

The Impact of School Shops on Students' Eating Habits on the Example of Secondary Schools in Wrocław in Poland¹

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Abstract

The aim of this paper was to describe the impact of school shops on students' eating habits on the example of secondary schools in Wrocław. The school shops in Wrocław's secondary schools were characterized in terms of their type, persons involved in the food sale, the range of products in school shops and vending machines located within the schools, as well as the advertisements of food and beverages displayed in the school shops, promotions used by the owners with respect to food offered to the students and activities related to the promotion of rational nutrition principles. The paper outlines the conditions which should be met by school shops in order to be an important link in shaping the correct nutritional behavior of young people.

Key words

School shops, range of products in school shops, food advertising, vending machines, eating habits, secondary schools

JEL Classification: M30, M37, M39

Introduction

Overweight and obesity are a growing health problem in the world, especially in developed countries, where there is a constantly observed increase in the prevalence of overweight and obesity in children at developmental age as well as in adults (Briefel & Johnson, 2004; Koplan, Liverman & Kraak, 2005; Sikorska-Wiśniewska, 2007; Weichselbaum & Buttriss, 2011).

Improper nutrition, low physical activity, overweight and obesity are the causes of adverse consequences for the mental and physical development of children and young people, as well as reasons for nutrition-dependent diseases in adulthood, such as diabetes, cardiovascular disease, malignant tumors (cancer) and osteoporosis (Benson & Bogalusa, 2012; Briefel & Johnson, 2004; Koplan, Liverman & Kraak, 2005).

According to the International Obesity Task Force (IOTF, 2005), about 18% of the pediatric population is overweight, of which about 4% is obese. The number of children with overweight and obesity constantly increases. Each year, there are approximately 85,000 more obese children and approximately 400,000 children who are overweight in EU (Szanecka, 2006). In Europe about 20% of children have excessive weight, of which about 5% are diagnosed with obesity. Today's youth are the first

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generation that will live about five years shorter than their parents due to atherosclerosis and heart disease caused by improper nutrition (IOTF, 2005). The result of improper eating habits of young people is a high level of caries and lack of oral hygiene (Echo Day, 2008).

Oblacińska and Jodkowska (2007), in their studies on the population of high school students in Poland, observed excessive body weight in 13.3% of the students, more commonly in girls (14.9%) than in males (11.6%). Research carried out within the framework of the Ministry of Health National Programme for the Prevention and Treatment of Cardiovascular Disease POLKARD showed that about 20% of children and adolescents weigh far too much and that their health is very poor. About 11% are already suffering from high blood pressure, every tenth 15-year-old has an excessive cholesterol level, which indicates the onset of atherosclerosis and may lead to a heart attack in the future, even before turning 35 years of age. The network of fast-food restaurants in Poland is increasing. Schools do not have canteens but they are usually close to McDonald's or some other vendor selling fast food (Newsweek, 2009).

The dietary errors committed by children and their parents lead to their repetition in adulthood, and consequently cause disorders in the mental, physical and social development. Schools also influence students' eating habits through their offer of food sold in school shops or canteens. In schools, students can buy a lot of products devoid of valuable nutrients. Not even every other child (40%) is given home-made sandwiches to school, and 36% of students eat for lunch sweets or crisps bought in the school (Tounian, 2008). Instead of the sandwiches, many children are given money from their parents, for which they buy their favourite products, mostly junk food and sodas. Most schools do not control the products that school shops offer to students. The majority of them have private owners, who are focused on generating profits with which to pay for the lease of school facilities.

In Poland, the promotion of the principles of rational nutrition and healthy lifestyles in schools is carried out through a variety of educational programmes for students and parents. Since 2006, most schools have been participating in the nationwide program "Trzymaj formę"³, whose priority is education for sustainable development of healthy habits among schoolchildren by promoting the principles of an active lifestyle and a balanced diet. Many schools in Poland participate or participated in other health-promotion programmes, including e.g. "Owoce, warzywa i soki są na 5", "Mleko z klasą"⁴, "Pij Mleko! Będziesz Wielki"⁵. Despite so many activities, no obligatory standards have been worked out yet defining the energetic and nutritional value of food and beverages sold in school shops and/or vending machines located in schools, something that was introduced in England as early as in 2005.

