Aneta Stanisławek[1], Agnieszka Żuk [1], Dariusz Stanisławek [2], Diana Piaszczyk[1]

[1]Health Institute of Jan Paweł II State School of Higher Education in Biała Podlaska
[1]Instytut Zdrowia Państwowej Szkoły Wyższej im. Papieża Jana Pawła II w Białej Podlaskiej
[2] Department of Mechanical Engineering of Kazimierz Pułaski University of Technology and Humanities in Radom.
[2] Wydział Mechaniczny. Uniwersytet Technologiczno - Humanistyczny im. Kazimierza Pułaskiego w Radomiu.

Assessment of Schoolchildren's Eating Habits
Ocena nawyków żywieniowych młodzieży szkolnej

Summary
Proper nutrition should be a very important part of the educational activities of nurses. Creating a health promoting school programs one should focus on the behaviour of children which is essential to maintain or improve their health.
Among the most common nutritional deficiencies in school-age children these should be mentioned:
• irregular meals;
• not eating breakfast before school and not heating lunch at school;
• improper content of food groups in planning each of the meals.
These and other deficiencies in one's diet may have a negative impact on the development and health of children and adolescents. Lack of proper diet can lead to weight gain and obesity or anorexia.

Key words: heating habits, nutrition, diet dependant diseases, obesity

Streszczenie
Prawidłowe żywienie powinno stanowić bardzo istotny element edukacyjnej działalności pielęgniarki. Tworząc szkolne programy prozdrowotne należy koncentrować się na tych zachowaniach dzieci, które mają podstawowe znaczenie dla utrzymania lub poprawy ich stanu zdrowia.
Wśród najczęściej występujących nieprawidłowości w zakresie żywienia dzieci w wieku szkolnym wymienić należy:
• nieregularność spożywania posiłków;
• niespożywanie pierwszego śniadania przed wyjściem do szkoły oraz drugiego w szkole;
• nieprawidłową zawartość grup produktów spożywczych w planowaniu poszczególnych posiłków.
Te oraz inne nieprawidłowości w sposobie odżywiania mogą mieć niekorzystny wpływ na rozwój oraz zdrowie dzieci i młodzieży. Brak odpowiedniej diety może prowadzić do nadwagi i otyłości lub anoreksji.

Słowa kluczowe: nawyki żywieniowe, żywienie, schorzenia dietozależne, otyłość

Introduction

The food in human life plays a very important role, affecting the development, health and physical fitness. Getting food processing and consuming it have always been one of the most important human activities.

In the early beginning of its existence Homo sapiens relied on instinct, they gathered and ate mostly fruits, leaves and roots. They ate small quantities of insects, molluscs and eggs of birds and reptiles. About three million years ago Homo sapiens began to lead a hunting life, enriching their food in the meat of wild animals. Another skill acquired by humanoids was kindling a fire, it allowed them to diversify their food. Another skill that has been mastered is the production of crops and livestock, the beginning of which took place in western Asia and Egypt 10 000 years ago (the Mesolithic period), and in Europe about 5000 years ago (in the Neolithic) (Gawęcki, 2008).

The result was a gradual development of agriculture dealing with more and more areas under cultivation, which made it easier to better meet the nutritional requirements. In varying food products manufacturing, dating back to the Neolithic times, has played an important role, where drying, salting and smoking were involved. In 1810 Appert discovered the opportunity to protect food from spoilage by heating it in a closed vessel, which marked the beginning of storage and thus the possibility of utilization at a later time (Higman, 2012).

In the early thirties of the last century, food technology identified itself as an independent branch of science, contributing to the development of all branches of the processing of raw materials (Gawęcki, 2005).

Definition of nutrition

Human nutrition can be defined as providing the human body with appropriate foods to ensure the maintenance of the basic processes of life. These foods can be taken in their natural state or in the form of a variety of processed foods and beverages. Rational human nutrition is tailored to the age, sex, energy intake, type of work, health, the climate in which they live and other factors (Jeżewska, 2011).

Due to the role in the body, there are three main groups of nutrients such as:

- nutrients: mostly protein and minerals,
- energy components: mostly carbohydrates and fats,
- regulating ingredients: vitamins, some minerals, fiber.

Human nutrition is a rapidly growing field of knowledge that is interdisciplinary and belonging in part to agricultural sciences, and in part to medical science (Jarosz, 2012) Social rank in this field of science is high, because to a large extent it determines the development of civilization and decides on health and well-being of present and future generations (Kunachowicz et al. 2000). This applies to rich societies in which there is free access to food, and advances in the technology of its manufacturing and advertising pressures threaten with hiperalimentation and so called lifestyle diseases that reach a rich population as well as people living in poverty, who need to be ensured of food security relative to protect them from hunger and diseases caused by malnutrition (Gawęcki et al. 2006).

The role of nutrition in the development of children

In certain periods of life consequences of poor nutrition are more noticeable and may be irreversible, because in certain aspects of a child's life, the demand for specific nutrients rises. This is due to the intensity of building new tissues and cells, or decreased digestive efficiency of the ingredients used **in food (Krawczyński, 2008).**

In the first year of life the baby is growing and developing the fastest. Gradually its ability to digest increases and it can absorb more, newer and more complex foods. The main food product over this period of child's life is mother's milk containing the necessary building and immunological nutrients, which cannot be replaced by any other food products.

From the first to the third year of life there is rapid growth and development of the child's body resulting in a need to provide a sufficient amount of nutrients, especially protein and calcium. They should be delivered in five regular meals per day preferably in the form of milk and dairy products. It is also advised to provide eggs, lean meats, poultry, fish, vegetables and fruit (Felińczak, 2011).

Between the fourth and sixth years of age the rate of growth is slowing down, but the body's energy needs are increased as the child becomes more mobile which implies increased demand for energy. The gastrointestinal tract at this age is now fully operational and ready to start learning healthy eating habits.

School age is a time of physical and mental development of the child. Younger children, who are still at school have to spend more time in a seated position, have reduced energy needs and often have no appetite. This situation forces the parents to pay attention to the attractiveness of food and eating the children's lunch. Because of the creation of permanent teeth it is important to consume adequate amounts of calcium, magnesium, fluorine, phosphorus, which are contained in green vegetables, marine fish, dairy products. It is also import ant to administer foods that need to be intensively bitten.

At the age of 10-15 years there is an acceleration of the physical and mental health, which is accompanied by an increase of physical activity. There should then be provided a greater amount of cheese, meat, vegetables, fruits, fats, bread, cereal, pasta. This is the time in which the differences in development between girls and boys begin to mark, which reflects the nutritional needs. And so the girl should eat more rich and varied meals (the body needs all the nutrients in increased amounts - protein, calcium, iron). The menu should be dominated by lean meats, fish, cheese, cereal with whole grains, fruits, vegetables, especially green and leafy ones.

In girls, over sixteen year old demand for energy and nutrients falls down while in boys the demand for energy tends to increase, as between sixteen and twenty years of age they reach sexual maturity. This is the period in which bone and muscle tissue ultimately shape so that the boys take on physical fitness. It should be pointed out at this stage to prevent obesity through sports and performing various physical activities (Ogden, 2011). The diet should be varied and include all groups especially dairy products, meat, vegetables, fruits (Gawęcki, 2008).

