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# CORRELATION OF ORAL HYGIENE KNOWLEDGE AND PRACTICE AMONG UNDERGRADUATE DENTAL STUDENTS

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## ABSTRACT

**Objective:** To assess the correlation between oral hygiene knowledge and practice among undergraduate dental students.

**Methodology:** This cross-sectional study was conducted among undergraduate dental students at the dental section of Islamabad medical and dental college over three months. Data for this study was collected using a pre-piloted questionnaire. The collected data were encoded, entered, and analyzed using Statistical Package for Social Statistics version 21.0. Spearman test was used to find the correlation of qualitative variables. P-value  $\leq$  0.05 was considered statistically significant.

**Results:** A total of 188 undergraduate dental students were contacted to participate in the study. Out of these, 176 (93.6%) returned completely filled questionnaires. The results were calculated using the Spearman test which showed that the correlation in "oral hygiene knowledge and practice among students was insignificant ( $r=0.096$ ,  $p=0.207$ ).

**Conclusion:** In our study dental students showed a lack of oral self-hygiene practice during their undergraduate period. It is recommended that in addition to spreading awareness regarding oral hygiene; the practice of oral hygiene should also be stressed.

**Keywords:** Oral Hygiene Implementation; Preclinical and Clinical Dental Students; Practices.

## INTRODUCTION

Oral health is a vital part of general health which is achieved by good oral hygiene.<sup>1</sup> For a healthy oral cavity, knowledge, behavior, and practice regarding preventive oral health care is important.<sup>2</sup>

Preventive oral health measures include brushing teeth twice daily, use of interdental aids, abstaining from sugary intake between meals, and having regular dental check-ups every 6 months.<sup>3</sup> Routine tooth brushing is the principle method of preventing many oral diseases. A significant reduction in plaque score has been seen in patients using the modified Bass technique for brushing.<sup>4</sup> But tooth brushing alone does not remove plaque from all surfaces of the teeth as 40% of surfaces are interdental<sup>5</sup> so interdental floss/brush is used to clean these areas. It is of utmost importance for dental students to have adequate knowledge and attitude regarding oral cavity since they play a key role in health promotion.<sup>6</sup> The attitude and behavior of dental health professionals affect their oral care habits and also influence their ability to inspire patients to practice oral health measures.<sup>7,8</sup>

As dental students are the future dentists, their knowledge, attitude, and awareness can motivate their patients to take care of their oral health and prevent the progression of different oral diseases.<sup>6</sup> So, the correlation between the level of knowledge and attitude of health professionals needs to be determined before they are trained as oral health educators which is the aim of our study.

## METHODOLOGY

This cross-sectional study was conducted at the dental section of Islamabad Medical and Dental college. Ethical approval (Ref #IMDC/DS/IRB/114. 29 October 2018) was obtained from the Institutional Review Board of Islamabad Dental Hospital. All Undergraduate dental students (188) freshly enrolled in the dental section were included via nonprobability convenience sampling. The questionnaire used by Jegede et al<sup>3</sup> was reshaped to evaluate the correlation between oral hygiene awareness and practice among students. Students who were not willing to participate in the study and those who gave incomplete questionnaires were excluded. A pilot study carried out showed the validity

ty of the questionnaire. Data was collected through a self-administered questionnaire. Permission was taken from concerned teachers and informed verbal consent was taken from students before distribution of the questionnaire to students. The questionnaire consisted of 23 structured questions: 14 questions were related to oral hygiene practice and 9 questions were on oral hygiene knowledge.

Practice questions were asked before the questions on knowledge, to reduce bias. Each question in the questionnaire had a range of 2-5 options and each response was assigned a score of 0-2. The responses to each question were compared with the predefined score. The ideal practices were scored as 2, good practices as 1, and poor practices as 0. Based on this, the total score was calculated for each respondent. SPSS version 21 was used to analyze the data and presented in the form of frequency and percentage tables Spearman test was used to find the correlation between knowledge and practice among undergraduate dental students

## RESULTS

A total of 188 undergraduate dental students were contacted to participate in the study. Out of these, 176 (93.6%) returned completely filled questionnaires. The study participants comprised 42 students from 1<sup>st</sup> year, 48 from 2<sup>nd</sup> year, 47 from 3<sup>rd</sup> year, and 51 from Final Year BDS.

Table 1 shows the frequency & percentage of oral hygiene practices per day by students, according to which, almost all brushed their teeth daily (n=175, 99.4%) and the majority brushed twice a day (n=131, 74.4%), cleaned their tongue (n=132, 75%), and used fluoridated toothpaste (n=147, 83.5%).

Table 2 shows the knowledge of students about daily brushing and the frequency of

toothbrush changes. Regarding oral hygiene knowledge, the majority knew that brushing twice a day is recommended (n=152, 86.4%), adding floss to brushing improves oral hygiene (n=138, 78.4%), and the toothbrush needs to be changed after every 3 months (n=119, 67.6%).

The correlation between the score of oral hygiene knowledge and practice among students was insignificant (r=0.096, p= 0.207).