The range of food and beverages offered to students by school shops can be affected by many factors, including:

1. the hygienic and sanitary conditions of the premises,
2. the contracts signed between school managements and franchise owners of the shops,
3. the arrangements between school managements and the parents,

³ Keep fit.

⁴ Milk with a class.

⁵ Drink Milk! You'll be great!

4. the students' preferences,
5. the arrangements made between franchise owners of the shops and sales representatives of the companies delivering food or beverages (e.g. the owner's cost-free right to receive shop fridges for chilled beverages),
6. the franchise owner's profit on the sale of food and beverages,
7. the types of schools in one building (e.g. primary, secondary, etc),
8. the access to school facilities for teaching purposes during the weekend (e.g. schools for adults).

With a view to shaping healthy eating habits among students, schools introduce some changes, mostly relating to the expansion of ranges of products sold in school shops to include sandwiches, yogurts, salads and fruit. However, these actions are usually short-term as there are no people to monitor the franchise owner's compliance with school management guidelines. Moreover, given the purchase choice of both the products recommended and not recommended for health reasons, the students tend to choose the later, because of their taste. Some schools do not take any action. What is important for the school management is that the franchise owner pays the rent for the lease of the shop, because they receive money, and the franchise owner has profits primarily from the selling of products not recommended for the student's health. The issue of food not recommended for students' health and sold in schools is quite popular (Larson & Story 2010; Terrence et al., 2007), whereas we often forget about food advertising present in the shops, also proven (Swinburn et al., 2008) to have an impact on students' eating habits.

The aim of this article was to describe the impact of school shops on students' eating habits on the example of secondary schools in Wrocław.

1 The Methodology

The study was conducted between February and June 2009, in 47 school shops in 44 schools. The bigger number of school shops than the schools is due to the fact that in three cases there were two shops per school. Thirty out of the 44 secondary schools belonged to the Network of Health Promoting Schools (Department of Health, Wrocław City Office, 2009).

The study did not include special secondary schools and junior high schools for adults. The special secondary schools are centers for children and adolescents who are: a) socially maladjusted, b) with mental disorders and chronic diseases, c) physically unfit, d) hearing impaired, e) with cerebral palsy, f) autistic. The study used the method of observation and the direct interview method (Łopacińska, 2005).

The research tool was a questionnaire designed for the owners and/or employees of school shops. The questionnaire contained six questions. The questions in the questionnaire were related with:

1. the kind of food-and-beverage school shops,
2. the persons involved in the sale of food and beverages in schools,
3. the range of foods and beverages sold to students in the school shops and vending machines located in schools,

4. the food and beverages most frequently bought by students,
5. the kinds of promotion relating to the sale of food and beverages in the school shops,
6. the advertising of food and beverages sold in the school shops.

2 The Results and Discussion

The kinds of school shops with food and beverages

School shops and canteens must comply with legal conditions, hygienic and sanitary requirements in order not to cause any health risk to consumers. According to the degree of compliance with hygienic and sanitary regulations, school shops can be divided into buffets and kiosks. In the kiosks, owners are not allowed to prepare meals, sandwiches or any other food because there is no access to hot or cold water. Kiosks only sell food in unit packages, properly labelled in accordance with the provisions of food law. Buffets, contrary to kiosks, sell simple meals such as soups, dumplings, salads, toasts, hamburgers, and food in unit packages.

Most of the surveyed schools featured buffets (74.5%), whereas kiosks amounted to 25.5% of the total number of school shops. None of surveyed secondary schools had a school canteen.

The persons involved in the sale of food and beverages in schools

The owners of the school shops were mainly private persons from outside the school (96%), and only in two cases (4%) they were persons employed full-time in the school (accountants). Most owners of the school shops had only one point of sale per school (94%); in the three cases (6%) the owners had additional stores in primary schools, and one owned a catering company. In more than a half of the school shops (62%), the direct sale of food and beverages was the responsibility of their owners, while in the remaining school shops (38%) the owner employed other persons to run the shop.

