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Original Article

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A comparative analysis of oral hygiene practices and daily dietary habits between dental and Allied health sciences students: An observational study

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ABSTRACT

BACKGROUND & OBJECTIVE: Oral hygiene and dietary habits play important roles in maintaining a healthy lifestyle. Undergraduate students of allied health sciences and dentistry need to have adequate knowledge of diet and nutrition. This study aims to find out the Oral hygiene practices and daily dietary habits of dental and Allied health sciences students in order to assess their knowledge and health priorities.

METHODOLOGY: Dietary and oral hygiene practices of 224 (n=112) undergraduate dental and Allied Health Sciences students from two local dental colleges were surveyed for this cross-sectional study using a convenience sampling technique. A semi-structured close-ended questionnaire was employed to collect data after taking informed consent. Data was analyzed using SPSS version 23. The results are presented as percentages and $p < 0.05$ was considered significant.

RESULTS: The comparison of oral hygiene practices among undergraduate BDS and AHS students using a semi-structured closed-ended questionnaire showed statistical significance in different variables, including routine brushing ($p < 0.05$), dental flossing ($p=0.004$), and dental consultation ($p=0.048$), indicating that dental students were more conscious about oral hygiene than the AHS group.

CONCLUSION: Dental students demonstrated better oral hygiene practices compared to Allied Health Sciences students, reflecting greater awareness and adherence to the recommended oral care routines. However, Allied Health students exhibited better dietary habits, particularly with a higher intake of fruits and vegetables. These findings suggest the need for targeted educational interventions to address gaps in oral hygiene and dietary habits among undergraduate students in both fields.

KEYWORDS: Oral Health, Nutritional Status, Oral hygiene, Diet.

INTRODUCTION

Diet-related health problems such as obesity, cardiovascular diseases, and diabetes have a significant impact on human health. Poor nutrition is one of the leading risk factor contributing to chronic disease burden [1].Similarly, ignoring dental hygiene has a negative effect on overall health and quality of life and a healthy oral cavity is often linked to better oral health knowledge and positive attitudes. Dental problems among undergraduate students are often caused by inadequate education [2].

Diet affects oral health. This interdependence suggests that nutritional health promotes good oral health and vice versa [3]. A nutritious diet, including adequate amounts of proteins, vitamins, essential fatty acids, and micronutrients, can play a vital role in the fight against infectious diseases such as periodontitis, dental caries, and gum diseases [4].

Undergraduate students spend most of their time in college, which may affect their quality of life and eating habits. They adopt unhealthy eating habits such as a high-calorie diet and junk food. A lower intake of fruits and vegetables and the frequency and timing of food intake may also be affected [5].

Dental students are assumed to have better knowledge of dietary and oral hygiene habits than non-dental students do. However, there is no evidence that this knowledge translates into practice for maintaining good health [6]. Healthy oral and dietary habits among dental students are important because they are expected to become dentists in the future. Students who ignore implementing healthy oral hygiene and dietary habits are likely to fail to establish health promotion opportunities for their patients [7].

A balanced diet is essential to maintain good oral health. An unhealthy diet can severely impair oral cavity function and

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alter the microbial flora. It may also affect demineralization and remineralization of teeth, resulting in dental caries [8]. A diet rich in calcium and low in sugar may enhance the process of tooth remineralization, and students should be aware of the effects of diet on oral health and encourage them to reduce their sugar intake [9]. However, university students are more prone to adopt unhealthy dietary habits, such as skipping meals, eating junk food, and consuming soft drinks, because of their lifestyle [10].

Several studies have focused on assessing the dietary habits and exercise practices of medical students. It was found that international students consumed more fast food and carbonated drinks per week than Chinese students [11].

METHODOLOGY

This cross-sectional study was conducted among undergraduate allied health sciences and dentistry students at the Fatima Memorial College of Medicine and Dentistry and Riphah International University from January 2023 to June 2023. Ethical approval was obtained from the Institutional Review Board (IRB). (FMH-14/03/2023-IRB-1191).

Another study assessed dental students' knowledge of their dietary habits and oral hygiene. The study concluded that 83.3% of participants agreed that dietary counseling could reduce the incidence of dental caries [9].

