

ASPECTS OF EATING BEHAVIOUR AMONG PUPILS FROM A PRIVATE HIGH SCHOOL FROM CHIȘINĂU

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Abstract: The study was based on a sample of 134 pupils, from VII-XII grades from a private high school from Chișinău. The data obtained showed that a frequency of 13.4% of pupils had 1-2 meals a day. 10.4% pupils from high school had not had breakfast. 15.8% of pupils declared that they did not consume fruits daily and 30.6% of pupils did not eat raw vegetables daily. Eating meat had a very high frequency, 80.6% of pupils stated that they ate meat products one or more times a day. A large majority of pupils lack fish (82.1%) and vegetables (82.8%). The food included in the daily menu of the vast majority of our pupils was cereals, meat dishes, dairy products, fruits and vegetables (raw or cooked). Most pupils did not sufficiently include in their diet fish and vegetables.

INTRODUCTION

Growth and neuropsychological development are two specific processes for childhood. These two processes are influenced by a number of internal factors (heredity) and external (environmental). Among the external factors, eating plays an essential role.(1)

Healthy eating is considered to include the number of meals a day, quality food products and the recommended amount of food intake from all food groups.(2)

European Day, "Breakfast is very good", celebrated on April 24th brought together stakeholders in this issue who were teachers, dieticians, doctors and food technologists in order to launch a call to action, asking European governments to take the necessary measures to improve eating habits among children in Europe - in particular by promoting breakfast as part of a healthy lifestyle.(3) As several studies shown, the lack of breakfast is very common among young people in Europe and is associated with risky behaviours such as smoking, alcohol consumption and sedentary behaviours that can lead to development of chronic disease.(4)

Because eating habits developed in youth are likely to continue during adulthood, the World Health Organization (WHO) calls the states for early and continuous intervention, and one of the easiest and most cost-effective ways to improve the health and wellbeing starts with breakfast. WHO reports show that the prevalence of obesity and higher body mass index (BMI) is generally lower among young people who eat breakfast; these young people showed signs of improvement of cognitive function and academic performances.(5)

A study from New Zealand showed that eating breakfast was more common among boys and children from rich neighbourhoods. Age differences of breakfast consumption have increased particularly among children from families with low socioeconomic status; a large share of adolescents from families with low socioeconomic conditions did not eat breakfast. Lack of breakfast meals was associated with a higher BMI ($p = 0.002$). Children who have not had breakfast had a significantly higher unmet recommendations for eating fruits and vegetables ($P = 0.005$) compared to those who eat breakfast and were more

likely to had a frequent consumption of unhealthy foods.(6)

A US study showed that many pupils from America did not eat varied and enough quantities of food products that could provide the necessary nutrients while avoiding excessive intake of calories. They should increase the intake of vegetables, fruits, whole grains, fat-free milk and dairy products and decrease the fatty products, seafood, and oils. These good food choices can help promoting proper nutrients, keeping calories under control and reducing the risks of chronic diseases.(7)

A study from Romania conducted on 8-10 years old pupils found that 9.1% of them took morning breakfast or snacks during breaks. Although this study showed no significant changes in school performance or health status of these pupils, the potential of good health related to breakfast for pupils cannot be neglected.

It is very important for our pupils to be aware that morning meals give a proper nutritional energy contribution, and also an important contribution is provided also by whole grains, fresh fruits and vegetables, dairy and meat. Parents can play an important role in planning and serving breakfast in the family.(8)

PURPOSE

The purpose of this study was to research the food behaviour of pupils from Chișinău families with high socioeconomic status.

