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Dariusz Góra

Unhealthy nutrition among teenagers in the city of Bielsko-Biała

Nieprawidłowe odżywianie wśród nastolatków na terenie miasta Bielsko-Biała

Faculty of Health Sciences, The President Stanislaw Wojciechowski Calisia University, Kalisz, Polska
Correspondence: Dariusz Góra, Łownica 75, 43-394 Rudzica, Poland, e-mail: dareczekg@op.pl

ORCID iD
Dariusz Góra https://orcid.org/0000-0003-2495-3191

Abstract

Introduction: Unhealthy nutrition results from inappropriate eating behaviours that lead to changes in body weight. Consuming excessive amounts of salt, sugar, carbonated drinks, alcohol combined with physical inactivity causes overweight or obesity. In order to prevent incorrect nutrition, it is necessary to prevent overnutrition and to promote health-promoting behaviours that should be targeted at specific groups of the society. Such initiatives may limit or even exclude the emergence of incorrect nutrition which contributes to an increase in the incidence of lifestyle diseases. **Objective:** The aim of the article is to present and discuss the forms of spending free time, participation in physical education classes, and dietary habits of third-year secondary school students in the city of Bielsko-Biała (Poland). **Materials and methods:** An original questionnaire entitled "My health – something I care about" was used for the study. The questionnaire included questions about the diet, forms of spending free time, and participation in physical education classes at school. **Results:** Based on the questionnaire findings, watching TV is the most common form of spending free time (37% boys and 32% girls). Only 7% of girls and 18% of boys chose participation in sports as a form of spending their free time. 28% of boys and as much as 39% of girls admitted that they did not participate in physical education classes at school. The type of drinks consumed by secondary school pupils was significantly dependent on their gender. Regarding the type of lunch, sweet buns are chosen by 31% of boys and 23% of girls. Fruit is declared as their preferred lunch snack by 28% of the surveyed girls and only 2% of boys. **Conclusions and discussion:** The study has shown that there are many abnormalities in the diet of adolescents. The widespread belief that a slim figure is an asset nowadays prompts many young people to use various weight loss diets or fasting which, if used excessively, can pose a threat to the developing body systems. Information gathered from the respondents also shows that they do not have sufficient physical activity. Secondary school pupils increasingly choose passive recreation because physical activity does not give them as much satisfaction as, for example, playing computer games.

Keywords: adolescents, eating habits, physical activity, overweight

Streszczenie

Wstęp: Nieprawidłowe odżywianie wiąże się z niewłaściwymi zachowaniami żywieniowymi, które prowadzą do zmian masy ciała. Spożywanie nadmiernych ilości soli, cukru, napojów gazowanych, alkoholu i/lub brak aktywności fizycznej powodują nadwagę bądź otyłość. W celu zapobiegania nieprawidłowemu odżywianiu należy nie dopuszczać do nadmiernego odżywiania i motywować społeczeństwo do zachowań prozdrowotnych. Działania te powinny być skierowane do danej grupy społecznej. Dzięki temu można ograniczyć lub wręcz wykluczyć nieprawidłowe odżywianie, które nasila wzrost zachorowalności na choroby cywilizacyjne. **Cel:** Cele artykułu obejmują przedstawienie i omówienie form spędzania wolnego czasu, uczestnictwa w zajęciach z wychowania fizycznego i sposobów żywienia się uczniów klas III liceum na terenie miasta Bielska-Białej. **Materiał i metody:** Do badania wykorzystano autorski kwestionariusz „Moje zdrowie – dbam o nie". Ankieta zawierała pytania dotyczące diety, form spędzania czasu wolnego oraz uczestnictwa w zajęciach wychowania fizycznego w szkole. **Wyniki:** Najczęstszą formą spędzania czasu wolnego okazało się oglądanie telewizji (37% chłopców i 32% dziewcząt). Jedynie 7% dziewcząt i 18% chłopców jako formę spędzania czasu wolnego wskazało uprawianie sportu. 28% chłopców i 39% dziewcząt przyznało, że nie uczestniczy w zajęciach wychowania fizycznego. Rodzaj napojów spożywanych przez uczniów był istotnie zależny od ich płci. Zjadanie drożdżówki na drugie śniadanie zadeklarowało 31% chłopców i 23% dziewcząt, a zjadanie owoców – 28% dziewcząt i tylko 2% chłopców. **Wnioski i omówienie:** Badania wykazały, że w diecie młodzieży występuje wiele nieprawidłowości. Powszechne przekonanie, że szczupła sylwetka jest w dzisiejszych czasach atutem, skłania wiele osób do stosowania licznych diet odchudzających czy postów, które w nadmiarze mogą stanowić zagrożenie dla rozwijającego się organizmu. Respondenci wykazują również niewystarczającą aktywność fizyczną. Uczniowie coraz częściej wybierają rekreację bierną, ponieważ aktywność fizyczna nie daje im takiej satysfakcji jak gra na komputerze.