In another study, the knowledge and practices of dietary habits and lifestyles were compared between non-medical and medical students. It was reported that there was no significant difference in the dietary intake of medical students (41.3± 9.39) compared with non-medical (40.8 ± 9.12) [12]. The rationale of this study was to highlight the gap in the dietary and oral hygiene practices of dental and allied health students. We assessed and compared the dietary intake and oral hygiene practices of undergraduate students.

This study highlights the link between oral hygiene practices and dietary habits among undergraduate students. A sample of (N=224) undergraduate dental and AHS students (n = 112) was selected using a 95% confidence interval, 5% significance level, and total a target population of 500. Non-probability convenience sampling was used.

RESULTS

Table-I: Learning environment among the integrated and traditional learning systems.

Questions	Options	BDS n(%)	AHS n(%)	Total n(%)	P- value*
How many times do you brush in a day?	Once	26(23.2)	54(48.2)	80(35.7)	0.00
	Twice	82(73.2)	52(46.4)	134(59.8)	
	I do not brush every day	4(3.6)	6(5.4)	10(4.5)	
How many times have you replaced your toothbrush this year?	I do not replace my brush	22(19.6)	16(14.3)	38(17)	0.018
	Once	68(60.7)	55(49.1)	123(54.9)	
	Twice	22(19.6)	41(36.6)	63(28.1)	
How much time do you spend brushing?	Less than 1 minute	37(33)	37(33)	74(33)	0.762
	1 minute	64(57.1)	67(59.8)	131(58.5)	
	2 minutes	11(9.8)	8(7.1)	19(8.5)	
How many times do you use dental floss?	I do not use floss	26(23.2)	21(18.8)	47(21.0)	0.004
	Once in a while	6(5.4)	17(15.2)	23(10.3)	
	Once every day	52(46.4)	32(28.6.)	84(37.5)	
	After every meal	28(25.0)	42(37.5)	70(31.3)	
Do you rinse your mouth with mouthwash?	No	46(41.1)	43(38.4)	89(39.7)	0.168
	Yes	66(58.9)	69(61.6)	135(60.3)	
How often do you consult a dentist?	I have never been to Dentist	17(15.2)	31(27.7)	48(21.4)	0.048
	Only in emergency cases	27(24.1)	30(26.8)	57(25.4)	
	Once in a year	33(29.5)	30(26.8)	63(28.1)	
	Twice in a year	35(31.3)	21(18.8)	56(25.0)	
Do you use miswak (organic toothbrush)?	Never	28(25.9)	29(25.9)	48(21.4)	0.137
	Sometimes	81(72.3)	67(59.8)	148(66.1)	
	Always	12(10.7)	16(14.3)	28(12.5)	
Do you rinse after eating?	Never	66(58.9)	60(53.6)	126(56.3)	0.50
	Sometimes	29(25.9)	37(33.0)	66(29.5)	
	Always	17(15.2)	15(13.4)	32(14.3)	
Do you have bleeding gums?	Never	65(58)	61(54.4)	126(56.3)	0.85
	Sometimes	5(4.5)	5(4.5)	10(4.5)	
	Always	42(37.5)	46(41.1)	88(39.3)	
Do you have staining on teeth?	Yes	85(75.9)	86(76.8)	171(76.3.)	0.87
	No	27(24.1)	26(23.2)	53(23.7)	

Methodology to be continue..

The allied health disciplines included in the study were physiotherapy, nutrition and dietetics, optometry, and dental lab technologists. Hence, 28 students from each discipline were included, regardless of their gender. The research tool used in this study was a semi-structured,closed-ended questionnaire.

The questionnaire consisted of demographic data, dietary intake of common cariogenic and healthy foods during the seven days before the survey, and oral hygiene practices. Multiple choice questions were asked after taking written informed consent from the participants. The parameters of dietary habits and oral hygiene practices were sourced from the literature [13,14].

The survey items were subjected to cognitive testing to identify and remove any problematic questions. Some of these questions were also revised. The questionnaire was distributed among the study participants after obtaining informed consent and was administered on the same day.