Material and the research methods

The purpose of this paper is to present the role of nurses in promoting proper eating habits among school-aged children.

The specific objectives are:

- Determination of the regularity of meals for school children.
- Presentation of the quality and quantity of food intake
- Determination of the physical activity of children examined.

A survey was conducted among students in grade V of Jan Kochanowski Primary School No. 5 in Biala Podlaska. The study involved a group of 96 students - 49 girls and 47 boys aged 11-12.

Discussion of results

The survey conducted among the students shows that obesity occurs in 9.3% of the students, including 55.5% of girls and 44.4% boys. 14.5% of the students are overweight - 57.1% girls and 42.8% boys. However, underweight was declared by 27% of students in the study - 50% girls and 50% boys, what is shown in the following figure:

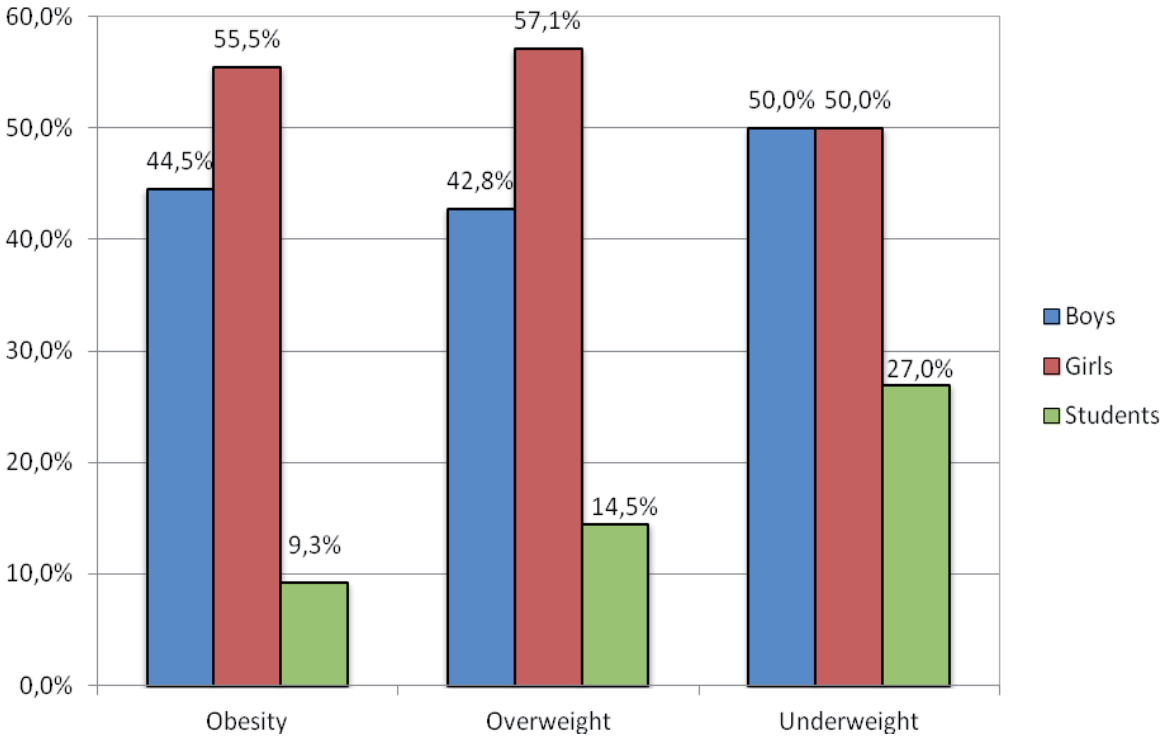


Fig. 1. The presence of excess body weight among the surveyed students (overweight and obesity) and underweight by sex.

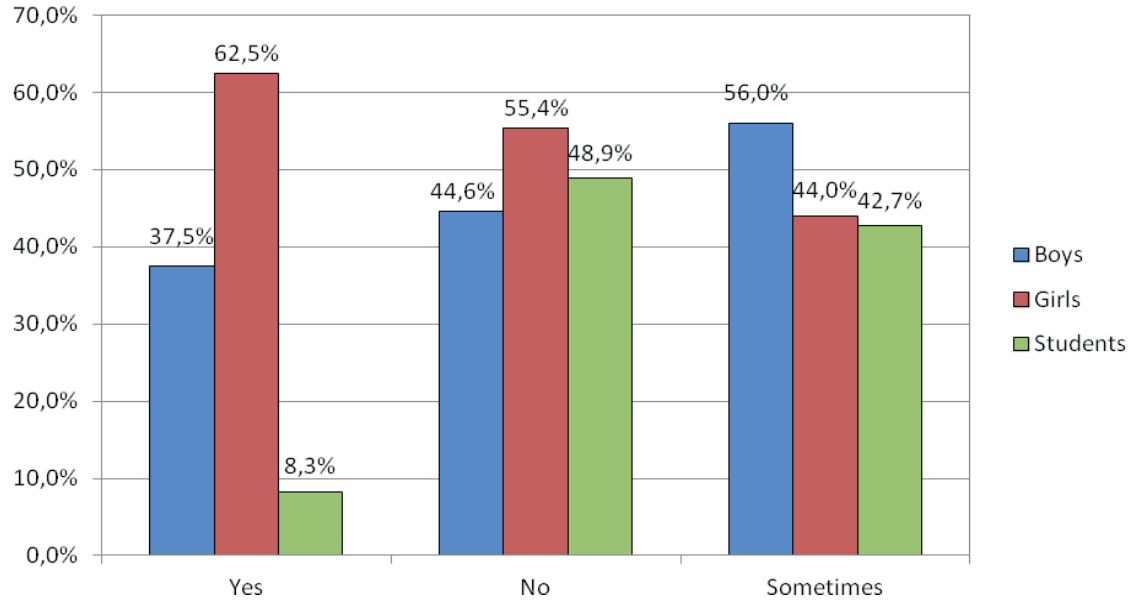


Fig. 2. Children who do not eat breakfast before going to school by gender.

These studies indicate that 8.3% of children surveyed consumed breakfast before going to school, including 37.5% boys and 62.5% girls, while 48.9% of respondents do not eat breakfast - 44.6% boys and 55.4% girls. On the other hand 42.7% of children sometimes eat breakfast - 56% of boys and 44% girls.

