



# Hygienic status and individual oral hygiene habits of students at the Vietnam National University in Hanoi

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## Abstract

**AIM.** To determine the hygiene status and personal hygiene habits of Vietnamese students studying at the Faculty of Dentistry of the University of Hanoi.

**MATERIALS AND METHODS.** the survey included 199 students (89 male, 110 female). Among them, 49 were second-year students, 41 were third-year students, 52 were fourth-year students, and 57 were fifth-year students. All participants were students at Vietnam National University in Hanoi. The mean age of respondents was 22 years. An anonymous questionnaire was administered in paper format in respondent's native language (Vietnamese). The questionnaire consisted of 24 questions, students could select multiple options from predefined answers or write in their preferences. Responses were statistically analyzed using StatTech software version 4.5.0 (Russian Federation).

**RESULTS.** When assessing hygiene indices, the average OHI-S score of those surveyed was  $0.63 \pm 0.72$  ( $0.00 \div 3.83$ ), which is interpreted as a good level of hygiene. Significant differences in scores were found depending on age and year of study. The average age of students with good and average hygiene levels was 23 years, while the average age of those surveyed with poor hygiene levels was 20 years ( $p = 0.018$ ). When assessing the level of hygiene relative to the year of study, a significant decrease in the number of students with very poor, poor, and average levels was found from the second to the fourth year, while the number of students with a good level of hygiene increased ( $p < 0.001$ ).

**CONCLUSIONS.** Despite the fact that most students at Hanoi Dental University have a good level of hygiene, some students require improvement. This is a group of students to whom a dentist should pay more attention when conducting educational programs.

**Keywords:** students, individual oral hygiene, frequency of toothbrushing, additional dental hygiene products

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## Гигиенический статус и привычки индивидуальной гигиены полости рта у студентов Вьетнамского национального университета (г. Ханой)

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## Резюме

**ЦЕЛЬ.** определение гигиенического статуса и привычек индивидуальной гигиены вьетнамских студентов, обучающихся на стоматологическом факультете университета города Ханой.

**МАТЕРИАЛЫ И МЕТОДЫ.** В опросе приняли участие 199 студентов (89 мужчин, 110 женщин). Из них 49 студентов обучались на втором курсе, 41 студент – на третьем курсе, 52 студента – на четвертом курсе, 57 студентов – на пятом курсе. Все они являются студентами Вьетнамского Национального Университета города Ханой. Средний возраст респондентов составляет 22 года. Анонимную анкету предоставляли в бумажном виде на языке респондентов (на вьетнамском). Анкета содержала 24 вопроса, студенты могли выбирать предложенные варианты ответа, либо написать свой вариант. Ответы статистически подсчитаны с помощью программы StatTech версии 4.5.0 (Российская Федерация).

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**РЕЗУЛЬТАТЫ.** При оценке гигиенических индексов получили, что среднее значение ОНІ-S обследованных составило  $0,63 \pm 0,72$  ( $0,00 \div 3,83$ ) баллов, что интерпретируется как хороший уровень гигиены. Достоверную разницу показателей получили в зависимости от возраста и курса. Так средний возраст студентов, которые имеют хороший, а также средний уровень гигиены, составляет 23 года, тогда как средний возраст обследованных с плохим уровнем гигиены составляет 20 лет ( $p = 0,018$ ). При оценке уровня гигиены относительно курса, получили достоверное снижение количества студентов, имеющих очень плохой, плохой и средний уровни от второго курса к четвертому, и увеличение количества студентов, имеющих хороший уровень гигиены ( $p < 0,001$ ).

**ВЫВОДЫ.** Несмотря на то, что большинство студентов стоматологического университета города Ханой имеют хороший уровень гигиены, у ряда студентов требуется улучшить гигиену. Контингент, которому врачу-стоматологу следует уделить большее внимание при проведении просветительских бесед – это студенты младших курсов в возрасте до 23 лет.

**Ключевые слова:** студенты, гигиена полости рта, кратность чистки зубов, дополнительные средства гигиены

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## INTRODUCTION

Prevention of dental diseases is ensured through individual oral hygiene beginning from tooth eruption and maintained throughout a person's lifetime [1; 2]. During university studies, insufficient attention to oral health is common, including irregular and inadequate oral hygiene practices, as well as infrequent preventive dental visits. These factors contribute to the deterioration of dental status, which leads to long-term consequences in later life [3; 4].

The student period is characterized by high intellectual and emotional workload and represents the first step toward independent living. At this stage, it is essential not only to focus on academic development but also to maintain general and oral health. Oral health is determined by multiple factors, including personal oral hygiene, regular dental checkups, balanced nutrition, and other behavioral components [5; 6]. Therefore, preserving and improving the oral health of young individuals is considered a public health priority in many countries, including Vietnam.

