



AWARENESS AND PRACTICE OF ORAL HYGIENE AMONG MEDICAL STUDENTS AT ZANZIBAR, TANZANIA

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ABSTRACT

Oral health is essential for general health and well-being throughout life and is a marker for overall health status. Poor oral health can have a significant effect on quality of life. Awareness regarding it can lead to the enhancement of oral health. The aim of the study is to investigate the awareness and practice among medical students of at the school of health and medical sciences, SUZA. A Descriptive cross-sectional design will be conducted and involving students of school of health and medical sciences, SUZA. Analysis of data will be done using charts, graph, table and figures. Results: 51 % of the students practice combined style (horizontal & vertical) of tooth brushing, 23.1 % practice circular, 16.6 % practice horizontal and 8.6 % practice vertical style. 48.5 % students were using fluoride toothpaste where as 34.6 % were unaware about presence or absence of fluoride in their paste and 16.9 % were not using fluoride toothpaste. 63.3 % of students were aware that the bleeding from the gum is due to poor oral hygiene, 18.6 % were aware that bleeding was due to general illness. 66.3 % of the students were aware of the cases of sugary diets as cause of dental decay, 18.3% of the students were unaware and 15.4 % of the student had no idea. About 51.8% of the students in this study visited a dentist only on dental pain, 25.1% never visited a dentist, 10.7 % of students go for dental check-up once in 6 months, 12.4 % go for routine dental check-up regularly once in 3 months. In conclusion, lack of oral health education and access to dental facility were major factors influenced the oral health as responded by the medical students. Students who are aware about practice of good oral hygiene habits tend to have healthier teeth and gums compared to the unaware subjects. Overall, promoting good oral hygiene awareness and practice not only enhance the dental health but also contribute to the overall health and well-being.

Key words: - Oral health, awareness, oral hygiene, systemic health.

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INTRODUCTION

The term "oral health" describes the activities that contribute to keeping the mouth healthy and clean.

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Keeping the mouth clean is essential for your general health and wellbeing. The attitude toward oral health determines the quality of oral health. Habits become attitudes, and attitudes determine the behavior of a person. Oral diseases are a major public health concern owing to their high prevalence and their effects on the individual's quality of life [1]. Lack of information is among the

reasons for non-adherence to oral hygiene practices. Further, oral health attitude and beliefs are significant for oral health behavior [2, 3].

It is essential to understand the oral hygiene habits and knowledge levels of these prospective medical professionals, as their opinions on the subject may affect how they interact with patients and support a comprehensive approach to preventive care. Additionally, because oral diseases are common and have an impact on general health, health professionals must have an in-depth understanding of oral hygiene. Because oral and overall health is linked, medical students' oral hygiene habits are particularly important, because oral diseases are common and have an impact on general health, health professionals must have an extensive understanding of oral hygiene [4, 5].

In Africa, oral diseases are increasingly being recognized as a major public health problem in the light of the NCD burden as well as its common modifiable risk factors. It is reported that approximately 400 million people suffered from some form of oral disease (WHO African region in 2017)

Oral health continues to be the problem in Zanzibar and Tanzania in general and can be prevented by improving the oral health awareness and practices. However, the extent to which medical students are aware of importance of oral hygiene and consistence with which they practice it remain an understudied area especially within the context of SUZA. This research seeks to address this gap and by investigating various aspects including the level of the awareness among medical student regarding oral hygiene, the integration of the oral health education within the curriculum and the factors influencing their oral hygiene practice. This study is aimed, to contribute valuable insight for the academic institution, and healthcare educator and policymaker to enhance the oral health and promote better oral hygiene practice and overall health among future medical professionals.

Dental caries accounted for the majority of students' recent dental visits (62.9%), with other common causes being recommendations from friends and family (8.2%), the dentist's advice (14.1%), and the students' own internal stimuli and interests (14.6%). However, when anticipating oral health practice, other factors should be considered in addition to knowledge and attitude [6, 7].

