

Assessment of Knowledge, Attitude and Practices Among Students of Health Sciences Regarding Oral Hygiene

Ihtesham ul Haq^{1*}, Naveed Ullah², Sabir Rehman³, Amir Sultan⁴,
Dr. Amna Mushtaq⁵, Usama Siddique⁶ and Mohsin Saeed⁷

¹Institute of Public Health and Social Sciences, Khyber Medical University, Peshawar, Pakistan.

²MSN Scholar Institute of Nursing Sciences Khyber Medical University Peshawar.

³Institute of Public Health and Social Sciences, Khyber Medical University Peshawar, Pakistan.

⁴Associate Professor and Head of Nursing Department, Times Institute Multan, Pakistan.

⁵Assistant Professor, Department of Medical Laboratory Technology, Times Institute Multan, Pakistan.

⁶Assistant Professor, department of Nursing, Times Institute Multan, Pakistan.

⁷NCS University System, Peshawar, Pakistan.

*Corresponding Author Email: Ihtisham02@gmail.com

Abstract

Objective: To evaluate the knowledge, attitude, and practices concerning oral hygiene among students at GANDHARA University Peshawar. **Methodology:** A descriptive cross-sectional study was conducted at GANDHARA University, involving all students from the health sciences department. The sample size of the study was 202, while utilized convenience sampling to gather participants. The data was collected through valid and reliable questionnaire. The data were analyzed through SPSS, and permission were taken for data collection while informed consent were obtained from each participant. **Findings:** The study included 202 participants, comprising 162 (80.19%) males and 40 (19.18%) females. Regarding oral health status, 33 (16.33%) students exhibited normal teeth and gum condition, 138 (68.31%) demonstrated good oral health, and 31 (15.34%) showed excellent teeth and gum condition. **Summary:** This research provided insights into oral hygiene awareness, attitudes, and behaviors among GANDHARA University Peshawar students. While overall oral health awareness was satisfactory, there is room for improvement in knowledge and practices. To address this, it is recommended that oral health promotion and awareness initiatives be incorporated into the curriculum promptly. The study revealed inadequate knowledge about dental floss and insufficient oral hygiene practices. Enhanced focus on oral health care education programs is necessary to improve student understanding and habits.

INTRODUCTION

Mouth cleanness is the way of keeping oral cavity free from irrational environments that disturb oral cavity such as gingival infections, tooth decay, oral injuries as well as abscesses. If public concerned with oral health promoting programs are to be effective, the information of the latest position of oral health of public is of vital importance.

Through essential knowledge and grooming of oral hygiene Oral well-being can best be measured.(1) According to American Dental Association (ADA), “oral health is a structural, functional, aesthetic, physiologic, and psychosocial state of health as well as necessary to an individual’s overall well-being and excellence of life” Deprived oral hygiene has a major influence on overall health besides with numerous systemic infections.

The systemic infections moreover have an influence on mouth infections. According to journal article, deprived glycemic mechanism is linked with an improved possibility of terrible periodontal diseases (2). Care about oral cavity is significant for patients’ happiness and well-being for multiple of reasons.

Oral cavity not only play a vital role in eating, taste, drinking, respiration, communicable and non-communicable communication but also release saliva which also has antibacterial affects which protect the body against infection.

Reduced oral hygiene is well recognized to be connected with hurtful, unlikable infections like gingival inflammation, xerostomia, bad breath and carious teeth, and in recent times, bad oral hygiene is also been associated with chest infections as well as pneumonia (Ministry of Health, 2004) (3).

Oral and complete health position is determined by on an active association of many factors, containing the person's particular knowledge, attributes, activities, and awareness. Oral well-being information is measured necessary condition for wellness connected activities and as stage of development rises, awareness also rises (4).

Oral cleanness is the practice of keeping a clean mouth to avoid oral complications, such as inflammation of gingival tissues, inflammation of periodontal ligaments, dental cavities, and unpleasant smell from mouth. For tooth decomposition and gingival infection calculus as well as plaque are the main causes.

