

# ORAL HYGIENE ATTITUDE AND BEHAVIOR OF PRE-CLINICAL AND CLINICAL UNDERGRADUATE DENTAL STUDENTS

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## ABSTRACT

*The objective of this study was to compare the oral health behavior and attitude among the pre-clinical and clinical undergraduate dental students of a university in Pakistan.*

*A cross-sectional study was designed and the students were categorised as pre-clinical and clinical students. "Hiroshima University-Dental Behavior Inventory (HU-DBI) questionnaire" was filled by the students and the "HU-DBI" scores were calculated and compared between pre-clinical and clinical undergraduate dental students through Mann-Whitney U test.*

*A total of 119 dental students took part in this research of which 52 (43.7 %) students were from pre-clinical classes while 67 (56.3 %) were clinical students. Overall mean score of oral health behavior was  $6.03 \pm 1.613$  while the median was  $6 \pm 2$ . The mean score of students in pre-clinical group was  $6.04 \pm 1.608$  (median =  $6 \pm 1$ ) and the mean score of the students in clinical group was  $5.98 \pm 1.627$  (median =  $6 \pm 1$ ). The difference in mean scores of two groups was statistically insignificant ( $p=0.887$ ). Hence, no significant difference was noted in oral health attitude and behavior between clinical and pre-clinical undergraduate dental students.*

**Key Words:** Oral hygiene, behavior and attitude, dental students, "Hiroshima University-Dental Behavior Inventory".

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## INTRODUCTION

Oral health is one of the leading health issues in the world.<sup>1</sup> It is integral part of the general well-being. The systemic effects of poor oral hygiene such as cardiovascular diseases, low birth weight, diabetes mellitus and bacterial pneumonia have been reported.<sup>2</sup>

In one of the studies on Global burden of diseases, it has been revealed that primary dentition caries was the 12th most prevalent disease.<sup>3</sup> According to the Global statistics by WHO the average "Decayed-missing-filled-teeth (DMFT) index" in children aged 12 is

1.9. According to WHO goal 2000, the DMFT score for a 12-year-old should be less than 3.0.<sup>4</sup> This could not be achieved specially in developing countries mainly due to high sugar intake in children. To protect oral health throughout the life course, WHO Guidelines recommend limiting the sugar consumption to no more than 5% energy intake for children and adults.<sup>5</sup>

WHO has recommended guidelines for Oral Health professionals and advocates that the professionals must have the confidence and skills to provide dietary advice to the patients.<sup>6</sup> It has been reported that oral health behavior and knowledge in dental students of different countries differ.<sup>7</sup> Difference was also noted among clinical and pre-clinical dental students.<sup>8</sup> Many efforts and suggestions have been made worldwide to standardize the dental education system. The oral self care attitude and behavior towards oral hygiene may affect the dental student to motivate and educate the patient.<sup>9</sup>

"Hiroshima University-Dental Behavior Inventory (HU-DBI)" was designed in 1988 which is currently being used in studies to assess oral hygiene behavior.<sup>10</sup>

This study was conducted for comparison of oral

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health attitude and behavior among clinical and pre-clinical undergraduate dental students of a university in Pakistan.

**METHODOLOGY**

Approval of this study was taken from the ethical review committee at National University of Medical Sciences, Rawalpindi. The students received informed consent and they were clarified the objective of the research. The questionnaire comprised of 20 stems with "Agree" and "Disagree" options. Students were asked to encircle the desired option. Total number of 12 options was selected for the analysis of oral health and the other 8 questions were related to general health. The English version of the "HU-DBI questionnaire" was given to the participants and the form was filled anonymously in the presence of a research team member. Ten minutes were given to all the students to fill in the forms. Students who were not present on that day were not included in the study.

One point was provided for each of the "Agree" replies to item number 4,9,11,12,16 and 19. Each of the "Disagree" answers for item number 2, 6, and 8,10,14,15

also received one point. Maximum "Hiroshima University- Dental behavior inventory (HU-DBI)" score was 12, which represents better oral hygiene. SPSS 20.0 was used to analyze the data. Mann Whitney U test was applied for comparison of "HU-DBI" scores between pre-clinical and clinical student categories.  $p \leq 0.05$  was considered statistically significant.

