International Journal of Scientific Research and Modern Technology (IJSRMT) ijsrmt.com
Volume 5, Issue 1, 2026
DOI: https://doi.org/10.38124/ijsrmt.v5i1.1171

Obesity in Dental Practice: Perceptions and Knowledge of Dental Students in Tunisia

Hana Moalla[1]; Rim Kallala[2]; Soumaya Touzi[3]; Ahlem Baaziz[4]

[1]University of Monastir, Faculty of Dental Medicine, Research Laboratory Biological and Clinical Dento-Facial Approach, LR12ES10, Faculty of Dental Medicine, University of Monastir, 5000, Monastir, Tunisia
[2]University of Monastir, Faculty of Dental Medicine, Research Laboratory Occlusondontics and Ceramic Prostheses, LR16ES15, Faculty of Dental Medicine, University of Monastir, 5000, Monastir, Tunisia
[3]University of Monastir, Faculty of Dental Medicine, Research Laboratory Occlusondontics and Ceramic Prostheses, LR16ES15, Faculty of Dental Medicine, University of Monastir, 5000, Monastir, Tunisia
[4]University of Monastir, Faculty of Dental Medicine of Monastir, Department of Pediatric and Preventive Dentistry, Laboratory of Biological and Clinical Dento-Facial Approach LR12ES10 ,5000, Monastir, Tunisia.

Publication Date: 2026/01/23

Abstract

➢ *Background:*
Obesity and overweight are significant global health concerns, affecting both children and adults, with rising prevalence rates worldwide. In Tunisia, the situation mirrors global trends, with increasing obesity rates linked to urbanization and shifts toward high-calorie, low-nutrient diets. Dentists play a fundamental role in addressing this issue and the prevention of this problem. This study aimed to provide insights into the perspectives and understanding of dental students in their academic training.

➢ *Methods:*
This cross-sectional study, conducted from May 2022 to April 2023 at the Faculty of Dental Medicine in Monastir, Tunisia, investigated undergraduate dental students' education, opinions, beliefs, and knowledge. A questionnaire, divided into four sections—general characteristics, education, opinions, and knowledge—was randomly distributed. Data were analyzed using SPSS software. The chi-square test was applied to compare percentages at a significance level of 0.05.

➢ *Results:*
Most dental students reported moderate knowledge of obesity but recognized its high prevalence in Tunisia and supported dentists' involvement in prevention. BMI was the preferred identification tool, and females spent more time studying obesity-related topics than males. Besides, the comparison between clinical and preclinical students was almost statistically significant.

➢ *Conclusion:*
This study represents an initial exploration of obesity and overweight within the Tunisian population, revealing a self-reported low level of obesity education among dental students, regardless of gender or clinical experience. It emphasizes the dentist's dual role in identifying obese patients and acting as a crucial link for prevention with other medical specialties.

I. INTRODUCTION

Obesity is a major health issue that affects millions of adults and children worldwide. It is defined as having a body mass index (BMI) of 30 or higher. BMI is calculated by dividing a person's weight in kilograms by their height in meters squared. Its development is influenced by a

Moalla, H., Kallala, R., Touzi, S., & Baaziz, A. (2026). Obesity in Dental Practice: Perceptions and Knowledge of Dental Students in Tunisia. *International Journal of Scientific Research and Modern Technology*, *5*(1), 79–85. https://doi.org/10.38124/ijsrmt.v5i1.1171

multitude of factors, spanning genetics, individual lifestyle, and the surrounding environment (1,2).

The World Obesity Federation estimates that by 2020, around 770 million adults globally were affected by obesity, and according to the World Health Organization (WHO), the number of overweight and obese children under the age of five is estimated to be over 42 million worldwide. In Tunisia, recent statistics published by the Global Nutrition Report showed that 37.5% of adult (aged 18 years and over) women and 22.1% of adult men are living with obesity. The prevalence of overweight children under 5 years of age is 17.2% (2,3).

For Dental professionals, treating obese patients seems to be a hard task.

Dental treatment for obese patients requires considering numerous factors, including medical history and comorbidities, which are increasingly prevalent in children. Consequently, the challenge seems to be higher with children. Future dentists need comprehensive knowledge of these challenges, starting with their academic foundation, to provide effective care.

This study aimed to assess beliefs, knowledge and attitudes of dental students towards overweight and obesity among children and adults in Tunisia.