Higher education institutions may contribute to the health preservation of their students; however, the development of effective measures requires a comprehensive assessment of the issue. To date, no research has been conducted on the oral hygiene status and habits of students in Vietnamese universities.

Accordingly, the objective of this study was to assess the hygiene status and individual oral hygiene habits among Vietnamese students enrolled in the Faculty of Dentistry at a university in Hanoi.

## MATERIALS AND METHODS

The study was approved by the Ethics Committee of the Peoples' Friendship University of Russia named after Patrice Lumumba (Protocol No. 12 dated November 17, 2022). The research included the assessment of dental hygiene indices and the completion of an anonymous questionnaire.

A total of 199 dental students from the National Vietnam University in Hanoi participated in the study. The general characteristics of the examined students are presented in Table 1.

The anonymous questionnaire was provided in paper form and presented in the respondents' native language (Vietnamese). It consisted of 24 questions, allowing students either to choose from predefined answers or to provide their own response.

Within the study, the following dental hygiene indices were assessed: the Simplified Oral Hygiene Index by Green–Vermillion (ОНІ-S) and the Approximal Plaque Index (API according to Lange).

Statistical analysis. The obtained data were statistically processed using StatTech software, version 4.5.0 (Russia). Quantitative variables were evaluated for conformity to a normal distribution using the Kolmogorov–Smirnov test, while categorical variables were calculated with indication of absolute values and percentage proportions. Comparison of percentage proportions was performed using Pearson's Chi-square test and Fisher's exact test.

**Table 1.** Characteristics of the examined students

**Таблица 1.** Характеристика обследованных студентов

Parameter	Values			
Total number of students	n = 199			
Sex, n (%)	Male	Female		
	n = 89 (44.7%)	n = 110 (55.3%)		
Age ((Me(Q1-Q3) (min÷max)), years	22 (21–23) (19÷24)			
Year of study, n (%)	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year	5 <sup>th</sup> year
	n = 49 (24.6%)	n = 41 (20.6%)	n = 52 (26.1%)	n = 57 (28.6%)

## RESULTS

The assessment of hygiene indices showed that the mean OHI-S score among the examined students was  $0.63 \pm 0.72$  (0.00–3.83), which corresponds to a good hygiene level. The distribution of students according to their hygiene categories, as well as the mean index value within each hygiene level, was also determined. The results are presented in Table 2.

No statistically significant difference in OHI-S hygiene levels was found between female and male students. A significant difference was identified based on age and year of study. The mean age of students with good and moderate hygiene levels was 23 years, whereas the mean age of those with poor hygiene was 20 years ( $p = 0.018$ ).

An analysis of hygiene level in relation to the year of study showed a statistically significant decrease in the number of students with very poor, poor, and moderate hygiene from the second to the fourth year, along with an increase in the proportion of students with good hygiene. Specifically, the percentage of students with very poor oral hygiene on the second, third, and fourth years was 7.7%, 2.6%, and 1.7%, respectively; poor hygiene – 20.5%, 7.7%, and 3.4%; moderate hygiene – 35.9%, 20.5%, and 17.2%; and good hygiene – 35.9%, 69.2%, and 77.6%, respectively ( $p < 0.001$ ). No statistically significant differences were found for fifth-year students.

The improvement in hygiene among older students and those in senior years of study can be explained by two factors: increasing maturity and responsibility for personal health, as well as the influence of dental education and the understanding that oral hygiene is a key method of preventing dental diseases. In addition, adaptation to the intellectual and emotional workload of university life may play a role, as such adaptation is lower among junior students and increases with more years spent in higher education.

Anonymous questionnaire results provided information on personal oral hygiene practices, including frequency and duration of oral hygiene procedures. The data are presented in Tables 3 and 4.

In addition, the use of supplementary oral hygiene products by the students was analyzed, with the option to select more than one response. A total of 106 students (53.3%) reported using dental floss, 55 (27.6%) used an irrigator, 3 (1.5%) used interdental brushes, 9 (4.5%) used mouthrinses, and 18 (9.0%) used toothpicks.

Furthermore, the students were given the opportunity to independently assess their own oral hygiene level. The results are presented in Fig. 1.

Twenty-five-point six percent of students rated their oral hygiene level as good, whereas the clinical assessment using the OHI-S index showed a much higher proportion of 57%. A total of 62.8% of students assessed their hygiene level as satisfactory, while clinical examination revealed that only 31% fell into this category. The number of students who rated their hygiene as poor was 11.6%, which closely corresponded to the clinical assessment: the combined proportion of students with poor and very poor hygiene amounted to 12%, nearly identical to the students' self-evaluation.