Słowa kluczowe: młodzież, nawyki żywieniowe, aktywność fizyczna, nadwaga

INTRODUCTION

Contemporary children and adolescents make numerous nutritional mistakes. These include excessive consumption of foods, increased intake of sugary drinks, frequent and large meals, purchasing easily available ready-to-eat foods such as fast foods with a high fat content, inadequate consumption of vegetables and fruit, and overconsumption of sweet snacks. One of the consequences of imbalanced diet and low levels of physical activity is the growing problem of obesity in the early period of life. In Poland, overweight and obesity affect over 12% of school-aged children and adolescents. Gaining insights into the lifestyle of young people and trying to modify undesirable behaviours may contribute to reducing the scale of the problem.

Health, according to the World Health Organization (WHO), is not merely the absence of disease, but a state of complete physical, mental, and social well-being. The definition puts an emphasis on the multidimensional and subjective nature of health. An important role in the process of shaping and protecting health is played by people's lifestyle and, above all, by the habitual pattern of behaviour towards one's body. It can take the form of behaviours aimed at maintaining or restoring health, and those that cause direct or distant damage to health. Health-related behaviours can be divided into pro-health (positive, health-promoting) and anti-health (negative, self-destructive) types. Pro-health behaviours are used to support health, prevent disease, and support recovery. On the other hand, anti-health activities contribute to the emergence of health disorders and various negative impacts in the emotional, physical and mental spheres of life[1].

From the perspective of social influence mechanisms, the level of awareness of one's own health-associated behaviours is of great importance. It is on the level of every individual's consciousness that their formation depends. The development of health behaviours is influenced by many factors related both to the individual and the environment.

Their modelling by parents and guardians in the early period of a child's life results in the development of specific habits. The process is then reinforced or modified as part of further socialisation taking place in the pre-school setting, then at school and in the peer group, and in later years also in the professional and social environment. Behaviour modelling refers to health and its constituent aspects including the quality of nutrition, physical activity, and preventive care.

Health-related behaviours are also determined by the so-called social and health context. Culture shapes a range of aspects such as the general standard of living of members of a given community, their ideas about health and disease, the ways of perceiving, feeling, describing and interpreting disease symptoms, the state of knowledge about the causality of diseases, attitudes and behaviours towards one's own disease as well as the lifestyle of a particular community.

Various types of media play an important role in influencing attitudes towards health. Rapid development of technology has made the media an important source of knowledge, including health information. Various social campaigns also serve to disseminate knowledge about health and disease. However, among campaigns and social movements, one can distinguish those that favour pro-health behaviours and those that may have a negative impact on health (e.g. websites promoting starving as a means of losing weight, "arguments" against vaccination of children, etc.).

One of the health-promoting attitudes is physical activity. The basic awareness-building factor is education in the field of physical recreation. Physical education lessons at school and extracurricular physical activities provide an optimal opportunity for children and young people to get the required dose of exercise. However, an important role is played by physical education classes, which also have the task of making young people independent in terms of physical recreation. In children and adolescents, systematic physical activity serves as a stimulus for many beneficial physiological changes. These include improved body shape, increased muscle mass, springy gait, better resistance to fatigue during physical work, and improved well-being. The body becomes stronger, faster and more robust. Researchers set the minimum physical activity level in children at 6 hours of organised movement a week. Children at preschool and early school age have the greatest need for physical activity. It is beneficial for the healthy mental and physical development of the child. Failure to meet the minimum standard of physical activity contributes to the impairment of processes occurring during the child's development and may become a factor inhibiting the development of awareness and physical activity in later stages of life[1,2]. The aim of this article is to discuss the diet of third-grade secondary school students in the city of Bielsko-Biała.

