



Submitted: 30.06.2020

Accepted: 27.08.2020

Suggested citation: Nazaruk S. (2020). *Healthy Eating Awareness among Early School Children and Activities Undertaken by Schools*, „Elementary Education in Theory and Practice”, vol. 15, no. 4(58), pp. 103-115. DOI: 10.35765/eetp.2020.1558.07

Stanisława Nazaruk

ORCID: 0000-0001-5620-3980

Pope John Paul II State School of Higher Education in Biala Podlaska

Healthy Eating Awareness among Early School Children and Activities Undertaken by Schools

KEYWORDS ABSTRACT

pupil, health,
primary school,
healthy eating,
awareness

Currently, the knowledge of good nutrition as an important health factor is an element of social awareness. One of the primary responsibilities of schools, which perform educational and didactic functions, is to increase this knowledge and develop habits and attitudes promoting healthy eating. Therefore, it seems advisable to undertake and conduct research among primary school students in order to learn about their awareness of healthy eating and about nutrition education activities undertaken by schools. In the empirical part of the article, there is an analysis of the findings of the research conducted among second- and third-graders (N=170) in selected primary schools across the Biała Podlaska district in the Lublin voivodeship. The quantitative research is complemented with the qualitative research in the form of individual interviews with eight form teachers responsible for the classes covered by the study. The analysis and interpretation of the results, on the one hand, indicated a high level of pupils' knowledge of good nutrition, which is largely influenced by the interesting educational activities conducted by the teachers. On the other hand, such analysis evaluated the pupils' diet which, in many aspects, gives rise to concern and requires integration with their families.

Introduction

Already a few centuries ago, the famous poet Jan Kochanowski wrote: “My good and noble health, none knows thy worth until we fall ill.” These words are still true today and eating is one of the basic processes in a person’s life. Nutrition provides us with energy, it influences developmental processes and, in consequence, it affects our health. The early school age is a very important period in a person’s life, during which particular habits, behaviours and attitudes are shaped and reinforced, including those related to healthy eating. In psychological terminology, this period is broadly understood and it lasts from the age of 6 or 7, up to 10, or, according to some authors, even 12 years of age (Brzezińska 2019; Harwas-Napierała, Trempała 2004; Żebrowska 1986). In this period of a child’s development, very dynamic changes occur in the physical, psychological and emotional growth. The immune system is developing, which is why children fall ill less frequently than in the preschool period. Moreover, in this period, mechanisms of child’s imitation and identification are very strong, and teachers often play the role of “important people” and models of behaviour for students. Teachers expect children to become independent and systematic, which is necessary in the educational process of studying and upbringing. The above-mentioned processes shape children’s habits, behaviours and attitudes, which is why we should pay special attention to the cooperation of teachers and parents. According to Barbara Wolny: “In such an approach to education, the actions of parents and teachers should be based on the systematic provision of knowledge, and the development of skills related to using this knowledge in everyday situations, i.e. shaping attitudes that support health” (Wolny 2012: 126).

One of the conditions of healthy eating, which influences the child’s correct development, is eating five meals a day. If we fail to satisfy the need for proper nutrition and ignore related principles, we will threaten the child’s proper development and risk his/her serious health disorders (Wolański 2012; Woynarowska et al. 2010). Unfortunately, in Poland there is an increasing number of overweight or obese children. The speed with which the percentage of children with body mass disorders is increasing is one of the fastest in Europe. The reasons for such disadvantageous tendency include improper nutrition and the lack of physical activity. This is also confirmed by the research carried out in the schools supervised by NIK. The percentage of their students with improper body mass (overweight or underweight) was 22%, i.e. it referred to one in five children within the analysed group. At the same time, the problem of malnutrition is still valid: it affects one in three children (Dziwisz 2017: 61-71). Similar data is confirmed by the results of the research of HBSC (Health Behaviour in School aged Children) carried out by the European bureau of WHO in 2012. In the group of analysed Polish teenagers, 29% of them are overweight (WHO, 2012).

The obtained research results do not show Polish schools in a good light. According to the report, school's activities are not sufficient in shaping pro-health attitudes of children despite the fact that school is a very important pedagogical environment which exerts a multifaceted influence on children and often reduces a bad influence of the family or peer environment (Jarosz 2008; Syrek 2000; Wolny 2012).

The above-mentioned problem of childhood obesity, which, more and more frequently, results from improper nutrition and insufficient physical activity of children, may be the cause of other diseases, e. g. neuroses and diseases related to the circulatory system. This may sometimes lead to educational failures and the lack of motivation to overcome them, and to the rejection and exclusion by the peer group. The sense of such rejection because of one's appearance is the reason for psychological breakdowns of some students. According to the published research results, mistakes in children's nutrition leading to obesity may exert a bad influence on the person's further life (Demel 1980; Jarosz 2008; Woynarowska et al. 2010; Wolański 2012). Thus, it is good to shape proper nutrition habits from the earliest period in a child's life, and to create developmental conditions that help the child understand that healthy eating is strictly connected with his/her health, i.e. physical and intellectual state.