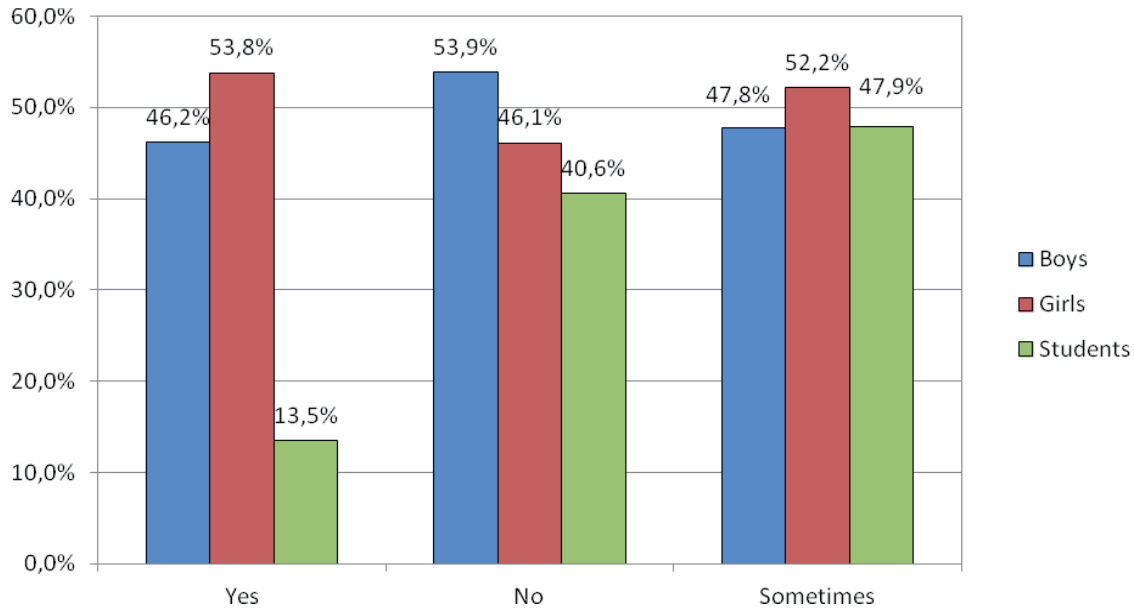


Fig. 3. Students who take a snack to school by gender.

The above study shows that 13.5% of school children eat lunch - 46.2% boys and 53.8% girls. Lunch is eaten by 40.6% of the respondents - 53.9% boys and 46.1% girls, while lunch is sometimes consumed by 47.9% of the students, including 47.8% boys and 52.2% girls .

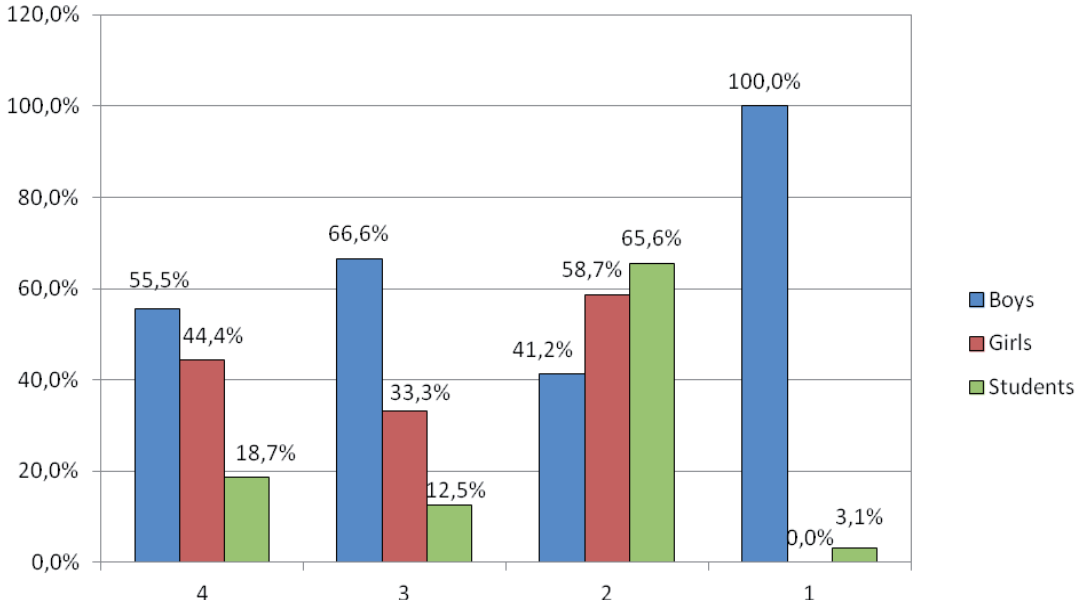


Fig. 4. Number of meals consumed by children during the day by sex.

The study shows that 18.7% of students eat four meals a day including 44.4% of girls and 55.5% boys. Three meals a day are eaten by 12.5% of the children - 66.6% boys and 33.3% girls. Two meals a day are eaten by 65.6% of which 58.7% are girls and 41.2% boys. One meal a day is eaten by 3.1% of the students, including 100% of boys.

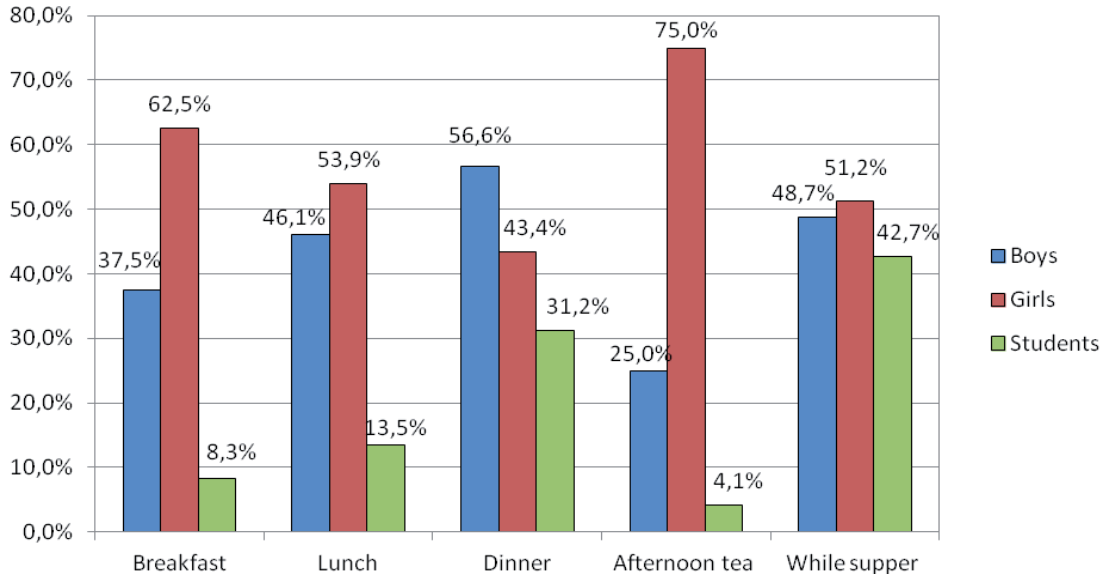


Fig. 5. Type of food consumed by children in the day by gender.

The chart above shows that breakfast is consumed by 8.3% of the students - 37.5% of boys and 62.5% girls. Lunch is eaten by 13.5% of the students - 46.1% of boys and 53.9% girls. Dinner is consumed by 31.2% of the children - 56.6% of boys and 43.4% girls. Afternoon tea is consumed by 4.1% of respondents - 25% of boys and 75% girls while supper is consumed by 42.7% of children - 48.7% of boys and 51.2% girls.

