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RESEARCH ARTICLE

IMPACT OF DENTAL EDUCATION ON ORAL HYGIENE PRACTICES AND PERIODONTAL HEALTH IN DENTAL STUDENTS AND THEIR SIBLINGS

[1]Saina Elahi, [1]Salika Sheikh, [1]Sharadha Gupta, [1]Sangeeta Muglikar, [*,2]Dr. Ganesh Ranganath Jadhav and [3]Dr. Shibli Syed

[1]Department of Periodontology and Implantology, M.A. Rangoonwala College of Dental Sciences and Research Centre, Pune-411001, Maharashtra, India
[2]Department of Conservative Dentistry and Endodontics, Sinhgad Dental College and Hospital, Pune, India
[3]Private Practitioner, Pune, India

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ABSTRACT

Aims: To assess the level of knowledge and attitude of dental students and their siblings towards oral health; their oral hygiene and periodontal status; and also to evaluate the effect of dental education on the same.

Materials and Methods: 80 participants were selected and divided into 4 groups as follows- Group A - 1st year BDS students, Group B - Siblings of group A participants, Group C - Final year BDS students, Group D - Siblings of group C participants. Each participant's oral hygiene and periodontal status was assessed using the Oral Hygiene Index-simplified (OHI-S; Greene and Vermilion 1964) and Community Periodontal Index (CPI; WHO); and their oral hygiene practices and attitudes were assessed using a questionnaire with close end questions. The collected data was subjected to statistical evaluation to assess the impact of dental education on their oral hygiene practices and periodontal health.

Results: There were significant differences between OHI-S & CPI scores, knowledge & attitude of final year dental students as compared to other groups; but no significant differences were observed amongst the first year students and siblings of both the groups.

Conclusion: This study showed that dental education did have an impact on the level of individual knowledge and attitude but this was not passed on to the siblings.

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INTRODUCTION

Education is the continuous process of learning as well as teaching skills and knowledge. Education also means helping people to learn how to do things and encouraging them to think about what they learn. It is important for educators to teach ways to find and use information. Through education, the knowledge of society is passed on from generation to generation and people are supposed to learn how to be active and effective citizens. More specifically education helps and guide individuals to transform from lower socio-economic class to a higher class. Empowered individuals, societies, countries, by education are taking edge over individuals who stand on the bottom of the pyramid of growth. WHO (1998) defines dental health education as a process that informs, motivates and helps people to adopt and maintain healthy dental practices and lifestyles, advocates environmental changes as needed to facilitate this goal and conducts professional training and research to the same end (Peter S 2009). Dental health is a highly individualized concept, the perception of which is very much affected by an individual's culture and socio-economic status. The attitude of people towards their own teeth, and the attitude of dentists who provide dental care, play an important role in determining the oral health condition of the population. By choosing a dental curriculum at the undergraduate level, dental students become a model for oral health. Although there is a lot of published data related to the motivation of patients to follow an effective oral health care program, few studies have dealt with the attitude and behavior of dental students in motivating patients. Moreover, little is known about the influence of clinical training and course content on the development of the oral health behavior of dental students. Siblings play a unique role in one another's lives and may influence each other the same way that peers do in all stages of life. Siblings can be effective

Corresponding author: **Dr. Ganesh Ranganath Jadhav,**
Department of Conservative Dentistry and Endodontics, Sinhgad Dental College and Hospital, Pune, India.

models of good behaviour for one another and can provide an important context for the development of each others' understanding of social, emotional, moral and health related worlds. Certain theories like attachment theory (Bretherton, 1992) and Alder's theory (Alder, 1964) explain the probable effect of siblings on each other's lifestyle during different phases of life. Oral health knowledge is considered to be an essential prerequisite for health related behavior. Although only a weak association exists between knowledge and behavior in cross sectional studies, there are studies that establish an association between knowledge and better oral health. It's believed that dental students are generally motivated to maintain good oral health, and researchers have found that the oral health attitudes and behavior of dental students differed in the pre-clinical and clinical years. Literature stated that Indian dental students have a relatively poor oral health behavior and they should improve in order to serve as a positive model for their patients, families and friends (Dagli RJ *et al* 2008). However there are however no studies on the influence of dental education of an individual on the behavior and oral health practices of the siblings. The present study was conducted to assess the level of knowledge and attitude of dental students and their sibling towards oral health, their oral hygiene as well as periodontal status and also to evaluate the effect of dental education on the same.