Furthermore, reports of excessive periodontal disease have come from Tanzanian populations. One of the most important and helpful forms of education for humans is that provided to nursing staff. Because of their work, nurses have direct access to patients and control over the health and welfare of the local community where they work. Nurses needs to be equipped with fundamental knowledge about oral health and encourage positive oral health habits. Once these qualities are transmitted to patients or represented through nursing care, they may improve or inspire lifetime optimal oral health behaviors in

them. This is visible in research conducted [8] that when it comes to the causes of dental caries and chronic periodontal disorders, less than half of the respondents gave the wrong answers.

Specific objectives

- i. To determine awareness levels of medical students regarding the importance of oral health in overall well-being.
- ii. To evaluate the baseline knowledge of the oral hygiene practice among medical students.
- iii. To identify potential factors influencing oral hygiene awareness and practice among the target population.

MATERIALS AND METHODS

The study was conducted at School of health and medical sciences (SHMS), SUZA Zanzibar in Urban West region at west B district located at Mbwani. It bounded with Kist on east and residential building at west, north and south. A descriptive cross-sectional study was carried out to investigate the awareness and practice of oral hygiene from student of the SHMS

Inclusion criteria

Approval from SHMS-SUZA, ethical clearance from Zanzibar health research and ethics committee (ZAHREC). Respondents were provided consent and be given information about the study and informed of their right to accept or reject participation in the study at any time. The student of the school of health and medical science, SUZA (male, female, degree and diploma). To avoid any bias in the study dental students were not included in the study. The sampling size was calculated using yamane's formula and finalized as 338.

Study design

The data was collected using a well-organized questionnaire. The questionnaire collected information on student's awareness, attitude, and practice of oral hygiene. The students included in the study received a brief explanation of the study aim. The students were given ample time to read, understand and answer the questionnaire with autonomy. Students were informed on the confidentiality and the participation was voluntary. Data was checked manually for completeness, then coded and analyzed with SPSS software.

RESULTS

Out of 338 students participated in the study 54.4% of the study subjects were female and 45.6% were male. About 90% students were confident of their oral healthy and expressed as good (45.6%) and excellent (44.4%) condition. Among the students participated in the study maximum number of subjects was in the age group

between 20-29 years (Fig 1). All the students were brushing teeth daily, 58.3 % of students brushed twice a day, and 21.9% brushed once a day and 19.8 % of subjects brush after every meal (Fig 2). 52.1% change toothbrush

within three months, 27.8% change their toothbrush only when it is completely useless, 12.1%change in six months and 8% change in a year (Fig 3).

Figure 1: Distribution of study population according to age in percentage.

