges in India. The participants were divided into two groups – final years and interns. Data collected was statistically analyzed. Kruskal-Wallis test was used for intergroup comparison and Mann-Whitney test was used for intragroup comparison.

Result: There was no statistical difference in knowledge between both groups, though a statistically significant difference was seen between the groups for attitude and practice.

Conclusion: The results of our study show that students who participated in the study have good knowledge about the preventive dental treatment. However they should be encouraged to practice what they have learnt and encouraged to do more preventive treatment along with curative treatment.

Keywords: Education, health, hygiene, prevention, role model, society

INTRODUCTION

Oral diseases are preventable yet are the most common diseases in the world. Dental caries is the most common infectious disease in the world and has been seen to affect close to 90% in industrialized countries. Periodontal diseases have seen a global prevalence 5-15% and are associated with diabetes and immunocompromised state.¹ The National Oral Health Survey conducted in India has shown that 63% of 15 year olds and 80% of 35-44 year olds have carious tooth.² The presence of oral diseases has shown to affect academic performance in schools and restrict work hours in office, thus causing valuable time to be lost all over the world. The quality of life of such people also appears to be diminished due to psychosocial impact.³

Oral health is a neglected area of global health and has traditionally registered low on the radar of national policy makers. The reasons for this situation are complex and varied. In many countries oral health is not included in national health surveys. And, if data are collected, it is usually in isolation from the context of general health.⁴ Dentists have also taken little interest in advocacy to promote good oral health, preferring to treat rather than prevent oral diseases. And, because poor oral health affects morbidity more than mortality, governments have viewed oral conditions as less important than other, more life-threatening diseases.⁵

Prevention of disease should be a primary goal of any society that hopes to provide a good quality of life for its people.⁴ An effective community prevention programme is a planned procedure that prevents the onset of a disease among a group of individuals. Many different approaches to preventing dental diseases exist and the most cost-effective method is health education.⁶

The goal of oral health education is to improve knowledge, which may lead to adoption of favorable oral health behaviors that contribute to better oral health. A basic oral health care program introduced by World Health Organization for less industrialized countries includes oral health education and emphasizes on the integration of health education with other oral health activities such as provision of preventive, restorative and emergency dental care.⁴

Although published research has been concerned with how to motivate the patients to follow a prescribed, effective oral health care program, little attention has been given to the context of how and when dental students undergo motivational behavior changes with respect to their self-care regimen.³ Hence this study was undertaken to understand the knowledge, awareness and practices of dental students towards preventive dental treatment.

MATERIALS AND METHODS

This cross-sectional study was conducted from January to March 2020. A structured questionnaire (Table 1) was prepared to assess the knowledge, attitude and practice of the students towards preventive dental treatment after obtaining approval from institutional ethics board. Participants consisted of final year undergraduates and interns from eight different dental colleges across the India. The questionnaire was sent to 1500 students through an online link. The data were analyzed using Statistical Package for the Social Science (SPSS) version 21 software (Chicago, IL, USA).

RESULTS

Out of 1500 students to whom the link was sent 1180 participated (78.67%). Table 2 shows the average mean knowledge score, attitude score, and practice score between final year students and interns. Table 3 represents the comparison of knowledge, attitude, and practice of dental professionals. There was no statistical difference in knowledge between both groups, though a statistically significant difference was seen between the groups for attitude and practice (P value < 0.05)

DISCUSSION

The promotion and prevention of oral health is critical for reducing the burden of oral health and improving the quality of life.⁴ Preventive dental interventions include educating public about oral hygiene practices, establishment of dental homes and the introduction of school and community oral health programs. Preventive treatment such as topical fluoridation and use of pit and fissure sealants are cost effective in reducing disease burden and associated expenditures.⁷ Prevention is the mainstay to avoid oral diseases and to have positive oral health. This aspect of dentistry is the responsibility of professionals, individuals, and society at large. Dentists are in a key position to help their patients to reduce the burden of oral disease and attain positive oral health behavior.⁸

The attitude of dental practitioners toward preventive dentistry is an important factor that can influence their decision to apply preventive dental care and may potentially affect their ability to motivate patients to receive preventive care measures.⁹

The present study was conducted to understand the knowledge, awareness and practices of dental students towards preventive dental treatment. Final years and interns were specifically chosen as final years would have treated patients in all departments and the interns were soon to enter into private clinical practice.^{3,7,8}

The results of our study show that though there was no statistical difference in the knowledge of final years and interns, there was a statistical difference in attitude and practices. This could be due to various factors. Final years are under stress to finish their clinical quota and may not look into comprehensive treatment though they are taught and instructed to do so.^{3,7} Another reason could be that interns would have the opportunity to assist and work along with post graduate residents throughout the day without having to attend theory classes. This would give them more time to observe and interact with post graduate residents who in turn could give inputs which could broaden their clinical thought process.^{8,10,11} Another reason could be the fact that many interns join private clinics in the evenings to understand the process of setting up private practice rather than wait for internship to get completed which would allow them to get an early head start.

