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INDIVIDUAL ORAL HYGIENE HABITS OF SNACKERS

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Abstract. Oral health is an integral part of overall health, encompassing not only the absence of disease but also the ability to eat, speak, and interact comfortably. Frequent snacking, especially on sugary or starchy foods, increases the risk of oral diseases. The aim - to identify individual oral hygiene habits among frequent snackers and their relationship with self-assessed oral health. Methods: A quantitative cross-sectional survey was conducted at the public institution **X Primary Health Care Centre** (Lithuania) from March 21st to April 23rd, 2025. The study involved 100 adults (83% women, 17% men; aged 18–86). Data collected via **Manoapklausa.lt** was processed and analysed using descriptive statistics in Microsoft Excel. Results. Seventy-five % of respondents snacked 2–3 times daily; 78% brushed at least twice a day, 75% rinsed with water, and 68% flossed after snacking. Advanced measures such as oral irrigators or xylitol lozenges were rarely used (13–14%). Snacking was mainly influenced by eating with others (45%), availability (37%), and habit (34%). Participants with higher self-assessed oral health demonstrated more varied and consistent hygiene routines. Conclusions. Social context strongly influences snacking behaviour. Promoting simple, convenient post-snack hygiene routines could help bridge the gap between knowledge and practice, improving oral health among frequent snackers.

Keywords: oral care, healthy eating, food, dental caries, diet and oral health

INTRODUCTION

Overall health is integral to oral health and implies not only the absence of disease but also indicates general well-being where a person can perform functions such as eating, talking and smiling, contributing creatively to society (Baiju et al., 2019; Paulson et al., 2025). Research in recent decades has shown that children and adults tend to choose snacks based on taste over diet, preferring unhealthy snacks over healthier alternatives (Almoraie et al., 2021). According to statistics, the rates of eating and snacking vary between countries, in Saudi Arabia for example, pregnant women consume about 90% of fish, meat and vegetables, but 80% also consume sweets and fast food. In the United States (US), children's snacks make up a third of their daily energy intake, 95% of children under 12 months commonly consume one or more snacks a day, and of children aged 2 to 5 years 26 to 27%, of their energy intake comes from snacks and nutrients provided are seen as deficient. For US adults – 20% of daily energy coming from snacks, (Almoraie et al., 2021). Studies show that snacking has an inseparable relationship with oral health (American Dental Association; Selvaraj et al., 2025) It influences occurrence of oral diseases, in the long run affecting quality of life. Frequent snackers have a higher risk of oral diseases as food and bacteria remain in the mouth for a longer. Therefore, it is very important to pay attention to oral hygiene routine, rinse the mouth with water, use individual oral hygiene products between snacks, preventing oral diseases, thereby maintaining a healthy and beautiful smile. Latest data also underlines a need to integrate the management of snacking habits into overall health systems, not only promoting personal care but also implementing public programs to help reduce the prevalence of oral diseases, especially among children and socially vulnerable groups (WHO, 2022).

Aim of the work: To reveal the individual oral hygiene habits of snackers.

The tasks of the research:

1. Identify the factors that determine snacking.
2. To characterise oral hygiene habits, post snacking.
3. Identify the snacking choices of respondents who rate their oral health well.

Research method: A questionnaire led survey was conducted in the public institution "*X* Primary Health Care Centre" from 21st March to 23rd April 2025. Adult patients and employees of the institution were interviewed. The survey sample consisted of 100 respondents who voluntarily agreed to participate. A quantitative analysis was performed, 83% of respondents were women, 17% were men. The age of the participants ranged from 18 to 86 years, and the average age was 46 years. The sample was random without the use of pre-selection criteria. The data collected during the study was processed in Manoapklausa.lt program and systematized by transferring to Microsoft Excel. Answers were expressed as percentages, tables were compiled, and graphical charts created. The results of some questions were also cross analysed to better determine links between oral health knowledge and practical hygiene actions.

ANALYSIS OF RESEARCH RESULTS

The majority (93%) of respondents were residents of Utena county. The age of the respondents ranged from 18 to 86 years. The largest number of respondents (51%) were aged 41-60 years. Most respondents had higher education (Table 1).

