

## EMOTIONAL AND HABITUAL OVEREATING AND DIETARY RESTRICTIONS IN THE EATING HABITS OF GIRLS AND BOYS

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### ABSTRACT

**Background.** Eating habits are mainly shaped at the first stages of human life. Incorrect eating habits in young individuals may in the future lead to eating disorders and predispose to abnormal body weight.

**Objective.** The aim of the study was to investigate eating habits among adolescents and verify whether there are any differences in eating habits between girls and boys.

**Material and methods.** The study was conducted among 337 post-primary school students, including 126 girls and 211 boys. A standardised questionnaire "My eating habits" was used as a research tool.

**Results.** Secret snacking was slightly more common among girls (27.78%) than boys (24.17%). It was also girls who mostly admitted that other people comment on their diet, as indicated by 33.33% of girls and 18.96% of boys. Girls are also more likely to be dissatisfied with their body weight (41.27% vs. 27.49%) and to occasionally avoid eating despite feeling hungry (42.06% vs. 27.01%) compared to boys.

**Conclusions.** The eating habits of young people are mostly varied. There are differences in the dietary habits of girls and boys; girls are more likely than boys to overeat under the influence of emotions and to apply dietary restrictions to themselves. In order to promote healthy eating habits and support the mental well-being of young people, it is recommended to provide nutritional education and to implement psychological support for those in need.

**Key words:** eating habits, eating disorders, dietary restrictions, adolescents

### STRESZCZENIE

**Wprowadzenie.** Kształtowanie zwyczajów żywieniowych zachodzi głównie w pierwszych etapach życia człowieka. Nieprawidłowości odżywiania u osób młodych w przyszłości mogą prowadzić do zaburzeń odżywiania oraz predysponować do nieprawidłowej masy ciała.

**Cel badań.** Celem badania było poznanie zwyczajów żywieniowych młodzieży oraz stwierdzenie czy istnieją różnice pomiędzy zwyczajami żywieniowymi dziewcząt i chłopców

**Materiał i metody.** Badanie zostało przeprowadzone wśród 337 uczniów szkoły ponadpodstawowej, w tym wśród 126 dziewcząt oraz 211 chłopców. Narzędziem badawczym był standaryzowany kwestionariusz ankiety „Moje Zwyczaje Żywieniowe”.

**Wyniki.** Nieznacznie większe skłonności do podjadania w tajemnicy przed innymi wykazują dziewczęta (27,78%), niż chłopcy (24,17%). To dziewczęta w przewadze przyznają, że inni ludzie komentują ich sposób odżywiania, na taką odpowiedź wskazało 33,33% dziewcząt i 18,96% chłopców. Dziewczęta także częściej, niż chłopcy wykazują niezadowolenie ze swojej masy ciała (odpowiednio 41,27% i 27,49% z nich) oraz pomimo odczuwania głodu unikają czasami jedzenia (42,06% i 27,01%)

**Wnioski.** Zwyczaje żywieniowe młodzieży są w większości zróżnicowane. Istnieją różnice w zwyczajach żywieniowych dziewcząt i chłopców; dziewczęta w porównaniu do chłopców wykazują większe skłonności do przejadania się pod wpływem emocji oraz do stosowania względem siebie restrykcji dietetycznych. W celu promowania prawidłowych zwyczajów żywieniowych oraz wspierania dobrej kondycji psychicznej młodzieży zaleca się prowadzenie edukacji żywieniowej oraz wdrożenie pomocy psychologicznej dla osób jej potrzebujących.

**Słowa kluczowe:** zwyczaje żywieniowe, zaburzenia odżywiania, restrykcje dietetyczne, młodzież

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## INTRODUCTION

Eating habits are mainly shaped at the first stages of human life [4]. We enter adulthood with an already developed system of eating habits. Therefore, monitoring and correction of poor eating habits among young individuals is needed as they may lead to future eating disorders and predispose to abnormal body weight [1].