MATERIALS AND METHODS

The research was conducted on a sample of 134 pupils from VIIth -XIIth grades, from a private high school from Chișinău (70 boys and 64 girls). Statistical processing of primary data was performed using the SPSS 20 program and various methods were used for analysis and mathematical modelling. Differences were considered statistically significant at $p < 0.05$. Our questionnaire has 39 items and it was based on the frequency of food daily intake. Questions were oriented in two directions: diet and consumption of certain foods: the number of meals taken per day, providing breakfast, presence of food packed at school, eating fruit, fruit juice raw, eating raw

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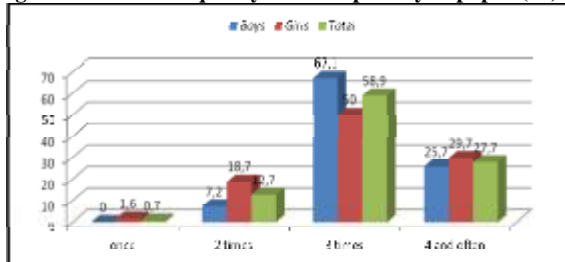
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and cooked vegetables, eating meat dishes, fish, cereals, milk, eggs, pulses and fatty food eaten on the day preceding the questioning. Also, we collected demographic data from respondents including: gender, residence, grades at school and family data.

RESULTS

According to the survey it was found that 10.4% of pupils did not have breakfast before school (2.9% of boys, 18.8% of girls). 13.4% of pupils were missing one important meal of the day (lunch or dinner), 12.7% were taking only two meals a day and 0.7% was taking just one meal a day (figure no. 1). During school hours (5-7 hours per day), 13.4% of pupils were not eating anything, having a huge break between meals. One third of pupils (34.3%) were eating foods from home like: local and exotic fruits, pies and other pastries, sandwiches and dairy products. During their staying at school they were purchasing from the school cafeteria food products 45.6% of high school pupils and from outside 6.7% of pupils. From school buffet pupils most often buy food such as: buns (72.0%), plain water (70.4%), biscuits, pretzels, salted sticks (48.0%), chocolate (28.8%), chocolate cake and cream cake (9.6%) and carbonated water with synthetic sweeteners (such as: coca cola, lemonade etc.). 70.9% of pupils have consider it is necessary to eat daily during school hours and a 74.6% believed they can afford to pay a daily breakfast from school cafeteria.

Figure no. 1. The frequency of meals per day to pupils (%)



A factor that greatly influences diet and eating habits of adolescents is the personal opinion about their own body. Asking pupils what they think about their body weight we found out that most of them (64.9%) consider that their weight is normal, 2.3% of pupils consider that their weight is to much below normal, and 6.7% appreciated their body weight as slightly below normal. A share of 14.2% of pupils appreciated their body weight as less than normal, and 2.9% think that their body weight is over normal.

Another important point was to study if pupils tried to mould their own body weight. So, in the last 7 days, 56.7% of pupils have not tried to weaken or get fat, 3.7% of students, observe the diet, 17.9% did exercises daily, 17.1% pupils followed a specific diet and did exercise and 4.6% of pupils have taken other methods to weaken or fatten. A method for preventing weight gain in pupils (4.5%) was to stay 24 hours without eating during last month (for 4.5% of the subjects).

Although questioning occurred in October, when in Republic of Moldova there is plenty of ripen fruits and vegetables, it was found that in day, preceding the questioning, 15.8% of pupils did not eat fruit and 76.9% did not drink fresh fruit juice. Although the WHO recommended daily intake of fruit and raw vegetables, those who did not eat raw vegetables the day preceding the questioning were in a share of 30.6%. A share of 31.3% of pupils did not eat cooked vegetables and 65.7% of respondents said they had not eaten potatoes the day before that preceded the questioning.

Studying the eating habits of pupils, it has been found

that consumption of meat dishes is neglected by 19.4% of pupils who say they have not eaten meat dishes the day before that preceded the questioning, 46.3% of pupils said they had consumed once a day, and 34.3% have consumed 2 or more times (boys - 48.6%, girls - 18.8%, p < 0.05).