MATERIALS AND METHODS

The research material was collected in January 2022. An original questionnaire entitled "My health – something I care about" was used for the study. The anonymous questionnaire contained several questions about the diet, forms of spending free time, and participation (or non-participation) in physical education classes at school. The questionnaire was addressed to third-grade secondary school students (189 boys and 178 girls). On the basis of the calculations made (broken down by sex), appropriate tables were drawn up and interpreted. The survey contained the following questions:

1. Specify the most common form of spending your free time.
2. Do you attend PE classes at school regularly?
3. Specify how often you eat certain types of food.
4. List the beverages you most frequently drink.
5. Specify the food that you eat most often for lunch.

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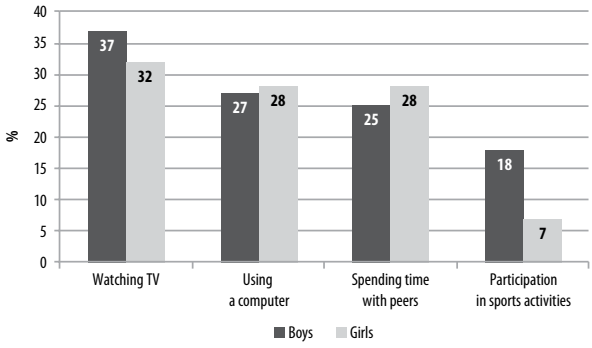

Fig. 1. Leisure activities (based on the collected data)

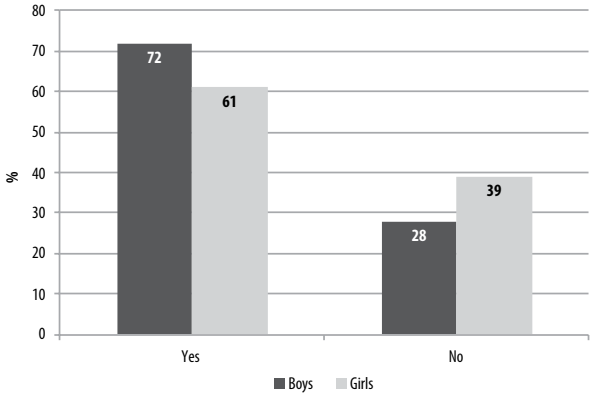

Fig. 2. Participation in physical education classes at school (based on the collected data)

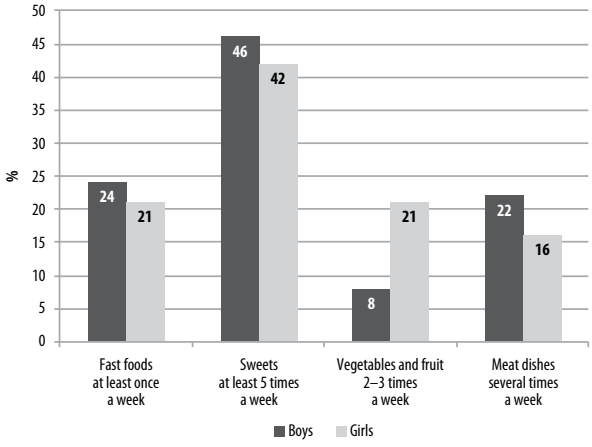

Fig. 3. Frequency of eating particular types of food (based on the collected data)

RESULTS

Watching TV was found to be the most common form of spending free time (37% boys and 32% girls). On the other hand, using the computer as a leisure activity was declared by 27% of the surveyed boys and 28% of girls. 28% of the surveyed girls and 25% of boys spend their free time with their peers. Only 7% of girls and 18% of boys chose participation in sports as their preferred leisure option (Fig. 1).

72% of the surveyed boys and 61% of girls regularly participate in physical education classes at their school. 28% of boys and as many as 39% of girls admitted that they did not attend physical education classes. Of note, as many as 75% (boys and girls) of the respondents answered that the main reasons for their lack of physical activity included unwillingness to exercise and the appearance of their body (Fig. 2).