Data was entered and analyzed using SPSS version 26. A descriptive analysis was performed for all variables. Categorical variables were presented as frequencies and percentages. Continuous variables were presented as mean and standard deviation. A Chi- square test was used to statistically compare two groups for a categorical variable. Pearson's correlation coefficients were applied to comparative variables. Data were considered statistically significant at a p-value ≤ 0.05.

Table -II: Comparison of dietary habits of undergraduate BDS and AHS students.

Questions	Options	BDS n(%)	AHS n(%)	Total n(%)	P- value *
Fruit intake	Twice a day	13(11.6)	21(18.8)	34(15.2)	0.00
	Once a day	49(43.8)	49(43.8)	98(43.8)	
	Couple of times a week	19(17)	32(28.6)	51(22.8)	
	I don't eat fruits	31(27.7)	10(8.9)	41(18.3)	
Vegetable intake	Thrice a day	6(5.4)	10(8.9)	16(7.1)	0.01
	Twice a day	11(9.8)	25(22.3)	36(16.1)	
	Once a day	47(42)	37(33)	84(37.5)	
	Couple of times a week	33(29.5)	35(31.3)	68(30.4)	
	I don't eat vegetables	15(13.4)	5(4.5)	20(8.9)	
How often do you drink beverages/juices	Never/rarely	42(37.5)	50(44.7)	92(41.1)	0.11
	1 to 3 times a week	54(48.2)	37(33)	91(40.6)	
	3 to 7 times a week	9(8)	14(12.5)	23(10.3)	
	1 to 3 times daily	7(6.3)	11(9.8)	18(8)	
How often do you drink energy drink	Never/rarely	54(48.2.)	37(33.0)	91(40.6)	0.11
	1 to 3 times a week	42(37.5)	50(44.6)	92(41.1)	
	3 to 7 times a week	9(8.0)	14(12.5)	23(10.3)	
	1 to 2 times daily	7(6.3)	11(9.8)	18(8.0)	
How often do you drink tea/coffee	Never/rarely	29(25.9)	22(19.7)	51(22.8)	0.72
	1 to 3 times a week	25(22.3)	22(19.7)	47(21)	
	3 to 7 times a week	21(18.8)	24(21.4)	45(20.1)	
	1 to 2 times daily	30(26.8)	36(32.1)	66(29.4)	
	>3 times a day	7(6.2)	8(7.1)	15(6.7)	
Daily water intake	>7 glass	28(25)	19(17)	47(21)	0.50
	5-6 glass	42(37.5)	43(38.4)	85(37.9)	
	3-4 glass	30(26.8)	37(33.0)	67(29.9)	
	Once or twice	12(10.7)	13(11.6)	25(11.2)	
What type of meal do you prefer when you are in university?	Home cooked lunch	10(8.9)	22(19.6)	32(14.3)	0.10
	I prefer to stay hungry	36(32.1)	38(33.9)	74(33)	
	Junk food	37(33.1)	29 (25.9)	66(29.5)	
	Instant food (chips, biscuit)	29(25.9)	23(20.5)	52(23.2)	
In the past week, how many days have you eaten junk food instead of a home cooked meal?	I rarely eat junk food	14(12.5)	24(21.4)	38(16.7)	0.48
	1-2 day	36(32.1)	42(35.9)	90(39.8)	
	3-4 day	36(32.1)	34(31.2)	70(32.0)	
	4-5 day	6(5.4)	6(4.4)	12(5.2)	
	6 or 7 days	8(7.1)	6(7.1)	14(6.3)	

Results to be continue..

Out of 224 undergraduate students 38 male (33.9%) and 74 female (66.1 %) participated from the BDS group. The AHS group included 52 (46.4%) men and 60 (53.6%) women. The average age of participants was 19-24 years.

The comparison of oral hygiene practices among undergraduate BDS and AHS students showed statistical significance among different variables, indicating that dental students were more conscious about oral hygiene than the AHS group (Table-I).

The comparison of dietary habits of both undergraduate groups did not show any significant difference, except for fruit ($p< 0.01$) and vegetable intake ($p = 0.01$), as shown in (Table-II). AHS students showed better fruits and vegetable intake as compare to BDS students.

