



KNOWLEDGE AND MAINTENANCE OF PERIODONTAL HEALTH AND ORAL HYGIENE AMONGST BDS STUDENTS IN HIMACHAL PRADESH

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ABSTRACT

The main objective of conducting this survey was to check the knowledge and maintenance of periodontal health amongst the students studying non-clinical subjects (Year 1st and 2nd) of various Dental Colleges in Himachal Pradesh. This survey was conducted from 30th November 2019 to 14th December 2019. A cross-sectional survey was conducted on a total number of 310 students. A detailed questionnaire was provided to the students via google forms in online mode. The results of the questionnaire were calculated and analyzed.

KEYWORDS : Oral Health; Oral Hygiene; Periodontal Health

INTRODUCTION

Health is an important component of one's life. Good health results in mental and physical wellbeing. Oral health equivalently plays a focal role in ensuring sound mental and physical health of an individual. The association between one's general health with that of his oral health cannot be ignored as the oral cavity is a reflection of general health.¹ Declining systemic disease can adversely affect the periodontal health and vice versa is also true. There is abundant evidence indicating the correlation between oral health and lack of awareness amongst the people coming from different socioeconomic backgrounds.² Periodontal health depends on the maintenance of the periodontium which includes gingiva, periodontal ligament, cementum, and alveolar bone.³

Most periodontal diseases are primarily bacterial, plaque-induced inflammatory diseases that are chronic in nature resulting in the progressive destruction of the supporting tissues of the teeth. Unless there is a timely intervention, tooth loss may be inevitable. These diseases are highly prevalent in both developed and developing countries.⁴

Although, periodontal diseases, particularly periodontitis are the leading cause of tooth loss amongst adults globally having adverse consequences on a person's quality of life,^{4,5} simple measures including twice daily brushing of teeth (morning and before bedtime) and daily interdental flossing have been reported as being successful in its prevention.

With the advancements in the field of dentistry it should be our prime objective to create awareness among the youngsters of the society. It is very important to be thorough with the knowledge of the periodontium to be able to carry out an effective treatment plan. To maintain oral health and prevent the occurrence of periodontal diseases, it is essential that there be acquisition of adequate oral health knowledge together with instilling of appropriate self-care practices. Moreover, prevention of and early intervention into periodontal disease are critical, and successful management

of periodontal disease depends on the capacity of patient's oral self-care practices.^{6,7} The most essential step an individual can take to reduce plaque accumulation and the consequent risk of plaque-associated diseases, such as periodontitis, is perhaps routinely performing tooth brushing.⁸ Budding dental professionals, considered to be the future health care providers are well-thought-out to have a better knowledge and awareness than the general population, but assessment of actual status demands a proper-channeled study. This survey was therefore initiated with a prime focus to determine the oral health awareness levels among the students who have just entered the field of dentistry i.e. the students in their pre-clinical years.

METHODOLOGY

This was a dental college-based survey conducted from November 2019 to December 2019 to find out about the awareness and knowledge of the periodontal health among students of pre-clinical years in dental colleges in Himachal Pradesh. Sample size of 310 was calculated. Data was collected using a self-structured questionnaire.

The questionnaire consisted of three main sections. The first section consisted of questions about the student's socio-demographic status: email id, name, age, sex, BDS prof. year and name of the colleges were reported. The second section consisted of questions on student's awareness about oral hygiene (three yes/no questions, and seven questions with multiple options for the students to check their own awareness about their oral hygiene). This section consisted of questions about the aid they use for their teeth cleaning, type of the aid, frequency of brushing, time of brushing, when did they change their toothbrush, the technique the use to clean their teeth and do they use aids such as floss and mouthwash.

The third section of our survey consisted of questions on students' knowledge about periodontal health (four yes/no questions, three questions with multiple options and one question for them to describe in order to check their knowledge about periodontal health). This section consisted of questions

about co-relation of oral and systemic health, common cause of bleeding of gums, bad breath and staining of teeth, sensitivity and mobility of teeth, recent advances in the field of dentistry and importance of maintaining dental health.

The inclusion criteria of our survey was to include the students belonging to the pre-clinical years of dentistry, both male and female. The exclusion criteria of our survey included the students belonging to the clinical years of dental colleges.