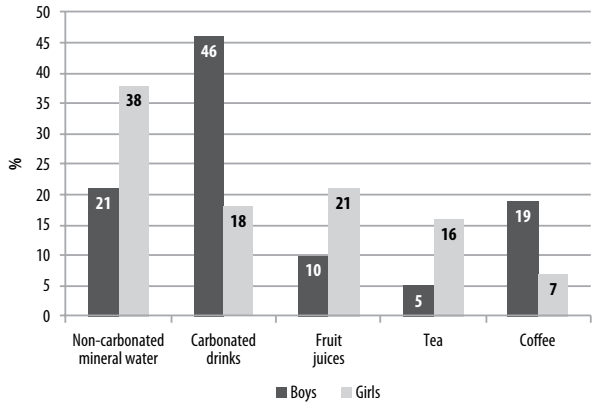

Fig. 4. Beverages most often selected by pupils (based on the collected data)

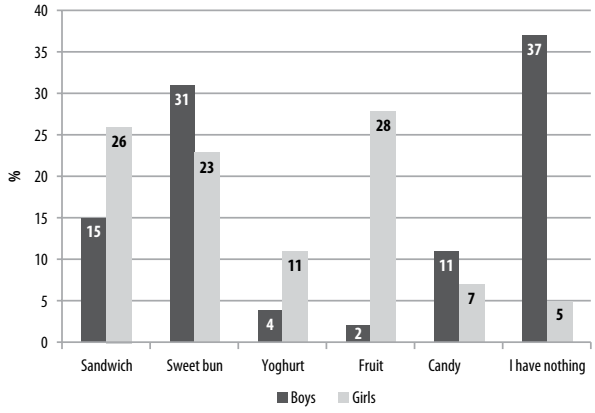

Fig. 5. Preferred lunch choices (based on the data collected)

As many as 46% of the surveyed boys and 42% of girls admitted that they ate sweet snacks at least 5 times a week. Having fast foods at least once a week was declared by 24% of boys and 21% of girls. In addition, a relationship between the preferred meal types and the gender of the respondents was observed on the basis of the questionnaire replies. Girls chose vegetables and fruit more often (21%) than boys (8%), while 22% of boys and 16% of the surveyed girls chose meat dishes (Fig. 3).

The type of beverages consumed by students was significantly linked to their gender. Girls preferred still mineral water (38%) and fruit juices (21%) as opposed to boys, who most frequently chose carbonated drinks (46%). A total of 19% of the surveyed boys and 7% of girls admitted that their preferred type of drink was coffee (Fig. 4).

As many as 37% of the surveyed boys stated that they did not have any lunch at school. Sweet bun was specified as their usual lunch snack by 31% of boys and 23% of girls. Fruit was declared by 28% of the surveyed girls and only

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2% of boys. Yoghurt was a preferred lunch option by 11% of girls and 4% of boys, and a sandwich by 26% of girls and only 15% of boys (Fig. 5).

DISCUSSION

Nowadays, limited physical activity is one of the major threats to the health of children. Motor disorders, including posture defects, are among the most common diseases among children and adolescents. Unfortunately, other conditions contribute to the disturbing picture of the current health status of children, i.e. back problems or visual defects. Weight disorders – especially overweight and obesity – show a specific tendency. They can be prevented, among others, through systematic physical activity; otherwise, there is a risk of other health disorders. These include diseases of the skeletal system such as osteoporosis, which is also attributed to an insufficient load on the skeletal system. Without prolonged physical activity, the body loses bone tissue density, calcium and phosphorus, and the breakdown of bone tissue is accelerated. Increased motor activity is of great importance for reducing the incidence of osteoporosis[3,4].

Another disease that poses a major threat to the health of children, and has links to physical inactivity is ischaemic heart disease. It is caused by atherosclerosis of the coronary arteries, i.e. the deposition of fatty substances on the inner walls of the arteries. Reduced physical activity results in less circulating blood, which decreases the number of red blood cells. As a consequence, it leads to hypoxia, which in turn contributes to a decrease in physical performance and impairment of body functions. Remaining inactive for a long time may lead to obesity[5,6].