DISCUSSION

Dietary intake and oral health are interdependent because oral health is affected by the type of food consumed and its nutrient content. Similarly, the well-being of oral tissues and saliva quantity and quality depends on dietary intake [15]. Eating more fruits and vegetables, particularly vitamin C-rich fruits and green leafy vegetables, reduces the risk of chronic diseases and promotes oral health [16].

Fruits and vegetables are two of the most essential food groups, with one or two cups being recommended daily [13]. In our study, most of the BDS and AHS students (43.8 %) consumed fruits once per day, while the consumption of vegetables and fruits was higher in AHS students. Similarly, a study reported that 42% of respondents consumed fruits and vegetables once daily during quarantine [17]. A study conducted on university students in Dammam, Saudi Arabia, showed that 45.63% of the participants regularly consumed energy drinks [18]. In our study, 40-41% of BDS and AHS students are taking beverages and energy drinks at least 1-3 times a week. At the same time,only 8% are taking these soft drinks on daily basis (P=0.11). An increased intake of caffeinated drinks among students (38.5%) to 2-3 times a day was reported in a study from UAE, in contrast to our research, where most of the students (29.4%) were taking 1-2 times a day [19] (Table-II).

It was observed that 50.7% of the students were eating junk food–3-7 days a week in Bangladesh, which is 29.5% of our study population [20]. Water is a source of life and accounts for 75% of the total body weight of humans. National dietary guidelines recommend consuming 'plenty of water,' and adequate intake is defined as 2.1L/ (10 glasses) per day for adult women and 2.6 days (11.5 glasses) for adult men [10]. In our study ,only 21% of students met this criterion, and 11.2 % of students were reportedly taking water once or twice a day.

Brushing twice daily is recommended to reduce dental caries [21,22]. A previous international study reported that 25% of dental graduates brushed their teeth once daily [23].This percentage was higher in our study, with 73.2% of BDS students and 46.4% of AHS students brushing twice daily, possibly because BDS students were more aware of the significance of tooth brushing (Table-I). It is recommended that toothbrushes be changed after three months [24]. Our students needed to be made aware of this fact and changed their toothbrushes twice a year. In this study, only 8.5% of students spent the recommended 2 minutes brushing their teeth (Table-I). Our results were in contrast to those reported by Muthu et al. They reported that most dental and non-dental students spent two minutes brushing their teeth [24,25].

Miswak is an organic tooth- brushing tool used in Southeast Asia, the middle east, and African cultures for centuries. It is reported to have various antimicrobial, antioxidant, anti-inflammatory, and analgesic effects [26]. The majority of the students ($p> 0.05$) in both groups did not use miswak (Table-I). A study among medical students showed that only 12.5% of students were using miswaks for oral hygiene maintenance [27].

The students in both groups (14.3%) rinsed after eating the meals (Table-I). Similar to our study, oral health practices were assessed among pre-university students, and the results indicated that 68.7% of students did not rinse after meals [27]. There are different types of staining in the teeth, including extrinsic and intrinsic staining. Tea, coffee, and smoking are the most common causes of extrinsic staining [28]. 23.7% of the students responded that they had no staining or cavities in their teeth. This may be because they needed to be made aware of the presence of the cavity and consulted a dentist only once a year (Table-I).

Regular dental examinations are crucial to maintain excellent oral hygiene and improve overall health. Dentists advocate good dental care during checkups, such as three minutes of daily brushing and flossing [29].

LIMITATIONS

This study is subject to several limitations. A considerable proportion of students in higher education reside in hostel accommodations, away from their familial homes, which may influence both the quality and quantity of their dietary intake. However, data regarding students' boarding status were not collected. Furthermore, the socioeconomic status of participants was not assessed in this study. However we were able to identify gaps in the dietary habits and oral hygiene practices of our study population. Future research is recommended to conduct a comprehensive analysis of university students' oral hygiene and nutritional intake, incorporating these variables to enhance the understanding of relevant influencing factors.

CONCLUSION

The students' dietary habits revealed concern about the intake of unhealthy food options, likely affecting their health. In addition, while dental students appeared to have better oral hygiene practices, their unhealthy dietary habits underscored the gap in applying health knowledge to their habits. These findings suggest the need for solid initiatives toward oral health education and promotion of better dietary patterns among these students. Additionally, more studies are necessary to evaluate the long-term implications of these habits on overall health status. Considering the future role of these students in promoting public health, institutions should take the required measures to ensure proper hygiene and dietary practices among their students.