II. MATERIALS AND METHODS

It was a cross-sectional study performed from May to April 2023. This study received ethical approval from the Ethics Committee of the Faculty of Dental Medicine, Monastir, Tunisia. All participants provided informed consent after receiving a clear explanation of the study protocol. The study included undergraduate dental students of the faculty of dental medicine of Monastir in Tunisia. Graduated dental residents are excluded. Foreign students were not included.

This study adapts questionnaires from Wyne et al.'s and Magliocca KR et al.'s studies. (4,5)

The questionnaire was presented in both English and French. It was divided into four main parts as follows:

- General characteristics such as age, gender, and the current year of study/training.
- Education question
- Opinion and beliefs questions
- Knowledge questions

The questionnaires were distributed randomly to students. Once received, data were collected and then analyzed using SPSS software. The chi-square test was used to compare percentages. The level of significance was set at 0.05

III. RESULTS

A total of 268 individuals responded to the survey. The majority were female (70.5%), with males comprising 29.5%. First-year students represented the largest group (36.9%). Their distribution according to their study level is presented by figure 1.

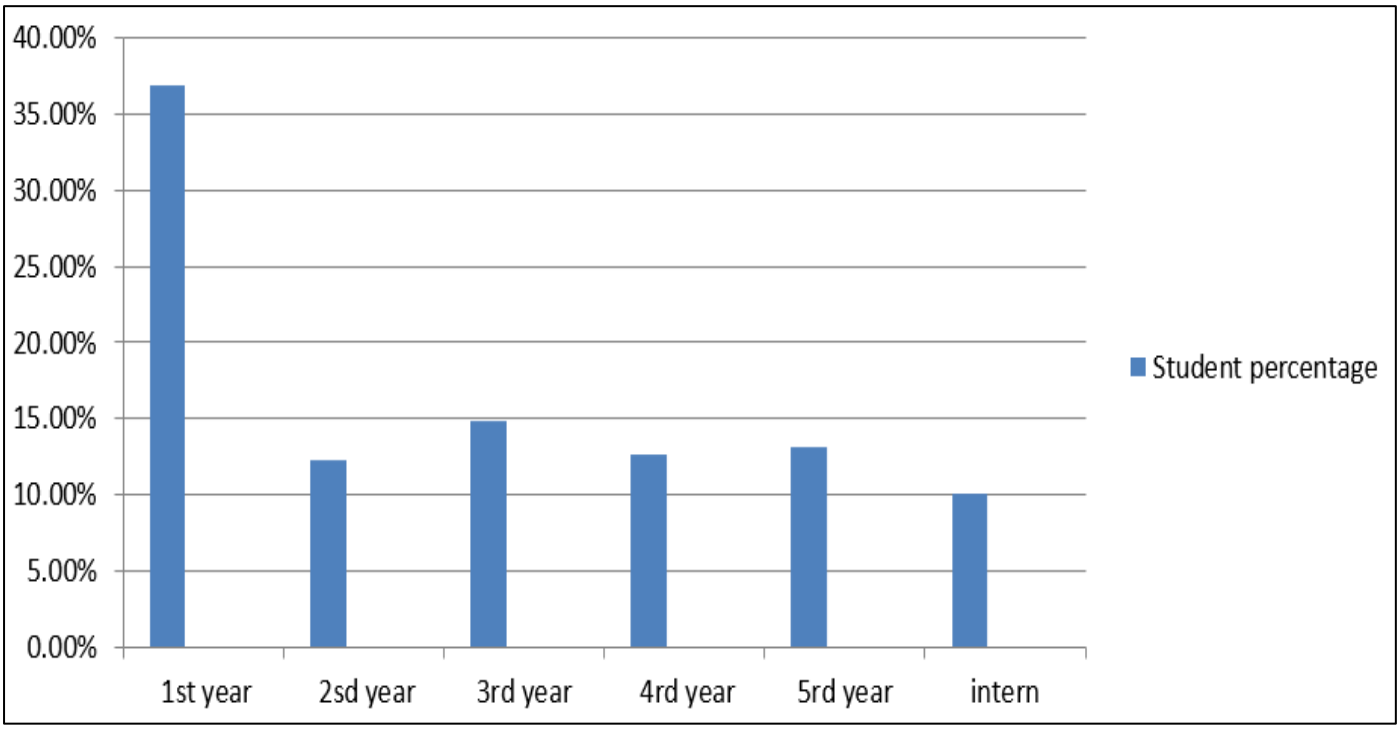

Fig 1 Distribution of Participants According to the Year of Study

Table 1 summarizes the main findings of the present survey. The majority of dental students reported a poor knowledge of overweight/obesity in both adults and children (respectively 35.1% and 45.5%). Only 19.8% and 18.2% reported a good knowledge of overweight /obesity, respectively, for adults and children. The difference was a statistically significant difference (P=0).