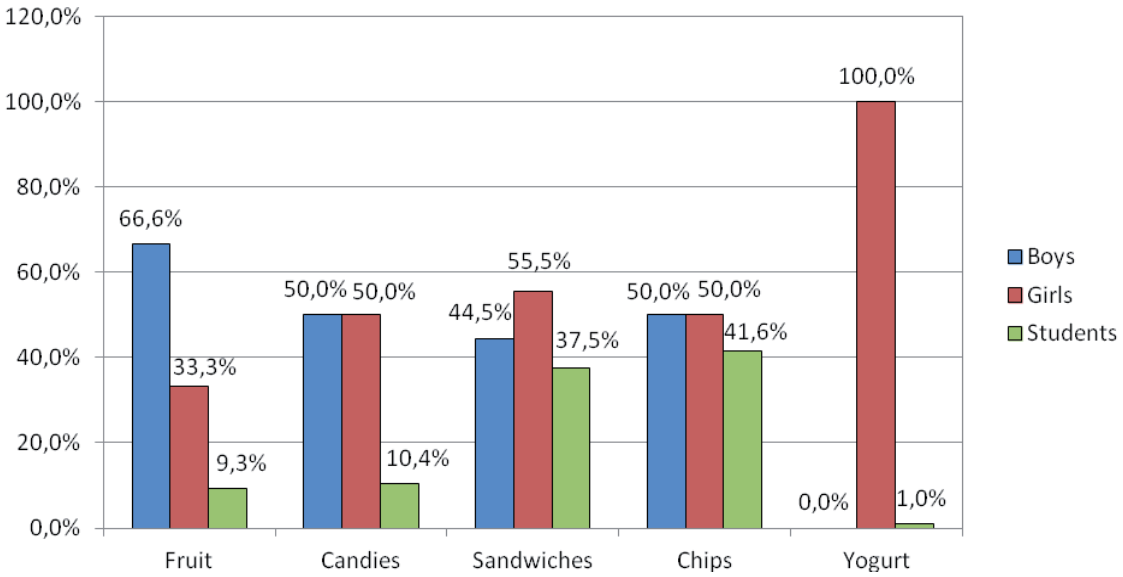


Fig. 6. Snacks between meals, school-age children by gender.

This study suggests that 9.3% of students eat fruit during the day including 66.6% of boys and 33.3% girls. Candies are eaten by 10.4% of the respondents in the day, including 50% of girls and 50% boys. Sandwiches are taken to school by 37.5% of the children, including 44.5% of boys and 55.5% girls. Potato chips are eaten up by 41.6% of the students during the day, including 50% of girls and 50% boys. However, only 1% of students eat yogurt during the day and they are girls.

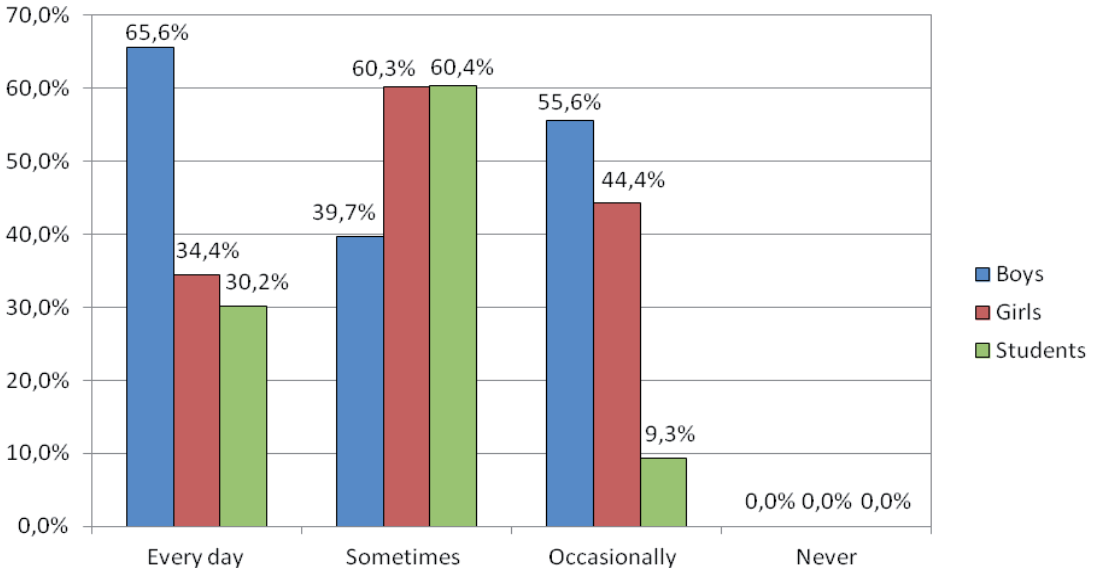


Fig. 7. Number of fruit eaten by the children of school age by sex.

The research shows that 30.2% of students eat fruit every day, including 65.6% of boys and 34.4% girls. However, fruits are eaten sometimes by 60.4% of respondents, including 39.7% of boys and 60.3% girls. Occasionally fruit is eaten by only 9.3% of children - 55.6% of boys and 44.4% girls.

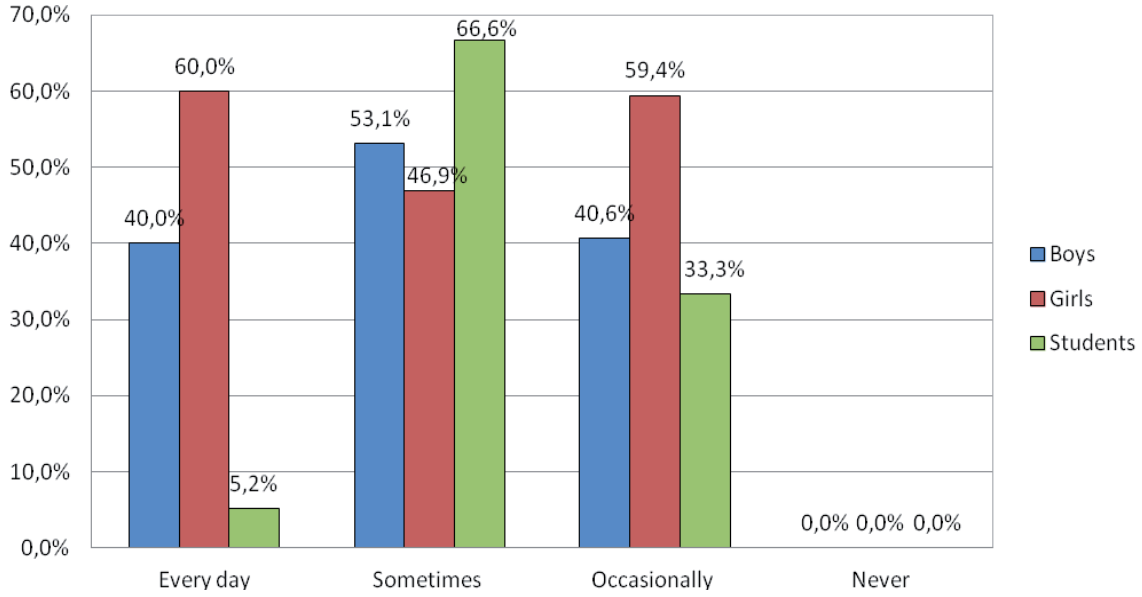


Fig. 8. Children who eat raw vegetables by sex.