In Europe, the Polish society is classified as not very active in terms of physical activity, especially organised sports activities. With age, the number of people preferring passive, static forms of rest increases. Numerous studies have shown that also children and adolescents increasingly show low levels physical activity and a preference for passive leisure activities. Students spend more time in front of the TV or computer, and avoid engaging in sports.

The survey conducted in Bielsko-Biała also shows that secondary school pupils are not eager to participate in physical education classes at school. 28% of boys and 39% of girls admitted to avoiding PE classes. Based on the questionnaire findings, only 7% of girls and 18% of boys consider sports activities to be a form of spending their free time (Figs. 1, 2).

Obesity is a pathological condition in which the amount of adipose tissue increases, affecting the whole body. Then, damage to the functions and structure of different body organs and systems occurs, which increases the risk of reduced average life expectancy. It is a disease which, even if the increased amount of adipose tissue does not cause immediate pathological symptoms, poses the risk of organ damage and general impairment of the health status, as it lasts longer[7,8].

In fact, overweight and obesity have many serious health effects for the child and later also obese adults. It is worth noting that these consequences are related not only to physical functioning, but may also apply to the mental and social health of young people. Obesity, as one of the most common disorders interfering in the development of children and adolescents, affects all constituents of health (physical, mental and social) of a young person, and then an adult, limiting their development potential, impacting life chances, and impairing the quality of life[9].

Aggressive marketing and advertising mean that modern people eat too many products containing excessive amounts of fats and easily digestible simple carbohydrates (mainly sweets) and ingredients of little nutritional value, as well as high-calorie dishes served in fast-food bars. Beverages that are popular all over the world (cola, beer, lemonade, and other sweetened drinks) pose another danger of consuming extra calories, of which consumers are frequently unaware. Insufficient consumption of low-calorie foods rich in fibre (fruit and vegetables), vitamins and essential minerals is another nutritional concern. Young people's favourite foods (burgers, French fries, crisps, sweets) are rich in calories and do not ensure an sufficient supply of the most important nutrients[8,9].

The studied adolescents from Bielsko-Biała also revealed a number of undesirable eating habits: lack of lunch – 37% of boys, 46% of boys eat sweet snacks at least 5 times a week, 24% of boys and 21% of girls eat fast foods at least once a week (Figs. 3, 4).

Obesity is an epidemic of the 21st century recognised by the WHO[9]. Epidemiological data indicate that in 2015 a total of 2.3 billion people worldwide were severely overweight and 704 million were obese. In Europe, approximately 20% of children under the age of 14 have excess body weight and 5% are obese. In Poland, the problem of excess body weight among school-age children affects about 18%[9,10]. The problem of excess body weight concerns 10% of Polish girls and 14% of Polish boys at early school age (7–9 years). In the group of 13–15-year-old adolescents living in Poland, obesity occurs in 4.5% of respondents, more often in girls than in boys, and overweight in 9% of adolescents[9]. In 2010, according to the HBSC (Health Behaviour in School-aged Children) study, the percentage of Polish teenagers with excess body weight was among the highest in Europe. Almost every fourth 11-year-old, every fifth 13-year-old and every seventh 15-year-old had excess body weight, and in the years 2002–2010 the percentage of overweight and obese adolescents was steadily increasing[11].

According to the WHO, increased body weight is responsible for more than one million deaths in Europe each year. It is also the sixth most important risk factor linked to the number of deaths worldwide[12,13].

In the past 25 years, the incidence of obesity in Europe has tripled. In European countries, overweight and obesity among children have been found in over 30% of girls and in 20% of boys aged 6–10[11].

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In approximately 25–45% of cases, genetic predisposition is responsible for the occurrence of obesity and overweight. Other factors include poor eating habits, snacking between meals, sedentary lifestyle, lack of physical activity, hormonal and neurological disorders, inadequate amount of sleep, and effects of marketing and advertising[11].

The most common health consequences of overweight and obesity in children and adolescents include diabetes mellitus, high cholesterol, hypertension, atherosclerosis, heart failure, fatty liver, gallstones, bronchial asthma, sleep apnoea syndrome, orthopaedic complications, impaired physical performance, and attention deficit disorder[12].

