International Journal of Enhanced Research in Medicines & Dental Care (IJERMDC),
ISSN: 2349-1590, Vol. 13 Issue 1, January 2026

Exploring the Link between Dental Health and Nutritional Habits among Young Adults in Maharashtra

Shruti Satav[1], Dr. Asmita Hamand[2]

[1]Undergraduate Intern, Department Of Public Health Dentistry, School Of Dental Sciences, Krishna Vishwa Vidyapeeth (Deemed to be University), Karad, Maharashtra, India
[2]Assistant Professor, Department Of Public Health Dentistry, School Of Dental Sciences, Krishna Vishwa Vidyapeeth (Deemed to be University), Karad, Maharashtra, India

ABSTRACT

Aim: Exploring The Link Between Dental Health And Nutritional Habits Among Young Adults In Maharashtra.

Introduction: Dental health and nutrition go hand in hand, with what we eat playing a key role in either protecting our teeth or contributing to oral problems. For young adults, changing lifestyles and dietary habits can greatly affect their dental hygiene and overall oral health. This study explores the relationship between the eating habits of young adults in Maharashtra and their dental health, aiming to identify common dietary patterns and promote awareness and preventive care strategies.

Objectives: The primary objectives include: To assess the dietary habits of young adults in Maharashtra, To analyze the prevalence of common oral health issues (e.g., cavities, gum disease) among young adults and their correlation with nutritional habits, To propose recommendations for better oral health through improved dietary choices and awareness programs.

Materials and Methods:
To gather insights on oral hygiene habits, a 20-question survey was created and shared online using Google Forms. The survey targeted individuals aged 15 and above, with participants randomly selected to ensure a diverse mix of backgrounds. The questions covered key areas like daily water intake, types of food consumed, sugar intake, snacking frequency, and any existing habits that might affect dental health. It also inquired about the presence of cavities or gum issues, along with general oral hygiene practices. All responses were gathered digitally, ensuring the process was straightforward, accessible, and efficient.

Result: The survey, conducted via Google Forms, revealed notable differences in oral hygiene practices and dietary choices among various age groups.. Participants showed a range of patterns when it came to their diets—everything from the types of foods they ate to how often they snacked, drank acidic beverages, or consumed water. Other key differences included brushing frequency, existing habits like smoking or chewing, and how much fibrous food people included in their meals. These findings point to a clear connection between age, diet, and dental health routines.

Conclusion: In conclusion, this study demonstrates that the dietary choices of young adults have a significant impact on their dental health. Habits like frequent snacking and drinking acidic beverages were linked to more dental issues, while healthier diets and regular brushing made a positive difference. Raising awareness and encouraging better everyday choices can go a long way in helping young people maintain stronger, healthier smiles.

INTRODUCTION

Oral health is closely intertwined with overall health and is significantly influenced by dietary habits and nutritional status[1]. A well-balanced diet contributes not only to general health but also plays a preventive role in common oral conditions such as dental caries, periodontal disease, and enamel demineralization[2]. Nutritional deficiencies—particularly in essential vitamins and minerals—have been shown to result in oral manifestations like gum bleeding, tooth sensitivity, and delayed oral tissue healing[11].

Frequent consumption of sugary and acidic foods and beverages has been linked to an increased risk of dental problems by promoting an acidic oral environment that facilitates demineralization[4]. Additionally, lifestyle behaviors such as smoking, alcohol use, and poor oral hygiene further worsen oral health outcomes[13],[19].

Despite increased public health awareness and improved access to information, oral diseases remain highly prevalent. These issues are often the result of modifiable behaviors, including unhealthy nutrition, suboptimal oral hygiene practices, and infrequent visits to the dentist[16].. Recognizing the impact of these factors is essential to designing effective interventions aimed at improving oral health. Therefore, this study seeks to evaluate the dietary habits, oral hygiene practices, and prevalence of oral health issues within a representative population, and compare the outcomes with findings from existing literature.