Healthy eating

Both in the title of the article and in the above considerations, the concept of "healthy eating" has been used in different contexts. Although this is a multi-aspect notion, we can assume that healthy eating is "(...) a way of eating that consists in receiving the substances that are good for one's health in order to maintain or improve health. Decreasing the risk of the occurrence of diseases such as obesity, cancer and heart diseases, is significant. A healthy diet includes proper amounts of necessary nutrients and water" (Kunachowicz et al. 2007; Molska 2010). Good nutrition is providing the body with all nutrients necessary for its correct functioning, including vitamins and minerals that regulate chemical processes and activities in our organism (Kunachowicz et al. 2019). In order to function properly, a person needs about 40 nutrients which are received from food. Food nutrients are divided into 6 groups: proteins, mineral salts, vitamins, carbohydrates, fats and water. These nutrients are not contained in all products. That is why, our diet should include many different products: the more, the better. Only such nutrition can give us all necessary nutrients. No supplements can replace a well-balanced diet. In order to eat in a healthy manner, not only should we provide our body with necessary nutrients in correctly prepared and composed meals, but we should also eat those meals in a regular manner. It should be emphasized that the demand for nutrients depends on many factors such as age,

sex, the work we perform, and individual differences among people (Molska 2010; Kunachowicz et al. 2019; Gawęcki 2012).

Taking into account the child's correct development, including his/her awareness of healthy eating, a diagnostic survey was carried out among early education students attending classes II and III in several Polish primary schools. The main objective of the research was diagnosing the level of knowledge of good nutrition among boys and girls at the early school age. The main problem formulated in the research was: Are early education students aware of the need for healthy eating? This problem was made detailed in the following questions:

1. Do the students of classes II and III have the knowledge of healthy eating?
2. Which issues related to good nutrition are known to these students?
3. Do the students know the consequences of ignoring the principles of healthy eating?
4. How does the school environment promote the model of healthy eating?
5. Which healthy eating campaigns are being fulfilled by the school?

Methodological assumptions of the research

The research was carried out in Lublin Voivodeship, in the county of Biała Podlaska. A hundred and seventy early education students took part in the research. The group of students included 102 boys and 68 girls. The boys constituted 60% of the students in the group, and the girls: 40%. All the analysed students lived in Biała Podlaska County in the Lublin Voivodeship. The researchers used the method of diagnostic survey and two techniques: a questionnaire and an interview. The questions for students of classes II and III were prepared in the form of worksheets. Each worksheet included five questions in order to get to know food products which the children usually eat for breakfast, their favourite snacks, as well as their knowledge of the bad consequences of unhealthy eating and their understanding of the concept of "healthy eating." Before starting the analysis, the school principals were asked to issue their consent for such a research. A set of worksheets was delivered to teachers of classes II and III. The research was carried out in the middle of April 2019. The research participants were anonymous. The class teachers told the students about the purpose of the study and the principles of answering the questions included in the worksheets. The second technique used in the research was an interview which was used to obtain information from the teachers of classes II and III on the actions they undertake to promote healthy eating and the forms in which they carry out such actions. Individual interviews with 8 teachers were carried out.

Early education students' knowledge of healthy eating in the light of the author's own research

The analysis among the students of classes II and III of primary schools was carried out thanks to the class teachers who know their students. This exerted a good influence on the quality of the research process, and its result were legibly completed worksheets that were later analysed. The first question aimed at getting to know what the children like eating for breakfast. The results, changed into percentage rates, are shown in the table below:

Table 1. Percentage of the products that the children like eating for breakfast

No.	Products	Boys		Girls	
		N=102	%	N=68	%
1.	Sandwiches	102	100,00	68	100,00
2.	Fruit juice	30	29,41	6	8,82
3.	Chips	0	0,00	0	0,00
4.	Tea	102	100,00	68	100,00
5.	Yoghurt	60	58,82	34	50,00
6.	Cornflakes with milk	90	88,23	68	100,00
7.	Doughnut	10	9,80	5	7,35
8.	Cocoa	90	88,23	34	50,00
9.	Pizza	5	4,90	2	2,94
10.	Dairy products (eggs)	75	73,52	30	65,50

he research results do not add up to 100% because it was possible to select multiple answers.

