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Wiedza młodzieży szkół ponadgimnazjalnych powiatu nowotarskiego na temat przyczyn i skutków nadwagi i otyłości oraz ich profilaktyki

Streszczenie

Wstęp. Badania epidemiologiczne dostarczają dowodów na zwiększającą się częstość występowania otyłości zarówno w Polsce jak i na świecie. Epidemia otyłości wynika głównie z uwarunkowań środowiskowych: dostępności wysoko przetworzonej, taniej żywności o znacznej zawartości tłuszczu i węglowodanów prostych oraz znacznego ograniczenia codziennej aktywności fizycznej. Najważniejszym czynnikiem warunkującym zdrowie jest właściwy styl życia i dlatego niezwykle istotne jest prowadzenie skutecznej edukacji zdrowotnej w wieku dorastania. Istotną składową systemu opieki zdrowotnej obejmującego dzieci i młodzież jest edukacja wskazująca młodym ludziom możliwości dokonywania prozdrowotnych wyborów, co powinno mieć wpływ na poprawę stanu zdrowia społeczeństwa.

Cel. Celem pracy było poznanie wiedzy uczniów szkół ponadgimnazjalnych na temat zagadnień dotyczących profilaktyki otyłości i jej skutków oraz zapotrzebowania uczniów na edukację zdrowotną.

Materiał i metody. Badania przeprowadzono w szkołach ponadgimnazjalnych powiatu nowotarskiego od listopada 2007 roku do marca 2008 roku. Zastosowano metodę sondażu diagnostycznego z użyciem techniki kwestionariusza ankiety skierowanej do 859 uczniów w wieku 16-19 lat, w tym 366 chłopców i 493 dziewcząt.

Wnioski. Skuteczność edukacji zdrowotnej uczniów klas II szkół ponadgimnazjalnych powiatu nowotarskiego na temat zagadnień dotyczących profilaktyki nadwagi i otyłości i ich skutków, jest niezadowalająca. Planując edukację zdrowotną młodzieży konieczne jest objęcie szczególną uwagą chłopców, którzy wykazują mniejszy poziom wiedzy i uwzględnienie zagadnień, na temat których uczniowie posiadają najniższy poziom wiadomości. W celu zwiększenia poziomu edukacji zdrowotnej powinno się realizować program profilaktyki i promocji zdrowia w ścisłej współpracy z pracownikami szkoły i rodzicami.

Słowa kluczowe: edukacja zdrowotna, młodzież, nadwaga, otyłość.

The knowledge of the secondary schools' students in Nowy Targ county of the causes, consequences and prevention of overweight and obesity

Abstract

Introduction. Epidemiological studies provide evidence of increasing prevalence of obesity in Poland, as well as abroad. The obesity epidemic has its roots mainly in environmental factors: availability of highly processed, cheap food containing much fat and simple carbohydrates, and significant reduction of daily physical activity. The most important determinant of health is a healthy lifestyle, and therefore it is essential to manage an effective health education for adolescents. An important component of a health care system involving children and young people is the education showing young people an opportunity to make healthy choices, which should have an impact on improving conditions of the society's health.

Aim. The purpose of the study was to learn about the knowledge of the secondary schools' students about the dangers related to the prophylaxis of obesity and its consequences, and the need of the students for health education.

Material and methods. The research was conducted in secondary schools in Nowy Targ County from November 2007 to March 2008. The method used for that purpose was a diagnosis survey, including a survey questionnaire, directed at 859 students aged 16-19, including 366 boys and 493 girls.

Conclusions. Effectiveness of pro-health education of the 2nd grade students of secondary schools in terms of the issues related to overweight and obesity prevention and their effects is unsatisfactory. Girls demonstrated a higher level of knowledge of the discussed issues. While planning health education for the youth, it is necessary to focus especially on boys, who represent a poorer state of knowledge on the issues that the students know the least about. In order to increase its efficiency, health education should be connected with a program of prophylaxis and health promotion at school, and should be completed in a close cooperation with school workers and parents.

Key words: health education, the youth, overweight, obesity.

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INTRODUCTION

Complex education in the field of health problems and illnesses should reflect environmental circumstances of the place of living, studying and working of the patient and their families. The WHO Committee of Experts on Education and Health Promotion acknowledged effective health education of adolescents as the most important factor determining proper lifestyle, and consequently, good health condition [1,2].

Health education in current curricula in Poland includes not only transfer of knowledge about health, but also the development of skills, which help kids and teenagers to use the knowledge rationally and shape adequate attitudes towards health [3].