Eating disorders are significantly more common in women than in men, and usually manifest in late adolescence or early adulthood. Fear of excess calories may lead to dietary restrictions, such as intentional limitation of food intake or skipping meals [13]. Common unawareness of eating disorders, such as for example anorexia and bulimia, may result in a failure to initiate appropriate treatment and, consequently, the development of chronic diseases [9, 21]. Eating disorders not necessarily lead to weight loss. Increased calorie intake due to eating disorders causes excess fat accumulation and, consequently, overweight and obesity [18]. This problem is currently seen in most European countries, posing one of major public health issues [24]. Excess body weight predisposes to multiple diet-related diseases, such as cardiovascular diseases, diabetes mellitus, and cancer. Therefore, maintenance of normal body mass index (BMI) is strongly recommended [11, 25]. Prevention of overweight and obesity is primarily based on education and promotion of healthy lifestyle. Educational programmes should inform about, among other things, its consequences, whereas prevention should provide guidance on changes in eating habits and physical activity [2].

Eating disorders and increased body weight may also be of psychological aetiology. Emotional eating involves consuming meals depending on mental state. In this type of disorders, dietary restrictions involving reduced intake of dietary calories should be preceded by psychological therapy to support emotional stability [26].

Habitual overeating, emotional eating, and dietary restrictions are risk factors for eating disorders. The measurement of the above factors allows for the diagnosis of the problem among selected groups of society, followed by implementation of preventive and educational measures [16]. Preventing bad eating habits, promoting the Pyramid of Healthy Eating and physical activity may help introduce eating habits that support health and good mental wellbeing [3, 4, 20].

The aim of this study was to investigate eating habits among adolescents and verify whether there are any differences in eating habits between girls and boys.

## MATERIALS AND METHODS

The study was conducted in the first quarter of 2020 among 337 post-primary school students from the Silesia Province, including 126 girls and 211 boys. The study was approved by the school principal.

A standardised questionnaire “My Eating Habits” by *Ogińska-Bulik* and *Putyński* [16] was used as a research tool. The questionnaire includes 30 yes/no questions. The questions were classified into three categories related to emotional overeating, habitual overeating and dietary restrictions. Each “yes” answer was scored 1 (except for 5 appropriately marked questions). The total score was used to calculate the mean and standard deviation for each category for all respondents and separately for sex groups. The answers were collected and analysed using Microsoft Excel 2010 spreadsheet software. Statistica 13 software was used to calculate mean, standard deviation, and for statistical analysis. Correlations between sex and different eating habits were verified using the *Chi-squared* test. A *p*-value <0.05 was considered statistically significant for all analyses.

## RESULTS

Means and standard deviations for factors in the groups are shown in Table 1. The mean value of answers to questions on habitual overeating was similar for girls and boys, i.e. 3.72 and 3.75, respectively. There were differences in the mean values of answers to questions on emotional overeating and dietary restrictions (4.07 and 3.09; 3.84 and 3.04, respectively). The highest standard deviation for all respondents was reported for the group of questions on habitual overeating, whereas the lowest standard deviation was reported for the group of questions on dietary restrictions, i.e. 2.49 and 2.15, respectively.

Table 1. Mean values of answers to questions on habitual overeating, emotional overeating and dietary restrictions for girls and boys

Factor	Total		Girls		Boys	
	Mean	SD	Mean	SD	Mean	SD
Habitual overeating	3.74	2.49	3.72	3.74	3.75	2.40
Emotional overeating	3.46	2.23	4.07	2.23	3.09	2.15
Dietary restrictions	3.34	2.15	3.84	2.16	3.04	2.08

The study showed that 24.60% of girls and 24.64% of boys attach too much importance to food, with 59.52% and 64.93% of them, respectively, considering

food to be an important part of their lives. However, uninhibited eating is more common among boys than girls, with such tendencies reported by 40.28% and 30.16% of them, respectively. Girls, on the other hand, are slightly more prone to snacking in secret than boys (27.78% vs. 24.17%). A total of 27.16% of respondents, including 30.16% of girls and 26.07% of boys, admitted to eating despite satiety; 75.88% of respondents (77.77% of girls and 65.40% of boys) rarely overeat (Table 2).