Good oral cleanliness is not individual about clean teeth and fresh breath however it is moreover one of the finest techniques to keep good general health. Oral healthiness is the most important portion of the overall health and happiness of the persons. It can be accomplished through preserving a decent oral hygiene (5).

In 1845, The American Magazine of Dental Science investigated dentists for ignoring the preventive part of dentistry, choosing in its place to effort on mechanical dentistry and surgical procedure. Far along, many dentists chosen to provide preventive care, but they hardly had time to deliver the facilities for which they were skilled (6). Dental caries and periodontitis disease are common and expensive long-lasting diseases disturbing current individuals. To an excessive range, their inhibition and control be predisposed by a person's lifestyle and routine (7).

Oral health problems are the most common non-communicable ailments, capable of causing distress, disability, and even death. Furthermore, the state of one's oral health is a key indicator of overall wellness and life quality. According to the Global Burden of Disease Study 2016, oral diseases affect 3.58 billion people globally, with decay in permanent teeth being the most frequently assessed condition.

Approximately 2.4 billion individuals are afflicted with permanent tooth decay, while 486 million children suffer from decay in their primary teeth (8). Throughout one's lifespan, oral health is essential for maintaining general health and well-being. Inadequate oral hygiene and issues like tooth decay and periodontal disease can significantly diminish quality of life by hindering crucial functions such as eating, drinking, swallowing, smiling, and verbal communication. Despite its importance, oral health has often been overlooked in developing or underdeveloped nations.

In state to preserve a good oral health, appropriate and effective defensive actions must be accomplished. Several studies have presented that there has been a relationship among good oral well-being and awareness (9).

Organization of decent oral hygiene practices is an essential step in sustaining oral health. In order to assume good defensive measures, we need to hold a good understanding of the oral hygiene practices of a population. In order to implement good oral hygiene methods at the community level, it is necessary to recognize the oral hygiene practices in the community and indication on oral health.

Keeping this in attention, the objective of this study was to assess the oral hygiene practices and cleaning practices (10). The study was conducted with the aim to assess the level of knowledge attitude and practice regarding oral hygiene among students of Gandhara university Peshawar.

MATERIALS AND METHODS

Methodology and participants: This investigation employed a cross-sectional descriptive approach, conducted at Peshawar University, Pakistan, from November 2021 through June 2022.

Participant selection: The research utilized convenience sampling to gather participants. An online tool calculated the required sample size of 202, considering the total student population, with parameters of 95% confidence level, 5% error margin, and 80% prevalence ratio. Health Sciences department students who were available and agreed to take part were incorporated until reaching the target sample size.

Eligibility requirement:

Current enrollment in the University of Peshawar's Health Sciences department.

Exclusion criteria:

Those who decline to participate.

Administrative, faculty, and support personnel.

Data Collection:

Information was gathered using a confidential, self-completed survey. The questionnaire comprised closed-ended inquiries about demographics, oral health knowledge, attitudes, and self-reported oral hygiene habits from University of Peshawar students.

Data Collection Procedure:

A descriptive cross-sectional study was conducted to assess the prevalence of oral hygiene knowledge, attitudes, and practices among university students. Each research component was evaluated to ensure participant confidentiality and privacy. Data was obtained through a questionnaire, which included demographic information (such as name, age, and ethnicity). Verbal consent was obtained from the study participants. A convenience sampling method was used to collect data from students.

Data Analysis:

Conclusions were drawn using appropriate statistical methods. Results were presented using bar charts and tables. Categorical variables like gender and education level were expressed as frequencies and percentages. The collected data was analyzed using SPSS (Statistical Package for Social Sciences) version 22, a data analysis software.

RESULTS

Table 1 shows the demographic characteristics of the 202 students who participated in the study. Most of them were male (80.2%). Most students were aged 20-23 years (79.2%). By department, Dental students made up 34.6% of participants, Anesthesia 19.8%, MLT 32.2%, and Radiology 13.4%.