While analysing the data from Table 1, we can conclude that the children's (both boys' and girls') favourite breakfast includes sandwiches and tea. The second place in the ranking is occupied by cornflakes with milk and cocoa. Then, dairy products (mainly eggs and yoghurt) were mentioned, and finally – fruit juice. Only a few children mentioned doughnuts and pizza. The foods presented by the children make it possible for us to conclude that – with a few exceptions – parents know the principles of good nutrition and serve healthy food for breakfast, providing the children with energy for the whole morning.

In question 2, the children participating in the research were to mention the snacks they get from their parents to eat at school. The answers to this question are presented in Table 2.

Table 2. Percentage rates concerning the snacks the children get from the parents to eat at school

No.	Products	Boys		Girls	
		N=102	%	N=68	%
1.	Pear	30	29.41	9	13.23
2.	Apple	60	58.82	30	44.11
3.	Doughnut	30	29.41	15	22.05
4.	Sandwich	96	94.11	48	70.58
5.	Sweets	12	11.76	2	2.94
6.	Salty sticks	18	17.64	15	22.05
7.	Croissant	12	11.76	2	2.94

The research results do not add up to 100% because it was possible to select multiple answers.

The data in the table confirms that most children know what healthy eating is. The largest percentage of the students from the analysed group get sandwiches and fruit as snacks for eating at school. Some of the children mentioned products such as doughnuts, salty sticks and sweets. There were more boys than girls among these children. This data helps both teachers and parents realize that they have to undertake educational and practical actions aimed at the improvement of the quality of snacks the children bring to school. Such actions should be suggested for fulfilment, and the cooperation of students, parents and teachers should be taken into account in them.

Another question included in the worksheets, question no. 3, was to check the students' favourite drinks they drink during the day. The answers were included in Table 3.

Table 3. The children's favourite drinks – percentage rates

No.	Drinks	Boys		Girls	
		N=102	%	N=68	%
1.	Tea	99	97.05	60	88.23
2.	Sparkling mineral water	35	34.31	25	36.76
3.	Still mineral water	80	78.43	62	91.17
4.	Fruit juice	90	88.23	55	80.88
5.	Sparkling drinks, e. g. Coca-Cola, orangeade drinks	20	19.60	16	23.52
6.	Milk	40	39.21	45	66.17
7.	Drinkable yoghurt	62	60.78	56	82.35

The research results do not add up to 100% because it was possible to select multiple answers.

The analysis of the data included in Table 3 shows that the children's favourite drinks during the day are tea, fruit juice and still mineral water. This trend is visible both among the boys and the girls. Their less favourite drinks include milk drinks, such as milk and drinkable yoghurt. Unfortunately, it was noticed that some children drink sparkling mineral water and various sweet sparkling drinks.

The objective of the fourth question included in the worksheets was to check if the children understand what healthy eating is. They were given seven sentences out of which they were to choose and underline only those which referred to good nutrition. Table 4 contains these seven sentences, along with the percentage of replies marked by the children. Since there were no differences between the boys and the girls, the percentage rates were calculated for the whole group of children.

Table 4. Percentage rates concerning the sentences that described healthy eating

No.	Sentences describing healthy eating	The analysed group of children	
		N=170	%
1.	Eating a lot of sweets	40	23.52
2.	Eating 5 meals a day	150	88.23
3.	Eating a lot of chips and hamburgers	60	35.29

No.	Sentences describing healthy eating	The analysed group of children	
		N=170	%
4.	Eating a lot of fruit and vegetables	165	97.05
5.	Drinking 2 litres of fluids a day (water, fruit juice, milk, drinkable yoghurt)	135	79.41
6.	Avoiding overeating	140	82.35
7.	Drinking sweet sparkling drinks	60	35.29

The research results do not add up to 100% because it was possible to select multiple answers.

According to the analysis of Table 4, the vast majority of children from the analysed group can correctly choose the sentence that describes healthy eating, which confirms that the students know what good nutrition is. However, some children made mistakes: as many as 23% of them said that eating a lot of sweets is healthy, and 35% of them indicated that eating chips and hamburgers, as well as drinking sweet drinks, is healthy.

Another question directed to early education students was to check if they know the consequences of unhealthy eating. The children were given 6 sentences that described certain states. The children were to choose those sentences which referred to the consequences of unhealthy eating.

Table 5. Percentage rates related to the knowledge of bad nutrition consequences

No.	Sentences that describe the consequences of bad nutrition	The analysed group of children	
		N=170	%
1.	Good health	20	11.76
2.	Tooth decay	145	85.29
3.	Obesity	165	97.05
4.	Fitness	90	52.94
5.	Overweight	160	94.12
6.	Bad mood	40	23.52

The research results do not add up to 100% because it was possible to select multiple answers.

The vast majority of the children in the analysed group were able to select the sentences that described the consequences of unhealthy eating. Only a small percentage of children indicated the sentences which did not refer to bad nutrition consequences.