QUESTIONNAIRE

Demographic questions

- Email id
- Name
- Age
- Gender
- BDS Proff. year
- Name of the college

Survey questions

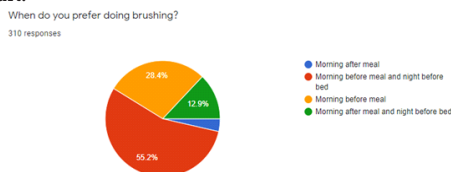
- What aid do you use to clean your teeth?
- If toothbrush, then which type of brush?
- How many times do you brush your teeth in a day?
- When do you prefer doing brushing?
- What do you think which type of brushing technique is good?
- When do you change your toothbrush?
- Have you heard about dental floss
- If yes do you use dental floss regularly?
- Have you heard about mouthwash?
- How often do you use mouthwash?
- Do you think dental health affects systemic health?
- What is the most common cause of bleeding gums?
- What is the common cause of bad breath?
- Do you think tea/coffee causes staining of teeth?
- What is the most common cause of loose teeth?
- Do you think sensitivity to hot and cold can be treated?
- Have you heard about recent advances in dentistry; if yes kindly specify
- Do you think maintenance of dental health is important?

RESULTS

A total of 5 dental colleges were sent the questionnaires via online link in the state of Himachal Pradesh. Out of which 310 responses were obtained which were used to formulate the result. The respondents included the students of pre clinical year in 5 different dental colleges. Out of 310 students 108 were from HIDS, Poanta Sahib (34.8%), 100 from HDC, Sundernagar (32.3%), 71 from Bhojia Dental College (22.9%), 24 from GDC, Shimla(7.7%), 7 from MNDAY Solan (2.3%). The majority of the students who responded were of 19 years (115 students out of 310) with a minimum age of 17 years and maximum age of 24 years.

302 students were found to use tooth brush for cleaning their teeth, however 8 students still used traditional methods to clean their teeth i.e 5 students used datoon and 3 used manjrn. Majority 60% students used medium harness bristle type of toothbrush. 198 students brushed twice a day while 107 students brushed once a day, 5 thrice a day and 5 after every meal.

55.2% were found to brush in the morning before meal and before bed at night. This is illustrated below with the help of a pie-chart.

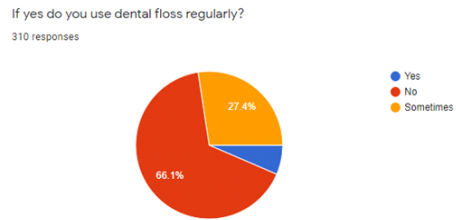


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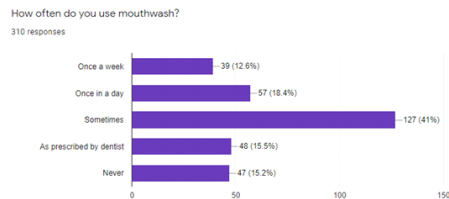
teeth,

97 students used vertical, 80 horizontal and 9 used other techniques. 176 out of 310 changed brush after 3 months of its usage, 78 after 6 months, 49 till bristles get frayed, 9 after 1 year, 5 below 2 months of usage.

72.9% students have heard about dental floss out of which only 66.1% use it regularly. This is illustrated via pie chart below.

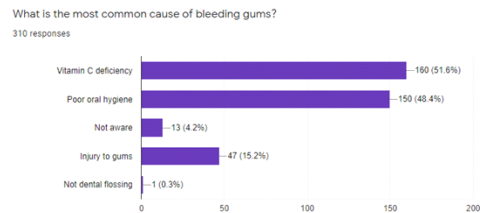


About 98.7% students have heard about mouthwashes and out of these 127 were uncertain about the amount of time they used mouthwashes. This is illustrated in the bar graph below.



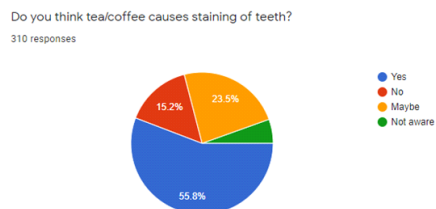
Majority (284 students) thought that there is a relationship between systemic health and oral health.

160 students thought the most common reason for bleeding gum was Vit C deficiency, 150 poor oral hygiene, 47 injury to gums, 13 were not aware about it.