**Table 2.** Distribution of hygiene levels according to the OHI-S index among the examined students

**Таблица 2.** Данные об уровнях гигиены согласно индексу OHI-S среди обследованных студентов

Hygiene level according to OHI-S	Mean index value, points $M \pm SD$	Number of students, $n$ (%)
Good	$0.17 \pm 0.19$	114 (57)
Satisfactory	$0.84 \pm 0.21$	61 (31)
Poor	$2.00 \pm 0.19$	18 (9)
Very poor	$2.97 \pm 0.51$	6 (3)

**Table 3.** Frequency of oral hygiene practices

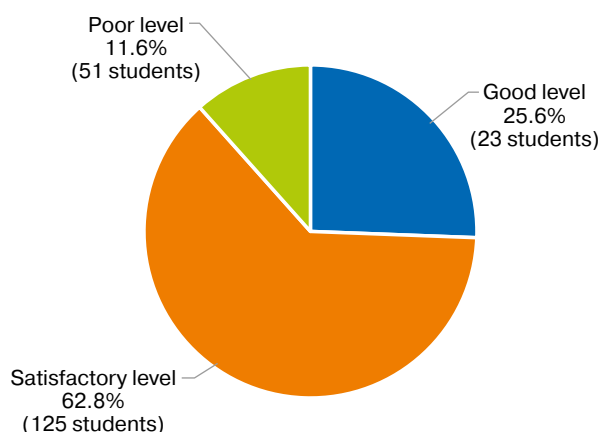
**Таблица 3.** Кратность гигиены полости рта

Daily oral hygiene frequency	Number of students selecting this response
Once a day, $n$ (%)	7 (3.5%)
Twice a day, $n$ (%)	169 (84.9%)
Three times a day, $n$ (%)	22 (11.1%)
Every other day, $n$ (%)	1 (0.5%)

**Table 4.** Average duration of each oral hygiene procedure

**Таблица 4.** Среднее время каждого раза гигиены полости рта

Toothbrushing duration	Number of students selecting this response
1 minute, $n$ (%)	6 (3.0%)
2 minutes, $n$ (%)	103 (51.8%)
3 minutes, $n$ (%)	12 (6.0%)
5 minutes, $n$ (%)	64 (32.2%)
10 minutes, $n$ (%)	12 (6.0%)
15 minutes, $n$ (%)	2 (1.0%)



**Fig. 1.** Self-assessment of oral hygiene level

**Рис. 1.** Самостоятельная оценка уровня гигиены полости рта

## DISCUSSION

Questionnaires are a widely used method for assessing various parameters among university students and are commonly applied in medical research [7; 8].

In a study by Bakirova and Shilova at Altai State Medical University on medical students' attitudes toward oral hygiene [9], 99 students aged 20–25 from different specialties participated in an anonymous survey, including general medicine and dentistry students. Less than half of the general medicine students (42.31%) reported brushing their teeth twice a day, whereas 74.47% of dental students brushed twice daily. Although these values are lower than those obtained in our study, they confirm that dental students generally maintain the recommended brushing frequency. A notable discrepancy was observed in the use of dental floss: 50% of general medicine students and 87.23% of dental students reported using floss, compared with only 53.3% of dental students in our study. It is also noteworthy that 38.3% of Altai respondents spent two or more minutes on oral hygiene, while in our study only 3% of respondents spent less than two minutes. Based on these findings, it is recommended to inform students that the adequate duration of oral hygiene should be approximately three minutes, and the acceptable frequency is twice daily. For cleaning interdental spaces, all students are advised to use dental floss and water irrigators.

Kriventsov and Kabyteva, in a study of third-year dental students at Volgograd State Medical University [10], reported that respondents answered questions about oral hygiene habits and performed self-assessment of their hygiene level. Their results showed that 12% of students rated their hygiene as excellent, 60% as good, 28% as satisfactory, and 0% as poor. These findings differ from our study, where 62.8% of students rated their hygiene as satisfactory, 25.6% as good, and 11.6% as poor (23 out of 199), despite all respondents being dental students. In the Volgograd study, all students used a toothbrush and toothpaste, 20% used mouthrinses, 21% used dental floss, 3% used interdental brushes, and 7% used a water irrigator. Compared with our results, a higher proportion of Vietnamese dental students use dental floss (53.3%) and water irrigators (27.6%), but fewer use mouthrinses (4.5%) and interdental brushes (1.5%).

## CONCLUSION

Although the majority of dental students at the Hanoi university maintain a good level of oral hygiene, a subset of students requires improvement. The group that should receive particular attention from dental professionals during educational sessions comprises junior-year students under the age of 23.

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