MATERIALS AND METHODS

Study Design and Study Population:
This research was performed as a web-based cross-sectional survey aimed at exploring the relationship between dental health and nutritional habits among young adults in Maharashtra, India. Data was collected through an online questionnaire shared across multiple digital platforms. The study focused on young adults aged 15 and above residing in Maharashtra. Participants were selected using non-probability convenience sampling, with efforts made to include a diverse range of individuals from various cities and socio-economic backgrounds across Maharashtra.

Questionnaire:
A survey comprising 20 questions was created and distributed via Google Forms to gather information regarding oral hygiene habits. The use of Google Forms for administering the survey enabled effective and uniform data collection. Participants aged 15 and older were randomly selected, ensuring a varied representation. The survey concentrated on factors such as water consumption, dietary choices, sugar intake, snacking frequency, existing habits, dental caries and gum diseases, oral hygiene routines, and tooth sensitivity. The data collection process was tracked through responses submitted online.

Statistical analysis:
The data obtained from the Google Forms responses was carefully analyzed using statistical techniques. Simple statistics, like counts and percentages, were used to describe the basic features of the group and important factors such as gender, how often people brush their teeth, their intake of sweet foods, and the presence of dental issues like cavities and bleeding gums.

RESULTS

This study collected data on participants' dietary habits, oral hygiene routines, and overall lifestyle to explore potential links with oral health. The findings are summarized across several key areas:

According to Table 1, among the participants, 48.17% identified as vegetarians, while 51.83% were non-vegetarians. Tea come out as the most frequently consumed beverage (48.6%), followed by coffee (26.6%), milk (19.3%), and other beverages (5.5%). Harmful habits were reported by a notable proportion of the population: 22% were smokers, 20.6% used tobacco products, and 22% consumed alcohol.

Common dental health complaints included tooth sensitivity (55.5%) and bleeding gums (39.9%). Oral hygiene practices varied, with 56.4% using mouthwash or dental floss and 41.7% visiting the dentist regularly. Furthermore, 64.7% of respondents were aware of foods that help prevent dental problems. Regarding the frequency of tea, coffee, or beverage intake, 61.5% consumed them 1–2 times daily, 28.4% consumed them 2–3 times, and 10.1% consumed them more than three times per day. The majority of participants (62.4%) consumed 2 tablespoons of sugar daily, while 10.1% reported consuming 4–5 tablespoons. Most individuals (61.5%) had tea, coffee, or other beverages 1–2 times per day, with 10.1% consuming them more than three times daily.

According to Table 2, over half of the participants (56%) reported always drinking water after meals or snacks. Additionally, 28.4% did so occasionally, 11.5% rarely, and 4.1% never drank water following meals. According to Table 3, 50% of participants reported snacking once per day. Meanwhile, 25.2% snacked twice daily, 18.3% three times, and 6.4% snacked multiple times throughout the day.

According to Table 4, Sugary snacks and beverages were consumed "sometimes" by 34.4% of the participants and "rarely" by 28%. Daily consumption was reported by 13.3%, while 10.6% consumed them often. Only 13.8% reported never consuming sugary items. According to Table 5, among individuals with habits such as smoking, tobacco use, or alcohol consumption, 62.4% engaged in these behaviors fewer than five times per day. Meanwhile, 24.2% reported frequencies under ten times, and 13.4% engaged in them fewer than fifteen times daily.

According to Table 6, Most respondents followed a regular meal schedule, with 43.1% eating two meals per day and 34.9% having three meals daily. A smaller percentage reported consuming only one meal (14.2%), while 7.8% ate more than three meals per day. According to Table 7, Daily consumption of fibrous foods was reported by 48.6% of participants, while 32.1% consumed them occasionally. In contrast, 14.7% consumed them rarely, and 4.6% did not include them in their diet at all.