Statistically significant differences were reported in the number of hours devoted to the subject of obesity between males and females. Females reported more important devoted hours.

The difference was statistically significant (P=0) with half of the participants believing that overweight/obesity in Tunisia is not a major issue among adults, while the other half believed it affected many adults. A quarter of the students believed that overweight/obesity was a concern for many children, while 64.2% believed it only affected a few.

Most dental students agree that dentists should have a role in the identification/prevention of overweight/obesity in adults (78%) and children (86.2%). 56,5 % of dental students believe that the best tool used to identify overweight and obesity is the Body Mass Index, while about 29 % have chosen the weight-to-height ratio. 9 % and 4% reported the weight measurement and visual assessment (P=0.00).

Table 1 Main Findings of the Present Survey

Education question						
		0-1 h	**2-5h**	**6-15h**		**P**
	All participants	51.1%	32.7%	12.7%		0.000
1. Number of hours devoted to the subject of obesity	Males	49.3%	43.3%	5.3%		0.006
	Females	56.8%	27.3%	15.9%		
	Preclinical	55.8%%	32.1%	12.2%		0.8
	Clinical	52.6%	33.7%	13.7%		
Opinion and beliefs questions						
		Poor/Fair	**Average**	**Good/**		**P**
2. How do you judge your knowledge of overweight /obesity in adults	All participants	35.1%	45.1%	19.8%		0.000
	Males	30.4%	50.6%	19%		0.4
	Females	37%	42.9%	20.1%		
	Preclinical	35.5%	45.3%	19.2%		0.9
	Clinical	34.4%	44.8%	20.8%		
3. How do you judge your knowledge of overweight /obesity in children	All participants	45.5%	39.9%	18.2%		0.0000
	Males	32.9%	51.9%	15.2%		0.019
	Females	50.8%	34.9%	14.3%		
	Preclinical	47.1%	39%	14%		0.7
	Clinical	42.7%	41.7%	15.6%		
		BMI	**W/H**	**WM**	**VA**	**P**
4. What is the best method to identify OW/OB in adults/children	All participants	56,5 %	29.1%	4.1%	9.7%	0.000
	Males	47%	27.8%	3.2%	14%	0.03
	Females	59%	29.1%	6.3%	6%	
	Preclinical	48.3%	34.9%	4.1%	12.2%	0.004
	Clinical	71.9%	18.8%	4.2%	5.2%	
BMI: Body Mass Index,W/H:Weight/ height ratio,WM: Weight Measurement, VA: Visual Assessment						
		Problem in someones	**Problem in many ones**	**No problem**		**P**
5. What do you believe about overweight/obesity in adults in Tunisia?	All participants	50.4%	45.1%	4.5%		0.000
	Males	50.6%	41.8%	7.6%		0.20
	Females	50.3%	46.6%	3.2%		
	Preclinical	49.4%	45.3%	5.2%		0.7
	Clinical	52.1%	44.8%	3.1%		
6. What do you believe about overweight/obesity in children in Tunisia?	All participants	64.2%	25%	10.8%		0.000
	Males	55.7%	26.6%	17.7%		0.04
	Females	67.7%	24.3%	7.9%		
	Preclinical	63.4%	23.8%	12.8%		0.3
	Clinical	65.5%	27.1%	7.3%		
		yes	**No**			**p**
7. Should dentists have a role in the Identification/prevention of overweight/obesity in adults?	All participants	78%	22%			0.000
	Males	75.9%	24.1%			0.603
	Females	78.8%	21.2%			
	Preclinical	75.6%	24.4%			0.00
	Clinical	82.3%	17.7%			
8. Should dentists have a role in the identification/prevention of overweight/obesity in children?	All participants	86.2%	13.8%			0.000
	Males	82.3%	17.7%			0.230
	Females	87.8%	12.2%			