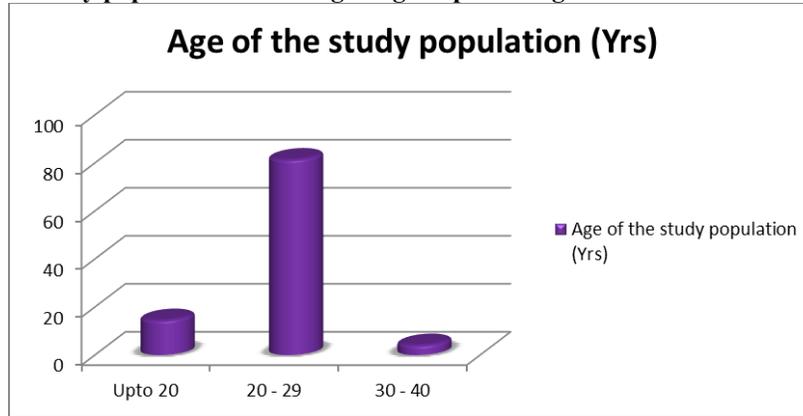


Figure 2: Frequency of brushing habits in percentage

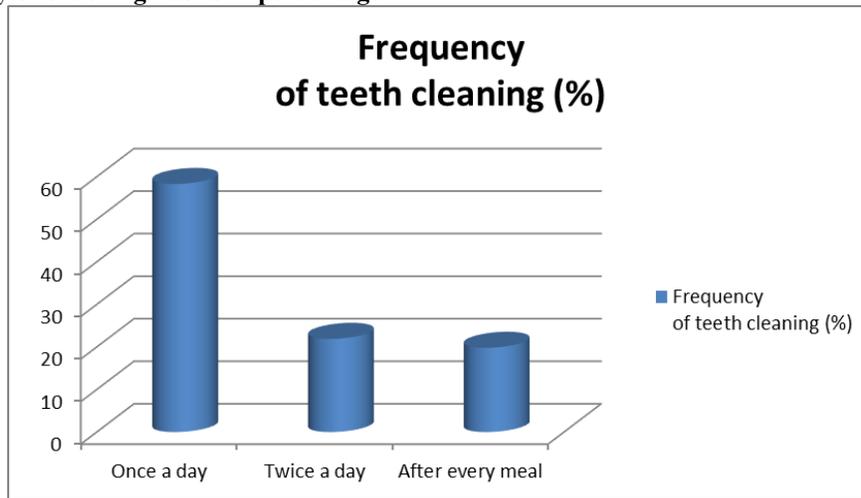
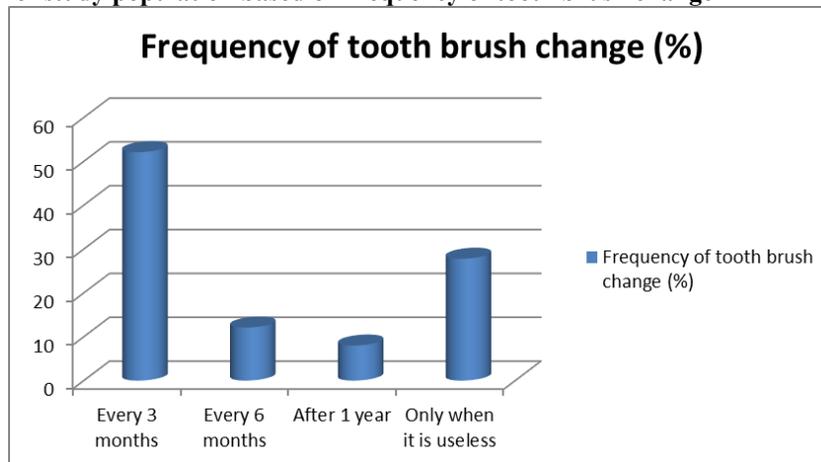


Figure 3: Distribution of study population based on frequency of tooth brush change



Awareness of students on oral hygiene

51 % of the students practice combined style (horizontal & vertical) of tooth brushing, 23.1 % practice circular, 16.6 % practice horizontal and 8.6 % practice vertical style (Fig 4). 48.5 % students were using fluoride toothpaste where as 34.6 % were unaware about presence or absence of fluoride in their paste and 16.9 % were not using fluoride toothpaste. 63.3 % of students were aware that the bleeding from the gum is due to poor oral hygiene, 18.6 % were aware that bleeding was due to

general illness and 18 % of students were not aware of the cause of bleeding. It was observed from our study that 66.3 % of the students were aware of the cases of sugary diets as cause of dental decay, 18.3% of the students were unaware and 15.4 % of the student said no. The study observed that 56.2 % of students were aware of the effect of soft drink in dental decay and said yes, 22.5 % of students said no and 21.3 % were unaware.

