NUTRITIONAL HABITS AND WEIGHT ATTITUDES – A SURVEY AMONG YOUNG BULGARIANS

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ABSTRACT
The eating habits and body image attitudes of young people are a significant area of research in today's society due to their impact on health and psychosocial well-being. Adolescence and young adulthood are characterized by the formation of enduring behavioral patterns, including eating habits and body image perceptions. These factors can have long-term effects on health and quality of life. The survey aims to examine the nutritional habits and weight-related attitudes of young people, as well as the interrelationship between these factors. Methodology: An anonymous online survey was conducted in October 2022 using Google Forms. The survey was based on a World Health Organization (WHO) questionnaire (GSHS - Dietary Behaviors Module), to which questions about the impact of the pandemic on attitudes toward weight and nutrition were added. The study included 111 participants, comprising 73% females and 27% males. The mean age of the respondents was 23.9 ± 2.1 years, meaning the analysis mainly covers young people, students, and individuals at the beginning of their professional careers. Statistical analysis of the results was performed using IBM SPSS 23.0 software. Results: Regarding body weight, 66% considered their weight to be normal, and 25% considered themselves to be slightly overweight. Their attitude toward body weight shows active interest: 40.5% are trying to maintain their current weight, 37.8% are trying to lose weight, and 3.6% are trying to gain weight. As for eating habits, 53.2% did not change their diet during the pandemic, while 25.2% reported eating more home-cooked meals. Only 6.3% reported an increase in fast food consumption. Conclusion: The results highlight the relative stability of young people's weight and eating behaviors, which experienced only slight fluctuations influenced by pandemic circumstances.

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INTRODUCTION

In contemporary society, the eating habits and attitudes towards body weight of young people are an important subject of research due to their impact on health and social well-being. The formation of lasting patterns of behavior, including eating habits and perceptions of body image, occurs during adolescence and young adulthood. These factors can have a significant and lasting impact on health and quality of life.

Nutritional habits

Proper and balanced nutrition from an early age is essential for preventing health problems such as obesity, metabolic disorders, and other chronic diseases later in life. The transition to adulthood (ages 18–29) is a critical period for forming healthy habits, including nutritional and physical ones. Eating patterns acquired in early childhood and adolescence have a long-term effect on health. Research on the subject shows that, at this age, young people often break away from the family model and start choosing, buying, and preparing their own food. However, this can result in a decline in the quality of their diet, with a reduced consumption of fruit, juices, and vegetables, and an increased consumption of fast food and carbonated beverages as dominant sources of calories (Kotowska et al., 2024; Young et al., 2023; Petrova et al., 2022; Patetta et al., 2019).

Other studies show that behaviors such as following a diet, not skipping meals, regularly cooking at home, and being aware of the various substances listed on food labels can improve the quality of young people's diets (Buyuktuncer et al., 2018; Astbury et al., 2019; Boycheva et al., 2023). Several authors point out the advantages of home-cooked food over that offered in fast food establishments, namely: it is usually lower in calories, with less saturated fat and simple carbohydrates, higher in dietary fiber and whole proteins, while also having a lower sodium/salt content compared to fast food (Kamiński et al., 2023; Jia et al., 2018; Lin & Guthrie, 2012).

The perception of fast food as 'convenient' and 'modern', as well as the influence of parental eating patterns (such as excessive fixation on products or preparing food, or strict, restrictive 'healthy' eating regimes), have a significant impact on unhealthy food choices (McGinnis et al., 2006; Shaw et al., 2023; Mohammadzadeh et al., 2025).

Attitude towards weight

Young people often place great importance on their weight, influenced by social ideals and their perceptions of body image. Their eating habits play a decisive role in weight regulation, with various factors influencing their dietary choices and behavior. A common problem among adolescents and young adults is the discrepancy between actual and perceived weight, which often bears little relation to reality (Ballarin et al., 2024; Ghammem et al., 2024). Higher BMIs have been found to correlate with lower self-esteem in this age group, suggesting that those who are overweight or obese often have negative self-perceptions. Body dissatisfaction is a significant indicator of low self-esteem and unhealthy eating behavior, particularly among women (Mond, 2012; Morán et al., 2024; Jankauskienė & Bacevičiūtė, 2019).