	Preclinical	82.6%	17.4%		0.00
	Clinical	92.7%	7.3%		
Knowledge questions					
		Agree	**Neutral**	**Disagree**	**P**
9. The student has taken other courses about obesity prior to dental school	All participants	36%	23.9%	40.7%	0.004
	Males	37.2%	20.5%	42.3%	0.6
	Females	35.4%	25.4%	39.2%	
	Preclinical	36.3.8%	22.2%	41.5%	0.6
	Clinical	35.4%	27.1%	37.5%	
10.Obesity is a chronic medical disease	All participants	59%	17.5%	23.6%	0.000
	Males	58.2%	22.8%	19%	0.2
	Females	59.3%	15.3%	25.4%	
	Preclinical	59.3%	19.2%	21.5%	0.4
	Clinical	58.3%	14.6%	27.1%	
11.Small weight losses (5-10 percent of body weight) can produce important medical benefits for obese patients.	All participants	84.4%	12.5%	10.3%	0.000
	Males	85.9%	12.8%	1.3%	0.5
	Females	84%	12.3%	3.7%	
	Preclinical	82.2%	13.6%	4.1%	0.2
	Clinical	88.5%	10.4%	1%	
12.Obesity is associated with serious medical conditions	All participants	78.8%	16.5%	11.4%	0.000
	Males	78.2%	17.9%	3.8%	0.9
	Females	79.8%	16%	4.3%	
	Preclinical	71.2%	23.5%	5.3%	0.000
	Clinical	93.8%	4.2%	2.1%	
13.the student can correctly identify the World Health Organization's definitions of overweight, obese, and morbidly obese patients	All participants	31.6%	41%	27.5%	0.022
	Males	33.3%	37.2%	29.5%	0.7
	Females	30.9%	42.6%	26.6%	
	Preclinical	30.6%	40%	29.4%	0.6
	Clinical	33.3%	42.7%	24%	
14.The student can provide a differential diagnosis list for obesity	All participants	28.4%	38.8%	32.8%	0.110
	Males	29.1%	40.5%	30.4%	0.8
	Females	28%	38.1%	33.9%	
	Preclinical	21.5%	43.6%	34.9%	0.003
	Clinical	40.6%	30.2%	29.2%	

IV. DISCUSSION

To date, obesity is a growing public health problem. Its prevalence in childhood has dramatically increased in the past three decades(3). In addition to obesity-related medical challenges, overweight/obese children may experience significant psychosocial distress and a lower quality of life. They are also more likely to become obese adults.

Childhood obesity leads to early puberty in girls, type 2 diabetes, metabolic syndrome, and adult obesity. These effects increase cardiovascular disease and cancer risks, likely due to insulin resistance and chronic inflammation(6).

Children between 5 and 13 years old are more likely to see their general dentist than their physician, so dental appointments can be opportunities to improve overall child health. That's why the dentist needs to diagnose obese children. (7)

The present study aimed to assess the knowledge, and attitudes of future dentists toward obese children.

Regarding the total number of hours that have been devoted to the topic of obesity since the beginning of dental studies, 51.1% of participants reported (0-1) hours. 32.7% of them reported (2-5) hours. Only 12.7% reported more than 6 hours. A statistically significant difference was reported according to sex. Females reported more important devoted hours. It means that the topic of obesity and overweight seems to be more interesting for female than male students. It can also be explained by the higher percentage of obese women in Tunisia(2). However, the difference was not as significant between clinical and preclinical dental students. They strongly suggest that dental curricula do not include a substantial, dedicated program focusing on obesity.

In a study conducted by Magliocca KR el al (4),similar percentage of students reported dedicating 5 hours or less to the topic of obesity since starting their dental studies: 39% reported 0-1 hours, and 43% reported 2-5 hours.

Most of the respondents reported more sufficient knowledge about adult overweight and obesity (64.9 %) than overweight and obesity in children (58.1%) (p=0.000). A survey among dental students in Saudi Arabia reported, as well, that 83% of them report a great

level of knowledge of obesity in adults but only 63% in children(5).

This observed difference could be attributed to three key factors explained by Wyne et al. (5): First, dental curricula tend to focus more extensively on adult overweight and obesity than pediatric cases. Second, assessing weight status is simpler in adults, where a straightforward BMI calculation (≥25 for overweight, ≥30 for obesity) suffices, unlike children requiring age- and gender-specific BMI percentile comparisons. Third, dental students likely encounter more media coverage about adult weight issues than childhood obesity, potentially influencing their awareness and knowledge base. These explanations are all highly applicable to the Tunisian context.

Regarding obesity assessment tools for both adults and children, most Tunisian dental students favored methods using both height and weight. Specifically, the majority (56.5%) identified BMI as the most suitable tool, followed by weight/height ratio (29.1%). This contrasts with a Saudi Arabian study (Wyne et al., 5) where only 34% chose BMI(5). For pediatric cases, growth charts serve as the primary tool for evaluating overweight and obesity status. Interestingly, some studies suggest that visual assessment may also represent a viable supplementary method in children.(8) In fact, the American Academy of Pediatrics published in 2010 that the majority of respondents reported visually screening children for overweight in addition to routinely measuring height and weight. Half stated they assess BMI for children older than 2 at most or all visits (8).