Figure 4: Style of brushing habits among the study population

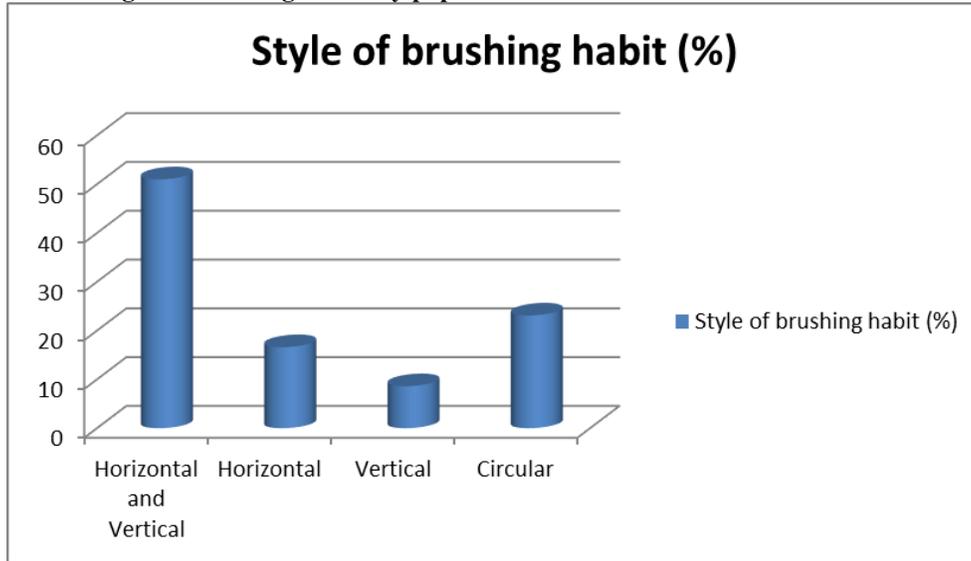
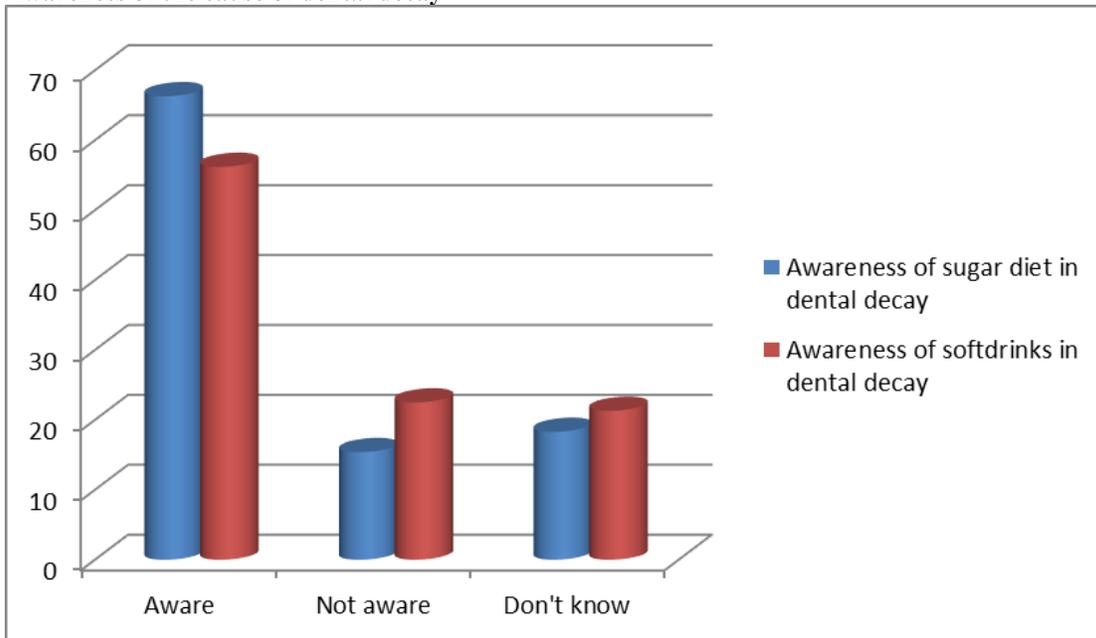