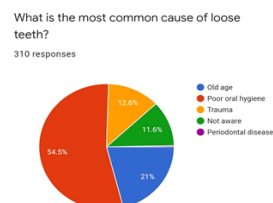


261 students thought that the most common cause of bad breath is poor oral hygiene.

55.8% students thought that staining of teeth is caused by consuming tea/coffee.

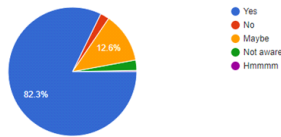


Most common cause of loose teeth was found to be poor oral hygiene (54.5%), while the least common cause was found to be periodontal disease (<0.1%)



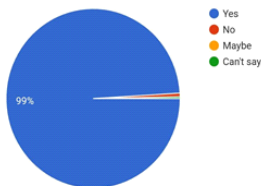
Most of them think sensitivity can be treated. This is illustrated as below

Do you think sensitivity to hot and cold can be treated?
310 responses



Almost 99% of the students think that maintenance of periodontal health is important.

Do you think maintenance of dental health is important?
310 responses



DISCUSSION

The exposure and awareness of periodontal health due to our lifestyle and eating habits requires greater emphasis in today's environment. The low awareness to some extent is attributable to the urban lifestyle and on the other extreme in rural areas due to the low literacy levels and economic status. Periodontal health is essential for maintaining both oral health and systemic wellbeing of an individual. Society should be aware about the importance of visiting a dentist on regular basis. Early detection of oral diseases makes them more amenable to treatment and would achieve better chances of cure. To attain good oral as well as periodontal health, toothbrush and various other oral hygiene aids should be used regularly on a daily basis in correct manner.

Dental students are the future promoters and counselors' of oral health care. Their awareness regarding periodontal health is vital.⁹ Their knowledge and oral hygiene practices can be useful in promoting the importance of oral and periodontal health for systemic health and general wellbeing.

In the survey the questionnaire was aimed towards gauging the knowledge and awareness of periodontal health and oral hygiene practices amongst BDS students from 5 colleges across the state of Himachal Pradesh who have yet to enter a clinical setup and gain practical exposure. The questions have been formulated such that they take into consideration the general awareness of students regarding periodontal health and their daily oral hygiene maintenance practices.

There is a positive link between dental education experiences, oral health attitudes, behavior, and improvement of personal oral health of dental students.¹⁰ Oral health knowledge is considered to be an essential prerequisite for health-related behavior.¹¹

310 responses were selected for analysis, out of which 91.6% respondents were well versed with knowledge regarding periodontal health, 49.8% practice good oral hygiene and 99% responses were aligned in favour of the essentiality of good oral hygiene. As compared to the study cited by Malla et al.(2017)¹², where only 55% students displayed adequate knowledge regarding good periodontal habits and an even smaller percentage of participants (22.5%) followed a good oral hygiene practice.

The present study shows 68.1% dental students brushed twice daily, which is in accordance with studies done by Neeraja et al. in 2011,¹³ Rahman and Kawas in 2013,¹⁴ and Malla et al in 2017.¹² The percentage in this sample is higher than that reported from Kuwait and Jordan where only one-third and

two-thirds of the students brushed their teeth twice a day respectively.¹⁵

Tooth brushing is an essential element of an effective plaque control program, and attaining optimal oral health depends on the efficacy of the method used and the ease of carrying out the procedure. In the present study 56% students were well aware of and used roll stroke technique for cleaning their teeth, 31% students used vertical, 26% horizontal and 3% used other techniques. Our results are in accordance with the study conducted by Malla et al. where about 45% students preferred roll-stroke, 28.3% vertical and 21.7% horizontal technique of brushing.

With a comparative study drawn between the various institutes taken in account, it is quite evident that even though dental students may have a higher understanding of concepts and techniques surrounding oral health care the records do not show impressive numbers regarding implementation of the same in their regular oral hygiene practices.

Regarding the awareness about dental floss, 72.9% students had heard about dental floss out of which only 66.1% used it regularly. In a study done by Rahman and Kawas¹⁴ on the dental students of University of Sharjah, UAE, almost 56% agreed that they floss every day and there was a significant association with the statement "I do use dental floss on a regular basis." On the contrary in the studies done by Neeraja et al.¹³ in 2011 reported only 16% of the students used dental floss on a regular basis and Malla et al (2017)¹² reported only 50% students were aware of it and 40% used it sometimes and only 9% used it regularly.