Table 1

Demographic overview of respondents

Category	Percentage (%)
Gender	83% women, 17% men
Residence	93% Utena county 6% Vilnius 1% Panevėžys county
Age groups	<25 years: 7%, 26-40 years: 24%, 41-60 years: 51%, 61+ years: 18%
Education	Higher (College) Education: 32%, Master's Degree: 25%, Bachelor's Degree: 20%, Secondary/Incomplete Higher Education: 11%, Professional Qualification/Other: 11%, Higher than Master's Degree: 1%

It was observed that 78% of respondents brush their teeth twice a day, 55% visit an oral hygienist and 46% visit a dentist regularly. Although most respondents were women, analysing the data separately, it could be deduced that women tend to prefer individual and preventive oral care. It was also observed that as many as 75% of respondents snack 2-3 times a day and almost half (47%) would be willing to change their snacking habits if healthier snack options were convenient and readily available. (Table 2).

Table 2

Oral hygiene and snacking habits

Category	Distribution of respondents
Brushing your teeth at least twice a day	78%
Used mouthwash	40%
Visited an oral hygienist	55%
Visited the dentist	46%
Snacks 2-3 times a day	75%
Regularly eats sweet snacks	26%
If it were convenient, they would change their habits	47%

32% of respondents indicated that they not only knew how to neutralize acids, but also actively applied this knowledge in their daily habits. Another 26% said they had knowledge but admitted that they did not practice good oral hygiene. Meanwhile, 29%. stated that they do not know how to neutralize acids at all. These findings highlight the significant gap between knowledge and behaviour, emphasizing the importance of implementing and executing further education programs to better help individuals improve and protect toral health.

Therefore, it can be concluded that people have a high general understanding of the risks of frequent snacking and of consuming sweet or sour foods. However, despite understanding of the factors that influence oral health, such as the acidifying effects of starchy foods, the role of oral pH, and the neutralization of acid, oral hygiene in practice still needs to be improved. There was also a clear gap between awareness and behaviour. While the results are encouraging, they also highlight areas that need targeted improvement.

The most popular type of snack among respondents was fruits and vegetables (55%), but most people in this group rated their oral health only as moderate. This suggests that healthy snacking alone does not automatically correlate with the highest self-assessed oral health outcomes in this sample. Interestingly, those who chose sugary foods (49%) reported a higher high oral health rating, despite the risks associated with the consumption of sugary snacks. Respondents who chose nuts and seeds (36%) presented a balanced distribution between medium and high oral health, suggesting limited understanding of the impact snacking. Respondents who chose fast food (21%) and starchy snacks (13%) reported the highest ratings. (Table 3).

Table 3

The relationship between the most commonly chosen snacks and oral health assessment

Type of snack	Distribution of respondents	High Ratings (8–10)	Average ratings (5-7)	Low ratings (1-4)
Fruits and vegetables	55 %	42%	54%	4%
Sugary foods	49%	53%	41%	6%
Nuts and seeds	36%	47%	50%	3%
Fast food and snacks	21%	62%	38%	-
Starchy and carbohydrate-rich foods	13%	62%	38%	-
Sugary drinks	11%	64%	36%	-

Clearly responses returned showed oral health self-assessments cannot be overly relied upon. Although the consumption of high carbohydrates and fast food is bad for oral health, in this study, respondents often rated themselves as good, which reflects a subjective perception rather than an objective condition. Due to the possibility of choosing several types of snacks, the results only show general associations, and the overlap of snack choices does not allow them to be attributed to a specific effect.

The data revealed a strong desire among respondents to improve their oral hygiene habits if they were made better aware of the relationship between snacking and oral health. 37% of participants indicated that they would change their habits, and another 47% said that they could change if it was convenient and simple, only 16 % of respondents said that they would not consider the possibility of change. A study conducted by Situmorang et al. (2024) offers a related view and found fast, starchy and carbohydrate-rich foods are most often chosen as snacks, because they are most easily accessible emphasising the importance of convenience. These findings show that 84% of all participants are open to behavioural change, which offers a significant opportunity for improving public health.