These studies tell us that every day raw vegetables are consumed by 5.2% of the students - 60% of girls and 40% boys. 66.6% of students reach for vegetables sometimes, including 53.1% of boys and 46.9% girls. Occasionally, raw vegetables are consumed by 33.3% of the students - 59.4% of girls and 40.6% boys.

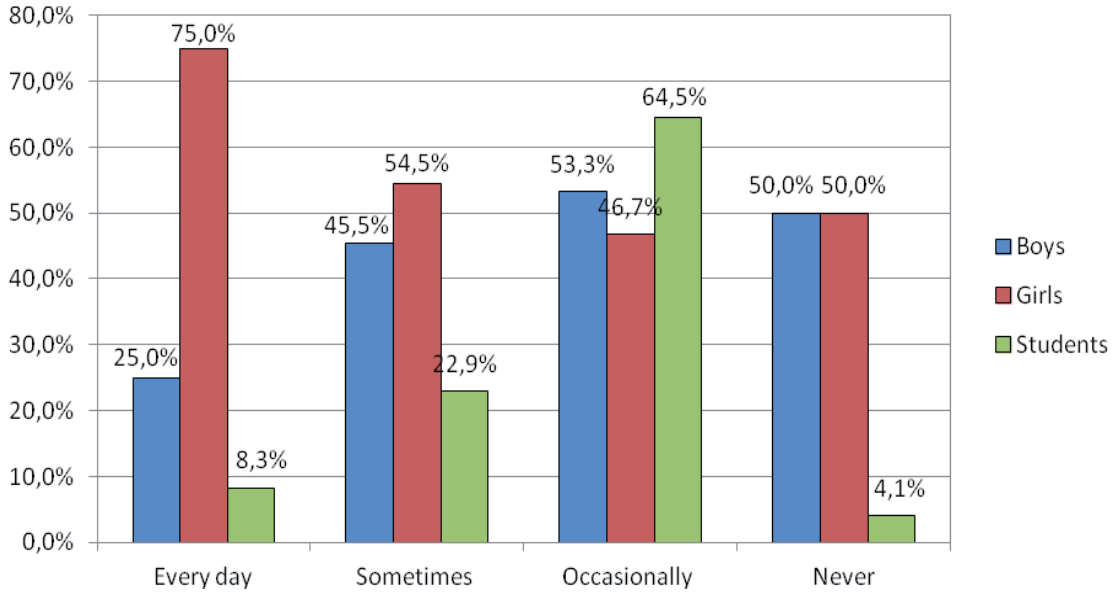


Fig. 9. Students who eat wholemeal bread by gender.

The study shows that only 8.3% of students eat whole meal bread every day, including 75% of girls and only 25% of boys whole wheat bread is sometimes eaten by 22.9% of children - 54.5% of girls and 45.4% boys. Occasionally whole meal bread is consumed by 64.5% of the students, including 53.2% of girls and 46.7% boys. However, 4.1% of respondents never eat whole meal bread, including 50% of girls and 50% boys.

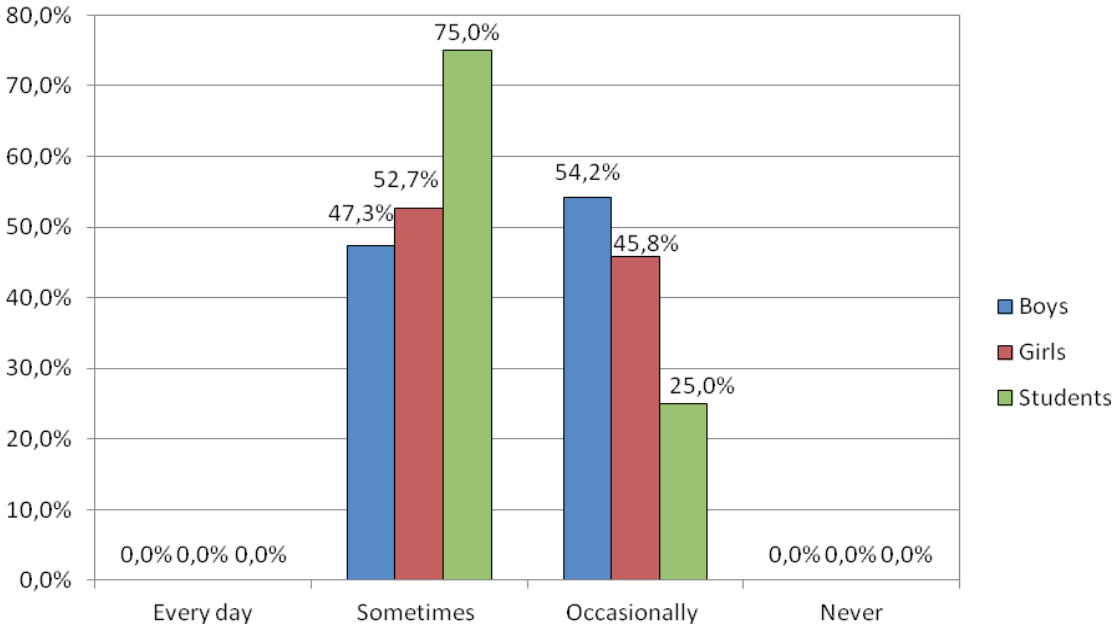


Fig. 10. Students who eat fish by sex.

Research shows that fish is eaten daily by 0% of the students. Sometimes fish is eaten by 75% of the respondents - 52.7% of girls and 47.3% boys. Occasionally, fish is eaten by 25% of children - 45.8% of girls and 54.2% boys.

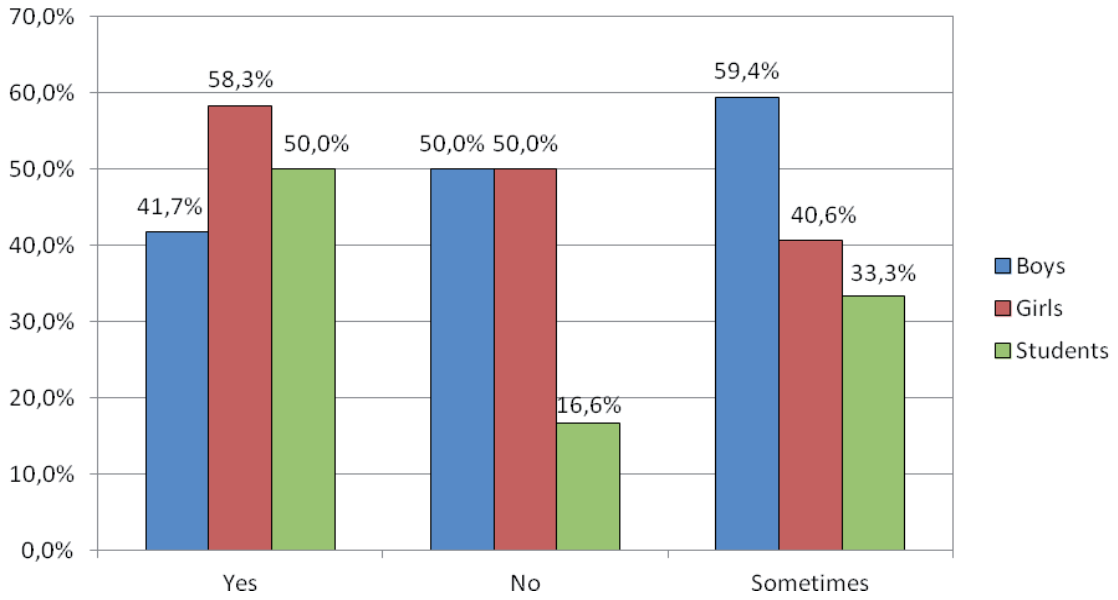


Fig. 11. Dairy intake by children of school age by sex.