Epidemiological studies prove that the obesity rate, both in Poland and abroad, is increasing. About 30% of the US citizens suffer from obesity, and if overweight is taken into account too, it is 67% [4]. In Europe about 50% of the population deal with overweight, plus additional 22% of obese women and 15% of men. Similar data has been achieved for the adult population of Poland [5-7].

The problem of excessive body weight concerns not only developed countries, but also the developing ones. In the countries of the North Africa, during the last 20 years the obesity rate tripled, and correlates with low education standards [5].

The child and adolescent obesity rates appear to have doubled or even quadrupled during the last 20 years, and it applies to, depending on the age and the country of living, 5% to 15% of the population at the developing age. In the USA it relates to even 25%. In Canada it applies to 10% of boys and 9% of girls, and in Finland it is 16.7% and 9.8% respectively [3]. Basing on the studies conducted in Germany, the episodes of overeating and the related overweight concern 2%, and night eating- 1.1% of children[8]. What is more, the studies of the Spanish authors demonstrate that the risk of the development of eating disorders, including overeating and its consequent obesity, applies to 15.3% of teenage girls and 2.2% of teenage boys [9].

Studies directed in Poland in 2005 by the Unit of School Medicine of the Institute of Mother and Child in Warsaw, indicated overweight of 8.8% of students aged 13-15 years old, and obesity of 4.5% of the same age group [10]. Basing on many statistical analyses, the BMI (the Body Mass Index) has been acknowledged as the most useful for the purpose of evaluation of the state of nutrition of both adults and kids [7]. International studies indicate that among the people whose relative body weight, measured with the BMI, was above 75 percentiles in their childhood, the mortality rate from cardiovascular disease at the adult age was twice as high as that of the people whose BMI was between 25 and 49 percentiles [11].

Epidemic obesity observed during the last 25 years has been caused mainly by environmental circumstances: availability of highly processed food with above-the-line amounts of fats and simple carbohydrates, and remarkable restrain from physical activity [12,13]. Improper nutrition is the main cause of health problems, in both developed and underdeveloped human populations [14].

Thus dietary prevention is one of the crucial elements of stemming modern-age diseases as well as improving human health.

AIM

The purpose of the study was to learn about the knowledge of the secondary school students about the dangers related to the prophylaxis of obesity and its consequences, and the need of the students for a health education

MATERIAL AND METHODS

The studies were carried out in secondary schools of Nowy Targ County from November 2007 to June 2008. The studies with the use of questionnaires were directed at 859 students of the 2nd grade, including 366 boys (40.3 percent of all the students surveyed) and 493 girls (59.7 percent of all the students). The students were 16-19 years old (median age 17.4).

The criteria required to be included in the researches were: studying in class 2 of a secondary school, living in Nowy Targ County, a written agreement of parents for conducting the studies, and assent of the student to fill in the survey.

The research tool was the author's anonymous questionnaire survey. Statistical analysis of the collected data was conducted basing on a computer statistical package Statistica v. 5.1 of the StatSoft Company and Microsoft Excel 2000 of the Microsoft. The analysis checked the percentage of the answers of the boys and girls for particular questions. With the use of the χ^2 test and log-linear analysis, it was also examined if there existed any major differences between the given answers depending on the sex. The level of statistical significance was $p<0.05$.

RESULTS

Overweight and obesity was declared by 19.7% of the surveyed students as the reasons for a higher risk of early diagnosis of atherosclerosis. Diabetes as the reason was declared by 13.7% of the students and 10% said that it was hypertension. It is worth mentioning that 40.6% of the teenagers (the girls and boys alike) did not answer that question, and another 10% of the surveyed admitted that they did not know the answer (Table 1).

No major statistical difference between the girls and the boys was found, neither in terms of possessing the knowledge of diseases that could raise the risk of early diagnosis of atherosclerosis, nor in terms of the lack such awareness.

The most important for atherosclerosis prevention was proper nutrition, as was stated by 47% of the teenagers surveyed. Physical activity was pointed by 36.4%, 9.3% – avoidance of smoking cigarettes, and 2.9% – keeping the proper body weight. Students not giving the answer to this question accounted for 31.8%, and 8.1% marked "I do not know" (Table 2).

No major statistical difference between the girls and the boys was found, neither in terms of evaluating behaviours

lowering the risk of early atherosclerosis development, nor in terms of the frequency of the answers that would suggest the lack of knowledge of the issue (Table 2).

The question what the Body Mass Index is and how it can be used was answered correctly by only 1.3%. 37.0% of the surveyed answered incompletely, and 61.7% did not know the answer (Table 3).