**RESULTS**

119 dental students were included in this research, of whom 22 (18.5 %) were male dental students and 97 (81.5 %) were female. 52 (43.7 %) students were from pre-clinical classes while 67 (56.3 %) were from clinical classes.

Overall mean score of oral health behavior was  $6.03 \pm 1.613$  while the median was  $6 \pm 2$ . The mean score of dental students in pre-clinical group was  $6.04 \pm 1.608$  (median =  $6 \pm 1$ ) and the mean score of the dental students in clinical group was  $5.98 \pm 1.627$  (median =  $6 \pm 1$ ). The difference in mean scores of two groups was statistically insignificant ( $p=0.887$ ) (Fig. 1).

32.7% students from pre-clinical and 10.4% clinical

TABLE 1: RESPONSES OF STUDENTS TO THE QUESTIONNAIRE

S/n	Statement	Pre-clinical*	Clinical*	p-value
1	I do not worry much about visiting the dentist	55.8%	56.7%	0.918
2	My gums tend to bleed when I brush my teeth	32.7%	10.4%	0.003
3	I worry about the color of my teeth	84.6%	79.1%	0.442
4	I have noticed some white sticky deposits on my teeth	26.9%	35.8%	0.302
5	I use a child-sized toothbrush	7.7%	3%	0.244
6	I think that I cannot help having false teeth when I am old	32.7%	38.8%	0.491
7	I am bothered by the color of my gums	36.5%	40.3%	0.676
8	I think my teeth are getting worse despite my daily brushing	36.5%	32.8%	0.673
9	I brush each of my teeth carefully	80.8%	64.2%	0.047
10	I have never been professionally taught how to brush	53.8%	34.3%	0.033
11	I think I can clean my teeth without using toothpaste	11.5%	20.9%	0.176
12	I often check my teeth in a mirror after brushing	98.1%	89.6%	0.065
13	I worry about having bad breath	78.8%	77.6%	0.872
14	It is impossible to prevent gum disease with tooth brushing alone	53.8%	55.2%	0.881
15	I put off going to the dentist until I have a toothache	59.6%	71.6%	0.168
16	I have used a dye to see how clean my teeth are	7.7%	10.4%	0.607
17	I use a toothbrush which has hard bristles	23.1%	16.4%	0.362
18	I do not feel I've brushed well unless I brush with strong strokes	38.5%	28.4%	0.244
19	I feel I sometimes take too much time to brush my teeth	40.4%	29.9%	0.230
20	I have had my dentist tell me that I brush very well	32.7%	31.3%	0.876

\* Percentage of students "agreeing" to the question statements.

\*\*Questionnaire to check "HU-DBI Score" (10).

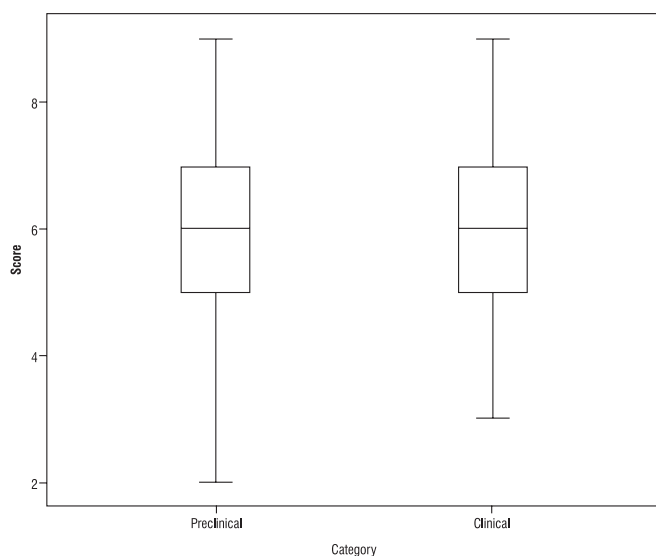


Fig. 1: Box and whisker plots of pre-clinical and clinical students showing no significant difference in “HU-DBI” scores between the two groups.