The research shows that 50% of the students consume dairy products, including 41.7% of boys and 58.3% girls. Dairy products are not eaten by 16.6%, including 50% of boys and 50% girls. However, dairy products are eaten by 33.3% of the children - 59.4% of boys and 40.6% girls.

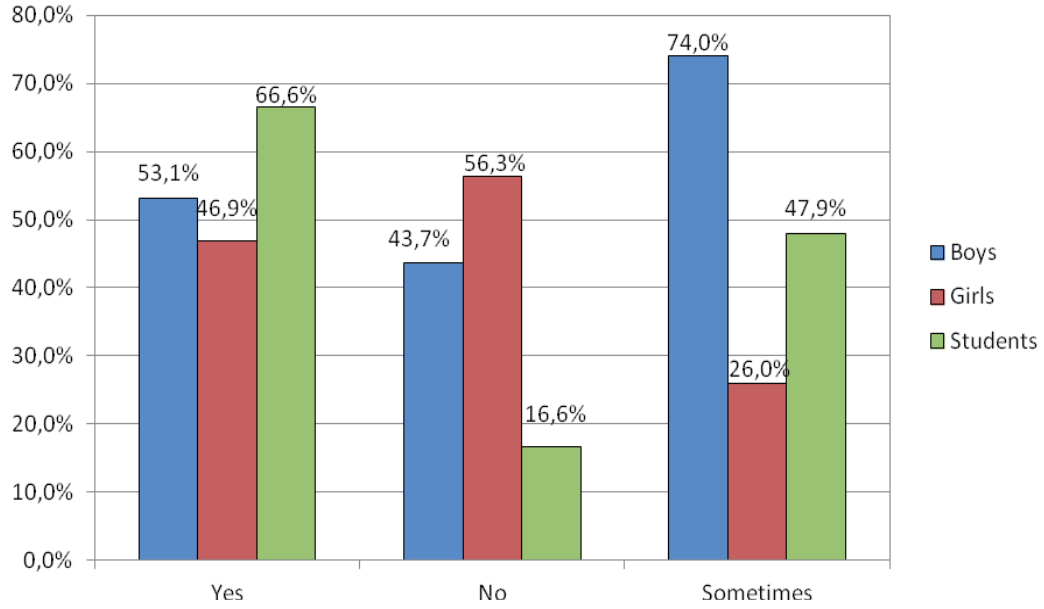


Fig. 12. Children watching television or using the computer every day by gender.

This study shows that 66.6% of students watch television and use the computer every day, including 53.1% of boys and 46.9% girls. 16.6% of the students do not watch television ore use the computer - 43.7% of boys and 56.3% girls. However 47.9%, watch television and use the computer sometimes, including 74% of boys and 26% girls.

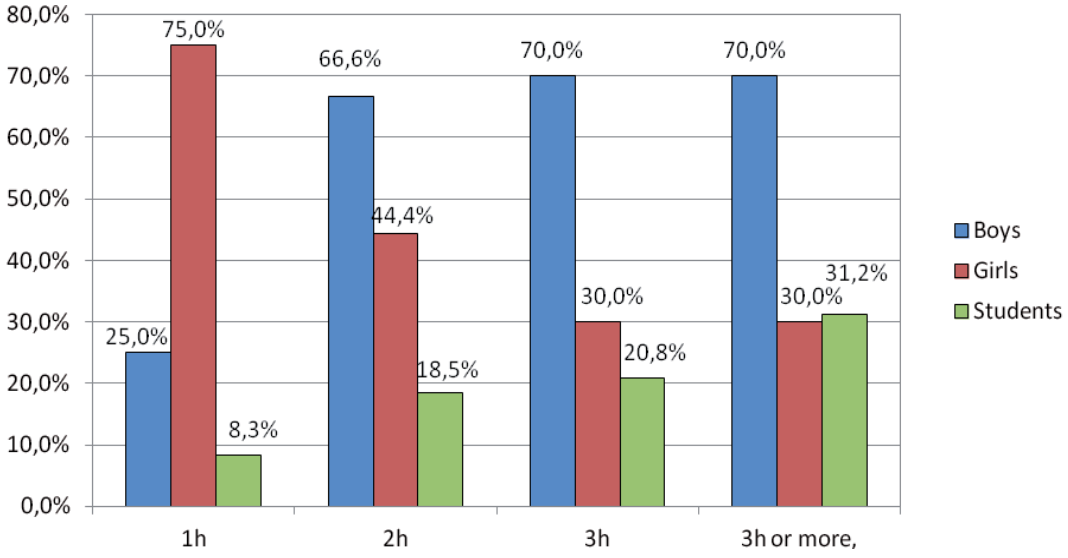


Fig. 13. Number of hours spent by children in front of the TV or computer by sex.

This study shows that 8.3% of students spend 0.5 hour per day in front of a TV or computer, including 25% of boys and 75% girls. One hour a day is spent by 18.5% of children of school age - 66.6% of boys and 44.4% girls. On the other hand, two hours a day are spent in front of a computer or TV by 20.8% of the respondents including 70% of boys and 30% girls. However, three hours or more a day are spent by 30.2% of the children - 70% of boys and 30% girls.

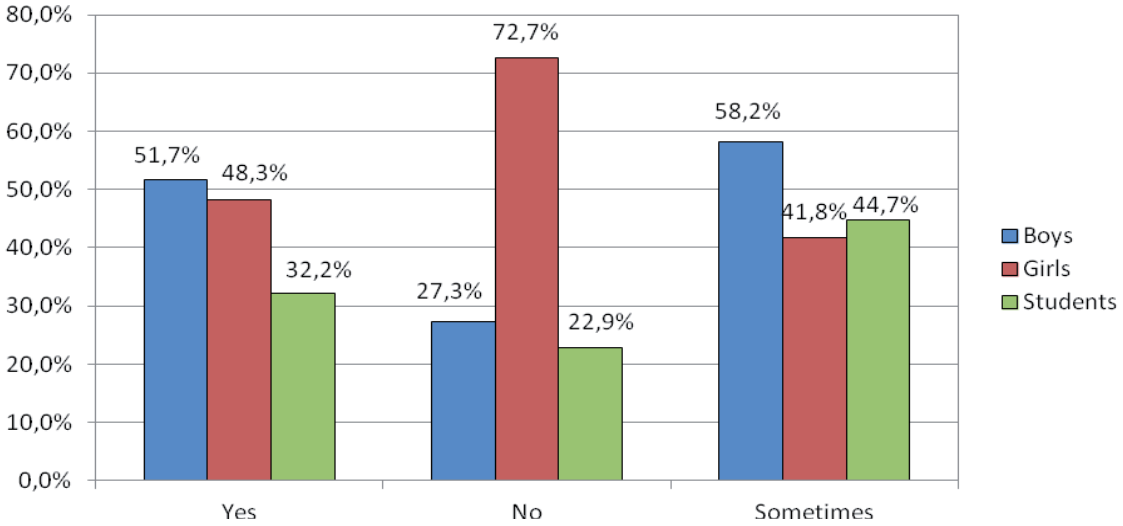


Fig. 14. Physical activity in the PE classes of the school children by gender.