Obesity treatment is a difficult process, often ineffective and frustrating both for the child, parents, and physicians. Therapeutic success depends on socio-economic, cultural, emotional and motivational factors. The treatment of obesity is by definition neither pharmacological nor surgical. The process is based on dietary treatment, increased levels of physical activity, and behavioural therapy. Nutritional changes consist in introducing a properly balanced, low-energy, norm-protein diet with a reduced intake of fats and carbohydrates. It is necessary to reduce the portions of consumed meals, avoid sweets and salty snacks between meals, and also limit the consumption of fried foods, and products rich in salt, sugar, and fat[10].

Health education plays an important role in the prevention of overweight and obesity among school children and youth[14].

CONCLUSIONS

The study has revealed a number of abnormalities in the diet of adolescents. Awareness of the risks associated with the contemporary lifestyle, as well as knowledge of the first symptoms of unhealthy nutrition, allows for a quick diagnosis and initiation of appropriate treatment in order to avoid health-related complications or even death. Crucially, the respondents included in the study also showed insufficient levels of physical activity.

Nowadays, pupils increasingly choose passive recreation because physical activity does not give them as much satisfaction as, for example, playing computer games. The findings highlight that parents should cooperate with their children in terms of lifestyle choices, because it is them who largely determine how children spend and will spend their free time in the future.

Conflict of interest

The author does not declare any financial or personal links to other persons or organisations that could adversely affect the content of this publication or claim rights thereto.

References

1. Santomauro DF, Melen S, Mitchison D et al.: The hidden burden of eating disorders: an extension of estimates from the Global Burden of Disease Study 2019. Lancet Psychiatry 2021; 8: 320–328.
2. Leonardi F: The definition of health: towards new perspectives. Int J Health Serv 2018; 48: 735–748.
3. Ponczek D, Olszowy I: Styl życia młodzieży i jego wpływ na zdrowie. Probl Hig Epidemiol 2012; 93: 260–268.
4. Litmanen J, Fröjd S, Marttunen M et al.: Are eating disorders and their symptoms increasing in prevalence among adolescent population? Nord J Psychiatry 2017; 71: 61–66.
5. Grzywacz R: Rola rekreacji ruchowej w wychowywaniu dzieci w wieku szkolnym. Med Rodz 2011; 2: 48–53.
6. Pietrzykowska M, Nowicka-Sauer K, Cwaliński T et al.: Występowanie zaburzeń psychicznych wśród osób z otyłością. Fam Med Prim Care Rev 2014; 16: 146–147.
7. Jonczyk P, Potempa M, Kajdaniuk D: Analiza stopnia odżywienia i zaburzeń odżywiania oraz charakterystyka przyzwyczajeń żywieniowych i aktywności fizycznej wśród dzieci szkolnych w wieku 6–13 lat w mieście Piekary Śląskie. Pediatr Med Rodz 2015; 11: 302–314.
8. Tabak I, Oblacińska I, Jodłowska M: Psychospołeczne czynniki sprzyjające stosowaniu diety przez nastolatków z nadmiarem masy ciała. Med Og Nauk Zdr 2014; 20: 120–125.
9. Szymocha M, Bryła M, Maniecka-Bryła I: Epidemia otyłości w XXI wieku. Zdr Publ 2009; 119: 207–212.
10. Witek A, Lewandowska-Kidoń T, Pawluk-Skrzypek A: Percepcja otyłego rówieśnika a przekonania zdrowotne młodzieży gimnazjalnej. Med Og Nauk Zdr 2012; 18: 276–280.
11. Jarosz M, Wolnicka K, Kłosowska J: Czynniki środowiskowe związane z występowaniem nadwagi i otyłości wśród dzieci i młodzieży. Post Nauk Med 2011; 9: 770–777.
12. Woźniak-Holecka J, Sobczyk K: Organizacja szkolnej edukacji zdrowotnej dotyczącej otyłości u dzieci. Med Środ 2013; 16: 64–70.
13. Pieszko M, Gaca M, Małgorzewicz S: Edukacja żywieniowa rodziny w przypadku występowania otyłości. Pediatr Med Rodz 2013; 9: 399–403.
14. Wojtyła A, Biliński P, Bojar I et al.: Zaburzenia odżywiania u polskich gimnazjalistów. Probl Hig Epidemiol 2011; 92: 343–350.