Statistically, significantly more girls than boys cited eating sweets (24.1% vs 12.0%; log-linear analysis; p<0.001), limited physical activity (77.3% vs 63.1%; log-linear analysis; p=0.001) and genetic conditioning (26.0% vs 15.6%; log-linear analysis; p=0.008) as the causes of overweight/obesity. Furthermore, the girls a bit more often pointed to eating fat food as one of the reasons (27.4% vs 22.4%; log-linear analysis; p=0,05) (Table 4).

Overweight/obesity as the roots of spreading cardiovascular disease was stated by 94.5% of the students (95.7% of the girls and 92.9% of the boys). Only few students did not notice that relationship (0.7%). The lack of knowledge of the issue was admitted by 4.8% of the respondents (4.1% of the girls and 5.7% of the boys) (Table 5).

The knowledge of the issue was similar for girls and boys (Table 5).

Analysing the answers of the students about cholesterol, it was proved that 52.1% of them were unable to explain what cholesterol was, 33.8% gave incomplete answers, and

TABLE 1. Diseases increasing the risk of early diagnosis of atherosclerosis, as cited by the students surveyed.

Students' answers*	Students surveyed						Statistical Significance
	Total		Girls		Boys		
	n=859	%	n=493	%	n=366	%	p**
Diabetes	118	13.7	66	13.4	52	14.2	0.54
Overweight/obesity	169	19.7	99	20.1	70	19.1	0.99
Hypertension	86	10.0	49	9.9	37	10.1	0.95
Other answers	223	26.0	127	25.8	96	26.2	0.09
I do not know	86	10.0	50	10.1	36	9.8	0.43
No answer	349	40.6	204	41.4	145	39.6	0.07

*Total number of answers is higher than 100% because the surveyed could give more than one answer
**log-linear analysis; partial dependencies

TABLE 2. Students' opinion concerning behaviours crucial for atherosclerosis prevention .

Students' answers*	Students surveyed						Statistical Significance
	Total		Girls		Boys		
	n=859	%	n=493	%	n=366	%	p**
Limiting fats/proper nutrition	404	47.0	241	48.9	163	44.5	0.93
High physical activity	313	36.4	192	39.0	121	33.1	0.52
Avoiding smoking cigarettes	80	9.3	45	9.1	35	9.6	0.99
Avoiding overweight/obesity	25	2.9	16	3.2	9	2.5	0.32
I do not know	70	8.1	39	7.9	31	8.5	0.75
no answer	273	31.8	155	31.4	118	32.2	0.80

*Total number of answers is higher than 100% because the surveyed could give more than one answer
**log-linear analysis; partial dependencies

TABLE 3. Students' knowledge concerning understanding of the Body Mass Index.

Answers of the students surveyed	Students surveyed						Statistical Significance
	Total		Girls		Boys		
	n=859	%	n=493	%	n=366	%	p*
Relation of body weight (reflected in kilograms) to height 2	11	1.3	11	2.2	0	0	
Comparison of body weight to height	318	37.0	221	44.8	97	26.5	<0,001
I do not know	530	61.7	261	53.0	269	73.5	
Total number of answers	859	100	493	100	366	100	

*log-linear analysis; partial dependencies

TABLE 4. Causes of overweight/obesity as stated by the students surveyed.

Answers given by the surveyed about the causes of obesity*	Students surveyed						Statistical Significance
	Total		Girls		Boys		
	n=859	%	n=493	%	n=366	%	p**
Improper nutrition (overeating)	617	71.8	370	75.0	247	67.5	0.08
Limited physical activity	612	71.2	381	77.3	231	63.1	0.001
Fat food	217	25.3	135	27.4	82	22.4	0.05
Genetic conditioning	185	21.5	128	26.0	57	15.6	0.008
Eating sweets	163	19.0	119	24.1	44	12.0	<0.001
Total number of answers	1794		1133		661		

*Total number of answers is higher than 100% because the surveyed could give more than one answer
**log-linear analysis; partial dependencies

only 14.1% of the respondents demonstrated a thorough knowledge of it (Table 6).

No major statistical difference between the boys and girls was noticed in terms of answering the question about cholesterol correctly or not (Table 6).

Students' responses to the question about "healthy eating" were hugely differentiated, nonetheless, they could be segregated into four notions, as presented in Table 7. The majority of the students surveyed (66%) demonstrated a weak understanding of the term, describing "healthy eating" as combination of products beneficial and unfavourable to human life; 23.5% of the surveyed were unable to enunciate it correctly, meaning generally products having disadvantageous impact on life. The correct explanation was given by a small proportion of the teenagers, who cited adherence to the rules of healthy eating (1.8%) (Table 7).

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DISCUSSION

Current medicine pays more and more attention to effective health education, which is a part of primary prevention – of healthy people, and secondary prevention. The basis of its success is a skilful influencing the knowledge, attitudes, skills and lifestyle of the receiver [15].

