Study of oral health behaviors and attitudes among dental students at government dental college, Alappuzha

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Abstract: Dentists as primary oral health care providers play an important role in developing positive oral health attitude among the general population. In order to achieve this, the dentist themselves should develop positive health behaviors and attitudes so that they can effectively teach what they believe. In this study we have tried to assess the oral health behaviors and attitudes among clinical and preclinical dental students of government dental college, Alappuzha using Hiroshima University Dental Behavior Inventory (HU-DBI). The HU-DBI score for clinical students was found to be slightly higher than for preclinical students which was however not statistically significant. The overall HU-DBI score was found to be 5.66. The low overall HB-DBI score emphasize the need for improvement in dental health behaviors and attitudes in the subjects involved.

Keywords - Oral health behavior, Oral health attitude, HU-DBI score, Dental students

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I. INTRODUCTION

Poor oral hygiene is related with common dental diseases like dental caries and periodontitis¹. Various studies have shown that poor oral hygiene may affect the course and pathogenesis of various systemic conditions like cardiovascular disease, bacterial pneumonia, diabetes mellitus, and low birth weight ². Dentists as primary oral health care providers play an important role in developing positive oral health attitude among the general population. In order to achieve this, the dentist themselves should develop positive health behaviors and attitudes so that they can effectively teach what they believe³. Hiroshima University Dental Behavior Inventory (HU-DBI) was developed by Kawamura to investigate dental health behavior, attitudes and perceptions⁴. The original questionnaire of the HU-DBI was written in Japanese. HU-DBI consists of twenty items dealing mainly with the oral health attitude and tooth-brushing behavior. The HU-DBI was found to have good test-retest reliability (0.73) in a sample of 517 Japanese university students over a four-week period⁵. The English version of the HU-DBI had good test-retest reliability and translated validity in a sample of 26 bilingualists⁶.

In this study we have tried to assess the oral health behaviors and attitudes among dental students of Government Dental College, Alappuzha using the English version of HU-DBI. A comparison of HU-DBI scores between the clinical and preclinical students will be made.

II. NULL HYPOTHESIS

There is no difference in the oral health behaviors and attitudes as assessed by HU-DBI score between clinical students and preclinical students of government dental college, Alappuzha.

III. MATERIALS AND METHODS

The English language version of HU-DBI was distributed among all preclinical (First Year BDS and Second Year BDS) and clinical students (Third Year BDS and Final Year BDS). Informed consent was obtained from all the students. All items in HU-DBI were in dichotomous responses format either agree or disagree. A quantitative estimate of overall oral health attitude and behavior is provided by the total number of appropriate agree/disagree responses. Based on Kawamura’s analytical research, 12 items out of 20 were identified for scoring. The purpose of the study was explained to the students and any doubts regarding the questions were answered.

Statistical analysis-Data were collected and entered into excel sheets. All data were analyzed using SPSS 17.0 for windows. The responses (agree and disagree) were analyzed using Chi-square test and Z test was used to compare the HU-DBI scores of preclinical and clinical dental students. It was considered statistically significant if p value was < 0.05.
IV. RESULTS

The total number of clinical student was 54 with mean age of 21.83 years, while for clinical students it was 89 with mean age of 19.95 years. The mean HB-DBI score for clinical students was found to be $5.78 \pm 1.76$ and for nonclinical student was $5.57 \pm 1.67$. The difference was however not statistically significant (Table 1). The overall HU-DBI score was found to be 5.66.

More preclinical (68.18%) than clinical students (83.33%) did not worry about visiting the dentist. Also more preclinical students (33.33%) than clinical students (15.09%) think their teeth are getting worse despite daily brushing. More number of preclinical students (25%) did not receive professional training regarding how to brush as compared to clinical students (9.26%). Only 66.67% of clinical students and 59.55% of preclinical students agree that they brush their teeth carefully. More preclinical students (17.98%) than clinical students (1.85%) believe they can brush the teeth without using toothpaste. Only 31.48% of clinical student and 31.46% of preclinical students feel they sometimes take too much time in brushing teeth. (Table 2)

