

Nutrition and healthy eating policy in health-promoting schools in Poland

Żywnienie i polityka w zakresie zdrowego żywienia w szkołach promujących zdrowie w Polsce

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Cel. Celem artykułu jest prezentacja wyników badań dotyczących: infrastruktury dla organizacji żywienia, posiłków i dostępności w szkole produktów i napojów dla uczniów oraz polityki w zakresie zdrowego żywienia w szkołach promujących zdrowie (SzPZ) i w szkołach, które nie podjęły działań w zakresie promocji zdrowia.

Materiał i metoda. Narzędziem badawczym był anonimowy kwestionariusz dla dyrektora szkoły, opracowany na podstawie standardowego „Szkolnego Kwestionariusza” przygotowanego w serii badań HBSC 2009/2010. Zbadano dwie losowo dobrane próby szkół podstawowych i gimnazjów: SzPZ (N=202) należące do wojewódzkich sieci tych szkół co najmniej 3 lata i szkoły nie realizujące tego programu – grupa kontrolna (N=378).

Wyniki. SzPZ, w porównaniu ze szkołami z grupy kontrolnej, miały lepszą infrastrukturę (stołówkę, sklepik szkolny); częściej oferowały uczniom obiady i drugie śniadania, zdrowe produkty; częściej miały politykę (na piśmie) w zakresie zwiększenia dostępności w szkole produktów korzystnych dla zdrowia i ograniczenia produktów niesprzyjających zdrowiu. Niekorzystnym zjawiskiem był większy odsetek SzPZ niż szkół kontrolnych, w których uczniowie mogli zakupić w szkole słodycze.

Wnioski. Prawie wszystkie analizowane wskaźniki były korzystniejsze w SzPZ niż w szkołach kontrolnych, co jest efektem długotrwałych działań w zakresie promocji zdrowia w SzPZ. Jednakże sytuacja w zakresie żywienia uczniów w SzPZ jest niezadowalająca i niezbędne są dalsze długofalowe i systemowe działania. Wyniki badań wykorzystano we wdrażaniu 3-letniego projektu „Zdrowe Żywnienie i Ruch w Szkole” realizowanego w 10 SzPZ oraz w Stanowisku Ministra Edukacji Narodowej, Ministra Zdrowia i Ministra Sportu i Turystyki w sprawie działań podejmowanych przez szkoły w zakresie zdrowego żywienia uczniów.

Słowa kluczowe: *posiłki szkolne, infrastruktura dla żywienia, szkolna polityka żywieniowa, szkoły promujące zdrowie*

Aim. To present the results of the survey carried out in health-promoting schools (HPS) and in comparison with schools which did not implement the HPS programme (control schools) concerning: facilities, school meals, availability of food and drinks and school policies on healthy eating.

Material & Method. An anonymous questionnaire designed for school principals was used. It was based on the “School-level Questionnaire” developed within the HBSC (Health Behaviour in School-aged Children) 2009/2010 survey. Two randomly selected samples of schools (primary and lower secondary) were used: HPSs which had belonged to the regional HPS networks for at least 3 years (N=202); control schools (N=378).

Results. In comparison with control schools, the HPSs had better facilities for eating at school; more often offered lunches, second breakfasts, healthy products, had written policies designed to increase the consumption of healthy food and to limit the consumption of unhealthy food. However the proportion of schools in which students can buy sweets was higher among the HPSs than among the control schools.

Conclusions. Almost all the indicators used were better for the HPSs than for the control schools. These positive data can be considered the results of long-term activities in implementing HPS. However activities of HPSs are not completely satisfactory and continuing, long-term, systemic activities in the future are necessary. The results of this survey were used in the development of the 3-years project “Healthy Eating and Physical Activity in Schools” implemented in 10 HPSs and the statement of the Minister of National Education, Minister of Health and Minister of Sport and Tourist on implementing healthy eating policy and practice in schools.