MATERIALS AND METHODS

The study was conducted in a dental college in Pune city to assess the level of knowledge and attitude of dental students and their siblings towards oral health, oral hygiene and periodontal status and to evaluate the effect of dental education on the same.

Ethical clearance and Informed consent

Ethical clearance was obtained from the Institutional Research Ethics Committee. Students of the Dental College and their siblings willing to participate in the study were explained regarding the study to their complete satisfaction. Written informed consent was obtained.

Student screening (n=120) 120 students from first year BDS (n_1=60) and final year BDS (n_2=60) were screened for the inclusion and exclusion criteria.

Inclusion criteria

Dental students who were systemically healthy without any chronic or long standing habits and whose siblings were below 30 years of age were recruited in the study.

Exclusion criteria

Participants who participated previously in such study or undergoing any active periodontal therapy were excluded from the study.

Randomization (n=80)

The participants satisfying the above mentioned inclusion criteria were recruited in the study. The participants were divided into four groups as follows:
Group A- 1st year BDS students (n=20)
Group B- Siblings of group A- participants (n=20)
Group C- Final year BDS students (n=20)
Group D- Siblings of group C participants (n=20)

Questionnaire

After induction into the study, each participant was asked to fill up a questionnaire. The questionnaire had 15 questions regarding the oral hygiene and dental health practices of the individual. The questions were close ended with 3-5 options as answers. (Figure 1)

Intra-oral Examination

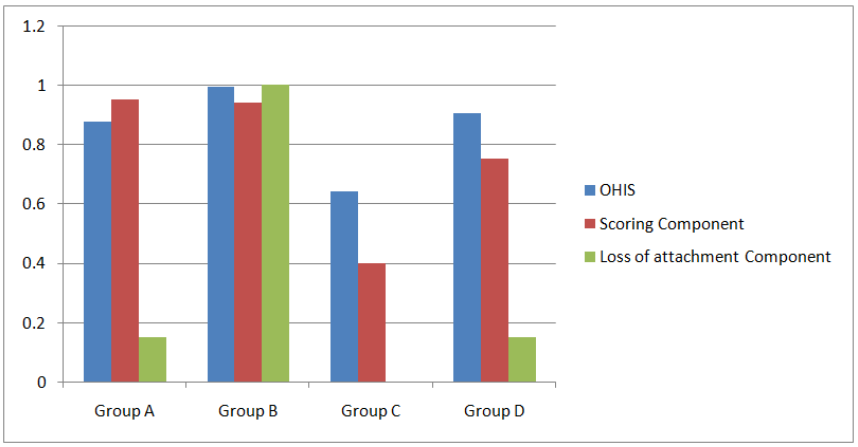
Following this each participant was subjected to an intraoral examination by a single examiner (S.E.) using the Oral Hygiene Index-simplified (OHI-S; Greene and Vermilion, 1964) and Community Periodontal Index (CPI; WHO).

Statistical Analysis

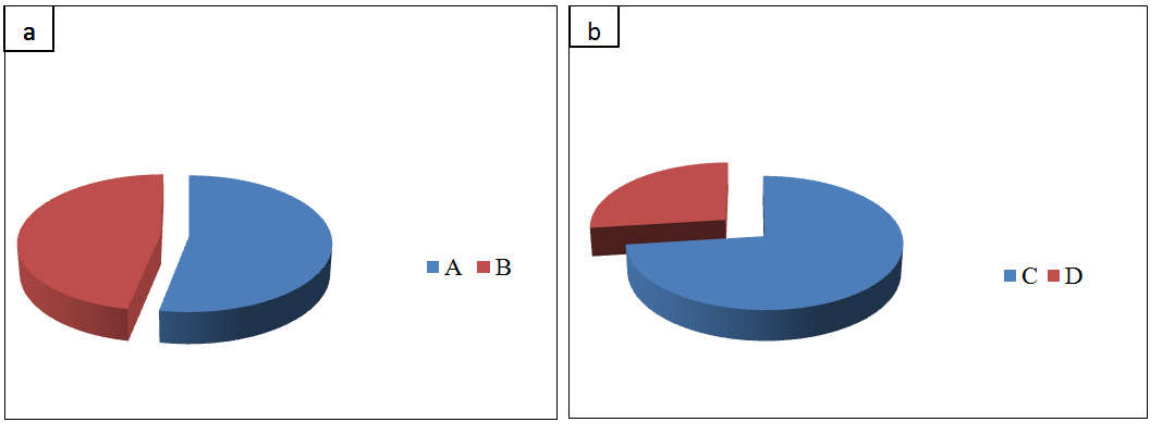
The data obtained from questionnaires and clinical examinations was entered in an Excel sheet and subjected to Wilcoxon Signed Rank Test and Paired t-Student Test which was suitable for the data to be statistically analysed. A difference was considered to be statistically significant if the p value was < 0.05.