When analysing the factors influencing snacking, eating with others was most often mentioned, by 45% of respondents. This was followed by the availability of snacks (37%) and habit (34%). These three factors together highlighted the significant influence of social and environmental conditions on snacking behaviour. Internal factors were less significant: hunger was indicated by 20%, stress by 18%, and boredom by 16% of respondents. Factors such as hormonal imbalance (7%), sports activity (3%) and medication use (1%) were relatively small.

Maintaining oral health alone appears insufficient in motivating good oral hygiene and snacking behaviours, effective interventions need to consider more comprehensive social context. These results lead to a reasonable conclusion that oral hygiene habits are adaptable, especially when people understand the relationship between snacking and oral health. While the desire to change is common, convenience remains the main obstacle, improvement measures should focus on ensuring that changes are easy and smooth to implement. Snacking is largely driven by social and environmental factors rather than hunger, suggesting that effective oral health strategies should include not only education and targeted habits, but also accessibility and social context. Practical solutions are needed to bridge the gap between awareness and action. (Figure 1).

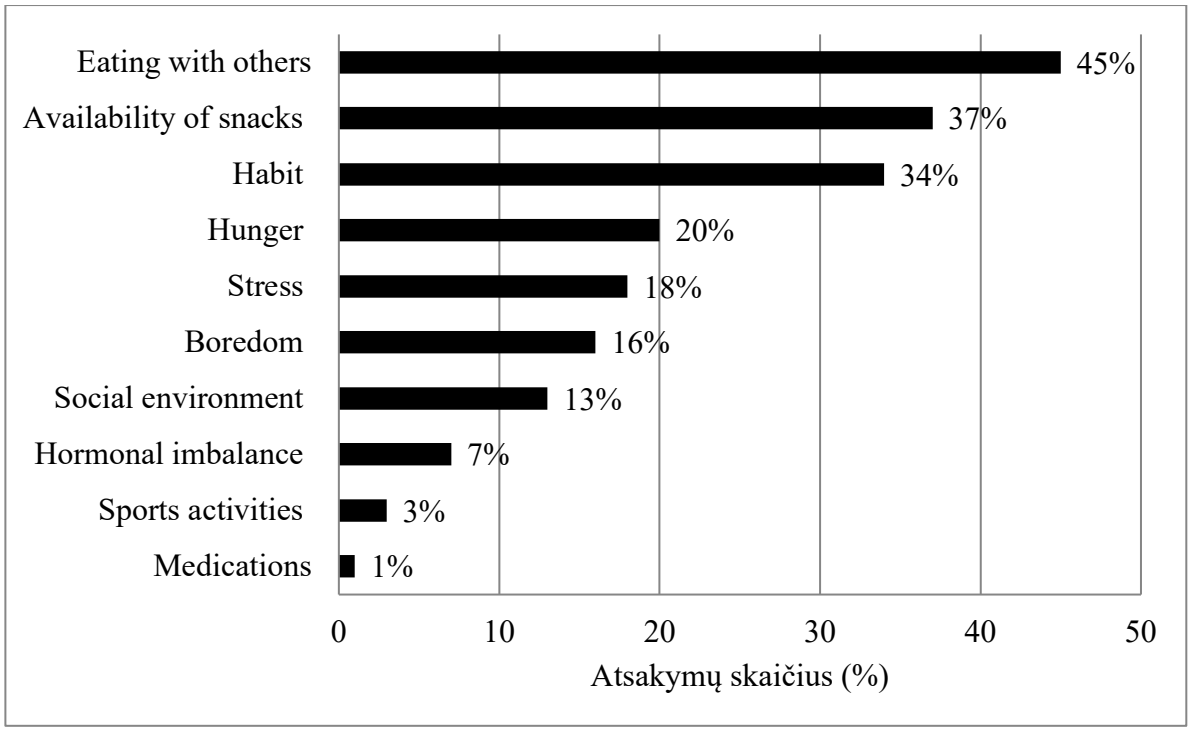

Figure 1. **Factors that determine snacking**

People's hygiene habits after snacking show significant differences. habits, such as rinsing with water or flossing, are more commonly practiced, while others, such as using a dental irrigator or cleaning with an electric toothbrush, indicate reduced use. These observations highlight the importance of raising awareness and promoting consistent oral hygiene habits after a snack, with a strong focus on strengthening both daily and advanced oral care routines.