Providing preventive care for children and teenagers begins to be especially appreciated. Its crucial element is health education of the young generation, which increases their chances of having good health condition and which, is indispensable for their school achievements and high quality of life. According to current regulations, health education of students should be provided for every type and level of school (independently from the curricula) as a part of school personal development program, and written in the school prevention program. Such program is supposed to shape pro-health attitudes and encourage teenagers to counteract health risks.

The grade 2 students of secondary schools that took part in the research, demonstrated a low level of knowledge of overweight and obesity prevention. A handful of studies by other authors reaffirm low effectiveness of the current form of health education.

Results of research conducted among children aged 13-15 [16] and soldiers of the regular military service in Grójec [17] also prove relatively low level of awareness of modern-age diseases connected to diet, and factors influencing contracting these diseases.

TABLE 5. Opinion of the students surveyed about the impact of overweight and obesity on expansion of cardiovascular disease.

Answers of the surveyed about the relationship between overweight/obesity and development of cardiovascular disease	Students surveyed						Statistical Significance p**
	Total		Girls		Boys		
	n=859	%	n=493	%	n=366	%	
Yes	812	94.5	472	95.7	340	92.9	0.09
No	6	0.7	1	0.2	5	1.4	
I do not know	41	4.8	20	4.1	21	5.7	
Total number of answers	859	100	493	100	366	100	

*log-linear analysis; partial dependencies

TABLE 6. Knowledge of the students surveyed of cholesterol.

Answers of the students to the question „what is cholesterol?"	Students surveyed						Statistical Significance p**
	Total		Girls		Boys		
	n=859	%	n=493	%	n=366	%	
Proper answer	121	14.1	71	14.4	50	13.7	0.188
Partial answer	290	33.8	181	36.7	109	29.8	
I do not know	448	52.1	241	48.9	207	56.5	
Total number of answers	859	100	493	100	366	100	

*log-linear analysis; partial dependencies

TABLE 7. Explanation of the term „healthy eating" by the students surveyed.

Students' answers	Students surveyed						Statistical Significance p**
	Total		Girls		Boys		
	n=859	%	n=493	%	n=366	%	
Observing the rules of healthy eating	15	1.8	13	2.6	2	0.5	<0.001
Larger amounts of vegetables, limiting animal fats in the diet	75	8.7	56	11.4	19	5.2	
Diet without products harmful to health	567	66.0	349	70.8	218	59.6	
Diet including animal fats, sweets, or fast-food" products	202	23.5	75	15.2	127	34.7	
Total number of answers	859	100	493	100	366	100	

*log-linear analysis; partial dependencies

Gacek [18] conducted in a holiday sport camp studies among teenagers aged 14-18 which demonstrated that 12% of the girls and 26.5% of the boys declared lack of any knowledge of proper nutrition. Międzyborska et al. [19] analysed the knowledge of the same issue of a group of students of Agricultural University of Cracow, and their findings were different. The students were generally aware of the influence of nutrition on the risk of contracting modern-age diseases, which confirms a relationship between the level of health awareness and the age as well as the kind of school the student attends.

Studying the knowledge of students from the Podkarpacie region about obesity, Marcysiak et al. [10] demonstrated a higher level of awareness of girls than boys, but only 3% of the surveyed showed a high level of knowledge. In the group of the girls, the average knowledge level was 48%, satisfactory – 28%, low – 18%, unsatisfactory – 5% of the respondents. On the other hand, the levels of knowledge of the boys were as follow: 54% – low, 14% –unsatisfactory, only 24% – average, and 9% – satisfactory level of the knowledge of the issue.

Likewise, the studies by Chemperek et al. [20] conducted among the students of junior high school and high school in Lublin demonstrate that the awareness of health nutrition is insufficient and its implementation is too weak, especially when students of high junior school are taken into account. Better results were achieved by Piwoński and Pytlak [21] among Warsaw teenagers aged 13-14, where the majority of the surveyed showed proper level of knowledge of rational nutrition and basic factors determining heart diseases. According to the slogan of the World Health Organization "health starts at home, parents are the first teachers of health of the child and their role does not stop when the child goes to school". Success of pro-health education depends on cooperation between school and parents [17].

CONCLUSIONS

1. Effectiveness of pro-health education of the 2nd grade students of secondary schools in terms of the issues related to overweight and obesity prevention and their effects is unsatisfactory.
2. Girls demonstrated a higher level of knowledge of the discussed issues.

In order to increase its effectiveness, health education should be connected to the school prevention program and health promotion, and should be include in close cooperation with the school workers and students' parents.

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