RESULTS

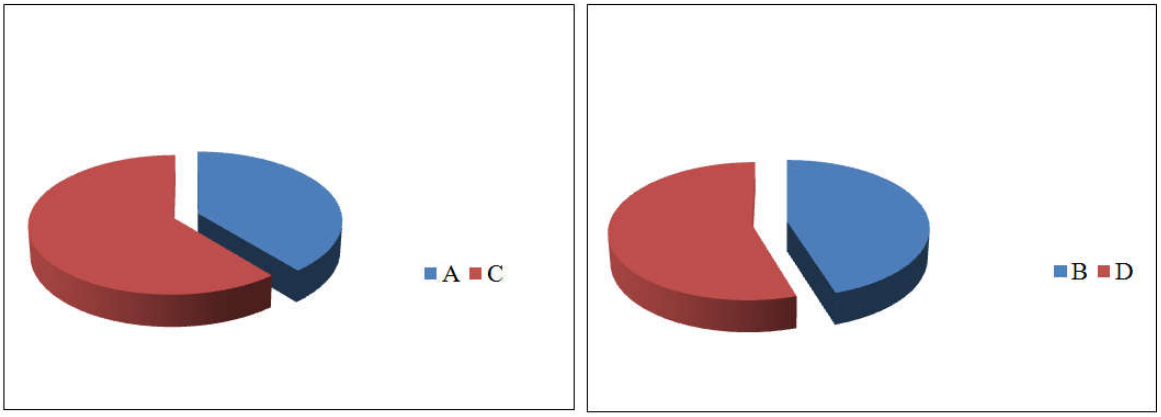
A total of 80 participants completed the study. Values obtained from OHIS performed in each patient were recorded as calculus and debris index and following this the mean was taken. CPI was recorded as two components namely loss of attachment and scoring component. The average of OHIS and CPI for the four groups is represented in Table 1. While comparing the first year students with their siblings, OHIS (p=0.076) and scoring component of the CPI scores (p=0.422) showed no significant difference. However attachment loss scores of both groups showed significant differences (p= 0.001). Final year students' comparison with their siblings showed statistically significant differences in the OHIS (p=0.003), scoring component (p=0.045) and the attachment loss scores (p=0.001). Final year students showed statistically significant difference in the OHIS (p=0.036) and scoring component (p=0.042) compared to first year students. However attachment loss scores (p=0.209) did not differ significantly in both the groups. Sibling of final year and first year students showed no difference in OHIS scores (p=0.089), scoring component (p=0.1410 but significant difference in the attachment loss scores (p=0.009) (Graph 1). It means only final year students have better oral hygiene and periodontal health as compared to their own siblings. It means that dental education has a positive impact on oral health practices of dental students. First year dental students and their siblings showed no difference in the knowledge and attitude (Graph 2); however there was difference observed between final year dental students and their siblings (Graph 3). Moreover there was no difference in the knowledge and attitude of first year - final year dental students and siblings of first year - final year dental students (Graph 2). The results of the attitude and behavior were similar to the results obtained from the indices taken previously. Final year BDS students showed the best knowledge and attitude towards oral health practices when compared to first year BDS students and the siblings of both groups



Graph 1. Comparison of OHIS and CPI scores between all groups



Graph 2 pie diagram showing difference in the knowledge and attitude of first year dental students and their siblings (a) and final year dental students and their siblings (b)



Graph 3. pie diagram showing difference in the knowledge and attitude of first and final year dental students (a) and their siblings (b)