Table 1: Demographic Characteristics of Study Participants

Variable	Frequency (n=202)	Percentage
Gender		
Male	162	80.2%
Female	40	19.8%
Age (Years)		
18-19	21	10.4%
20	60	29.7%
21	42	20.8%
22-23	58	28.7%
24-26	21	10.4%
Department		
Dental	70	34.6%
Anesthesia	40	19.8%
MLT	65	32.2%
Radiology	27	13.4%

Table 2: This table displays the students' self-reported oral health status. 16.3% said their oral health was normal, the majority (68.3%) responded good, while 15.3% felt they had excellent oral health. The students' knowledge about the benefits of dental floss. Less than half (47.5%) answered yes, they know the benefits of flossing, while 52.5% said they do not know the benefits. The students' attitudes about the effect of smoking/chewing tobacco on oral health. A large majority (93.6%) agreed that smoking/chewing tobacco negatively impacts oral health. Whether students think regular dental visits are important for maintaining good oral health. Most students (73.3%) agreed regular dental visits are necessary. Just over half (59.4%) brush once daily. One third (34.7%) brush twice daily, while only 5.9% brush more than twice per day. How recently students visited the dentist. Almost one third (32.2%) have never visited the dentist. 31.2% visited less than 6 months ago. The remaining students' last visit ranged from over 6 months up to more than 1 year ago. The students' main reason for their last dental visit. Over one third (34.7%) have never visited. Almost equal percentages visited for either pain relief (31.7%) or routine checkup/cleaning (17.8%).

Table 2: Knowledge, attitude and practices of students

Status	Frequency (n=202)	Percentage
1: Self-reported Oral Health Status		
Normal	33	16.3%
Good	138	68.3%
Excellent	31	15.3%
2: Knowledge of Dental Floss Benefits		
Yes	96	47.5%
No	106	52.5%
3: Attitudes Towards Effect of Smoking/Chewing Tobacco on Oral Health		
Yes	189	93.6%
No	13	6.4%
4: Attitudes Towards Regular Dental Visits for Maintaining Oral Health		
Yes	148	73.3%
No	54	26.7%
5: Self-Reported Tooth-brushing Frequency		
Once daily	120	59.4%
Twice daily	70	34.7%
More than twice	12	5.9%
6: Self-Reported Last Dental Visit		
Never visited	65	32.2%
< 6 months ago,	63	31.2%

6-12 months	29	14.4%
>1 Year	45	22.3%
7: Main reason for dental visit?		
Never visited	70	34.7%
Pain relief	64	31.7%
Treatment follow-up	32	15.8%
Routine checkup. cleaning	36	17.8%

DISCUSSION

While many people enjoy smiling and looking attractive, few consider oral health issues to be a serious concern. Dental hygiene involves maintaining a mouth free from conditions such as gum diseases, cavities, and oral sores. Since oral well-being impacts overall health, the best way to evaluate it is through understanding the knowledge, attitudes, and practices related to dental care. Proper oral hygiene is essential for preserving a healthy mouth and preventing various oral ailments. The current study reveals that 59% (120) of students brush their teeth once daily, aligning closely with findings from Kiran Bala's 2018 research in rural Jammu district, where 61.1% of people reported brushing once a day (8).

Our research indicates that 73.26% of students consider regular dental check-ups essential for maintaining good oral health. This contrasts with Simranpreet Kaur's 2015 study among health professionals in Ludhiana, India, where all participants deemed regular dentist visits necessary. The difference may be attributed to a lower awareness of oral hygiene knowledge, attitudes, and practices in our study population (11). The findings demonstrate that the majority of students seek dental care only when experiencing pain in their teeth, gums, or mouth. This is consistent with V. Gopikrishna's 2016 study in Bengaluru city, which identified pain as the primary motivator for patients to visit the dentist, strongly supporting our current research (12).