Health beliefs and attitudes of dental students, as future dental health professionals, not only affect their oral self-care habits but also potentially influence their patient's ability to take care of their teeth and shape the public's oral health education level. Although enhancing the knowledge of students is very important to this process, dental faculty's attitude toward prevention, known to be a component of the "hidden curriculum," is an influential factor.^{9,11}

In order to train a prevention-oriented dental workforce, educational institutions should respond to growing evidence of the value of appropriate use of prevention and nonsurgical treatment.¹² It has been suggested that improvements in applying preventive measures can be achieved by creating supporting policies for application parallel with training of a prevention-focused dental workforce. In the latter, teaching faculties in dental institutions carry the main responsibility. Thus, via their knowledge and attitudes toward prevention, dental faculties have exceptionally important direct and indirect roles in shaping student's preventive orientation.^{13,14}

Policies that address the risk factors for oral diseases, such as intake of sugars and tobacco use, can also be implemented, especially because these moves will help reduce chronic diseases. Oral diseases and chronic diseases, such as cardiovascular diseases, cancer, chronic respiratory diseases, and diabetes share many common risk factors. In 2007, a World Health Assembly resolution called for oral health to be integrated into chronic disease prevention programmes.^{1,3,7}

Promoting good oral health could also help countries to achieve child-related development goals. Caries can negatively affect a child's ability to eat, sleep, and do school work. Preliminary studies have suggested that dental caries and related pain and sepsis might contribute to undernutrition and low weight and height in children in developing countries. In developed countries, studies show that when dental caries are treated,

children start to put on weight and thrive. Oral pain is also one of the most common reasons for school absenteeism.^{13,15}

Preventing oral disease is important and achievable. Evidence-based, simple, and cost-effective preventive approaches exist, but they need to be rigorously promoted and implemented. Professionally, health workers, including physicians, nurses, paediatricians, and pharmacists can all deliver prevention messages about the use of fluoride and the risk factors for oral disease.¹⁶ Politically, commitment is needed to integrate oral disease prevention into programmes to prevent chronic diseases and into public-health systems. A need thus exists to develop sustainable prevention-oriented approach, especially in countries with developing health care systems.³ The advantages of this study are the large sample size and high response rate. As this is a questionnaire study, it has its own limits since most of the responses are self-reported and do not give exact information. Participant's bias can be there as they may not reflect their true opinion and might have given socially desirable answers.

CONCLUSION

The results of our study show that students who participated in the study have good knowledge about the preventive dental treatment. However they should be encouraged to practice what they have learnt. Reduction in oral diseases and increasing the availability and adoption of appropriate preventive procedures will not occur without the adequate knowledge of dental faculty as they are involved in training the future dental professionals. This can only be achieved if dental faculties are involved in continuing education activities and placing emphasis and support on prevention-related research

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Table1: Self-administered questionnaire (knowledge, attitude, practice for the study)

Sl No	Question	Options
KNOWLEDGE		
1.	Not cleaning your teeth everyday can cause	A. Decay B. Gum disease C. Bad breath D. All of the above
2.	Reason for brushing your teeth	A. White teeth B. Caries Prevention C. Maintenance of teeth D. Bad breath
3.	What is the cause of foul breath	A. Dental caries B. Gum disease C. Gastrointestinal disease
4.	What will happen if you eat lots of sweet	A. Decay B. Gum disease C. Bad Breath D. All of the above
ATTITUDE		
5	After what time period do you change your brush	A. 1 – 3 months B. 3-6 months C. 6-12 months D. After 12 months
6	How often do you visit your dentist?	A. Once a year B. Twice a year C. Only when I have a problem
7.	Which oral hygiene aids are present in your home	A. Toothpaste B. Toothpaste and mouthwash C. Toothpaste and floss D. Toothpaste, mouthwash and floss E. Any other oral hygiene aid
8.	Do you motivate your family members to maintain oral hygiene	A. Sometimes B. When asked by someone C. Occasionally sit and motivate them D. never
9.	How many times have you visited a dentist in your lifetime	A. Never B. 1-5 times C. 5- 10 times D. Every 6 months
PRACTICE		
10	What do you use for cleaning your teeth	A. Dental floss B. Brush and toothpaste C. Brush, Toothpaste, Floss and Mouthwash D. mouthwash
11	How often do you brush your teeth	A. once daily B. Twice daily C. After ever ymeal
12	How much toothpaste do you normally put on your toothbrush	A. Full length of brush B. Half length of brush C. Pea size D. Smear over bristles
13.	How long do you brush your teeth	A. 30 seconds B. 1-2 minutes C. 2-3 minutes D. More than minutes
14	How often do you floss everyday	A. Never B. Once a day

		C. Twice a day D. After every meal
15	Which method do you use to brush your teeth?	A. Vertical B. Horizontal C. Combination of vertical and horizontal D. Modified Bass technique
16	Do you rinse your mouth after every meal?	a. Yes b. No c. Sometimes
17	Do you clean your tongue?	A. Yes B. No C. sometimes

Table 2: Average mean knowledge score, attitude score, and practice score

Group	Knowledge	Attitude	Practice
Final Years	3.52±0.51	1.02±0.63	2.43±0.41
Interns	3.88±0.49	2.40±0.84	3.50±0.67

Table 3: Comparison of knowledge, attitude, and practice of dental professionals

Group	Knowledge P value	Attitude P value	Practice P value
Final Years Vs Interns	0.452	<0.05	<0.05