DISCUSSION

Education is a process through which people learn about different values, skills and beliefs. It's a tool which helps them change and improve their lifestyle and gain a better position in the society. The knowledge of a society is passed on from one generation to another through education. Children and adults are supposed to learn how to be active and effective citizens by learning and educating themselves. More specifically education helps and guides individuals to transform from a lower socio-economic class to a higher class. Dental education helps individuals improve their dental health and behavior and motivates them to acknowledge and adopt healthy dental practices. Health behavior is defined as the activities undertaken by people in order to protect, promote or maintain health and to prevent disease (WHO, 1998). The broad categories of factors influencing health behavior at individual as well as community level include: Knowledge, beliefs, values, attitudes, skills, the influence of family members, friends, co-workers and health workers themselves. High awareness of self-oral health in a dental student should logically have a direct impact on his attitude for patient education and help to create oral awareness in the general population. Studies have shown that dental education has a positive impact on oral health and practices of dental students irrespective of the gender (Dagli, 2008, Tseveenjav, 2012). However search of the existing literature found that no studies have been done to assess the impact of dental education on the

people in close association with the same dental students. Hence this study was carried out to assess the level of knowledge and attitude of dental students and their siblings towards oral health as well as the impact of education on them. Close end questionnaires were used in order to assess their knowledge and attitude (Al-Omiri, 2006). Oral Hygiene Index-simplified (OHI-S; Greene and Vermilion, 1964) and Community Periodontal Index (CPI; WHO) were recorded. Inter-group comparison of Group A(1st year BDS students) and Group B (Siblings of group A participants) OHIS scores gave a mean of 0.875 and 0.995 respectively which showed no significant difference while the CPI scores for scoring component showed a mean of 0.95(A) and 0.964(B) which demonstrated no significant difference but the attachment loss scores showed significant differences with mean of 0.15(A) and (B). Group C(Final year BDS students) and Group D(Siblings of group C participants) OHIS scores gave a mean of 0.64 and 0.905 for respectively which showed significant difference while the CPI scores for scoring component showed a mean of 0.4(C) and 0.75(D) and attachment loss scores a mean of 0(C) and 0.15(D) both of which showed significant differences. Intra-group comparison of Group A and C, OHIS and CPI scores for scoring component demonstrated significant differences while the attachment loss scores showed no significant differences. Group B and D, OHIS and CPI scores for scoring component demonstrated no significant differences but the attachment loss scores showed significant differences.

The results from this study revealed that final year students had better oral and periodontal health when compared to first year students. These differences might be due to the gain in knowledge of preventive aspects of oral health and diseases, which improves the students' attitude and behavior to personal oral health care which are introduced in the clinical years. The siblings of both the groups had no change or improvement in their oral health and behavior which shows that although the dental students had an improvement in their oral health, attitude and behavior they did not transfer or pass on this knowledge to their siblings. So emphasis has to be laid on educating and training the dental students on their role in transfer of their knowledge so that the advantages of their acquired knowledge is transferred to the people coming in association with the dentists which include patients, family, friends and society.

Dental education is not emphasized upon in schools during primary education. The curriculum in schools and junior colleges lacks educating individuals on the various aspects of oral and overall health which is one of the major contributing factors in lack of health care related knowledge reflected in newly admitted first year students in this study. This could be rectified to a larger extent by introducing education of the children regarding oral and dental health from schools and colleges. During dental education, dental students focus on clinical practice, diagnosing and treating oral diseases as well as the preventive aspect of oral health which means they deal with treating as well as preventing oral and periodontal conditions. Nadeem *et al*. in 2013 concluded that dental knowledge and motivation had a positive effect in improving the behavior of oral self-care (Nadeem, 2011). Peker *et al* in 2009 performed a study and concluded that the oral health knowledge of the dental students improved with increased education (Peker, 2009). Dagli *et al* in 2008 concluded that Indian dental students had relatively poor oral health behaviour which should improve in order to prove as a positive model for their parents, family and friends. There was no gender factor influencing the results in this study which is consistent with a study by Tseveenjav *et al* in 2000. However a study performed by Porat *et al* in 2001 showed that female dental students had a better oral hygiene than their male colleagues (Porat, 2001). Ozalp *et al* in 2012 concluded that that oral and dental health behaviour and attitudes and also their knowledge about oral and dental health care of dental students improved with increasing level of education while oral and dental health care of female students were better than males (Özalp, 2012). Neeraja *et al* in the year 2011 concluded that oral health attitude and behaviour of dental students improved with increasing levels of education (Neeraja, 2011).