Key words: *facilities for eating, school meals, school nutrition policy, health promoting schools*

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List of abbreviations

HBSC – Health Behaviour in School-aged Children.

A WHO Collaborative Cross-national Study

HEPS – Healthy Eating and Physical Activity in Schools

HPS – health promoting schools

SLQ – School-level Questionnaire

Introduction

Young people spend a substantial proportion of their lives at school. During school hours they should drink and eat at least one meal. This meal is important for many reasons. There is a widespread habit among young people in Europe to skip breakfast at home before school. The results of the HBSC (*Health Behaviour*

in *School-aged Children, A WHO Collaborative Cross-national Study*) 2009/2010 survey indicate that the average percentage of children who did not eat breakfast every school day in the group of 39 HBSC network countries ranged from 29% among 11-year-olds to 45% among 15-year-olds [1]. In Poland this percentage is very high – 36.7% and 44.1% respectively [2]. Feeling hungry at school has a negative influence on students' cognitive functions, academic performance and affects their well-being and behaviour [3].

Eating at school should also be considered in a broader context than only fulfilling the physiological needs for nutrients and energy, because:

- School age is an important period for the development of health behaviour, including eating habits. With age, the consumption of food eaten outside the home without parental control increases. Such meals often comprise take-away fast food. Moreover, children and adolescents are influenced by the extensive marketing and advertising which target them.
- Nutritional education is an important component of school health education. It should be supported by the possibility to practice healthy eating while at school.
- The new challenge for providing healthy food in schools is growing with the prevalence of overweight and obesity among children and adolescents. In Poland 16.4% children aged 6-19 years are overweight or obese [4] and the percentage of overweight children has been increasing by about 2% per decade. Schools should participate in the prevention of obesity.

In Poland the health-promoting school (HPS) programme has an almost 23-year history. It started in January 1992 as a three-year pilot project, established with the support of the WHO Regional Office for Europe [5]. Since 2006 regional HPS networks have been set up in all 16 regions, comprising 2659 schools of different types in the end of 2013 (data of Center of Education Development). Many HPSs undertook activities connected with providing school meals. These schools are very active in implementing different educational nutrition programmes offered to schools by various organizations.

The aim of the paper is to present the results of the survey carried out in 2010/2011 in HPSs in comparison with schools which did not implement the HPS programme concerning:

- facilities, school meals and the availability of food and drinks at school and in school vicinity,
- school policy on healthy eating,
- implementation of the “Glass of Milk” and “Fruits at school” programmes.

The decision to carry out this survey was connected with the preparation to implement the HEPS project (*Healthy Eating and Physical Activity*) in Poland. The University of Warsaw was the partner in developing this project in 2008-2011 [6].

Method and material

Sampling

The survey was carried out in 2010/2011 in two samples of primary and lower secondary schools:

- the sample of HPSs (N=202) was randomly selected among the schools which had for at least 3 years belonged to thirteen of the sixteen regional HPS networks. The lists of these schools were prepared by the regional coordinators of HPSs;
- the sample of schools which did not undertake the HPS programme, called the control group (N=378). These schools were selected from the sample of 520 schools previously randomly selected as the national, representative sample of the general school population in the country from the list of the Ministry of National Education [7].

Instrument

An anonymous questionnaire “School environment and health” for school principals was used. It was based on the international “School-level Questionnaire” (SLQ) developed within the framework of the HBSC 2009/2010 survey. This questionnaire was developed under the lead of the HBSC School Focus group. The objectives of SLQ were to describe school-specific health promotion structures and measures, organizational factors relevant to health, as well as to analyze the association between them and students' health and health behaviour [8].

The Polish “School environment and health” questionnaire included the HBSC optional “Nutrition” package with additional Polish questions related to this topic. It included questions on:

- facilities and equipment for eating and drinking at school and in school vicinity,
- meals offered at school and the proportion of students who eat them,
- availability of drinks and food products at school,
- school policies on promoting healthy eating (written or informal – verbal agreement) and procedures to inform about these policies,
- implementation in school of two of the national programmes on promoting healthy eating: “A Glass of Milk” and “Fruits at School”. They were developed in the framework of the Common Agricultural Policy established by the European Commission (in 2004 and 2009 respectively) and aimed to increase the consumption of milk and dairy products, fruits and vegetables at school.