As shown in Table 8, Acidic food and drink intake was occasional for 56% of respondents, while 13.3% reported frequent consumption. Conversely, 30.7% indicated that they never consumed acidic items. According to Table 9, when it comes to oral hygiene, 47.7% of participants brushed their teeth once per day, while 34.9% brushed twice daily. A smaller proportion (17%) brushed more than twice daily, and only 0.5% did not brush regularly. According to Table 10, Dental decay was reported by more than half of the participants. Specifically, 45.4% had between 1 to 5 decayed teeth, 7.3% had 6 to 10, and 4.5% had more than 10 decayed teeth. Meanwhile, 43.5% reported no dental caries.

Table 1: survey analysis

Title	Grand total	percentage
Vegetarian	105	48.17%
Non vegetarian	113	51.83%
Milk	42	19.3%
Coffee	58	26.6%
Tea	106	48.6%
Other beverages	12	5.5%
Smoking	48	22.0 %
Tobacco chewer	45	20.6%
Alcohol	48	22.0%
Bleeding gums	87	39.9%
Teeth sensitivity	121	55.5%
Mouthwash/ floss	123	56.4%
Visit dentist regularly	91	41.7%
Aware of food which prevent dental problems	141	64.7%
Tea /coffee/ beverages		
1-2 times a day	134	61.5%
2-3 times a day	62	28.4%
Above 3 times a day	22	10.1%

Table 2: water intake after consuming meals/snacks

	Grand total	percentage
Always	122	56%
sometimes	62	28.4%
Rarely	25	11.5%
Never	9	4.1%

Table 3: frequency of snacking

Frequency	Grand total	percentage
Once a day	109	50%
Twice a day	55	25.2%
Thrice a day	40	18.3%
Multiple times a day	14	6.4%

Table 4: Frequency of consuming sugary snacks or beverages

frequency	Grand total	percentage
Never	30	13.8%
Rarely	61	28%
Sometimes	75	34.4%
Often	23	10.6%
daily	29	13.3%

Table 5: frequency of consumption (if having any habit)

Frequency	Grand total	percentage
Less than 5 per day	98	62.4%
Less than 10 per day	38	24.2%
Less than 15 per day	21	13.4%

Table 6: Number of meals per day

No. of meals per day	Grand total	percentage
Once a day	31	14.2%
Twice a day	94	43.1%
Thrice a day	76	34.9%
More than thrice a day	17	7.8%

Table 7: Frequency of fibrous foods in diet

Frequency	Grand total	percentage
Daily	106	48.6%
Occasionally	70	32.1%
rarely	32	14.7%
Never	10	4.6%

Table 8: Frequency of acidic foods or drinks

frequency	Grand total	percentage
Never	67	30.7%
Occasionally	122	56%
frequently	29	13.3%

Table 9: Frequency of brushing teeth daily

Frequency	Grand total	percentage
Once	104	47.7%
Twice	76	34.9%
More than twice	37	17%
Not daily	1	0.5%

Table 10: no of decayed teeth

No of decayed teeth	Grand total	percentage
O	95	43.5%
1-5	99	45.4%
6-10	16	7.3%
More than 10	8	4.5%

DISCUSSION

The results of this study are consistent with trends observed in previous research on diet and oral health. A significant portion of the participants reported frequent consumption of tea and coffee, which supports findings by Khan et al.[4], who emphasized the adverse effects of caffeinated and sugar-laden beverages on dental health among athletes and active individuals. Although 64.7% of respondents were aware of dietary practices that help prevent dental problems, only 41.7% reported visiting the dentist regularly. This discrepancy between knowledge and practice has also been highlighted in studies by Jang et al.[15] and Luo et al.[16], suggesting that awareness alone does not necessarily translate into consistent oral health behaviors.

Tooth sensitivity and dental decay were highly prevalent in this population, aligning with previous evidence linking frequent snacking and high-sugar diets with increased risk of caries and enamel wear[10],[11]. Moreover, over 69% of participants consumed acidic foods and drinks at least occasionally, which has been shown to contribute significantly to enamel erosion, as reported by Isola[2] and Kerstens et al.[6] in their reviews on dietary acid exposure and its effect on oral and gut microbiota. Only 34.9% of respondents brushed their teeth twice a day, consistent with worldwide patterns

reported by Madera et al.[12] and Aida[14], who highlight a reduction in oral hygiene practices associated with shifts in diet and urban living..