Figure 5: Awareness of the cause of dental decay

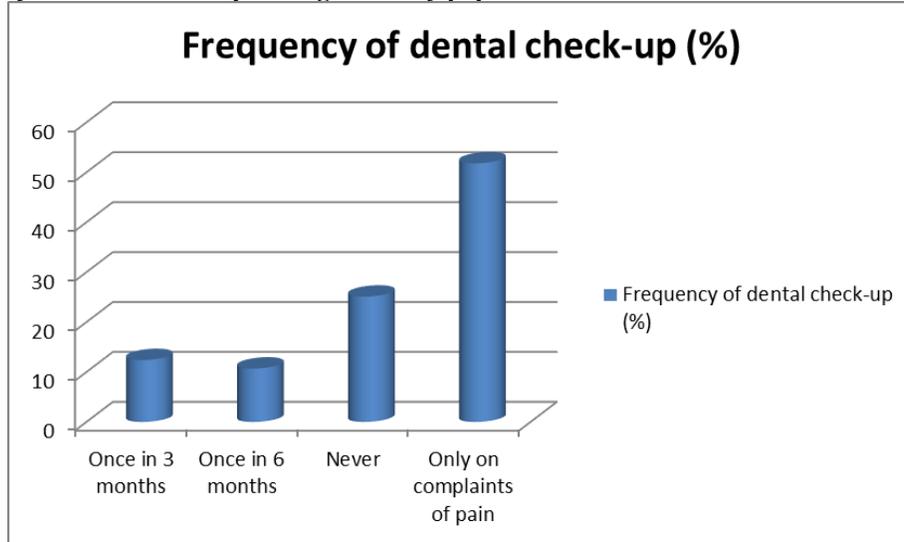


Frequency of dental check-ups

About 51.8% of the students in this study visited a dentist only on dental pain, 25.1% never visited a

dentist, 10.7 % of students go for dental check-up once in 6 months, 12.4 % go for routine dental check-up regularly once in 3 months (Fig 6).

Figure 6: Frequency of dental check-up among the study population



Reasons for not visiting the dentist

Many students said that no specific reasons of not visit dentist, 18.6% said they didn't visit dentist because no clinic nearby and 15.4% said that they didn't visit because of fear 65.7 % of participants were not aware of regular dental check-ups.

Effectiveness of curriculum at SHMS in oral education

36.7% of the students reported that the curriculum at SHMS on oral education were very effective, 28.7% said that somewhat effective, 17.8% said not effective and 16.9% said it was neutral.

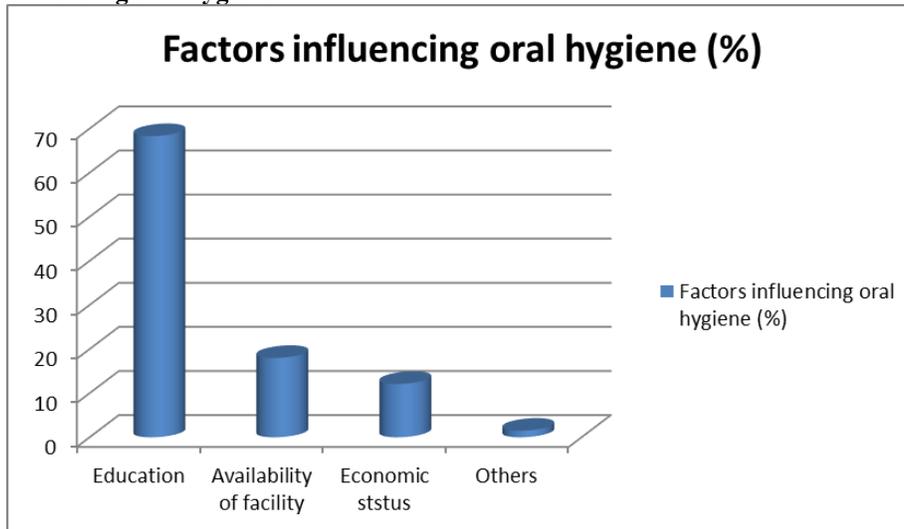
Socio-economic factors influence oral hygiene

The study showed that 40.2% of the students, their oral health were moderately influenced by socio-economic factors, 45.2% significantly influenced, 9.5% slightly influenced and 15.1% not influenced at all.