A.-S.: Sand et al. (2017) report a discrepancy between perceived and actual body size. This can result in attempts to alter body mass, with many young people wanting to change their weight even when it is within a healthy range. Young women often express a desire to lose weight, whereas young men are more likely to want to build muscle (White et al., 2024). Frequent self-weighing (daily or weekly) is an effective way of managing weight, as it encourages healthy behaviors such as controlling one's diet and increasing physical activity. However, this behavior can also lead to unhealthy practices, such as the development of eating disorders in women and dissatisfaction with appearance and overeating in men (Wing et al., 2015).

The impact of the pandemic on eating habits and weight control

The pandemic has significantly affected the eating habits and physical activity levels of young people, exacerbating existing health and well-being challenges. Restrictive measures, such as school closures and working from home, have led to a decrease in physical activity among this age group. Combined with increased stress and anxiety, this has contributed to a deterioration in eating habits and an increase in body weight in young people. Several studies have reported weight gain, with young people typically gaining an average of 4–5% of their body weight during lockdown. Almost two-thirds of respondents, primarily women, reported weight gain (Schienkiewitz et al., 2022; Alshahrani et al., 2022; Zaccardi et al., 2023; Dun et al., 2021). Studies in Bulgaria have shown that the pandemic has led to changes in the eating habits of young people. The main reasons for these changes are anxiety, longer study periods, and boredom caused by isolation. These factors have led to increased food consumption and reduced physical activity, thereby increasing the risk of developing non-communicable diseases (Yaneva et al., 2022).

Research on eating habits and attitudes toward weight, especially among young people, is insufficient in Bulgaria (Bacheva et al., 2024; Petrova et al., 2016; Vassilevsky et al., 2009). Most of them concern specific eating habits that are mainly typical of children and adolescents, rather than attitudes toward one's own weight.

The present, preliminary study does not claim that its results are representative of the entire youth population and *aims* to examine the nutritional habits and weight-related attitudes of young people, as well as the interrelationship between these factors.

METHODOLOGY

To determine the eating habits of young Bulgarians, over 150 young people who met the following criteria were invited to participate: a) They were representative of the general population; b) had not been diagnosed with an eating disorder in the past year; c) aged 18–29. Ten volunteers distributed a link to the questionnaire via social media and e-mail.

The survey was conducted using an anonymous online questionnaire, created in October 2022 with Google Forms, and was completed by 123 youth. Twelve of them did not allow their answers to be published, which is why the statistical processing of the results was made on 111 people.

The survey was based on a WHO questionnaire (the GSHS core-expanded questionnaire modules 2018-2020). Questions relevant to the youth age group were selected from the "Dietary Behaviors Module", and additional questions were added regarding the impact of the COVID-19 pandemic on attitudes toward weight and nutrition. Of the 111 participants, 73% were female and 27% were male. With an average age of 23.9 ± 2.1 years, the respondents were predominantly young individuals, primarily undergraduate students or those at

the beginning of their professional careers.
Statistical analysis of the results was performed using IBM SPSS 23.0 software. Student's t-test and Pearson's χ^2-test were used to establish statistical significance for hypothesis testing.

RESULTS AND DISCUSSION

The main occupations of the respondents were as follows: One third were studying, 35% were in employment only, and 32% were in both employment and study. Respondents were asked to provide basic anthropometric data, namely their height and weight, on the basis of which their BMI was calculated. The sample data were presented in Table 1.