Regarding harmful behaviors, 22% of participants admitted to smoking, with a similar percentage reporting alcohol use. These findings are consistent with data presented by Yadav et al.[13], who examined the relationship between dental care interventions and smoking cessation. The persistence of these habits points to the need for integrated oral health promotion and behavioral counseling within dental practices. While fibrous foods play a known protective role in maintaining periodontal health and limiting plaque buildup[9], only 48.6% of participants in this study reported consuming them daily. This is concerning given the established benefits of fiber for both oral and gut health, as emphasized in the literature on the oral-gut-brain connection[6].

Overall, the current findings reaffirm conclusions drawn in recent scientific reviews and clinical guidelines[1–3,5,7], advocating for a comprehensive approach that combines nutritional guidance, behavioral interventions, and preventive dental care to effectively reduce the burden of oral diseases.

CONCLUSION

This study brings to light a clear connection between what young adults eat and the state of their dental health in Maharashtra. It shows that everyday choices—like how often they snack, drink acidic beverages, eat fibrous foods, or stay hydrated—play a big role in maintaining healthy teeth and gums. Brushing habits and overall awareness about oral care also varied, often influenced by lifestyle, cultural background, and access to reliable information.

Although many participants had a general understanding of good oral hygiene, their actual habits didn't always reflect that knowledge. Irregular brushing, poor dietary patterns, and lack of awareness could lead to long-term dental problems if not addressed. These findings point to a real need for more public health efforts to educate young adults on how closely diet and dental health are linked.

By encouraging healthier habits early on—like eating a balanced diet, staying hydrated, brushing regularly, and visiting the dentist—there's a strong chance we can help this generation enjoy better oral health and overall well-being in the years to come.

Source of funding: None
Conflict of interest: None

REFERENCES

[1]. Nutrition and oral health. Gondivkar SM, Gadbail AR, Gondivkar RS, Sarode SC, Sarode GS, Patil S, Awan KH.Dis Mon. 2019 Jun;65(6):147-154. doi: 10.1016/j.disamonth.2018.09.009. Epub 2018 Oct 4.
[2]. The Impact of Diet, Nutrition and Nutraceuticals on Oral and Periodontal Health. Isola G.Nutrients. 2020 Sep 6;12(9):2724. doi: 10.3390/nu12092724.
[3]. ESPEN practical guideline: Clinical nutrition and hydration in geriatrics.mVolkert D, Beck AM, Cederholm T, Cruz-Jentoft A, Hooper L, Kiesswetter E, Maggio M, Raynaud-Simon A, Sieber C, Sobotka L, van Asselt D, Wirth R, Bischoff SC. Clin Nutr. 2022 Apr;41(4):958-989. doi: 10.1016/j.clnu.2022.01.024. Epub 2022 Mar 5
[4]. Sports and Energy Drink Consumption, Oral Health Problems and Performance Impact among Elite Athletes. Khan K, Qadir A, Trakman G, Aziz T, Khattak MI, Nabi G, Alharbi M, Alshammari A, Shahzad M.Nutrients. 2022 Nov 30;14(23):5089. doi: 10.3390/nu14235089.
[5]. Fluoride and caries prevention: a scoping review of public health policies. Veneri F, Vinceti SR, Filippini T. Ann Ig. 2024 May-Jun;36(3):270-280. doi: 10.7416/ai.2024.2593. Epub 2024 Jan 17.
[6]. Balancing the Oral-Gut-Brain Axis with Diet. Kerstens R, Ng YZ, Pettersson S, Jayaraman A. Nutrients. 2024 Sep 22;16(18):3206. doi: 10.3390/nu16183206.
[7]. The association of periodontal disease and oral health with hypertension, NHANES 2009-2018. Li Y, Yuan X, Zheng Q, Mo F, Zhu S, Shen T, Yang W, Chen Q. BMC Public Health. 2023 Jun 12;23(1):1122. doi: 10.1186/s12889-023-16012-z.
[8]. 8.Nutrition and oral health in sport: time for action. Needleman I, Ashley P, Fairbrother T, Fine P, Gallagher J, Kings D, Maughan RJ, Melin AK, Naylor M. Br J Sports Med. 2018 Dec;52(23):1483-1484. doi: 10.1136/bjsports-2017-098919. Epub 2018 May 31
[9]. Nutrition Education and Practice in University Dental and Oral Health Programmes and Curricula: A Scoping Review. Kataoka M, Adam LA, Ball LE, Crowley J, McLean RM. Eur J Dent Educ. 2025 Feb;29(1):64-83. doi: 10.1111/eje.13045. Epub 2024 Oct 29
[10]. The Role of Nutrition in Periodontal Health: An Update.Najeeb S, Zafar MS, Khurshid Z, Zohaib S, Almas K. Nutrients. 2016 Aug 30;8(9):530. doi: 10.3390/nu8090530.
[11]. Chapter 12: Nutrient Deficiencies and Oral Health. Rahman N, Walls A. Monogr Oral Sci. 2020;28:114-124. doi: 10.1159/000455379. Epub 2019 Nov 7