Data collection

The anonymous questionnaire was sent by post to the school principals of selected schools. They or their deputies were asked to complete the questionnaire and return it by post. Two reminder letters were sent to schools, with an additional questionnaire in the second letter. The response rate was 92% for the HPSs and

74% for the control schools. The majority (80%) of the questionnaires were completed by the principals, 15% by their deputies, 5% by other school staff members.

Data analysis

The analyses were performed using SPSS version 14 software. The statistical significance of the differences between the HPSs and the control schools was assessed by the Chi-square test. Differences were considered statistically significant at $p < 0.05$.

Results

Facilities and equipment for eating and drinking at school and in its vicinity

The majority of schools had a canteen and a school store. Such facilities existed more frequently in the HPSs (80.6% and 73.7% respectively) than in the control schools (72.2% and 62%). Fewer than one in five schools in both groups had one or more vending machines. In the close vicinity of HPSs there were more grocery stores or supermarkets, as well as fast food restaurants, snack bars and hot dog stands where students could buy food or drinks, than in the neighborhood of the control schools (78.8 vs. 66.2) (Table I).

Table I. Facilities and equipment where students can get or buy food or drinks at their school and in vicinity (% of schools)

Facilities and equipment	HPSs n=202	Control schools n=378	p-value
Facilities and equipment at school			
canteen	80.6	72.2	<0.05
buffet	4.8	4.8	ns
school store	73.7	62.0	<0.01
vending machine (one or more)	22.1	19.5	ns
Facilities where students can buy foods or drinks existed in close proximity to school			
fast food restaurants	10.9	4.2	<0.05
other restaurants and cafeterias	11.6	9.5	ns
grocery stores, supermarkets	78.8	66.2	<0.0
snack bars, hot dog stands	13.5	6.4	<0.01

Table II. Meals offered to students at school and proportion of students who eat particular meals (% of school)

Meals	HPSs n=202	Control schools n=378	p-value
Lunches or other hot meals			
schools which offer them of students who eat them on a typical school day	87.3	81.3	<0.05
25 % or less	28.8	27.9	
26-50%	46.1	44.2	ns
51% or more	25.1	27.9	
Schools which organized second breakfast (drinks and sandwiches) eaten together			
for all classes	29.4	23.9	ns
for some classes	34.0	34.6	
Percentage of students who eat a free meals at school			
15% or less	61.5	47.4	
16-25%	17.6	20.5	ns
26% or more	20.9	32.1	

Meals offered to students at school

The form of meals offered to students at school are presented in Table II. Over 80% of the schools in both groups offered lunches or other kinds of hot meals to students. In only one in four of the schools these meals were eaten on a typical school day by more than half of the students. The proportions of students who eat this type of school meal were similar in the HPSs and in the control schools.

The so-called "second breakfast" (drinks and sandwiches prepared at home and for some students at school) eaten together with the teacher in the classroom or another place, was organized for all the classes only in 29.3% of the HPSs and in 23.9% of the control group and in some classes (mainly for younger students) in about 34% of schools.

Almost all the schools (98%) in both groups served free meals for students coming from poor families. This is a task which has been carried out in schools in Poland for a long time. It is an element of the social policy of the state and in recent years has been supported by many organizations. In about 21% of HPSs and 32% of the control schools these meals were offered to 26% or more students. There were no significant differences between both groups of schools in the proportion of students who had free meals at school.