The range of foods and beverages in school shops and vending machines located in schools

The majority of the school shops sold primarily products with a high energy value and low nutritional value, such as candy bars (91.5%), biscuits (80.9%), sweetened soft drinks (76.6%), doughnuts (66%), toasties (63.8%), candies (61.7%) and "7 Days croissants" with various fillings (59.6%). The results are similar to those recorded by Urbańska and Czarniecka-Skubina (2007), where most of the school shops in the Warsaw primary and secondary schools mainly sold candy bars, crisps, salty sticks, lollipops, candies and biscuits.

These products are rich in sugar, fat, salt and provide students with a lot of energy. As far as products recommended for students are concerned, more than a half of the school shops sold spring water (85%), sandwiches with ham, sandwiches with ham and cheese, yogurts (respectively 59.6%, 55.3% and 55.3%), and only every fifth

school shop offered fruit to the students. Every fourth school shop also offered flavoured milk, which is a better result than that obtained by Urbańska and Czarniecka-Skubina (2007), who surveyed 25 schools and found the product in one shop only.

The study conducted by Szymandera-Buszka et al. (2010) showed that in secondary schools from the area of Poznan (Poland) the range of products on offer included mainly crisps, crunchies, sweets and sweetened soft drinks.

This research shows that the range of foods and beverages offered in school shops in Wroclaw was much larger, as seen in Tables 1 and 2. Similar results were also obtained by Urbańska and Czarniecka-Skubina (2007), who conducted research in primary and secondary schools in Warsaw. Some food products were sold apiece and beverages – in units. The products sold apiece included jelly beans, chewing gum and candies, whereas soda drinks were sold per cup.

Table 1 The beverages sold in school shops in surveyed secondary schools in Wroclaw (Poland)

Kind of beverage	(%) of schools
Fruit beverages	91.5
Ice tea (e.g. Nestea)	89.4
Spring water	85.0
Juices	80.9
Sugar sweetened sodas (np. Coca-Cola, Fanta)	76.6
Coffee	63.8
Tea	57.4
Isotonic drinks	27.7
Flavoured milk	25.5
Energy drinks	12.8

Source: Based on own research.

Table 2 The food sold in school shops in surveyed secondary schools in Wroclaw

Kind of food	(%) of schools
Candy bar	91.5
Chewing gum	87.2
Yeast rolls	83.0
Lollipops	83.0
Biscuits	80.9
Salty sticks	74.5
Doughnuts	66.0
Toasties	63.8
Sweets	61.7
"7 Days croissants"	59.6
Sandwiches with ham	59.6
Sandwiches with ham and cheese	55.3
Yogurts	55.3

Sandwiches with cheese	48.9
Corn crisps	42.5
Chocolates	44.7
Jelly beans	44.7
Ice cream	40.4
Crisps	36.1
"Hot Pot" instant powdered soups	36.1
Sweet rolls	31.9
Hot dogs	31.9
Peanuts	29.8
Sesame snaps	27.2
Hamburgers	25.5
Puddings	23.4
Toasts	21.3
Fruit (apples, bananas, tangerines)	21.3
Salads	17.0
Dumplings, croquettes, crepes	10.6
French fries	6.4

Source: Based on own research.

In 44 schools there were a total of 15 vending machines, in which both the students and teachers could buy: a) hot drinks (in 53.3% of the machines), b) sweetened soft drinks, salty and sweet snacks like candy bars and potato crisps (46.7%). The food-and-drink machines were mostly located by the entrance doors (50%), next to the staff room (30%) and by the school shop (20%). All the machines that were in the schools were owned by external companies (e.g., STATOR, Dallmayr, Sortis, and Mars Poland).

The food and drinks most frequently purchased by the students

According to the owners of the school shops, the products which the students bought most frequently were: sweet rolls (76.6%), sandwiches with cheese and ham (66%), fruit drinks (57%) as well as sodas and tea beverages (53.2%). Other research results (Bochanek & Kozłowska, 2004; Szymandera-Buszka et al., 2010; Urbańska & Czarniecka-Skubina, 2007) confirm that what students mainly buy in school shops are products not recommended for their health, i.e. sweetened sodas, sweet rolls, candy, crisps, etc. Their purchasing decisions are mainly dictated by the taste and low price of the products.

