

## Original Research Article

# Assess the knowledge, attitude and behaviour regarding oral health among bachelor of dental surgery first year students: descriptive study

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## ABSTRACT

**Background:** Oral health integrates physiological harmony and microbial equilibrium, underpinning systematic wellness and psychological confidence. Today's social media era, information about oral health is widely accessible, influencing students' perceptions and habits. While digital platforms can enhance awareness, they may also spread misinformation, making it essential to assess how social media affects their knowledge and behaviour. This study is conducted to assess knowledge, attitude and behaviour regarding oral health among BDS first year students.

**Methods:** A descriptive cross-sectional study was conducted among BDS first year students of New Horizon dental college and research institute. Convenience sampling was done and out of 99 students, 94 students consent to be a part of this study. Collected data was analysed by software IBM SPSS Statistics version 23.0 and descriptive analysis was done.

**Results:** The survey involved 94 students out of 99, with 29% of the participants being male and 71% being female. It showed that there is a limited knowledge and practice among first year students.

**Conclusions:** Study revealed that BDS first year students performed better but there is a need to improve their knowledge, attitude and behaviour towards oral health.

**Keywords:** Oral health, BDS, Social media, Knowledge

## INTRODUCTION

Health is a multifaceted concept encompassing physical, mental, and social well-being, essential for an individual overall quality of life.<sup>1</sup> Oral health integrates physiological harmony and microbial equilibrium, underpinning systematic wellness and psychological confidence.<sup>2</sup>

In today's social media era, information about oral health is widely accessible, influencing students' perceptions and habits. While digital platforms can enhance awareness, they may also spread misinformation, making it essential

to access how social media affects their knowledge and behaviour.

Many students acknowledge a course of bachelor of dental surgery as a professional responsibility to the individual patient, but they may not fully embrace a broader obligation to address societal oral health disparities.<sup>3</sup> Their understanding and practice not only impact personal oral hygiene but also shape their approach to patient care. Therefore, in our present study we will assess the knowledge, attitude, and behaviour of BDS first-year students towards oral health, as they are the future of dental professionals.

## METHODS

A descriptive cross-sectional study was conducted among BDS first year students of New Horizon Dental College And Research Institute, Bilaspur Chhattisgarh. The survey was carried out in the month of January 2025-February 2025. Convenience sampling was done and out of 99 students, 94 students consent to be a part of this study. The ethical clearance was obtained from institutional ethical community prior to the start of the study. The participants not willing to participate were excluded from the study.

A predesigned, pretested and pre-validated closed-ended questionnaire was taken from a study conducted by Yao et al in which 20 questions were given to assess the knowledge, attitude and behaviour towards oral health among BDS first-year students.<sup>4</sup> This questionnaire consists of 9 questions related to knowledge, 5 for attitude and 6 for behaviour. Self-administered questionnaire was distributed among BDS First year students.

### Statistical analysis

The collected data from 94 students were entered according to the options selected by students and analyzed by the software IBM SPSS statistics version 23.0. Descriptive statistics were calculated and mean and standard deviation were obtained.

## RESULTS

The survey involved 94 students out of 99, with 29% of the participants being male and 71% being female. The majority of participants were within the 17-23 age range. 20 questionnaire survey comprising fundamental inquiries concerning knowledge, attitude, and behaviour was administered. All respondents were students at our institution.

Table 1 shows that 72.3% students are aware of the cause of dental caries, however the remaining 17% or 10.6% are uncertain or possibly perplexed about the cause. 91.5% of students know the cause of bleeding during brushing, while the remaining students are unaware but 100% students are aware of the number of permanent and deciduous teeth. The 97.9% of people are know that oral and dental health have an impact on overall body health and 97.9% of students are aware that consumption of smoked or smokeless tobacco causes oral cancer. The 96.8% of students concur that teeth with abnormal placement can be treated.

Table 2 shows the attitude of students towards oral health in which 92.6% of students believe that we should see a dentist regularly and 100% of students agree that smokeless and smoked tobacco in any way are unhealthy habits. According to 72.3% of students, toothpaste is not necessary for thorough tooth cleaning and 93.6% of students concur that teeth and gums are impacted by the hardness of a brush's bristles. Table 3 shows that 100% of students brush their teeth out of which 77.7% of students brush twice a day and 91.5% of students use tongue scraper. The 94.7 % reported that they had no bad breath which indicates positive behaviour of students regarding oral health.

Figure 1 depicts negative and mixed responses of students towards knowledge and behaviour like only 27.7% students know that appearance is affected by dental plaque rest 48.9% think it leads to dental caries. Cancer is a systemic illness that may be connected to oral health issues and Just 41.5% of students are aware of the reason. Likewise, only 26.6% of students know that gum bleeding is an indication of gum inflammation rest 68% think it's an infection this proves there is a gap in knowledge among students. Similarly, 26.6% do not use other oral hygiene aid apart from toothbrush and 52% students visit dentists only after toothache reflecting a need to induce a positive behaviour among BDS first year students.