Hence, conduction of various training programmes or modifications in dental school curricula and syllabus which will focus on educating the emerging dentists on the importance of their role in improving the oral health condition of people in association with them which include patients and students' family and friends is very important. This is particularly valuable in developing countries like India where preventive care expenses can be borne more easily than expenses involved in active treatment of dental conditions. Also with the emerging evidence of role of dental diseases in the etiopathogenesis of systemic diseases like cardiovascular diseases, Diabetes Mellitus, strokes and Preterm low birth weight babies etc. the importance of preventing dental diseases takes on a higher level of significance. Recognition that oral health and general health are interlinked is essential for determining appropriate oral health care programmes and strategies at both individual and community care levels. Oral health shares common risk factors with other chronic diseases and conditions. The adoption of a collaborative 'common risk factor approach' which addresses common risk factors and their underlying social determinants for oral health promotion is more resource-efficient and effective than a targeted disease-specific approach. Therefore it can be said that- oral health is a window to your overall health. Recognizing this, the World Health Organization has also integrated oral health into its chronic disease prevention efforts "as the risks to health are linked (WHO 1998)." The limitations of this study are that the sample size of this study was less and there was no standardization for the siblings age, therefore future studies should include a larger sample size and age wise selection of the siblings group for more accurate results to be obtained.

REFERENCES

Adler A. 1964. Individual Psychology of Alfred Adler. Harper Collins; ch: 30.

Al-Omiri MK, Al-Wahadni AM, Saeed KN. 2006. Oral health attitudes, knowledge, and behavior among school children in North Jordan. *J Dent Educ*., 70(2):179-87.

Bretherton I.1992. The origins of attachment theory: John Bowlby and Mary Ainsworth. *Develop Psychol*., 28(5):759.

Dagli RJ, Tadakamadla S, Dhanni C, Duraiswamy P, Kulkarni S. 2008. Self reported dental health attitude and behavior of dental students in India. *J Oral Scie*., 50(3):267-72.

Nadeem M, Syeda SA, Khaliq R, Mirza H. 2011. Evaluation of dental health education and dental status among dental students at Liaquat College of Medicine and Dentistry. *Intern J Dent Clin*., 3(3): 23.

Neeraja R, Kayalvizhi G, Sangeetha P. 2011. Oral health attitudes and behavior among a group of dental students in Bangalore, India. *Euro J Dent*., 5(2): 163–167

Özalp N, Dağ C, Ökte Z. 2012. Oral Health Knowledge among Dental Students. *Clin Dent Res*., 36(1):18-24.

Peker I, Alkurt MT. 2009. Oral health attitudes and behavior among a group of Turkish dental students. *European Journal of Dentistry*, Jan; 3(1):24.

Porat D, Kawamura M, Eli I. 2001. Effect of professional training on dental health attitudes of Israeli dental students. Refu'at ha-peh veha-shinayim.; 18(2):51-6.

Soben Peter. 2009. Essentials of Preventive and Community Dentistry, 4th Edition, ch:2;8

Tseveenjav B, Suominen AL, Vehkalahti MM. 2012. Oral health-related behaviours among dentate adults in Finland: findings from the Finnish Health 2000 Survey. *Euro J Oral Scie*., 120(1):54-60.

WHO/HPR/HEP/98.1. 1998. Health Promotion glossary

QUESTIONNAIRE

GROUP A

Name: Age/sex:

1) How many times a day do you brush?

- Once a day
- Twice a day
- Thrice a day
- After every meal
- Never

2) What type of toothbrush do you use for brushing?

- Hard
- Medium
- Soft
- Ultra soft

3) Which technique do you use while brushing?

- Horizontal strokes
- Vertical strokes
- Circular strokes
- Both horizontal and vertical strokes
- Modified Bass method

4) Which of the following do you use with your brush?

- Tooth paste
- Tooth powder
- Any other, specify_____

5) How often do you change your tooth brush?

- Once in 3 months
- Once in 6 months
- Once a year
- If any other time, specify_____

6) How long do you brush your teeth for?

- Less than 1 min
- 1-2 mins
- 2-5 mins
- More than 5 mins

7) What Interdental aids do you use?

- Dental floss
- Interdental floss
- Tooth pick
- None

8) Which among the following do you use to clean your tongue?

- Tongue cleaner
- Tooth brush
- Finger
- I don't clean my tongue

9) How often do you use a floss?

- Once a day
- Twice a day
- Occasionally
- Never

10) Do you use a mouthwash?

- Yes
- No

11) Do you have any habits?

- Yes
- No
- +If yes, specify_____

12) How often do you visit your dentist?

- Every 6 months
- Once a year
- Only when required
- Never visited one

13) The reason for your last visit to the dentist was?

- Tooth ache
- esthetics
- Routine checkup
- Any other, specify_____

14) What are the treatments you have undergone till date?

- Fillings
- Crowns
- RCTs
- Extractions
- Periodontal surgery
- Orthodontic treatment
- Any other, specify_____

15) Have you got a scaling done before?

- Yes
- No

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