students agreed that their gums tend to bleed when brushing ( $p=0.003$ ). Greater percentage of students from pre-clinical category (80.8%) believed that they brushed their teeth carefully as compared to the students from clinical classes (64.2%) ( $p=0.047$ ). 53.8% of pre-clinical students and 34.3% of clinical dental students believed that they had never instructed to brush teeth professionally ( $p=0.033$ ). No statistically significant distinction was observed between pre-clinical and clinical categories in the responses of rest of the questions (Table 1).

## DISCUSSION

One of the most important tasks for a future dentist is to educate the patients about importance of oral hygiene and its effects on systemic health. To achieve this, the student must have appropriate attitude towards oral health and its systemic effects. Students with such attitude and behavior can in turn create awareness regarding oral hygiene in general masses. Adoption of the required oral hygiene measures is compromised in general public as shown by a study that only 6% of the people used oral hygiene aids other than tooth brush.<sup>11</sup> Even the attitude of undergraduate dental students was not satisfactory as stated by a study done in Pakistan showing that the undergraduate medical students were more concerned about their oral hygiene as compared to undergraduate dental students.<sup>12</sup>

In present study the overall mean “HU-DBI” score was 6.03, which was better than reported scores in Sudan (5.08) (Al Shiekh 2015) China (5.07) (Komabayashi et al 2005) and 5.06 Yemen (Halboub exam) but lower than the mean score of studies done in Japan (7.40) (Kawamura M 2000), Greece (6.68) Turkey (6.53) (Peker

I 2009) and Britain (7.33) (Komabayashi T 2005).<sup>13-19</sup>

There was no statistically significant difference between preclinical and clinical undergraduate dental students in terms of oral health behavior in current study. Mean “HU-DBI” scores of pre-clinical and clinical groups were 6.04 and 5.98 respectively. The difference between these two groups was observed only in 3 questions. 32.7% students from pre clinical and 10.4% students from clinical agreed that their gums tend to bleed when they brush their teeth, suggesting that clinical students had a better oral hygiene status. In contrast to this, present study showed that 80% of pre-clinical students and only 64.2% of clinical students believed that they brush their teeth carefully. This is probably due to the fact that clinical students understand the oral hygiene measures better than the pre-clinical students and therefore observe their oral hygiene measures more critically. This fact is endorsed by another question asked in this study which showed that 53.8% of pre-clinical students believed that they were never instructed to brush teeth professionally, while only 34.3% of the clinical students gave the same response. This shows that students in clinical category had better attitude regarding oral hygiene measures. Despite the differences mentioned above, the “HU-DBI” scores of students were similar in both categories reflecting that there was no difference in oral hygiene behavior among the two groups. In another study done in Pakistan among dental, pharmacy and physiotherapy students, there was no difference among “HU-DBI” score of dental (7.30), pharmacy (7.23) and physiotherapy (6.97) students.<sup>20</sup> This study suggests that the undergraduate dental programs in Pakistan are not improving the oral hygiene behavior of undergraduate dental students.

Therefore, there is an urgent need for a productive and constructive revision of the curricula to positively impact students understanding, behavior and attitude.

## CONCLUSION

The result of the present study shows no difference between preclinical and clinical undergraduate dental students in terms of oral health behavior and attitude.

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#### CONTRIBUTIONS BY AUTHORS

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|-----------------------------|---|
| <b>1 Nauman Bari Khans:</b> | Study conception and design; Manuscript writing.              |
| <b>2 Muhammad Azhar:</b>    | Analysis and interpretation of data + Drafting of manuscript. |
| <b>3 Amna Zaheer:</b>       | Data Collection.  |
| <b>4 Ayesha Aslam:</b>      | Critical revision.  |