**Table 1: Mean and standard deviation of responses regarding knowledge.**

| Questions regarding knowledge                             | Response (n=94) | Mean±SD    |
|-----------------------------------------------------------|-----------------|------------|
| <b>Cause for dental caries?</b>                           |                 |            |
| Toothpaste without fluoride                               | 16              | 1.94±0.525 |
| More sugar intake                                         | 68              |            |
| Don't know                                                | 10              |            |
| <b>Causes of bleeding during brushing?</b>                |                 |            |
| Natural physiological phenomenon                          | 2               | 2.04±0.290 |
| Hard brushing                                             | 86              |            |
| Don't know                                                | 6               |            |
| <b>Influence of dental plaque?</b>                        |                 |            |
| Affecting appearance                                      | 26              | 2.17±1.064 |
| Inducing dental caries                                    | 46              |            |
| No big deal                                               | 2               |            |
| Don't know                                                | 20              |            |
| <b>Systemic disease that may related to oral disease?</b> |                 |            |
| Heart disease                                             | 7               | 2.62±0.818 |

Continued.

| Questions regarding knowledge                                    | Response (n=94) | Mean±SD    |
|------------------------------------------------------------------|-----------------|------------|
| Diabetes mellitus                                                | 35              |            |
| Cancer                                                           | 39              |            |
| None of the above                                                | 13              |            |
| Number of deciduous and permanent teeth?                         |                 |            |
| 5 and 24                                                         | -               | 2.00±0.000 |
| 20 and 32                                                        | 94              |            |
| Don't know                                                       | -               |            |
| Meaning of gum bleeding?                                         |                 |            |
| Gum disease (Inflammation of gums)                               | 25              | 1.79±0.526 |
| Infection                                                        | 64              |            |
| Don't know                                                       | 5               |            |
| Can the health of teeth and mouth affect the health of the body? |                 |            |
| Yes                                                              | 92              | 1.04±0.290 |
| No                                                               | 2               |            |
| Don't know                                                       | -               |            |
| Reasons for oral cancer?                                         |                 |            |
| Calcium deficiency                                               | 2               | 2.02±0.145 |
| Gutkha and tobacco chewing, smoking                              | 92              |            |
| Don't know                                                       |                 |            |
| Is it possible to correct irregularly placed teeth?              |                 |            |
| Yes                                                              | 91              | 1.03±0.177 |
| No                                                               | -               |            |
| Don't know                                                       | 3               |            |

**Table 2: Mean and standard deviation of responses regarding attitude.**

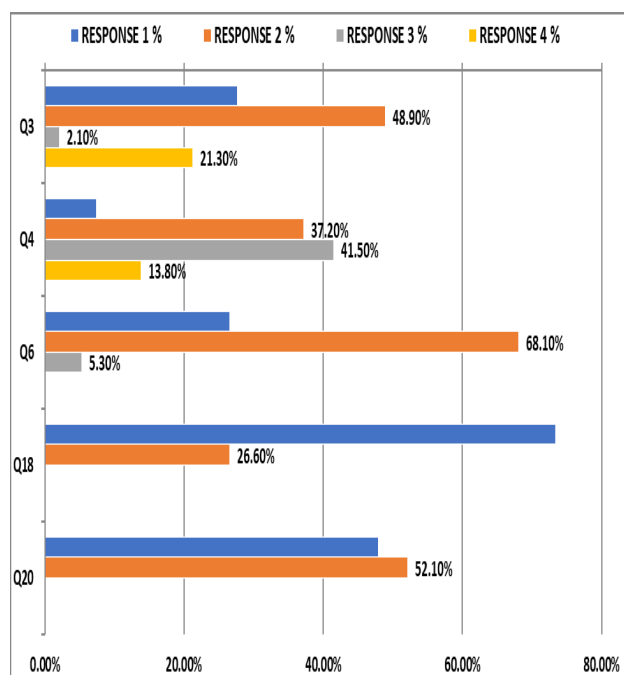
| Questions regarding attitude                                                        | Response (n=94) | Mean±SD    |
|-------------------------------------------------------------------------------------|-----------------|------------|
| <b>Dentists should be visited regularly</b>                                         |                 |            |
| Yes                                                                                 | 87              | 0.93±0.264 |
| No                                                                                  | 7               |            |
| <b>Gutkha and tobacco chewing is a bad habit.</b>                                   |                 |            |
| Yes                                                                                 | -               | 1.00±0.000 |
| No                                                                                  | 94              |            |
| <b>Smoking in any form is a bad habit?</b>                                          |                 |            |
| Yes                                                                                 | 94              | 1.00±0.000 |
| No                                                                                  | -               |            |
| <b>Well cleaning of teeth be done without using toothpaste?</b>                     |                 |            |
| Yes                                                                                 | 26              | 0.28±0.450 |
| No                                                                                  | 68              |            |
| <b>Hardness of the bristles of the toothbrush has any effect on teeth and gums?</b> |                 |            |
| Yes                                                                                 | 88              | 0.94±0.246 |
| No                                                                                  | 6               |            |