This study shows that physical activity is performed by 32.2% of the respondents in PE classes - 51.7% of boys and 48.3% girls. However, sometimes the physical activity is performed by 44.7% of children, including 58.2% of boys and 41.8% girls. However, physical activity does not concern 22.9% of students, including 27.3% of boys and 72.7% girls.

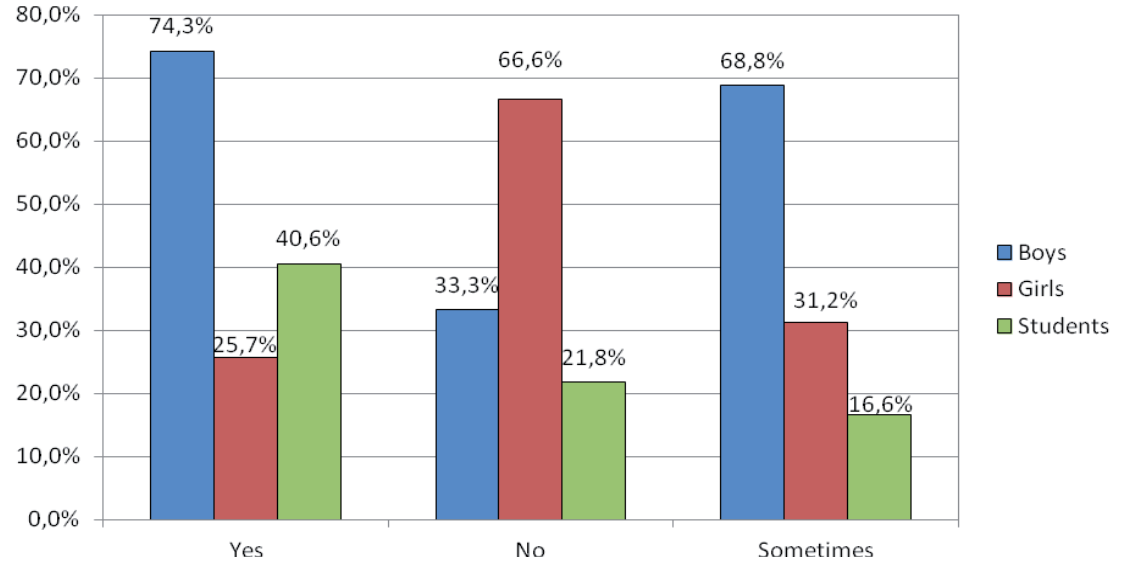


Fig. 15. Students who participate in physical activities outside school.

Research has shown that physical activities outside school involved 40.6% of the children - 25.7% of girls and 74.3% boys. 16.6% of the students sometimes participate in extracurricular activities - 31.2% of girls and 68.8% boys. 21.8% of the respondents do not participate in physical activities outside school - 66.6% of girls and 33.3% boys.

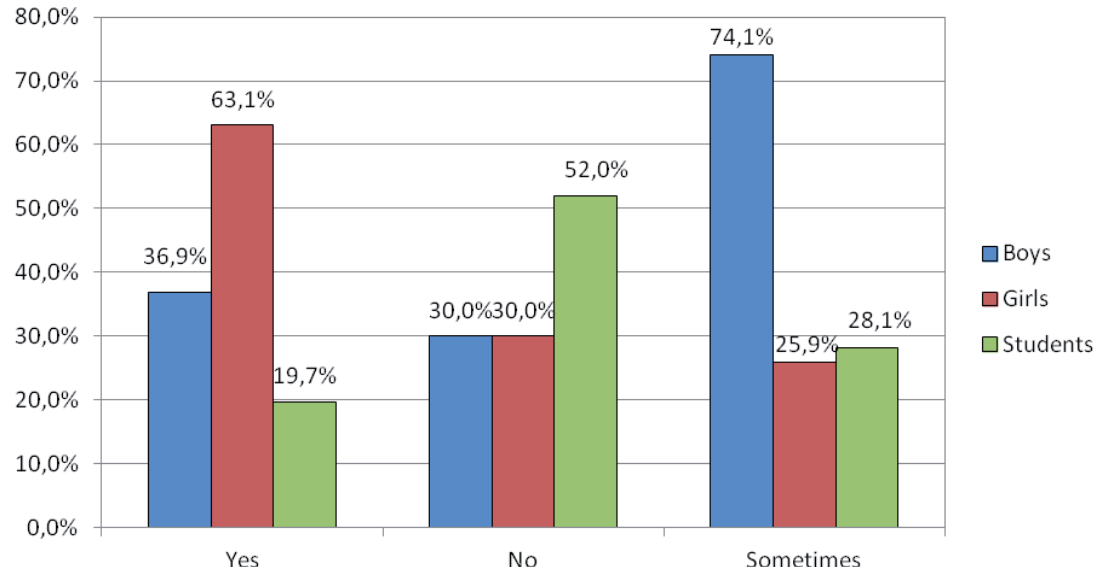


Fig. 16. Children whose parents provide them with the information on healthy eating.

This study shows that 19.7% of parents provide their children with the information about healthy eating, including 36.9% of parents of boys and 63.1% of parents of girls. However, sometimes the information is provided for 28.1% of the children, including 74.1% for boys and 25.9% for girls. News on adequate nutrition cannot be transmitted to 52% of the students, including over 30% of boys and 30% girls.