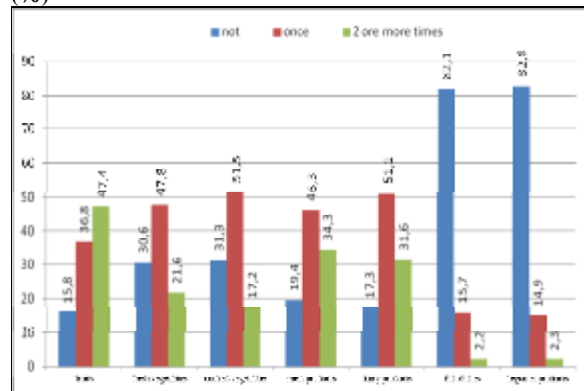
The study found that 17.3% of pupils do not eat dairy products such as milk, kefir, yogurt, cottage cheese, cheese etc.

Cereals as the food at pyramid base, recommended by specialists to be consumed daily in amount of 5-6 servings. In the studied high school, 2.2% of pupils did not eat cereal products and 97.8% of other pupils who ate cereal products on the day preceding the questionnaire mentioned the following products: bread (70.9%), buns (38,1%) pies (28.4%), soft mushes (24.6%), macaroni (21.6%) and polenta (2.9%).

Fish is an important source of animal protein for people, especially the white one containing less than 1% fat, reluctantly pupils who ate fish on the day preceding the questioning reaching a share of 82.1% (figure no. 2).

Legumes being a source of vegetable protein highly valued by their content in three essential amino acids (methionine, lysine and tryptophan) are recommended for pupils who are in a continuous process of development. The share of pupils surveyed who did not eat dishes of legumes (beans, peas, chickpeas, soybeans, grain etc.) was very impressive 82.8% of reaching pupils.

Figure no. 2. The share of food consumption daily by pupils (%)



Another group of food that should be carefully studied is egg consumption. Eggs are naturally rich in essential nutrients, are very important for the body and also with high cholesterol, which in adults, can increase the level of cholesterol in the blood plasma. A share of 69.4% of pupils did not consume eggs on the day preceding the questioning. 27.6% of pupils consumed only once 3.7% two or more times.

Most food animal fats are rich in saturated fatty acids and triglycerides and are considered unhealthy food included in the diet of children. Fat food consumption is observed in 27.7% of pupils once a day, two or more times per day in 2.9% of pupils, all being boys. Those who did not consume fat food as butter, margarine, lard, pork were in a percentage of 69.4%.

DISCUSSIONS

The study "Health Behaviour in School-Aged Children: eating behaviour and physical activity (HBSC)" conducted on a sample of pupils, found that some children and adolescents (between 29% and 37%), motivated perhaps by the desire to decrease their weight, reduced the number of meals per day to 1-2, unhealthy practice that over time could lead to a custom reported by many adults to serve one meal a day, frequently dinner.(9) A trend much lower (13.4%) was observed

in surveyed pupils from private high school from Chişinău.

The study conducted by A Gikas in 2003 in Greece found that 29.4% of pupils did not eat breakfast, especially pupils from socially vulnerable families, those whose parents had a low level of education and those who thought they were overweight or obese.

The share of Greece is triple compared with the share from high school from Chisinau. Greek pupils' share that ate fruits daily is 43.9% which is two times lower than that obtained in the survey of private high school (84.2%).(10)

United States, through the study "Youth Risk Behaviour Survey" (YRBS) conducted by CDC in 2013 among pupils of IXth-XIIth grades found that at national level, 61.5% of pupils ate vegetables one or more several times a day. The share is very close to that obtained in our study (69.4%). They also found that at national level, 40.3% of pupils have consumed dairy products one or more times per day. The share of pupils from studied high school is twice higher (82.7%).(11)