In the part of the questionnaire on emotional overeating, the responses of the two groups differed (Table 3). Overeating anxiety was significantly more common in girls than boys (41.27% vs. 16.11%). The urge to dispose of unnecessary calories after having a large meal was also more common among girls (50%)

than boys (37.44%). Half (50%) of students, including 65.87% of girls and 41.23% of boys, would like to weigh less than they do. Only 19.29% of students, including 22.22% of girls and 17.54% of boys, admitted that they start eating meals when they get upset, and 64.69% of all students, including 59.52% of girls and 67.77% of boys, reported eating as a way to improve mood.

The part of the questionnaire on dietary restrictions (Table 4) also revealed some differences. A total of 46.83% of girls and 64.45% of boys are rarely concerned about their body weight, and dissatisfaction with one's figure was reported by 67.46% and 40.28% of them, respectively. Girls are also more likely than boys to show dissatisfaction with their body weight (41.27% and 27.49%, respectively) and sometimes avoid meals despite feeling hungry (42.06% and

Table 2. Answers to questions on habitual overeating for girls and boys

Answers to questions	Habitual overeating					
	Total		Girls		Boys	
	n=337	%	n=126	%	n=211	%
I often think about eating	203	60.24	73	57.94	130	61.61
Eating is an important part of my life	212	62.91	75	59.52	137	64.93
Sometimes I snack in secret from others	86	25.52	35	27.78	51	24.17
I eat often, even when I feel full	93	27.16	38	30.16	55	26.07
I rarely overeat *)	115	34.12	42	33.33	73	34.60
I eat often, although I am not hungry	132	39.17	55	43.65	77	36.49
Sometimes I eat uninhibited	123	36.50	38	30.16	85	40.28
I rarely feel overeaten *)	131	38.87	54	42.86	77	36.49
Food is too important to me	83	24.63	31	24.60	52	24.64
My stomach is like a bottomless sack	82	24.63	28	22.22	55	26.07

\*) The question is scored for "NO" answer

Table 3. Answers to questions on emotional overeating for girls and boys

Answers to questions	Emotional overeating						
	Total		Girls		Boys		p-value
	n=337	%	n=126	%	n=211	%	
I often feel anxious when I eat too much	86	25.52	52	41.27	34	16.11	0.00
Other people comment on my diet	82	24.33	42	33.33	40	18.96	0.00
I eat more than normal when I am anxious or upset	68	20.18	31	24.60	37	17.54	>0.05
Sometimes when I start to eat, I feel that I won't be able to tell myself "enough"	69	20.47	27	21.43	42	19.91	>0.05
I would prefer to weigh less than I do now	170	50.45	83	65.87	87	41.23	0.00
My diet generally depends on my mood	162	48.07	72	57.14	90	42.65	0.01
In the company, I eat medium but „allow” myself more when I am alone	104	30.86	40	31.75	64	30.33	>0.05
When I get angry, I start eating	65	19.29	28	22.22	37	17.54	>0.05
I would like to get rid of unnecessary calories after having a large meal	142	42.14	63	50.00	79	37.44	0.02
Food puts me in a good mood	218	64.69	75	59.52	143	67.77	>0.05

Table 4. Answers to questions on dietary restrictions for girls and boys

Answers to questions	Dietary restrictions						p-value
	Total		Girls		Boys		
	n=337	%	n=126	%	n=211	%	
I rarely follow diets *)	86	25.52	27	21.43	59	27.96	>0,05
I read and collect diets from magazines and books	41	12.17	16	12.70	25	11.85	>0.05
I rarely worry about my weight *)	142	42.14	67	53.17	75	35.55	0.00
I am not satisfied with my figure	170	50.45	85	67.46	85	40.28	0.00
Sometimes I avoid eating, even when I'm hungry	110	32.64	53	42.06	57	27.01	0.00
I put too much weight on my body weight	110	32.64	52	41.27	58	27.49	0.01
I rarely feel guilty after overeating *	190	56.38	73	57.94	117	55.45	>0.05
I like to feel empty in my stomach	51	15.13	24	19.05	27	12.80	>0.05
I often follow diets	64	18.99	20	15.87	44	20.85	>0.05
I consciously limit my food consumption	161	47.77	67	53.17	94	44.55	>0.05