Availability of drinks and food products at school

Table III presents the sorts of drinks and food products which students can buy or get at school. The majority of the schools in both groups offered bottled water and 100% fruit or vegetable juice (the latter

Table III. Drinks and food products which students can buy at the school from vending machines, school store, canteen or buffet (% of schools)

Drinks and food products	HPSs n=202	Control schools n=378	p-value
Drinks			
bottled water			
100% fruit/vegetable juice	75.7	67.3	ns
regular soft drinks (e.g. coca-cola), energizing drinks and fruit drinks that are not 100% juice	76.3	63.0	<0.05
diet soft drinks (eg. cola light)	40.8	45.1	ns
warm drinks (coffee, tea, hot cocoa)	35.1	36.0	ns
	35.1	27.0	ns
Milk and dairy products			
whole milk	13.5	8.3	ns
skim (non-fat) or low fat milk	15.6	13.4	ns
chocolate milk (cold)	22.1	17.5	ns
yogurt or kefir	31.2	18.2	<0.05
Fruits			
	49.2	32.7	<0.001
Vegetables/salads			
	18.9	12.1	<0.05
Whole-grain bread products			
	27.1	17.2	<0.01
Sandwiches			
	39.1	28.6	<0.05
Pizza			
	19.3	16.7	ns
Sweets and salty snacks			
chocolate bars/candies/biscuit/cakes/	75.8	69.3	ns
sweet rolls, doughnut	67.7	55.2	<0.01
ice-cream	36.4	32.0	<0.05
potato crisps or chips, French fries	41.9	41.7	ns

more often in HPSs). Other healthy food products were rarely available. The products which were more frequently on offer in HPSs than control schools were: yogurt or kefir (31.2% vs. 18.2%), fruits (49.2% and 32.7%), vegetables or salads (19.9% and 12.1%), whole-grain products (27.1% and 17.2%) and sandwiches (39.1% and 28.6%). Unfortunately, in almost two-thirds of all the schools students can buy different sorts of sweets. All sweet products were more often offered in the HPSs than in the control group. Regular soft drinks were available in 40.8% of the HPSs and in 45.1% of the control schools and salty snacks (potato crisps or chips, and French fries) in about 42% of schools in both groups.

School policy on promoting healthy eating and procedures to inform about them

School principals were asked about the existence of nutrition policies concerning promoting healthy food, limiting unhealthy products at school and the forms of these policies: written or informal (verbal agreement). Their answers concerning the existence of a written policies are presented in Table IV.

Written policies (documents) were in place in a relatively small percentage of schools. Only about half (48%) of the HPSs and one in five (21.3%) of the control schools had a policy on the consumption of healthy food during the school day. Three other types of policy existed in 11-23% of the HPSs and in 4-6% of the control schools (statistically significant differences). The lowest percentage of schools in both groups had a written policy stating that when food is served at school events, fruits and vegetables will be offered.

The procedures to inform the school community about policies related to nutrition and eating, existed more often in HPSs. Over 70% of the HPSs and over 60% of the control schools had procedures to inform students, teachers and parents about policies concerning nutrition and healthy eating. Only about 36% of the HPSs and 26% of the control schools regularly informed parents about the importance of instilling healthy eating habits in their children. There were statistically significant differences between both groups of schools.

Implementation in schools of the national programmes on promoting healthy eating

The “Glass of Milk” programme was implemented in the majority of schools (HPSs–79.6%, control schools –74.2%). In almost 80% of both groups of schools more than 61% of students were involved in this programme.

The programme “Fruits at Schools” was implemented in 65.1% of HPSs and less frequently in the control schools (36.0%). The proportion of students participating was lower than in the “Glass of Milk” programme. Only in about 40% of schools in both groups 61% or more students were involved.

Discussion

Data received from randomly selected primary and lower secondary schools in Poland make it possible to diagnose the current situation concerning the infrastructure, the sort of meals, food products and drinks available for students during the school day and the school policy on promoting healthy eating. These data also allow the assessment of the degree to which schools have become involved in the activities to prevent overweight. Previous research within the HBSC study indicates that organizational factors and school policy can have an influence on students, health and health behaviour [7]. It was shown that the adolescents’ diet can be affected in such a way that food policy and the availability of food at school can decrease the consumption of unhealthy food [8].