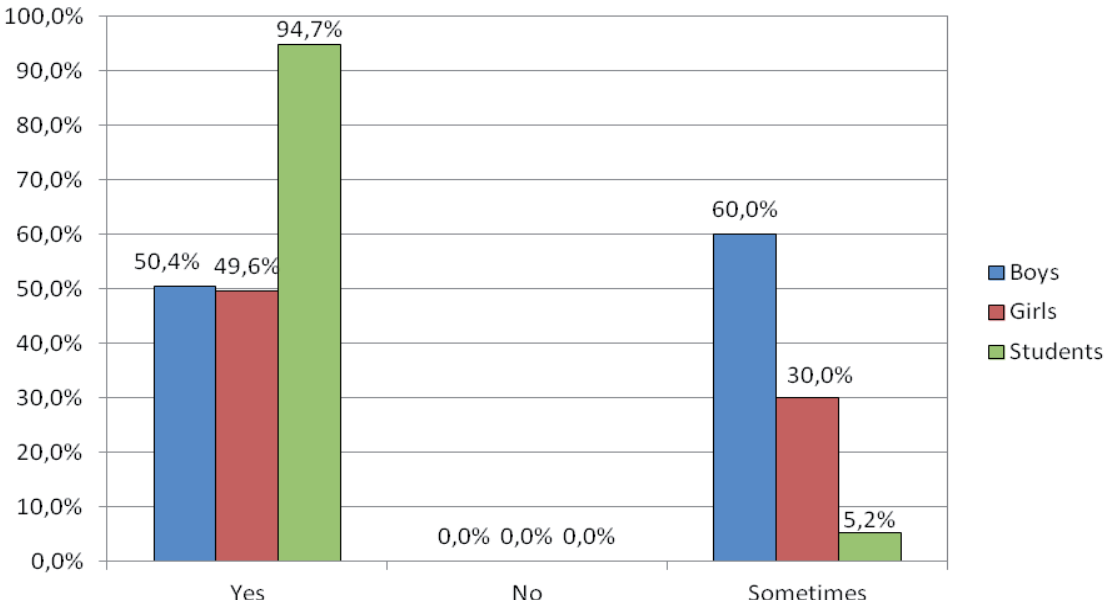


Fig. 17. Children who acquire knowledge about healthy eating from a nurse

The research I conducted illustrate to us that 94.7% of the students acquire the knowledge from the school nurse - 49.6% of girls and 50.4% boys. However, this knowledge is delivered by the school nurse sometimes to 5.2% of the students - 30% of girls and 60% boys.

Discussion

The leader in promoting proper nutrition style is undoubtedly the Institute of Nutrition and Food in Warsaw. The educational activity is an important part of the tasks of the Institute to raise awareness and public understanding in the field of food, nutrition, physical activity and their effects on health. The aim of education is to improve awareness and knowledge in the field of food and nutrition by promoting the principles of rational nutrition and healthy lifestyle, providing information on healthy foods, rational nutrition and the prevention and control of diseases resulting from faulty nutrition, dietary recommendations for healthy people and patients, to promote the principles of rational nutrition and healthy lifestyle in the prevention of diet-related diseases.

Proper eating habits have a significant impact on children's development during adolescence, where there is a huge demand for nutrients and energy, and it is in a turbulent transformation of the body, puberty, changes in body shape and the formation of internal organs. There are also significant changes in the maturation of emotional, mental and social development of young people. In view of the important role of nutrition in human adolescence, this work raises issues of immense importance in the regularity of meals for school children, the amount and quality of meals consumed by students and physical activity among youth (Gawęcki, 2005).

In response to these issues it should be noted that there is little compliance with the assumptions promoted by the Institute of Nutrition and Food in Warsaw, as students, due to the current system of school education stays away from home much too long thereby preventing the consumption of food at fixed times. In addition, young people tend to leave the breakfast, this important meal does not apply to 48.9% of the children and only 42.7% have breakfast sometimes, but only 8.3% of students eat breakfast in the morning before going to school. The most common food consumed during the day was dinner - by 42.7% of the children. The next meal was lunch consumed respectively by 31.2% of the children, then a snack - 13.5%, followed by lunch - 8.3% and breakfast and afternoon tea - 4.1%. Among the young people four meals per day were consumed by 18.7% of the respondents, three meals a day by only 12.5%, and two meals per day were consumed by the majority of as much as 65.6% of the students. Only 3.1% of respondents consumed one meal a day. When it comes to the quality and quantity of food they eat, it should be noted that in this day and age there is a huge availability of food high in energy, which is not necessarily healthy for young organisms. Such foods are rich in so called empty calories that only satisfy the hunger for a while. This way of eating leads to glucose metabolism, which contributes to the development of type II diabetes and other metabolic diseases.

Students eat too little fruit, only 30.2% of children eat it every day, and sometimes fruits are consumed by 60.4% of respondents, while only 9.3% of students eat them occasionally. When it comes to vegetables, only 5.2% of children eat them every day. Sometimes the vegetables are consumed by 66.6% of students and by 33.3% just occasionally. When it comes to whole meal bread, it is consumed daily by 8.3% of students, by 22.9% of respondents sometimes and occasionally by 64.5%. 4.1% of the students do not eat bread. The white bread is consumed every day by 75% of the young people. Sometimes by 16.6% and only 8.3% occasionally consume white bread. In the case of dairy products

50% of children eat them willingly, and sometimes 33.3% of the respondents. 16.6% of the students do not eat dairy at all. The fish, in turn, is not eaten every day by anyone, even though the fish contains unsaturated fatty acids, complete protein, minerals such as magnesium, calcium, iodine, selenium, and vitamin D. Sometimes fish is consumed by 75% of students and by 25% occasionally. The meat most eagerly eaten by the students is the pie, which is 40.6% of consumption. Ham is eaten by 35.4% of the children. On the other hand, 22.9% of respondents eat beef and 11.4% of the students like to eat sausage. The most eaten snacks are unfortunately chips - 41.6% of the students. Then there are sandwiches, which are consumed by 37.5% of respondents, followed by sweets consumed by 10.4% of children and in the end there are fruits consumed by 9.3% of respondents. Improper eating habits can have devastating health consequences for the young population.

In this study children also responded to questions about physical activity, but only 32.2% eager to participate in physical education classes, 44.7% of the students practise sometimes and 22.9% do not practice at all. When it comes to physical activities outside school only 40.6% of the students are actively involved in such activities, 16.6% of respondents practice sometimes and 21.8% do not exercise at all. The disturbing fact is confirmed in this study that the youth of today spend a lot of time in front of the computer or TV. Every day, up to 66.6% of students sit in front of a computer or television, 31.2% of the students do it more than 3 hours aday. Two hours a day in front of a computer or TV are spent by 20.8% of respondents, and an hour a day by 18.5% of children, and half an hour a day is spent by 8.3% of students. On the other hand, sometimes 47.9% of respondents spend time in front of the computer or TV, 16.6% of the children do not do it at all.

Conclusions

1. Almost a half - 48.9% of children of school age do not eat breakfast, and only 8.3% students eat breakfast before going to school.
2. The most regularly consumed meals are dinner and lunch, which was observed with 73.9% of respondents. The most often missed meals were breakfast and afternoon tea.
3. Most of the children eat only two meals a day, while the three meals aredaily consumed by only 12.5% of the students which is the right and worthy way to diet
4. Students eat too little fruit, because only 30.2% of the children eat them every day in their diet. Vegetables and fruits are not often consumed by children, because only 5.2% of students eat them in their diet.
5. Only 8.3% of respondents consume in their diets recommended wholemeal bread.
6. Half of the respondents (50%) consume dairy products.
7. The low intake of fish is very disturbing, it is sometimes consumed by 75% of the respondents, and it is occasionally eaten by 25% of children.
8. Another very disturbing fact is that as many as 41.6% of students consume so called empty calories in the form of snacks between meals.
9. It was also noted among the respondents that there is a very low physical activity during the classes of physical education, because only 32.2% of students take an active part in them, and when it comes to physical activities after school, only 40.6% of the students are actively involved in these. Others prefer watching TV or using the computer for three hours a day.

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