Factors influence oral hygiene

From the study showed that education is the most potential factor that influences the oral hygiene by 68.3 %, followed by access to health care facility by 18 %, followed by socio-economic status by 12.1 % and other factors by 1.5 % (Fig 7).

Figure 7: Factors influencing oral hygiene



DISCUSSION

Oral health literacy programs play an important role in providing awareness about oral health and controlling oral disease⁹; therefore, the present study was

conducted in order to determining the awareness level of medical students regarding the importance of oral health in overall wellbeing, evaluate the baseline knowledge of the oral hygiene practice among medical students and

identify potential factors influencing oral hygiene awareness and practices among the target population.

From our study 63.3% of students were aware that the bleeding from the gum is due to poor oral hygiene, 18.6% were aware that bleeding was due to general illness and 18% they didn't know. Also, it was observed that 66.3% of the student said yes on the cases of sugary diets as cause of dental decay, 18.3% of the student they didn't know and 15.4% of the student said no. The study also observed that 56.2% of students were aware of the effect of soft drinks in dental decay and said yes, 22.5% of students said no and 21.3 % said they didn't know. On the overall from our study 61.93% of the students showed to have good awareness about oral health and 38.17% showed to have poor awareness of oral health. This was similar to the study done by Waheed et al.¹⁰, Malaysian University which showed that 63% of medical students had good awareness of oral health. And also, the study done by AlJasser et al.,⁹ showed that 59.1% were aware of maintaining oral hygiene which resembled to the result of our study.

Good oral health practices are important for maintaining both our oral and general health, when practice good oral hygiene such as brushing our teeth, cleaning our tongue, visiting the dentist regularly and proper frequency of changing the tooth brush, can minimize the risk of dental problem.

In our study all the students were brushing teeth daily and many students brushed twice a day 58.3 %, and 21.9% brushed once and 19.8% after every meal. And 47.6% students use toothbrush having medium type of bristles and 32.0% of them use soft, 10.9% use hard and 9.2% they don't know type of brush they use. Also 52.1% of the students change toothbrush within three months, 27.8% change when useless, 12.1% change in six months and 8% change in a year. And 51% of the students practice combined style (horizontal & vertical) of tooth brushing, 23.1% practice circular, 16.6% practice horizontal and 8.6% practice vertical style. About 51.8% of the students in this study visit to the dentist when they were in pain, 25.1% were never visit to the dentist, 12.4% were visit every six month and 10.7% were visit regularly once in 3 months. The study showed that 40.2% of the students, their oral health were moderately influenced by socio-economic factors, 45.2% significantly influenced, 9.5% slightly influenced and 15.1% not influenced at all. On overall, a significant majority of participants 51.28% demonstrated comprehensive good practice regarding the oral health which includes proper brushing technique, proper

frequency of change brushes and other things that can affect oral hygiene.

This is similar to the study conducted by Gupta et al.,⁴ Chhattisgarh, India which was 51.4% and two other study from medical students of the Manipal 58% and medical officer of Nigeria was 68%. However, our study was in contrast with study done by AlJasser et al.,⁹ Saudi showed poor practice of oral hygiene which was about 71.3% of the respondents.