<table>
<thead>
<tr>
<th>Category</th>
<th>Sample size</th>
<th>Mean Age (Years)</th>
<th>Mean HB-DBI Score</th>
<th>Standard Deviation</th>
<th>Z Value</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical</td>
<td>54</td>
<td>21.83</td>
<td>5.78</td>
<td>1.76</td>
<td>0.1997</td>
<td>0.841</td>
</tr>
<tr>
<td>Preclinical</td>
<td>89</td>
<td>19.95</td>
<td>5.57</td>
<td>1.67</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2 HU-DBI response given by Clinical and Preclinical students

<table>
<thead>
<tr>
<th>Statement</th>
<th>Clinical Students</th>
<th>Preclinical Students</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>I don’t worry much about visiting the dentist.*</td>
<td>45(83.33%)</td>
<td>9(16.66%)</td>
<td>0.04584</td>
</tr>
<tr>
<td>My gums tend to bleed when I brush my teeth. (D)</td>
<td>9(16.66%)</td>
<td>45(83.33%)</td>
<td>0.74066</td>
</tr>
<tr>
<td>I worry about the color of my teeth.</td>
<td>29(53.70%)</td>
<td>25(46.29%)</td>
<td>0.1336</td>
</tr>
<tr>
<td>I have noticed some white sticky deposits on my teeth. (A)</td>
<td>13(24.07%)</td>
<td>41(75.93%)</td>
<td>0.27871</td>
</tr>
<tr>
<td>I use a child-sized toothbrush.</td>
<td>4(7.41%)</td>
<td>50(92.59%)</td>
<td>0.13568</td>
</tr>
<tr>
<td>I think I cannot help having false teeth when I am old. (D)</td>
<td>20(40.82%)</td>
<td>29(59.18%)</td>
<td>0.30577</td>
</tr>
<tr>
<td>I am bothered by the color of my gum.</td>
<td>14(25.93%)</td>
<td>40(74.07%)</td>
<td>0.05193</td>
</tr>
<tr>
<td>I think my teeth are getting worse despite my daily brushing.*(D)</td>
<td>8(15.09%)</td>
<td>45(84.91%)</td>
<td>0.01761</td>
</tr>
<tr>
<td>I brush each of my teeth carefully. (A)</td>
<td>36(66.67%)</td>
<td>18(33.33%)</td>
<td>0.39479</td>
</tr>
<tr>
<td>I have never been taught professionally how to brush.*(D)</td>
<td>5(9.26%)</td>
<td>49(90.74%)</td>
<td>0.02032</td>
</tr>
<tr>
<td>I think I can clean my teeth well without using toothpaste *(A)</td>
<td>1(1.85%)</td>
<td>53(98.15%)</td>
<td>0.00387</td>
</tr>
<tr>
<td>I often check my teeth in a mirror after brushing. (A)</td>
<td>33(61.11%)</td>
<td>21(38.89%)</td>
<td>0.29378</td>
</tr>
<tr>
<td>I worry about having bad breath.</td>
<td>27(50%)</td>
<td>27(50%)</td>
<td>0.32586</td>
</tr>
<tr>
<td>It is impossible to prevent gum disease with tooth brushing alone. (D)</td>
<td>37(69.81%)</td>
<td>16(30.19%)</td>
<td>0.83971</td>
</tr>
<tr>
<td>I put off going to the dentist until I</td>
<td>27(50%)</td>
<td>27(50%)</td>
<td>0.09814</td>
</tr>
</tbody>
</table>
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| I have used a dye to see how clean my teeth are | 1(1.85%) | 53(98.15%) | 5(5.68%) | 83(94.32%) | 0.27074 |
| I use a tooth brush with hard bristle. | 6(11.11%) | 48(88.89%) | 9(10.23%) | 79(89.77%) | 0.86789 |
| I don’t feel I have brushed well unless I brush with strong strokes. | 14(25.93%) | 40(74.07) | 25(28.09%) | 64(71.91%) | 0.77819 |
| I feel I sometimes take too much time to brush my teeth. | 17(31.48%) | 37(68.52) | 28(31.46%) | 61(68.54%) | 0.99793 |
| I have had my dentist tell me that I brush very well. | 8(15.38%) | 44(84.62%) | 26(29.55%) | 62(70.45%) | 0.05903 |
| I do use tooth floss on regular basis. | 1(1.85%) | 53(98.15%) | 8(9.09%) | 80(90.91%) | 0.08566 |
| I do use mouth wash on regular basis. | 2(3.70%) | 52(96.30%) | 8(8.99%) | 81(91.01%) | 0.2296 |