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REFERENCES:

1. Hacker K. The burden of chronic disease. Mayo Clinic Proceedings: Innovations, Quality & Outcomes. 2024;8(1):112119.Doi:10.1016/j.mayocpiqo.2023.08.005
2. Moradell A, Casajús JA, Moreno LA, Vicente-Rodríguez G, Gómez-Cabello A. Effects of diet—exercise interaction on human health across a lifespan. Nutrients. 2023;15(11):2520. Doi:10.3390/nu15112520.
3. Da Costa FD, Prashant GM, Sushanth VH, Imranulla M, Prabhu A, Kulkarni SS. Assessment of knowledge, attitude and practices of diet and nutrition on oral health among dental students. Journal of Global Oral Health. 2019;2(1):29-35. Doi:10.25259/jgoh_32_2019.
4. Choi J. Impact of stress levels on eating behaviors among college students. Nutrients. 2020;12(5):1241. Doi:10.3390/nu12051241.
5. Okoroafor CC, Okobi OE, Owodeha-Ashaka M, Okobi E, Oluseye B, Ekpang OB, et al. Dental health knowledge attitude and practice among University of Calabar students. Ureus. 2023;15(6):e40055. Doi:10.7759/cureus.40055C
6. Bhattacharya PT, Misra SR, Hussain M. Nutritional aspects of essential trace elements in oral health and disease: an extensive review. Scientifica. 2016;2016(1):5464373.Doi:10.1155/2016/5464373
7. Rohaninasab M, Mohammadian F, Rezaeijoo S. Erosion and the effect of saliva in coping with it: a review article. Pakistan Journal of Medical and Health Sciences .2020; 14(4):2005-2009.
8. Yanti GN, Yustina I, Primasari A, Rochadi RK. Effectiveness of rebon shrimp in preventing dental caries among elementary school children in Bagan Serdang Village. Journal of International Dental and Medical Research. 2022;15(4):1718-1723.
9. Sánchez-Ojeda MA, Luna-Bertos ED. Healthy lifestyles of the university population. Nutricion Hospitalaria. 2015;31(5):1910-1919. Doi:10.3305/nh.2015.31.5.8608
10. Ul Haq I, Mariyam Z, Li M, Huang X, Jiang P, Zeb F, et al. A comparative study of nutritional status, knowledge attitude and practices (KAP) and dietary intake between international and Chinese students in Nanjing, China. International Journal of Environmental Research and Public Health. 2018;15(9):1910. Doi:10.3390/ijerph15091910
11. Sajwani RA, Shoukat S, Raza R, Shiekh MM, Rashid Q, Siddique MS, et al. Knowledge and practice of healthy lifestyle and dietary habits in medical and non-medical students of Karachi, Pakistan. Journal of the Pakistan Medical Association. 2009;59(9):650-655.
12. Lange SJ. Percentage of adolescents meeting federal fruit and vegetable intake recommendations—Youth Risk Behavior Surveillance System, United States, 2017. MMWR. Morbidity and mortality weekly report. 2021;70(3):69-74
13. Poudyal R, Agrawal P, Shrestha A, Dali M, Bhagat T, Choudhary A. Evaluation of oral hygiene practice, knowledge and attitude among (10-15 Yrs) school children in Dharan, Nepal-A cross-sectional study. Pharmacology, Toxicology and Biomedical Reports. 2015;1(1).14-16 .Doi:10.5530/PTB.1.1.5
14. Barranca-Enríquez A, Romo-González T. Your health is in your mouth: A comprehensive view to promote general wellness. Frontiers in Oral Health. 2022;3:971223. Doi 10.3389/froh.2022.971223
15. Dorrington N, Fallaize R, Hobbs DA, Weech M, Lovegrove JA. A review of nutritional requirements of adults aged ≥ 65 years in the UK. The Journal of Nutrition. 2020;150(9):2245-2256. Doi:10.1093/jn/nxaa153
16. Sidor A, Rzymski P. Dietary choices and habits during COVID-19 lockdown: experience from Poland. Nutrients. 2020;12(6):1657. Doi:10.3390/nu12061657
17. Alsunni AA, Badar A. Energy drinks consumption pattern, perceived benefits and associated adverse effects amongst students of University of Dammam, Saudi Arabia. Journal of Ayub Medical College Abbottabad. 2011;23(3):3-9.
18. Kharaba Z, Sammani N, Ashour S, Ghemrawi R, Al Meslamani AZ, Al-Azayzih A, et al. Caffeine consumption among various university students in the UAE, exploring the frequencies, different sources and reporting adverse effects and withdrawal symptoms. Journal of Nutrition and Metabolism. 2022;2022(1):5762299. Doi:10.1155/2022/5762299
19. Banna MH, Brazendale K, Hasan M, Khan MS, Sayeed A, Kundu S. Factors associated with overweight and obesity among Bangladeshi university students: a case–control study. Journal of American College Health. 2022;70(8):2327-2333. Doi:10.1080/07448481.2020.1851695
20. Rangan GK, Dorani N, Zhang MM, Abu-Zarour L, Lau HC, Munt A, et al. Clinical characteristics and outcomes of hyponatraemia associated with oral water intake in adults: a systematic review. BMJ Open. 2021;11(12): e046539. Doi:10.1136/bmjopen-2020-046539
21. Sudan S, Ravishankar TL, Tirth A, Tafadar MN. Does tooth brushing prevent dental caries among children? A systematic review and meta-analysis. Journal of Indian Association of Public Health Dentistry. 2023;21(3):210-216. Doi:10.4103/jiaphd.jiaphd_238_22
22. Hafsah S, Chellappa LR. Knowledge, attitude and practices on various brushing techniques among clinical dental graduates: Institutional Study. Journal of Coastal Life Medicine. 2022;10(1):237-243.
23. Hamza B, Niedzwiecki M, Körner P, Attin T, Wegehaupt FJ. Effect of the toothbrush tuft arrangement and bristle stiffness on the abrasive dentin wear. Scientific Reports. 2022;12(1):840. Doi:10.1038/s41598-022-04884-x
24. Muthu J, Kumar RS, Jagadeesan M, Alagappan A. Pattern of Toothbrushing among College Students in Puducherry: A Questionnaire Survey. Journal of Scientific Dentistry. 2023;12(2):43–46. Doi:10.5005/jp-journals-10083-1030