Factor that can influence oral hygiene awareness and practice include education level, social economic status, access to dental care and others like personal habits and cultural believes. From the study showed that education is the most potential factor which influences the oral hygiene by 68.3%, followed by access to dental care facility by 18%, then income level by 12.1 % and other factors by 1.5 %. The study also showed that 40.2 % of the students, their oral health were moderately influenced by socio-economic factors, 45.2 % significantly influenced, 9.5 % slightly influenced and 15.1 % not influenced at all. Many students 65.7 % said that there were no specific reasons of not visit dentist, 18.6 % said they didn't visit dentist because no clinic nearby and 15.4 % said that they didn't visit because of fear.

CONCLUSION

Generally, the level of awareness and practices of oral hygiene for most medical students was slightly good, only by 61.93 % but not much enough especially for the medical students as its needed for the purpose of prevention of oral and general diseases. Lack of oral health education and access to dental facility were major factors influenced the oral health as responded by the medical students. Students who are aware about practice of good oral hygiene habits tend to have healthier teeth and gums (lack of oral health problems) compared to the unaware subjects. Overall, promoting good oral hygiene awareness and practice not only enhance the dental health but also contribute to the overall health and well-being.

Recommendations

Education and awareness campaigns: To implement targeted campaigns in school, workplace and communities to educate people about the importance of oral hygiene and its impact on overall health.

Accessible dental services: To ensure affordable and accessible service for treatment and encourage prevention

Community engagement: Foster partnership with local health authorities, dental professional and community leaders to create oral health initiative.

REFERENCES

- Butt, A.M., Ahmed, B., Parveen, N., & Yazdanie, N. (2009). Oral health related quality of life in complete dentures. *Pak Oral Dent J*, 29(2), 397–402.
- Chander Shekar, B.R., Reddy, C., Manjunath, B.C., & Suma, S. (2011). Dental health awareness, attitude, oral health-related habits, and behaviors in relation to socio-economic factors among the municipal employees of Mysore city. *Ann Trop Med Public Health*, 4(2), 99–106.

3. Jaramillo, J.A., Jaramillo, F., Kador, I., Masuoka, D., Tong, L., Ahn, C., & others. (2013). A comparative study of oral health attitudes and behavior using the Hiroshima University-Dental Behavioral Inventory (HU-DBI) between dental and civil engineering students in Colombia. *J Oral Sci*, 55(1), 23–28.
4. Gupta, V. (2020). Assessment of oral hygiene practices among medical students. *Int J Community Med Public Health*, 7(3), 1170.
5. Kumar, H., Behura, S.S., Ramachandra, S., Nishat, R., Dash, K.C., & Mohiddin, G. (2017). Oral health knowledge, attitude, and practices among dental and medical students in eastern India - A comparative study. *J Int Soc Prev Community Dent*, 7(1), 58–63.
6. Ehsan, H., Ahmadzai, N., Orfani, Z., Rezayee, B.M., Wally, M., & Daftani, S. (2023). Oral health knowledge, attitude, and behavior among health professions' students at Kabul University of Medical Sciences. *Clin Cosmet Investig Dent*, 15, 349–358.
7. Barrieshi-Nusair, K., Alomari, Q., & Said, K. (2006). Dental health attitudes and behavior among dental students in Jordan. *Community Dent Health*, 23(3), 147–151.
8. Rwakatema, D.S., Ananduni, K.N., Katiti, V.W., Msuya, M., Chugulu, J., & Kapanda, G. (2015). Oral health in nursing students at Kilimanjaro Christian Medical Centre teaching hospital in Moshi, Tanzania. *BMC Oral Health*, 15(23), 1–8.
9. AlJasser, R., Alsinaidi, A., Bawazir, N., AlSaleh, L., AlOmair, A., & AlMthen, H. (2023). Association of oral health awareness and practice of proper oral hygiene measures among Saudi population: A systematic review. *BMC Oral Health*, 23(1), 1–13.
10. Waheed, D.Z., Saeed, M., & Jameel, R.A. (2017). Awareness and practices of oral hygiene among female undergraduates in a Malaysian university. *J Educ Educ Dev*, 4(2), 227.

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