In the present study, females were significantly more aware of overweight and obesity and greater inclination to identify and prevent overweight and obesity than males. This difference may be related to the fact that females in Tunisia have a greater prevalence of obesity 36% compared to males 20%. A recent Tunisian study reported that the prevalence rate of overweight was higher for men (41%) than women (31%, p<10-6). While the prevalence rate of obesity was higher in women (36%) than in men (20%).(2)

A statistically significant difference was observed between clinical (71.9%) and preclinical (48.3%) students (p=0.004). It means that the emergence in the clinical stage and the direct contact with patients may have improved the students' knowledge and skills. Also, a statistically significant difference was reported between females and males (0.03). This could be attributed to the fact that male students were less likely to use the BMI assessment than female students and some males were more inclined to rely on weight measurement and visual assessment than females.

The majority of the respondents are aware about overweight and obesity in Tunisia in adults (45.1%) more than in children (25%) (p=0.000). Most of them, as well, believe that dentists should have a role in the identification and prevention of obesity, with a higher proportion endorsing this role in children (86.2%) as compared to adults (78%) (p=0.000).

The study by Kharma et al(1) reported that weight screening in dental offices can encourage healthy behaviors, improving both weight and oral health while reducing systemic risks. Dentists should note that children with obesity may face a higher risk of dental erosion but not necessarily more cavities than normal-weight children. To treat obesity through dietary restriction, methods such as oral jaw wiring (OJW), maxilla-mandibular fixation (MMF), or dental device systems (DDS) have been proposed to prevent overeating(1).

When asking if the student had taken other courses about obesity prior to dental studies, we found that nearly half of the students (40.7%) declared that they had not had any courses or education about the subject of obesity, and 23.9% were neutral.

This is consistent with the findings of Magliocca KR et al(4) who reported that 51% of the students had never received obesity education, 37% had some prior exposure, and 13% were unsure.

The findings regarding the number of hours dedicated to obesity education highlight a concerning lack of training on this topic prior to entering professional education. This gap can be attributed to the absence of obesity-related content in secondary school curricula in Tunisia and the special training of healthcare professionals. Notably, the majority of surveyed students expressed a strong interest in learning more about obesity. In a study conducted in Saudi Arabia 39% of dental students reported dedicating one hour or less in the curriculum to obesity. Among dental students, 43% indicated having received between two and five hours of obesity-related education. The majority (92%) reported five hours or less of training. When comparing different academic years (first year, second year, etc.) within the predoctoral dental curriculum, no significant difference was found in the number of education hours.(5). In a study realised in the UK and Ireland just 31.6% of students, including those in dental and dietetics programs, believed they had received adequate training on the connection between diet and dental health.(9) in the USA, pediatric dental residents reported that the most frequently significant barriers to obesity related education were the lack of personnel knowledge or training personnel about childhood obesity (10).In the UK most dental students (82.4%) reported having received zero to four hours of training, while only 35.1% believed their training in dietary patient management was adequate(11). In the United States, according to a survey, 47% of residents stated they had been taught through a formal curriculum on managing overweight or obese patients.(12)

Given that obesity is a relatively emerging problem in Tunisia, efforts should prioritize prevention—particularly in children, as early intervention can prevent childhood obesity from persisting into adulthood. Integrating this topic into dental education would be highly

valuable, especially since the students surveyed showed a strong interest in further education on the matter. Undergoing training on childhood obesity would be beneficial to pediatric dentistry residents in Tunisia.

Fifty-nine percent of students recognized obesity as a chronic disease, while 78.8% were aware of its association with serious medical conditions. A statistically significant difference was reported between clinical (93.8%) and preclinical (71.2%) students (p=0.000).

Obesity was first classified as a disease in the International Classification of Diseases in 1948. In 1997, the WHO classified obesity as a distinct chronic disease. In the American Medical Association's 2013 declaration and the European Commission's 2021 formal classification, obesity is recognized as a chronic relapsing disease acting as a gateway "to a range of other non-communicable diseases". (13)

In response to whether they agree that obesity is associated with serious medical conditions, more than three-quarters of the respondents expressed their agreement. A clear distinction appears between clinical and preclinical students (p=0.000) with 93.8% of clinical students against 71.2 % of preclinical students.