**Table 3: Mean and standard deviation of responses regarding behaviour.**

| Questions regarding behaviour                                    | Responses (n=94) | Mean±SD    |
|------------------------------------------------------------------|------------------|------------|
| <b>Do you brush your teeth?</b>                                  |                  |            |
| Yes                                                              | 94               | 1.00±0.000 |
| No                                                               | -                |            |
| <b>Minimum brushing habit?</b>                                   |                  |            |
| Once in a day                                                    | 21               | 1.78±0.419 |
| Twice a day                                                      | 73               |            |
| <b>Do you use tongue scrappers?</b>                              |                  |            |
| Yes                                                              | 86               | 0.91±0.281 |
| No                                                               | 8                |            |
| <b>Use of oral hygiene aids like dental floss and mouthwash?</b> |                  |            |
| Yes                                                              | 69               | 0.73±0.444 |

Continued.

| Questions regarding behaviour              | Responses (n=94) | Mean±SD    |
|--------------------------------------------|------------------|------------|
| No                                         | 25               |            |
| Presence of bad breath?                    |                  |            |
| Yes                                        | 5                | 0.05±0.226 |
| No                                         | 89               |            |
| Visit to the dentist only after toothache? |                  |            |
| Yes                                        | 45               | 0.48±0.502 |
| No                                         | 49               |            |



**Figure 1: Negative and mixed responses of students towards knowledge and behaviour questions.**

## DISCUSSION

This study aimed to assess the knowledge, attitude, and behaviour of first-year BDS students regarding various aspects of oral health. Oral health remains a cornerstone of general well-being, yet its comprehension and perception among budding dental professionals can significantly influence future healthcare standards. The survey results highlight strengths and gaps in their understanding and emphasizing the need for improved awareness in certain areas.

### Knowledge regarding oral health

Survey indicates 72.3% of students are aware that more sugar intake leads to dental caries in comparison to a study conducted by Zakaria et al where only 35% recognized that sweetened food or drinks contribute to caries development.<sup>4</sup> This suggests a relatively high level of awareness among the students surveyed in present study. A study by Yao et al reported that 79% of students associated bleeding while brushing with periodontal disease in comparison to our study where 91.5% of

students understand its cause, indicating strong awareness.<sup>5</sup>

Yao et al conducted a study in which 79.6% of students acknowledged the correlation between dental plaque and periodontal disease, whereas, in the present study, only 27.7% of students aware about the impact of dental plaque on appearance, suggesting a limited awareness of plaque's aesthetic consequences.<sup>5</sup>

In the present study, 100% of students correctly identified the number of deciduous and permanent teeth which indicates a strong foundation of knowledge regarding dental anatomy among first-year BDS students.

A study by Gupta et al reported that 89% of students knew that gum bleeding is associated with gingivitis in comparison to our study where, 91.5% knew the cause of bleeding during brushing, indicating slightly higher awareness.<sup>6</sup>

In the present study, 97.9% of students aware about the impact of oral and dental health on overall body health suggesting knowledge regarding oral health diseases related to general health. The study conducted by Singh et al reports 85% of students identifying tobacco as a risk factor for oral cancer whereas in the present study, 97.9% of students reported tobacco consumption causes oral cancer suggesting stronger knowledge.<sup>7</sup>

The study conducted by Alhammadi et al reported that 85% of students were aware of malocclusion and its treatment, while in our study 96.8% of students are aware that abnormal placement of teeth can be treated reflecting a better understanding of orthodontic treatment.<sup>8</sup> Gupta et al conducted a study where only 40% of dental students followed preventive dental visits whereas in the present study, 92.6% of students followed regular dental visits which indicates a better awareness among students.<sup>9</sup>

### Attitude and behaviour towards oral health

According to our study, 100% of students agreed that tobacco in any form is unhealthy habit, 93.6% agreed that the hardness of a toothbrush's bristles affects teeth and gums and 72.3% believed that toothpaste is not necessary for thorough cleaning of teeth reflecting an attitude that often lags, indicating the need for reinforcement in dental education. Johnson et al conducted a study in which 60% of dental students followed the recommended oral

hygiene practice, compared to 100% in the present study.<sup>10</sup>

Oral health knowledge, attitude, and behaviour were better among BDS 1<sup>st</sup> year students in this social world since it is the primary content available on social media platforms in dental professional education. Because these studies rely on self-reported data for scoring, one of the limitations is that we surveyed in very small population. The result could be skewed by both over reporting and underreporting because of social desirability and Confidentiality is protected.

## CONCLUSION

Our study revealed that BDS first year students performed better but there is a need to improve their knowledge, attitude and behaviour towards oral health. For this purpose, we suggest to develop modules on oral health awareness and to implement among BDS first year students and stressed to be part of curriculum which can serve as a roadmap for enhancing knowledge regarding oral health among first year students, which will ultimately benefit the population as they can educate patients at an early phase.

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