Table 1. *Anthropometric characteristics and BMI of respondents (Mean±SD)*

	Male ***n*** **= 30**	**Female** ***n*** **= 81**
Height (cm)	178.1 ± 8.4	166.6 ± 7.4
Weight (kg)	85 ± 13.7	56.3 ± 9.7
BMI (kg/cm²)	26.8 ± 3.7	20.2 ± 2.4
• Underweight (< 18.5)	0%	24.7%
• Normal weight (18.5-24.9)	40%	70.4%
• Overweight (25-29.9)	43.3%	4.9%
• Obesity class 1 (30-34.9)	16.7%	0%

Attitudes towards weight and strategies for controlling it

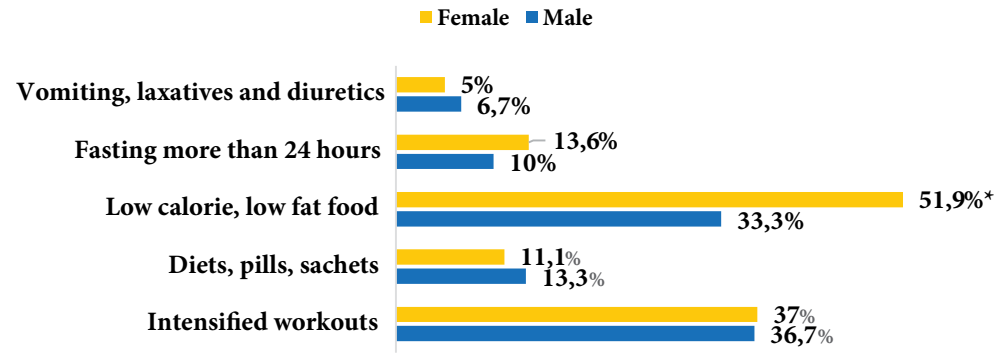
Respondents' self-reported height and weight, rather than being measured by researchers, introduce a subjective element and allow for potential inaccuracy, which also applies to BMI calculations. However, the focus is not on specific physical characteristics, but rather on the relationship between respondents' knowledge of their weight, based on self-weighing, and their perception of body mass.
The respondents' self-assessment of their weight was as follows: 65.8% considered their weight to be normal; 25% considered it to be slightly overweight; 1% considered it to be very overweight; and 8% considered it to be underweight. Men are much more likely to consider themselves to be significantly overweight than women, with statistically significant differences (p<.01). Amongst males with a BMI corresponding to overweight, 30% consider themselves obese. A similar phenomenon is observed among women who assess their weight as underweight: a quarter of them consider their body mass to be above normal. Discrepancies in self-esteem and self-assessment have been observed in both sexes, confirming the findings of other researchers (Ballarin et al., 2024; Mond, 2012).
The frequency with which respondents weigh themselves is an indication of how self-assessment of body weight affects its control. One-third of young people reported rarely weighing themselves (37% of women and 26% of men), while a quarter said they weighed themselves weekly.
What steps were young people taking to change their body weight? Around 40% were trying to maintain their weight, 37% were trying to lose weight, and just 4% were trying to gain weight. The difference in the percentage of those who want to lose weight is insignificant between the two sexes, while among those who strive to gain weight, men are 2.5 times more than women. Among women who want to lose weight, 37.5% weigh themselves daily, while an equal proportion do so rarely. Body weight is generally measured less often by men than by women, regardless of whether their current weight is being maintained or a change is wanted.
The survey asked questions about the ways in which young people regulate their weight when they want to change it. Respondents were asked whether they had taken any steps to lose weight or gain muscle mass in the past month, and if so, how. Weight regulation is achieved through:

- Changes in physical activity (increased/decreased intensity of exercise, strength training);
- Changes in eating habits (decreased/increased food intake and calorie intake; changes in the ratio of macronutrients – decreased carbohydrate intake, increased protein intake, decreased/increased fat intake);
- Resorting to the use of medications and dietary supplements without consulting a doctor;
- Extreme weight loss behaviors – fasting, vomiting, etc.