* P value significant  (A) or (D) correct answer- 12 responses were scored

V. DISCUSSION

The overall mean HB-DBI score was found to be 5.66 which was lower than that found in other studies (Table 3). However the number of questions scored were found to be higher for other studies and this may have contributed for the higher scores in these studies. The low score however emphasize the need for improvement in oral hygiene attitude and behavior in dental students involved in the study.

The HU-DBI values for clinical (first and second BDS) and preclinical students (third, fourth and fifth BDS) were derived from available data wherever possible.

Table 3 HU-DBI score of dental students in various studies

<table>
<thead>
<tr>
<th>Author</th>
<th>Place</th>
<th>HU-DBI Score</th>
<th>No of Questions scored</th>
<th>Ist Year</th>
<th>IInd Year</th>
<th>IIIrd Year</th>
<th>IVth Year</th>
<th>Vth Year</th>
<th>Preclin.</th>
<th>Clin.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imran Alam Moheet et al 2013</td>
<td>Saudi Arabia</td>
<td>6.4</td>
<td>12</td>
<td>5.8</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R Neeraja et al 2011</td>
<td>Bangalore, India</td>
<td>8.61</td>
<td>15</td>
<td>6.88</td>
<td>7.32</td>
<td>8.25</td>
<td>9.28</td>
<td>11.4</td>
<td>7.1</td>
<td>9.64</td>
</tr>
<tr>
<td>Khalid K et al 2016</td>
<td>Sudan</td>
<td>7.7</td>
<td>17</td>
<td>6</td>
<td>7.47</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ahed Mohammed et al 2004</td>
<td>Jordon</td>
<td>6.51</td>
<td>11</td>
<td>6</td>
<td>6.53</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agry Polychronopoulou et al 2005</td>
<td>Greece</td>
<td>7.1</td>
<td>12</td>
<td>6</td>
<td>6.2</td>
<td>6.3</td>
<td>7.5</td>
<td>8.2</td>
<td>6.11</td>
<td>7.29</td>
</tr>
</tbody>
</table>

The mean HB-DBI score was only slightly higher for clinical students than nonclinical students which was however not statistically significant, so the null hypothesis has been accepted. This means there is no difference in the oral health behaviors and attitudes between clinical and preclinical students of government dental college, Alappuzha.

This is similar to study by Rushabh J Dagli et al 2008 who had also found only a slight increase in HU-DBI score for clinical students. In contrast, Moheet I A et al 2013, Neeraja et al 2011, Sinem Yildiz et al 2011 and Agry polychronopoulou et al 2005, had found a significantly higher HD-DBI score for clinical students than for nonclinical students. The study suggests there are no significant improvement in dental health behavior and attitude in clinical students than in preclinical students. More preclinical students think their teeth are getting worse despite daily brushing. This may be due to the fact that more preclinical students have not received professional training regarding tooth brushing. A large number of both clinical and preclinical students accept that they do not carefully brush each of their teeth. A majority of clinical students does not believe they
can clean their teeth properly without using toothpaste. This suggests an undue importance given to toothpaste in oral hygiene maintenance. All these should be considered significant since the dentist play an important role in developing positive oral health attitude among the general population. To achieve the same they themselves should develop correct oral health attitudes.

VI. Conclusion

No significant differences were found in HU-DBI scores of clinical and preclinical students. The low overall HB-DBI score found in the study emphasize the need for improvement in dental health behavior and attitude in the subjects involved. Steps should be taken to impart correct knowledge as well as proper attitude towards oral hygiene in the students.

REFERENCES