The food and beverage sales promotion

In more than a half of the surveyed school shops (51.1%), their owners or employees tried to encourage young people to buy food and drink by introducing sales promotions, most frequently relating to sodas and candy bars (15%), sweet rolls (13%), to a lesser extent with yogurt (11%) and sandwiches, fast food and crisps (7%). The promotion ideas included: a) buy one product and get one free, b) buy three products and get one free, c) get a free lollipop for each product bought.

There were some products sold at lower prices before the closing hour of the school shop (sandwiches, sweet rolls), but also when the expiry date was within days (yogurts). The owners also used promotions of multiple sets, e.g: "buy two products and pay less than if you bought each separately". The examples of such sets included "a toastie + Coca Cola", "a toastie + ice tea" or "Cola + a toastie + small juice".

The advertising of food and beverages sold in the school shops

Approximately 60% of the school shops displayed advertisements of food and drink not recommended to students because of their low nutritional and high energy value (Coca-Cola, Pepsi, hamburgers, hot dogs, etc.). The advertisements were usually in the form of posters, plastic boards displaying the fast-food menu, notices, stands and cardboard boxes. The products advertised in the Wroclaw school shops included: Coca-Cola and Pepsi (27.5%), crisps (25%), spring water (15%), ice cream (12.5%), candy bars (10%), hamburgers (7.5%) and "7 Days croissant" with various fillings (5%).

Only two school shops (4.2%) displayed posters promoting the principles of rational nutrition. According to some authors (Barr-Anderson et al., 2009; Halford et al., 2007; Halford et al., 2004) advertising food which is not recommended for students' health has an impact on their eating habits, and banning this kind of advertising in schools can help to reduce the incidence of adverse health effects among students (Chou, Rashad & Grossman, 2008; Epstein et al., 2008).

The actions taken by the schools related to the health promotion

Among the 44 surveyed secondary schools, thirty belonged to the "Schools for Health in Europe (SHE) Network⁶" (Department of Health, Wrocław City Office, 2009). These schools pursue a number of activities related to health promotion, such as lectures, discussions, art competitions, sports competitions and many others. Unfortunately, these activities fail to bring long-term effects because, on the one hand, students are taught what foods and beverages consumed in excess are harmful for their health, and on the other, the same food and drinks are readily available in school shops or vending machines. If only what is taught in biology and physical education lessons was reflected in the actions taken by the school and owners of the school shops, the students would have a confirmation of the idea that taking care of your health is really important and in everyone's interest. Otherwise, the actions are inconsistent and their power of influence diminishes.

It may be assumed that the effectiveness of the actions will be greater if junk food is withdrawn from school shops, together with all advertisements of food which contains excessive amounts of sugar, fat and salt.

⁶ SHE Network aims to support organisations and professionals to further develop and sustain school health promotion in each country by providing the European platform for school health promotion.

Conclusion

The research has shown that:

1. The school shops were varied in terms of hygiene and sanitary conditions, which had an impact on the type of food offered.
2. The majority of food and beverages sold in school shops and most frequently purchased by the students was characterized by a high energy value (high content of fat or sugar) and low nutritional value. Only those categories of foods were included in the shops' sales promotion.
3. The school shops were missing posters promoting the types of food recommended for students, but displayed numerous advertisements of sweetened fizzy soft drinks (Coca-Cola) and crisps.
4. The activity of those school shops which sell food and beverages not recommended for the students can be assessed as harmful for their health and developing improper eating habits.
5. The secondary schools hadn't canteens.

The school shops might influence the proper eating habits of students through:

- a) The mutual cooperation of school managements, teachers, parents and owners of school shops promoting a balanced diet and healthy lifestyle, and involving students in the practical application of these principles in everyday life (e.g., contests, tastings).
- b) The special clauses in contracts with owners of school shops, prohibiting the sale of certain types of foods rich in fat, salt, sugar, as well as beverages with large sugar content.
- c) The mandatory training and access of owners of school shops to the latest educational materials (e.g. guides, posters, etc.), which are the primary source of nutrition knowledge.

Such actions involving school shop owners can be implemented by e.g. granting them financial assistance (lowering the rent) in exchange for their change of the range of food and beverages sold. It would be also useful to develop generally applicable national standards for the quality of food and beverages offered in school shops.

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