\*) The question is scored for "NO" answer

27.01%). A total of 18.99% of all respondents, including 15.87% of girls and 20.85% of boys, often use diets; 15.13% (19.05% and 12.80%, respectively) of respondents like the empty stomach feeling; and 45.62% (42.06% and 44.55%, respectively) rarely feel guilty after overeating.

## DISCUSSION

The study showed that habitual overeating behaviours dominated in the group of students ( $M = 3.74$ ), whereas dietary restrictions were less common ( $M = 3.34$ ). Similar findings were presented by Kobos et al. [8] with behaviours associated with habitual overeating and dietary restrictions declared by  $M = 3.66$  and  $M = 3.59$  secondary school students. As reported by the authors, emotional overeating was more common compared to our study ( $M = 4.84$  and  $M = 3.46$ , respectively). Different results compared to our study were obtained by Ogińska-Bulik and Putyński [16] with dominant emotional overeating ( $M = 4.67$ ), and less common habitual overeating ( $M = 2.94$ ).

Analysis of our findings showed that 60.24% of students participating in the study often think about food. Similar results were obtained by Porwolik et al. [22] who assessed the impact of the place of birth and upbringing on eating habits among 267 students of Medical Faculty of Wrocław Medical University. The authors showed that 66.3% of students often think about food. They also showed that 20.8% of respondents practised secret snacking. This is comparable to our findings (25.52%). Our respondents were also asked about the importance of food in their life, with 24.63% of them admitting that they attach too much importance to food.

Different findings were presented by Sekula et al. [23] with 56.8% of respondents reporting that they attach too much importance to food. These differences may have resulted from the choice of sample as the study enrolled individuals with obesity, as well as from the type of questionnaire used by the authors. The study showed that 39.17% of students eat despite not being hungry. A significant difference was found in the frequency of affirmative answers provided by girls and boys (43.65% vs. 36.49%). Similar results were obtained by Porwolik et al. [22] with such answer provided by 37.6% of students.

A total of 24.63% of respondents agreed with the statement "my stomach is like a bottomless pit". Different findings were presented by Sekula et al. [23], with the above mentioned statement confirmed by 62.2% of respondents. It should be noted, however, that this question was addressed to obese patients in the cited article, which could have influenced the obtained results. No reduction in ghrelin levels occurs after food intake in obese individuals, which results in persistent hunger [6].

Our study showed that 62.91% of students considered eating to be an important part of life. A higher percentage was reported by Sekula et al. [23], with 70.3% of respondents indicating this answer, whereas Porwolik et al. [22] showed that 35.3% of respondents attach too much importance to food. On the other hand, 27.16% of students agreed with the statement "I eat often, even when I already feel full". Similar findings were presented by Porwolik et al. [22], while different results were obtained by Sekula et al. [23]

In the present study, the students were also asked questions on the frequency of overeating and the resulting feeling of guilt. Our study showed that 34.12%

of respondents often overeat, and 56.38% of them feel guilty about it. Furthermore, 61.13% of respondents claimed that they rarely feel extremely full. Similar results were obtained by *Porwolik* et al. [22], who showed that 30.6% of students admitted that they often overeat, and 69.4% reported that they rarely feel extremely full. More affirmative answers in relation to overeating were obtained by *Sekula* et al. [23] with 56.8% of respondents declaring frequent overeating, and 51.4% of respondents feeling guilty about it. Both overeating and dietary restrictions are influenced by different emotions. Many studies have shown that increased appetite, which leads to an increased intake of food, is primarily caused by experiencing negative emotions [15, 17, 27].