In current study 92.57% students knows that oral health is important to general health whereas study lead by Dr. Manoj Humagain, in 2011 among rural Nepal, Among secondary level students result shows that 96% students aware of the link between oral health and systemic well-being which support current study (13).

In current study the use of dental floss and fingers for cleaning teeth is 2.4% and 4.95% respectively while study conducted by Kiran Bala in 2018 at Jammu district, the use of other methods for cleaning teeth like dental floss, fingers was reported as 2.4%, and 3.7% which strongly support our result (8) The current study shows that 31.6% participants visit dentist only when there is problem whereas other finding claimed by Santhosh Kumar in 2016 among law students in Chennai shows that 58% replied that dental practitioner should be visited only when there is a problem which contrasts with current study. Because medical students have more knowledge and are more sensitive about their health than law students (14).

In current study shows that 73.2% of students were aware of importance of teeth while study conducted by Humagain M in 2011 among rural Nepal shows that most participants were aware of importance of regular dental attendance (71%) which strongly support our current conducted study (12). Current study shows that 14.8% students claimed to not brush their teeth on daily basis while study conducted in 2016 among college student at Bengaluru city shows that (2.4%) claimed to not brush their teeth on a daily basis which is dissimilar from our conducted study the reason behind that may be due to the deficiency of practices of oral hygiene among university students due to bust routine (12).

Current study shows that, 202 (73.26%) students knows that regular visit to dentist is necessary while study of Elsabagh HM, in 2017 Among majmaah university female student, KSA only 20.9% know that regular dentist visit is necessary which is in contrast to current study due to only limited to female students (4). In current study 122 (60.39%) students use fluorinated tooth paste while study of Alokenath Bandyopadhyay, in 2017 Among engineering Students in Bhubaneswar, Odisha, India about (69%) of participants in this study used fluoridated toothpaste which is almost equal and support current study (5).

In current study 34.65% students brush their teeth two times daily while study of Dr. Manoj Humagain in 2011 among rural Nepal found that 40% participants brushed their teeth two times a day(13). In my current study 68% students have good state of teeth and gum while study conducted by Yilkal Tafere Gualie, in 2018, Among students of governmental secondary school north central Ethiopia that (60%) students had good oral hygiene knowledge both the study are approximately same and support each other (15). In current study 52.47% students didn't know about dental floss whereas study conducted by Umakanta Prusty in Kamrup (Metro) District in North East Region of India 2017 , Among the Welfare Workers shows that (75.7%) welfare workers was unaware about the use of dental floss which is different from our finding due to lack of attentiveness of using dental floss (16).

In my study most students use toothbrush and toothpaste for cleaning their teeth while study conducted in rural south India shows that A large number of contestant had accurate knowledge and activity of using toothpaste and toothbrush for cleaning their oral cavity which strongly support our current study (17). In current study 17.8% students visit dentist for checkup while result conducted by Dr.M.P. Santhosh kumar in 2016 among Law Students in Chennai shows that only 22% participants visit dentist for routine oral checkup which is closer to our conducted study and support current study(14). In current study 85% students rinse their mouth after meal while study conducted by Kiran Bala, in 2018 among Jammu bala shows that practice of rinsing mouth after meals was found to good with response rate of 76.9% which is less than my finding due to lack of practice of oral hygiene(8).

This study had limitations. Self-reported data accuracy depended on student honesty. Convenience sampling from one Khyber Pukhtankhwa university also limits generalizability. However, similar regional findings suggest results may mirror broader oral health tendencies among young Pakistani adults warranting further investigation.

CONCLUSION

This research provides an overview of oral hygiene knowledge, attitudes, and practices among students at Gandhara University Peshawar. While oral health awareness was found to be satisfactory, there is a need to improve students' understanding and habits related to oral well-being. To accomplish this, it is crucial to promptly incorporate oral health promotion and awareness initiatives into the curriculum. Additional emphasis should be placed on oral health care through educational programs.