25. Almutairi K, De Santis J. Prophetic medicine in the context of middle eastern culture: a concept analysis. Research and Theory for Nursing Practice. 2024. Doi:1891/RTNP-2023-0158
26. Gul A, Haq A, Mumtaz S, Ahmad A, Iftikhar A, Fatima M. Knowledge about Oral Hygiene and Miswak Use among Medical Students of Pakistan. Journal of Rehman College of Dentistry. 2022;3(2).
27. Reddy V, Bennadi D, Gaduputi S, Kshetrimayum N, Siluvai S, Reddy CV. Oral health related knowledge, attitude, and practice among the pre-university students of Mysore city. Journal of International Society of Preventive and Community Dentistry. 2014;4(3):154-158. Doi:10.4103/2231-0762.142012
28. Ullah N. Medicinal plants of Pakistan: challenges and opportunities. International Journal of Complementary & Alternative Medicine. 2017;6(4):00193. Doi:10.15406/ijcam.2017.06.00193.
29. Jahangiry L, Bagheri R, Darabi F, Sarbakhsh P, Sistani MM, Ponnet K. Oral health status and associated lifestyle behaviors in a sample of Iranian adults: an exploratory household survey. BMC Oral Health. 2020;20:1-9. Doi:10.1186/s12903-020-01072-z.

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Authors' Contribution:

Farah Qaisar: Substantial contributions to the conception and design of the work.
Aneela Qaisar : The acquisition of data for the work.
Ayesha Irfan: Analysis and interpretation of data for the work.
Sanam Ayesha: Drafting the work.
Mahnoor Asif: Reviewing it critically for important intellectual content.
Afshan Hussain: Final approval of the version to be published.