The obtained results showed that 36.50% of students occasionally overeat. By contrast, *Sekula* et al. showed that this fact was confirmed by 59.50% of respondents [23]. As demonstrated by other authors, situations such as social gatherings or activities involving attention, such as watching TV, cause loss of control over eating. As a result, there is a reduction in self-awareness, when the person pays no attention to the quality or quantity of food consumed [15].

In our study, 24.33% of students reported that others comment on their diet. This was also confirmed by 54.1% of respondents in the study by *Sekula* et al. [23]. Everyone has an influence on how they look, but is at the same time subject to pressure and comparisons with common body standards. Overweight and obesity are often viewed negatively by society [10].

The statement “when I feel anxious or upset, I eat more than I normally do” was confirmed by 20.18% of students. Additionally, 19.29% of students admitted that they start to eat after getting upset. Both of these phenomena were more common in the study by *Porwolik* et al., with 36.4% and 31.2% of students confirming such statements [22]. *Sekula* et al. showed in their study that 56.8% of respondents eat more than they normally do when feeling anxious, and that they start eating after getting upset [23]. Psychological stress is one of the factors that contribute to obesity and overweight. Furthermore, confusing emotions with feeling hungry often leads to higher food intake [7].

It is disturbing that 50.45% of study participants declared dissatisfaction with their body and would like to weigh less than they do. Similar findings were obtained by *Porwolik* et al. [22], who showed that 53.8% of students would also like to weigh less than they do, whereas up to 74% of respondents confirmed this fact in a study by *Kobos* et al. [8]. Criticism of one's own figure was more common among girls than boys (67.46% vs. 40.28%). Dissatisfaction with one's body among girls may be due to the image created by the media, with a slim woman considered to be a canon of beauty. *Materna* et al. [12], who assessed

the awareness of middle school girls about bulimia and anorexia, showed that 48% of them wished they had a figure of a fashion model and that 75% of them do not tolerate their own body.

In our study, 48.07% of students declared that their eating habits generally depended on their mood and, additionally, 64.69% of them confirmed that eating improves their mood. Different findings were presented by *Sekula* et al. [23], with 70.3% of respondents admitting that their eating habits depend on their mood, and 67.6% of them declaring that eating improves their mood [23]. However, this question was addressed to patients with morbid obesity in the cited study. Individuals suffering from this condition often have a tendency to over-experience emotions, which, in addition to a tendency to impulsive behaviour, can have a significant impact on eating habits depending on mood [19].

The statement “I eat moderately in the company of others, but I allow myself for more when alone” was confirmed by 30.86% of our respondents. Such declaration was made by 21.41% of respondents in the study by *Porwolik* et al. [22] and 59.5% in the study by *Sekula* et al. [23]

Our study showed that 32.64% of students avoid food despite feeling hungry and 47.77% of respondents deliberately use dietary restrictions. A higher percentage of affirmative answers (59.5%) regarding limited food intake despite hunger and a similar percentage (43.2%) for the question on intentional dietary restrictions were reported by *Sekula* et al. [23].

*Niewierska* et al. [14], who conducted their study among secondary-school students, reported that 26% of girls and 12% of boys declared the use of slimming diets. These results differ from our findings, according to which boys were more likely to use diets (20.85% vs. 15.87%). Alarming data were also presented by *Jodkowska* [5], who assessed the use of slimming diets among boys and girls aged 11-15 years. The author showed that up to 35.8% of girls and 14.3% of boys used slimming diets. In the context of dieting among girls, these results are twice higher compared to our study. It should be noted, however, that our questionnaire did not specify the type of diet used, which may have contributed to these differences.

Incorrect eating habits are one of the causes of diet-related diseases [8, 9]. Similarly to other authors, our findings point to issues that need to be considered when shaping correct eating habits.

## CONCLUSIONS

Eating habits of adolescents are mostly varied.

There are some differences in eating habits between boys and girls, with the latter more prone to emotional overeating and more likely to use dietary restrictions.

Nutritional education and, if needed, psychological help are recommended to promote healthy eating habits and support good mental health in adolescents.

### Conflict of interest

None declared.

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