References

- 1) Jabeen C, Umbreen G. Oral Hygiene: Knowledge, Attitude and Practice among School Children, Lahore. Journal of Liaquat University of Medical & Health Sciences. 2017 Jul 1;16(3).
- 2) Naseem S, Fatima SH, Ghazanfar H, Haq S, Khan NA, Mehmood M, Ghazanfar A. Oral hygiene practices and teeth cleaning techniques among medical students. Cureus. 2017 Jul;9(7).
- 3) Nyvad, B., 2015. The role of oral hygiene. *Dental caries, the disease and its clinical management*, pp.171-176.

- 4) Elsabagh HM, Abd Elkader MN, Abd Elkader EN. Oral hygiene knowledge, attitude, practice and self-perception of personal dental appearance among majmaah university female student, KSA. *oral health*. 2018; 4:5.
- 5) Bandyopadhyay A, Bhuyan L, Panda A, Dash KC, Raghuvanshi M, Behura SS. Assessment of Oral Hygiene Knowledge, Practices, and Concepts of Tobacco Usage among Engineering Students in Bhubaneswar, Odisha, India. *The journal of contemporary dental practice*. 2017 Jun 1;18(6):423-8.
- 6) Rayman SS, Almas K. Dental hygienist: a dental professional in america. *Pakistan Oral and Dental Journal*. 2004;24(2):235-9.
- 7) Zhou Y, Lin HC, Lo EC, Wong MC. Risk indicators for early childhood caries in 2-year-old children in southern China. *Australian dental journal*. 2011 Mar;56(1):33-9.
- 8) Bala K, Gupta R, Ara A, Sahni B. A KAP study of oral health status among adults in a rural area of Jammu District. 2019;6(1):1–7.
- 9) Pradhan D, Kumar J, Shavi GR, Pruthi N. Evaluating The Oral Hygiene Knowledge, Attitude and Practices Among Dental and Medical Students in Kanpur City Evaluating the Oral Hygiene Knowledge, Attitude and Practices Among Dental And. 2016;(July).
- 10) Gharpure AS, Bhange PD, Gharpure AS. Evaluation of oral hygiene practices in an urban Indian population. *J Indian Dent Assoc*. 2016;10(11):10-4.
- 11) Kaur S, Kaur B, Ahluwalia SS. Oral Health Knowledge, Attitude and Practices amongst Health Professionals in Ludhiana, India. 2015;5(7).
- 12) Sourabha K, Jacob J, Gopikrishna V, Bhaskar N, Kulkarni S. Knowledge, attitude, and practices of oral hygiene among college students in Bengaluru city. *J Indian Assoc Public Heal Dent*. 2016;14(1):75.
- 13) Id A, Author C, Humagain M, Humagain M, Type A, Submitted OA, et al. Evaluation of Knowledge, Attitude and Practice (KAP) About Oral Health Among Secondary Level Students of Rural Nepal - A Questionnaire Study Evaluation of Knowledge, Attitude and Practice (KAP) About Oral Health Among Secondary Level Students of Rural Nepal - A Questionnaire Study. 2011;1–17.
- 14) Kumar MPS. Knowledge, Attitude and Practices towards Oral Health among Law Students in Chennai. 2016;8(7):650–3.
- 15) Gualie YT, Tayachew AT. Assessment of knowledge, attitude, and practice toward oral hygiene among governmental secondary school students in Debre Tabor Town, Amhara Region, North Central Ethiopia. 2018;92–8.
- 16) Prusty U. Traditional Medicine & Clinical Naturopathy Oral Hygiene – Knowledge, Attitude and Practice among the Health Worker (ANM / ASHA) of Kamrup (Metro) District in North East Region of India. 2017;6(2).
- 17) Kuppuswamy VL, Murthy S, Sharma S, Surapaneni KM, Joshi A. Oral Hygiene Status, Knowledge, Perceptions and Practices among School Settings in rural South India. 199