One of the most important links in this study was to find out the habits of individual oral hygiene after a snack. An analysis of hygiene behaviour after snacking revealed that some habits are more consistent than others. Rinsing the mouth with water was the most common habit, reported by 75% (17% always, 58% sometimes). Flossing is used by 68% of respondents (18% always, 50% sometimes). Brushing teeth with fluoride-containing toothpaste was reported by 53% of respondents (7% always, 46% sometimes). The use of advanced tools such as water floss, xylitol lozenges and electric toothbrushes was very low: only 13-14 % of respondents said they did, and more than 80% indicated that they had never used them. (Table 4).

Table 4

Frequency of use of individual oral hygiene products after a snack

Action after a snack	Always	Sometimes	Never
Rinses mouth with water	17%	58%	25%
Uses interdental floss	18%	50%	32%
Chew chewing gum	5%	49%	46%
Brush with fluoride toothpaste	7%	46%	47%
Rinses mouth with mouthwash	4%	36%	60%
Cleans with an interdental brush	6%	29%	65%
Uses a single-tuft toothbrush	3%	22%	75%
Uses a water floss	3%	11%	86%
Uses xylitol lozenges	3%	11%	86%
Brushes teeth with an electric toothbrush	2%	11%	87%

The relationship between oral hygiene behaviour after a snack and respondents self-assessed oral health rating was further examined. The ratings were divided into high (8-10), medium (5-7) and low (1-4). The goal was to identify which habits were most associated with better oral health outcomes. Participants reported specific actions performed after a snack, such as rinsing with water, brushing teeth, and flossing. Respondents with high scores followed more diverse and consistent oral hygiene habits than respondents with an average self-assessment: they used dental floss (71% vs. 67%), chewing gum (56% vs. 53%), xylitol lozenges (23% vs. 4%) and water floss (19% vs. 9%) more often, indicating a broader and more preventive approach to oral care.

Interestingly, on average, self-assessed respondents surpass those who rated themselves with high scores in some habits: they rinsed their mouths with water (80% versus 69%) and brushed their teeth with fluoride-containing toothpaste (62% versus 46%). This shows that although both groups follow basic individual oral hygiene habits, those who score higher on their oral health are more likely to supplement their daily routine with additional individual oral hygiene products. Respondents who assessed themselves with low scores showed limited use of individual oral hygiene products, rinsing their mouths with water, but due to the small size of the group, the results should be evaluated with caution. The data supports a link between more varied and better hygiene habits and higher oral health scores (Table 5).

Table 5

Oral health assessment and post-snack actions

Action after a snack	Distribution of respondents		
	High rating (8-10)	Average rating (5-7)	Low rating (1-4)
Rinses mouth with water	69%	80%	100%
Uses interdental floss	71%	67%	33%
Chews chewing gum	56%	53%	33%
Brushes teeth with fluoride toothpaste	46%	62%	33%
Rinses mouth with mouthwash	37%	44%	33%
Using an interdental brush	38%	33%	-
Uses a single-tuft toothbrush	29%	22%	-
Uses an water floss	19%	9%	-
Uses xylitol lozenges	23%	4%	-
Uses an electric toothbrush	13%	13%	-

In summary, the results of the study highlight a clear relationship between strong, consistent individual oral hygiene behaviours and higher self-assessed oral health scores. Those with the highest self-score consistently combined several factors, while those with average self-score showed partial habits, while respondents with low self-score showed minimal involvement in fostering individual oral health. These observations reveal the need for targeted interventions to encourage regular oral hygiene procedures, especially among those at higher risk of oral health.

CONCLUSIONS

Snacking in this cohort is driven mainly by context, social situations, availability, and habit rather than hunger. Post-snack oral hygiene is typically limited to low-effort actions such as rinsing with water, with fewer respondents

consistently using more protective measures beyond that. Notably, many participants who rate their oral health as "good" still choose sugary or starchy snacks, indicating that self-assessment is a weak indicator of actual behavioural risk and reinforcing the need for practical, low-friction routines that fit real-world social settings.

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