The main purpose of the survey was to compare the data obtained from those HPSs which had at least 3

Table IV. Written policies on promoting healthy eating and existence of procedures to inform about these policies (% of schools)

	HPSs n=202	Control schools n=378	p-value
School have a policy on			
To increase consumption of healthy foods (fruits, vegetables, whole grains, and calcium-rich foods) during the school day	48.0	21.3	<0.001
To limit consumption of sweets, chips and soft drinks among students	23.1	5.9	<0.001
Stating that at school events, if food is served, fruits and vegetables will be offered	11.5	4.5	<0.001
Stating that the food offered at school (in vending machines, cafeteria) will not include junk food	20.8	6.5	<0.001
School have procedures			
To inform about policies concerning nutrition and healthy eating			
students	73.8	61.8	<0.01
teachers	73.3	62.2	<0.05
parents	72.3	64.0	<0.05
To inform parents of the importance of instilling healthy eating habits in their children			
regularly	36.2	26.1	<0.05
from time to time	63.3	70.3	<0.05

Table V. Implementation of the national programmes related to healthy eating in schools

Programmes	HPSs n=202	Control schools n=378	p-value
“A Glass of Milk”			
school which implemented it (%)	79.6	74.2	ns
percentage of students involved			
30% or less	10.0	5.6	ns
31-60%	10.8	15.2	
61% or more	79.2	79.2	
“Fruits at school”			
school which implemented it (%)	65.1	36.0	<0.001
percentage of students involved			
30% or less	14.5	15.9	ns
31-60%	42.7	40.7	
61% or more	42.7	39.8	

years of experience in implementing health promotion activities and schools which did not implement such activities (the control group). It was expected that HPSs would create better conditions for students' healthy eating during school hours than the control schools.

The schools belonging to the regional HPS network in comparison with the control schools:

- had better facilities for eating at school (canteen – 81% vs. 72% respectively; school store – 74% vs. 62%),
- offered lunches or other hot meals more often (87% vs. 81%) and organized second breakfast for students in all classes (29% vs. 24%),
- more often offered healthy products: i.e. fruits, vegetables, whole-grain bread,
- more often had a written policy with the following objectives: to increase the consumption of healthy food (48% vs. 23%); to limit the consumption of sweets, chips and soft drinks (23% vs. 6%),
- more frequently had information procedures about healthy eating policies for students, teachers and parents (61% vs. 73%).

These positive data can be considered the results of long-term activities to implement health promotion in schools. The HPSs participating in the survey had been members of the regional network for at least 3 years. According to the rules binding in Poland, the school can be a member of the regional HPS network and receive a regional certificate only after completing about 2 years of preparation, so the time of their work on health promotion had been longer than 3 years.

Research limitation

According to the strategy of implementation of the HPSs used in Poland each school can decide which kind of activities will be undertaken. This decision is based on the results of the diagnosis and the selected priority

problems [10]. In the questionnaire used in this survey there was no question on earlier implementation of the healthy eating projects at school. Thus there was no possibility to analyze the data taking into consideration the earlier HPSs activities related to this topic.

Conclusions

The data presented indicate that in spite of the more positive results showed in the HPSs, the overall infrastructure and organization of students' nutrition at school is unsatisfactory and incoherent. It was astonishing that the proportion of schools in which students can buy sweets was higher among the HPSs than among the control schools. The majority of schools in Poland, even HPSs, still do not appreciate the need for all pupils to eat a meal and healthy food at school. Continuing, long-term, systematic activities in the future are necessary.

The results of this survey were used in preparation of the official statement concerning the implementation of the healthy eating policy and practice in schools was signed by the Ministers of: National Education, Health, Sport and Tourism in 2012. Also the three-year pilot project "Healthy Eating and Physical Activity in Schools" which was implemented in 10 HPSs in 2012. This project was based on the European HEPS (*Healthy Eating and Physical Activity in School*) project.

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