The responses showed that 40% of young people were trying to maintain their current weight, 38% wanted to lose weight, 4% wanted to gain weight,

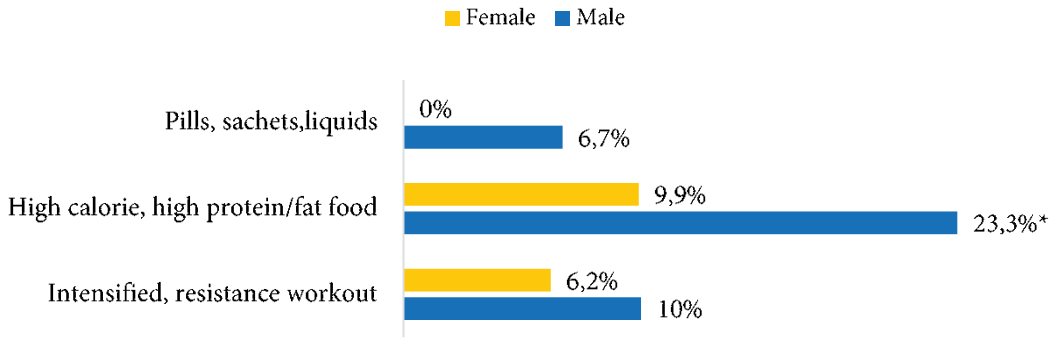
and 18% were not taking any action to regulate their weight. It is interesting to see the ways in which respondents of both sexes regulate their body weight. Increasing the volume and intensity of physical activity is one of the preferred methods for those who want to lose weight, with almost equal numbers of men and women citing this method (37%). Dietary adjustment is another preferred method of weight loss. Women (51.9%) are more likely to consume low-fat foods and reduce the overall calorie content of their diet. Men also make similar changes to their diet, but 1.5 times less frequently (33.3%). The use of medications and dietary supplements, as well as various diets, is also common (11.1% of women and 13.3% of men). Women are more likely to fast for over 24 hours, while men more often resort to laxatives and diuretics, but these differences are not statistically significant (Figure 1).

Although the number of respondents who want to gain weight is small, gender differences are also observed in the most commonly used methods. Increasing the calorie content of food and increasing protein and fat intake is characteristic of 23.3% of men, whereas this behavior is approximately 2.5 times less common among women (9.9%). The use of pills, sachets, and liquid foods is practiced by 6.7% of men, whereas similar practices are not observed in women. Both sexes engage in intensive training, primarily strength training, which is more prevalent among men (Figure 2).



*Note:*p<.05*

Figure 1. *Weight loss strategies in the last 30 days*



*Note: * p<.05*

Figure 2. *Weight gain strategies in the last 30 days*

Nutritional habits

In summary, the respondents' nutritional habits were divided into two groups: healthy and unhealthy. Healthy eating habits include eating breakfast every day and consuming home-cooked meals, as well as milk, dairy products, and fruit and fruit juices. Unhealthy eating habits include consuming carbonated drinks and fast food.

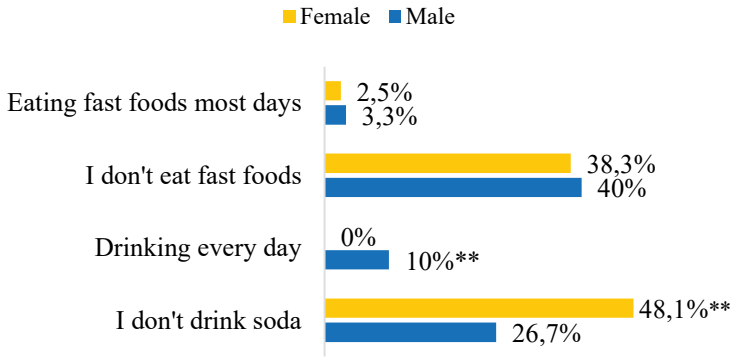
Various studies confirm that regularly eating breakfast is associated with better cognitive function, greater concentration, and an enhanced learning ability. Additionally, people who eat breakfast regularly tend to have a healthier body weight and are less likely to develop metabolic disorders. Breakfast also helps regulate appetite throughout the day, reducing the likelihood of overeating later on.

The survey results indicated that 33% of respondents ate breakfast daily, 20% ate breakfast most days, and 6.3% skipped breakfast. Notably, twice as many women as men skip this meal. Compared to

the study by Vassilevsky et al. (2009), which reported that 59% of students did not eat breakfast, the current survey shows a significant decrease in this eating behavior. Breakfast is skipped most commonly by people who want to lose weight and those who want to maintain their current weight (≈ 7%), with the most common reasons given being lack of time (4.5%) and lack of appetite (20.7%).