[12]. Demographic, Epidemiologic and Nutrition Transitions in Colombia: Implications for Oral Diseases and Dental Services. Madera M, Choong EK, Amador LT. J Health Care Poor Underserved. 2022;33(3):1688-1699. doi: 10.1353/hpu.2022.0094.
[13]. Smoking-cessation advice from dental care professionals and its association with smoking status: Analysis of National Health and Nutrition Examination Survey 2015-2018. Yadav S, Lee M, Hong YR. J Am Dent Assoc. 2022 Jan;153(1):15-22. doi: 10.1016/j.adaj.2021.07.009. Epub 2021 Oct 28.
[14]. Oral Health and Nutrition: Epidemiology, Clinical, and Social Aspects. Aida J. J Nutr Sci Vitaminol (Tokyo). 2022;68(Supplement):S26-S27. doi: 10.3177/jnsv.68.S26.
[15]. Associations between Dental Checkups and Unmet Dental Care Needs: An Examination of Cross-Sectional Data from the Seventh Korea National Health and Nutrition Examination Survey (2016-2018). Jang JH, Kim JL, Kim JH. Int J Environ Res Public Health. 2021 Apr 3;18(7):3750. doi: 10.3390/ijerph18073750.
[16]. Association between acculturation, dental floss use, dental visits and unmet dental needs among Asians in the United States: Findings from National Health and Nutrition Examination Survey (NHANES) 2011-2018. Luo T, Beiter K, Tseng TS. Community Dent Oral Epidemiol. 2024 Feb;52(1):101-110. doi: 10.1111/cdoe.12906. Epub 2023 Aug 30.
[17]. Quality of life related to oral health and its impact in adults. Spanemberg JC, Cardoso JA, Slob EMGB, López-López J. J Stomatol Oral Maxillofac Surg. 2019 Jun;120(3):234-239. doi: 10.1016/j.jormas.2019.02.004. Epub 2019 Feb 11.
[18]. A comparison of oral health, nutrition, and swallowing function in older adults with and without sarcopenia: A cross-sectional study. Yücel M, Ünlüer NÖ, Sari YA. Nutr Clin Pract. 2025 Jun;40(3):596-604. doi: 10.1002/ncp.11283. Epub 2025 Mar 4.
[19]. Oral Health in the Population Assessment of Tobacco and Health Study. Chaffee BW, Lauten K, Sharma E, Everard CD, Duffy K, Park-Lee E, Taylor E, Tolliver E, Watkins-Bryant T, Iafolla T, Compton WM, Kimmel HL, Hyland A, Silveira ML.