## DISCUSSION

Brushing teeth twice daily is the minimum recommendation that everyone should follow.<sup>3</sup> In our study, a large number of participants were aware of the importance of cleaning their teeth each day and performed it routinely. This was dissimilar to a study by Jegede et al, in which very few performed it even after knowing that it is recommended to brush the tooth twice a day.<sup>3</sup> According to our research, half of the students brush their teeth for 2 minutes. In a study conducted by Haripriya et al where it was reported that almost all of the students spent 1-2 minutes

brushing.<sup>9</sup> In our study half of the students were found using either soft or hard-bristle toothbrushes whereas, in research, most of the students reported that they did not use a hard-bristle toothbrush.<sup>10</sup> On the other hand, almost half of the students in a study done by Muthu et al were found using hard bristles toothbrushes.<sup>11</sup>

It is to be noted that medium bristled brushes are efficacious to avert periodontal disease and tooth enamel and gums can be harmed by using hard-bristled toothbrush.<sup>12</sup>

Most of the students in our research knew that fluoride plays a role in preventing decay which is similar to another study conducted by Ozyemisci et al.<sup>13</sup> Numerous studies have shown that fluoride decreases the incidence of dental caries and helps in slowing or reversing the progress of existing lesions by reducing the rate of enamel demineralization and increasing the rate of enamel remineralization.<sup>14</sup> Use of fluoridated toothpaste was observed in 83.5% of undergraduate dental students. This was similar to results from a study by Folayan et al in Ni-

Table 1: Response to Questions on Oral Hygiene Practice

Variables	Frequency (n=176) (%)
Brushed Daily	175 (99.4)
Brushed twice	131 (74.4)
Brushed after every meal	12 (6.8)
Changed toothbrush every 3 months	76 (43.2)
Flossed their teeth	79 (44.9)
Cleaned their tongues	132 (75)
Use of medium toothbrush	90 (51.1)
Use of fluoridated toothpaste	147 (83.5)
Use of toothpicks	78 (44.3)
Use of additional aids	76 (43.2)

Table 2: Response to questions regarding oral hygiene knowledge

Variables	Frequency (n=176) (%)
Toothbrush change after 3 months	119 (67.6)
Brushing twice	152 (86.4)
Brushing after every meal	19 (10.8)
Floss + Brushing both are important	138 (78.4)
Use of a medium toothbrush	90 (51.1)

geria where over 95% of the students used fluoridated toothpaste.<sup>8</sup>

The majority of students (97.2%) in our study considered that oral health affects general health, similar to a study conducted by Gupta et al.<sup>15</sup> According to our research 78.4% of the students knew that floss is required for complete cleaning but only 44.9% of students flossed their teeth; this is by research held by Daya et al in which the rate of the usage of dental floss was 52.8%.<sup>16</sup> In our research only 11.9% of the students flossed their teeth daily, while the remaining 88.1% did so once or twice a week, or irregularly. This was in contrast to a study at the University of Sharjah where 56% mentioned regular floss use.<sup>17</sup>

In our study, 72.7% of the students believed that regular dental checkups should be made every 6 months to the prevention of dental diseases. This is to research held at the Kalinga Institute of Dental Sciences were a total of 89.33% of dental students believed that regular dental visits were necessary.<sup>17</sup> Despite being aware, only 42% of the students in our study visited dentists for routine checkups, whereas 58% visited only because of pain. Vangipuram et al reported that 68% of dental students went to the dentist only in case of a toothache.<sup>18</sup> Also in research done by Kocovski et al, almost half of the students visited the dentist only when they had a problem in the oral cavity, while 35% had regular dental checkups every six months.<sup>19</sup> In our study half of the undergraduate dental students used mouthwash, among which 14.2% used mouthwash daily. The study by Benjamin et al reported only 16.3% of dental students practiced the use of mouthwashes.<sup>20</sup> In research held at Malabar Dental College most of the students were reported using mouthwash.<sup>9</sup>

On being asked about the tongue cleaning habit of our study participants, 75% responded positively. This is similar to research

conducted by Halawany et al.<sup>21</sup>

In our study, the correlation was insignificant between the score of oral hygiene knowledge and practice among dental students, which is reported to be similar to a study conducted in Nigeria.<sup>3</sup> Despite having awareness, the dental students did not practice oral hygiene. Such students need to be reinforced on the importance of oral hygiene at the personal level. Community-level awareness should be encouraged by conducting seminars, and workshops, and distributing pamphlets.

The limitation of this study is that the participants were selected from a single institute. Students from different institutes would be involved for better evaluation of their oral hygiene.

## CONCLUSION

In our study, dental students show a lack of oral self-hygiene practice during their under graduation period. It is recommended that in addition to spreading awareness regarding oral hygiene; the practice of oral hygiene should also be stressed. This can be done with help of regular seminars and presentations regarding the importance of practical aspects of maintaining oral hygiene.

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### Author's Contribution

AK conceived the idea, Searched the literature, data collection, analysis of data, interpretation of data, and wrote the manuscript. AZ contributed to literature search, data collection, and interpretation of data. BA supervised the study and gave final remarks on the manuscript. Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

### Conflict of Interest

Authors declared no conflict of interest

### Grant Support and Financial Disclosure

None

### Data Sharing Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.