Obesity frequently leads to metabolic syndrome, characterized by a cluster of conditions including abdominal obesity, insulin resistance, elevated triglycerides, low HDL cholesterol, high blood pressure, and impaired fasting glucose. While diagnostic criteria vary slightly, abdominal obesity emerges as the most predictive factor for metabolic syndrome development in children and adolescents.(6)

The majority of respondents (84.4%) recognized the medical value of modest weight loss. Research indicates that even a 5–10% reduction in body weight can improve health outcomes, including reduced medication needs for diabetes and hypertension. This awareness may stem, at least in part, from widespread media coverage of obesity-related health risks and the advantages of weight management.(4)

A minority (31.6%) expressed confidence in their understanding of the WHO obesity classification of patient types. Magliocca KR et al (4) found roughly equal percentage for the answer to this question (less than 40%). 40.6% of clinical students could provide a differential diagnosis for an obese patient, while only 21.5% for preclinical ones (p=0.003). These results could be explained by the fact that the clinical stage could increase awareness and knowledge about obesity and overweight. It could be inferred that the students' understanding of obesity is based on general knowledge rather than on academic sources.

V. CONCLUSION

This study is the first to address obesity and overweight in the Tunisian population, revealing that dental students perceive their obesity education as limited, regardless of gender or clinical experience. The comparison between the two sexes was almost statistically significant in favor of females, which could be explained by their higher motivation and awareness about the topic.

Furthermore, a significant difference between clinical and preclinical students suggests that practical experience and patient interaction significantly influence dental students' awareness and beliefs. This study underscores the dentist's role in identifying obese patients and their potential as a preventive link to other medical specialists.

DECLARATIONS

- Ethics approval and consent to participate: the Ethics Committee of the Faculty of Dental Medicine, Monastir, Tunisia
- Consent for publication: Not applicable
- Funding: No funding
- Clinical trial number: Not applicable
- Human Ethics and Consent to Participate declarations: Not applicable

REFERENCES

[1]. Kharma MY, Aws G, Tarakji B. Are dentists involved in the treatment of obesity? J Int Soc Prev Community Dent. 2016;6(3):183-8.

[2]. Global Nutrition Report. Country nutrition profiles - Tunisia. [Internet]. 2025 [cited 2025 Mar 21]. Available from: https://globalnutritionreport.org/resources/nutrition-profiles/africa/northern-africa/tunisia/

[3]. World Health Organization. Obesity and overweight. [Internet]. 2025 [cited 2025 Mar 20]. Available from: https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight

[4]. Magliocca KR, Jabero MF, Alto DL, Magliocca JF. Knowledge, beliefs, and attitudes of dental and dental hygiene students toward obesity. J Dent Educ. 2005;69(12).

[5]. Wyne AH, Al-Hammad N, Nainar SMH. Saudi Arabian dental students' knowledge and beliefs regarding obesity in children and adults. J Dent Educ. 2013;77(4):518-23.

[6]. Biro FM, Wien M. Childhood obesity and adult morbidities. Am J Clin Nutr. 2010;91(5):1499S-1505S.

[7]. Singh S, Awasthi N, Padung N. First dental visit: age, reasons, oral health status and dental treatment needs among children aged 1 month to 14 years. Int J Clin Pediatr Dent. 2022;15(4):394-7.

[8]. Klein JD, Sesselberg TS, Johnson MS, O'Connor KG, Cook S, Coon M, et al. Adoption of body mass index guidelines for screening and counseling in pediatric practice. Pediatrics. 2010;125(2):265-72.

[9]. Kingsnorth J, Cushen SJ, Janiszewska K, Avery A. Health professionals' knowledge, views and advice on diet and dental health: a survey of UK and Ireland dietitians and dentists. J Hum Nutr Diet. 2021;34(4):705-14.
[10]. Wright R. Assessing attitudes and actions of pediatric dentists toward childhood obesity and sugar-sweetened beverages. J Public Health Dent. 2017; [Volume (Issue)]: [Page numbers].
[11]. Shah K, Hunter ML, Fairchild RM, Morgan MZ. A comparison of the nutritional knowledge of dental, dietetic and nutrition students. Br Dent J. 2011;210(1):33-8.
[12]. Hisaw T, Kerins C, McWhorter AG, Seale NS. Pediatric obesity curriculum in pediatric dental residency programs. Pediatr Dent. 2009;31(7):486-91.
[13]. Burki T. European Commission classifies obesity as a chronic disease. Lancet Diabetes Endocrinol. 2021;9(7):418.