In the study from urban area, conducted in Chişinău and Bălţi on 10 schools with teaching in Romanian and 10 high schools with teaching in Russian, it has been found that 19,2% of pupils from the high schools with teaching in Romanian language and 14.4% of pupils from high schools with teaching in Russian did not take breakfast. Compared to the private high school from Chisinau, which is a Romanian teaching school, in the state schools with the same teaching language, the share of pupils who did not have breakfast was two times lower (10.4%). Given the difference between the socioeconomic status of families from private high school pupils and state high schools, it has been found a difference in the number of meals, so 22.7% of pupils from high schools with teaching in Romanian and 22.9% of pupils from high schools with teaching in Russian took 1-2 meals on the day preceding the questioning. The share of pupils from private high school who ate 1-2 times a day was twice lower (13.4%). The study results were used for ensuring an intervention in school by introducing headmaster lessons, civics and biology topics about healthy eating conducted by trained physicians and teachers.(12)

CONCLUSIONS

1. Daily regime was observed by the vast majority of pupils from the private high school; the share of those who did not have breakfast or eat 1-2 times a day was very small.
2. Foods included in the daily ration of pupils are cereals, meat dishes, dairy products, fruits and vegetables (raw or cooked).
3. For the majority of students, the following groups of food were insufficiently included in their diet: fish and legumes.

RECOMMENDATIONS

1. Increase the number of pupils who take breakfast and takeout by forming attitudes of nutrition and healthy practices.
2. Introducing healthy eating principles contents in certain school subjects (biology, civics, master classes etc.)
3. Training teachers on the principles of healthy eating.
4. Informing parents about the importance of observing health diet and the consumption of the main groups of food by children.
5. Training the medical personnel from pre-university institutions and cooks from school canteens.

REFERENCES

1. Gavăț V, Albu A, Petrariu FD. Alimentația și mediul de viață în relație cu dezvoltarea copiilor și a tinerilor. Iași: Ed. Gr. T. Popa UMF; 2006.

2. Petrescu C. Igiena mediului, alimentației și a dezvoltării copilului și a adolescentului. Timișoara: Editura EUROBIT; 2008.
3. The European Commission. Breakfast times. 2015. Available from: <http://www.breakfastisbest.eu/> [Accessed November 23, 2015].
4. Currie C, et al. Social determinants of health and well-being among young people. Health behaviour in school-aged children (HBSC) study: international report from the 2009/2010 survey. WHO Regional Office for Europe; 2010.
5. Cooper SB, Bandelow S, Nevill ME. Breakfast consumption and cognitive function in adolescent schoolchildren. *Physiol Behav.* 2011;103(5):431-439.
6. Utter J, Scragg R, Ni Mhurchu C, Schaaf D. At-Home breakfast consumption among New Zealand children: associations with body mass index and related nutrition behaviors. *J Am Diet Asso.* 2007;107(4):570-576.
7. United States. Department of Agriculture, U.S. Department of Health and Human Services Dietary Guidelines for Americans, 2010. p.56. Available from: www.dietaryguidelines.gov [Accessed November 22, 2015].
8. Prejbeanu I, Cara M, Pisoschi C. Socio-economic factors influencing the nutritional behaviour of pupils. *Curr Health Sci J.* 2012;38(3).
9. Health Behaviour in School-aged Children. Comportamente de Sănătate la Copiii și Adolescenții din România: comportament alimentar și activitate fizică. Cluj-Napoca, România, 2010. Available from: <http://www.aspgorj.ro/promovare/raport%20HBSC%20dec2010.pdf> [Accessed November 23, 2015].
10. Gikas Á, Öriantafillidis JK, Perdikaki P. Breakfast skipping and its association with other unhealthy food habits among Greek high school adolescents. *Ann Gastroenterol.* 2003;16(4):321-327.
11. Control Diseases Center. Youth Risk Behavior Surveillance. United States. Surveillance Summaries. 2014;63(4). Available from: <http://www.cdc.gov/mmwr/pdf/ss/ss6304.pdf> [Accessed November 19, 2015].
12. Топада. А. Знания школьников по поводу правильного питания в городских образовательных учреждениях в Республике Молдова. (XI International Pirogov scientific medical conference for students and young scientists. Book of abstracts). Moscow, 17-18 March 2016; p. 445-446.