On being enquired about the knowledge and application of mouth washes in their daily routine, 98.7% dental students had heard about mouthwashes and 59% used it correctly. Our results were in accordance with the study done by Neerja et al where 55% of dental students used mouth rinse on a regular basis. On the contrary Malla et al. reported 46.7% dental students never used mouthwash, 12.5% used it once a week while 38.3% used it as per prescription.

Awareness regarding the use of dental floss and of mouthwash was good among the students in this study, but the percentage of those using these correctly was comparatively low.

In our survey about 48% of the students believed that poor oral hygiene was the most common cause of bleeding gums and 51% believed deficiency of Vit C to be the most common cause. The results were somewhat similar to study done by Malla et al., where 46.7% of dental students believed poor oral hygiene and 43.3% considered deficiency of Vit C to be the cause of bleeding gums.

With reference to relation of periodontal health with systemic health majority of dental students from our sample (284/310) i.e. 91.61% believed it to be true and 95.8% sample from Malla et al. also responded positively. From the statistics reported by Sabeen et al. 94% students from professional colleges in Karachi also responded positive to the question. An understanding of this connection is vital for the proper diagnosis, treatment and maintenance of both periodontal and systemic diseases.

Dentinal Hypersensitivity affects daily life of subjects because of the transient but recurrent pain elicited during oral activities like eating, drinking, brushing of teeth and even breathing.¹⁵ From an academic point of view, a discrepancy exists between the relative frequency of DH and the controversial effectiveness of available treatment on one hand, and the limited attention it receives within the undergraduate dental

timetable on the other hand. The results obtained in our survey were fairly good as students having knowledge about dentinal hypersensitivity and its treatment were reported to be 82.3% and somewhat similar results were obtained in the study by Malla et al. Continuing dental education may valuably complement the shortcomings related to the limitations of dentists in this regard.

In accordance with the study done by Malla et al [12], 54.5% dental students in our survey believed that the most common cause of loose teeth is poor oral hygiene, while the least common cause is periodontal disease (<0.1%).

Several studies [6, 17, 18] have reported an increased concern of adolescents about esthetics and its relationship to self-esteem. It is essential to recognize the etiology and pattern of the tooth discoloration among adolescents so as to manage the discoloration effectively and efficiently. Malla et al reported that 56.7% dental students considered tea/coffee as the cause of dental stains, 5.8% disagreed, 30.8% were not sure and 6.7% were not aware. Similarly in our survey as well 55.8% students thought that staining of teeth is caused by consuming tea/coffee, 15.2% did not agree, 23.5% were not sure and 5.5% were not aware.

The concepts of periodontal health (knowledge and awareness) in the survey directed by us does not show female gender predilection as mentioned by Malla et al. (knowledge:- female 77.5% and male 22.5% ; good oral hygiene practice :- female 77.5% and male 22.5%). Gender proved to be the strongest predictor of the frequency of brushing teeth in the survey catalogued by Kassak et al due to the stereotypical standards of esthetics and beauty to be maintained or achieved by the female gender (78% females vs 53.7% males). The study conducted by Al-Omari QD, Hamasha AA, (2005) [19] on Dental Students in Jordan also showed female dental students had, in general, more positive oral health attitudes and practices than male students. The results obtained in our survey, differed from the other studies, this could be due to the fact that, with increasing awareness on oral health and being associated with the dental profession even the male students are now well aware with the concepts of periodontal health.

CONCLUSION

Our survey shows that awareness and knowledge about oral hygiene and periodontal health is one of the most important factors to maintain the oral health. The responses show that though most of the students have adapted good oral habits but still there is need to inculcate good oral hygiene habits in everyone. The students coming in the pre-clinical classes should have proper knowledge as they are the future dentists and the mediators to communicate with the public. If a dental student is properly educated with best knowledge and habits he/she can create awareness in the society for the same. Hence, we recommend inclusion of attractive and effective educational materials such as practical sessions of brushing and flossing techniques along with the use of other interdental cleaning aids, oral irrigation devices and plaque disclosing agents would help achieve optimum plaque control. Likewise, effective oral hygiene must be constantly reinforced during the five year dental education period.

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