The responses regarding other eating habits can be summarized as follows:

- One-third of young people report eating home-cooked meals once or twice a day. The main reason they gave for not eating enough was that "cooked food isn't always available" (44%), while 7% say they prefer fast food. This preference is 3.5 times higher among men than women.
- Milk and dairy products (e.g., cheese, cottage cheese, and curd), which are a source of whole proteins, are part of the daily menu for 30% of young people. Meanwhile, 38.7% consume them, but not daily. Those who responded that they want to increase their body weight consume dairy products more than three times per day.
- Consumption of fruits and fruit juices is insufficient. Sixty-three point six percent of respondents say they do not consume them daily. Surprisingly, men report consuming these products two to three times more often.
- Seventy percent of young people do not include carbonated soft drinks in their beverage intake (42.3% do not drink them at all, and 28.7% rarely drink them), while only 2.7% consume them daily (only men). The responses indicate that women are significantly more likely than men to avoid consuming carbonated drinks. In fact, 5 times more women do not drink such beverages, and twice as many women consume them rarely.



*Note: ** p<.01*

Figure 3. *Soft drinks and fast food consumption*

- About fast food consumption, 47.7% of young people say they rarely eat it, and 38.7% do not eat it at all (Figure 3). On most days, fast food is consumed by 2.7% of respondents, which is four times more common among young people with a BMI greater than 30 kg/m².

Lastly, the subjects' responses regarding alterations in their weight, exercise routine, and nutrition habits were presented at the close of the COVID-19 pandemic.

Two-thirds of young people reported that their level of physical activity remained unchanged since the lockdown. The rest said they moved less, with positive responses from women exceeding those from men by 10%.

In terms of nutritional habits, isolation at home has led to changes. Half of the young people reported that they had maintained the same eating habits. Meanwhile, 25% reported eating more home-cooked meals, and 6.3% reported eating more fast food. There has been no increase in carbonated soft drink consumption among either gender.

However, social isolation and staying at home have affected the self-esteem and behavior of one-third of young people. For some, it has affected their weight: 22% have gained weight, 11% have lost weight, and most report no change. A smaller percentage of young people in Bulgaria have gained weight compared to the 35% reported by Schienkiewitz et al. (2022) among young Polish people, aged 18-34. The incidence of weight loss is the same for women and men, but twice as many men have gained weight. Alshahrani et al. (2022) report that 65% of women in Saudi Arabia have gained weight. However, the data covers the 26–45 age group, which is generally associated with a more seden-

tary lifestyle. According to both male and female respondents, the closure of gyms and other places where they usually exercise has not negatively impacted their body weight.

CONCLUSION

Healthy nutritional habits are essential for young people because they significantly impact cognitive abilities and maintaining a normal weight. A normal weight is linked to one's perception of appearance and self-esteem, as well as long-term health. Adolescence and early adulthood are ideal times to establish healthy nutritional habits that can prevent chronic diseases in the future and support overall well-being.

- Regardless of the size of the sample, which is not representative of the country as a whole, the preliminary study results allow us to draw the following conclusions:
- Young people in Bulgaria try to control their weight by changing their diet (mainly women) and doing more exercise (mainly men).
- There is a discrepancy between subjective weight assessment and actual weight, which confirms the observations of other researchers.
- Young people have relatively stable eating habits. Only 7% prefer fast food, while most eat home-cooked meals at least twice a day. Their usual diet includes foods rich in whole proteins, such as milk, cheese, and quark, as well as foods rich in vitamins and minerals, including fruits and fresh juices. However, a higher intake is recommended.
- Foods that are high in saturated and trans fats and calories (e.g., fast food) and sugary soft drinks are not part of the usual diet of most youth, nor are they consumed every day.
- During the pandemic, young people maintained their eating habits and physical activity levels, so managing their body weight was not a challenge.

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