Promotion of healthy eating in selected primary schools

The answers to the next questions concerning the ways of promoting a model of healthy eating by primary schools were obtained during individual interviews. The interviews were carried out with 8 teachers of classes II and III to which the analysed children belonged. First of all, it is worth noticing that it is not easy to work out and implement principles that are approved by children, because such principles are related to certain obligations and prohibitions, e. g. “now wash your hands”; “eat this because it is healthy”; or “do not eat this because it is unhealthy”. Fortunately, many entities, starting from the family and school, as well as the media, present and promote the principles of healthy eating, due to which the school’s actions are not isolated and they are supported by many people. Schools promote good nutrition through carrying out educational activities, including practical and preventive ones. Such activities are directed to students, parents and teachers themselves. The contents are not only transmitted during the lessons, but also in various forms outside the classroom, e. g. during so-called “natural schools” (several days’ school trips), school celebrations, events promoting the school, sports and entertainment events, competitions and cooking workshops. Some of the above-mentioned forms involve not only the community of students, but also whole families.

According to the interviewed teachers, projects aimed at the promotion of healthy eating are long-term and consistent, which is specified in the curriculum for each class. Teachers are obliged to implement such projects according to the *Core curriculum for general education in classes I-III* in which we read as follows: “the student has health consciousness related to hygiene, cleanness of the body, nutrition and lifestyle”. And the fulfilment of thematic contents concerning healthy eating was assigned to teaching science, and it includes the following issues:

- “the student knows the nutritive value of particular food products; he/she knows that a good diet is important for a person’s health; he/she reduces eating products with low nutritive value and unhealthy products; he/she does not eat many sweet products and he/she knows the consequences of eating too many of them”;
- “the student prepares healthy meals” (Journal of Laws 2017, item 356).

It is worth mentioning that children also learn about healthy eating during other classes, e. g. Polish language and literature, foreign and regional languages, PE. In practice, information on good nutrition is combined with health, physical activity,

movement, and spending free time, which is a good forecast for the future. The inclusion of knowledge of healthy diet into various school subjects ensures the integrity of pro-health actions and makes it possible to carry out nutrition education with reference to many aspects of teaching and educating.

Parents are important partners for teachers in the process of educating and upbringing. The objectives of nutrition education will only be achieved if teacher's actions are supported by parents, especially by their model behavior and consistency. Some teachers have already noticed that in several families bad eating habits have been replaced with the principles of good nutrition. However, according to the interviewed teachers, some parents are not sufficiently involved in the fulfillment of nutrition education at school, which is a kind of an obstacle that hinders transferring their actions to the family environment.

School is a place that not only teaches and educates, but also makes it possible for students to satisfy their nutrition needs. School canteens serve healthy meals with a large amount of vegetables and fruit. According to the interviewed teachers, the number of students eating meals in the school canteen has increased, which exerts a good influence on the way they perform various school tasks. At present, in school shops it is impossible to buy sweets, sweet drinks, chips, doughnuts, and sweet rolls, and school canteens do not serve hamburgers, chips or toasted sandwiches. They were replaced with fruit, salads or milk in boxes. Obviously, at the beginning of those changes the students protested a lot, but now everyone is happy. In time, the students got used to healthy food, and they no longer protest against it. Due to educational and promotional campaigns supporting healthy food, in which most of the parents are interested, the students' eating habits and attitudes are gradually changing.

Results and conclusion

The above mentioned research results clearly confirm that the analysed primary schools implement systematic actions related to nutrition education. The interviewed teachers usually combine healthy nutrition classes with other health-promoting actions. For this purpose, they use various didactic forms and methods that are attractive from the point of view of an early education student, based on practical action and involvement. The fulfilled actions, on the one hand, show the teacher's great responsibility for the process of nutrition education, and, on the other hand, result in the students' high level of knowledge evaluated on the basis of the replies to the questions included in the worksheets. The vast majority of students of classes II and III of the primary school understand the notion of "healthy eating" and can indicate the sentences that describe this notion. Also, it was easy for most of them to indicate the

sentences that described the negative results of a bad diet. The subject of the research carried out in the schools from Biała Podlaska County matches the subject of some analyses conducted in other countries concerning healthy eating, the way of perceiving good nutrition, and the consequences of eating unhealthy food. A longitudinal study related to such topics was carried out in a 3-year period in India among the students (N=307) aged 7 to 15, in three schools of various socioeconomic statuses. The data was obtained through survey questionnaires. The results showed that older children and mothers with higher education, as well as children with a proper body mass, better understand the meaning of healthy eating with reference to the constituents of a diet. In the area of understanding the notion of unhealthy food, it was noticed that it is influenced by the child's age and his/her socioeconomic status. However, the children's knowledge is not reflected in practice, because there are no significant differences among children of various ages, sexes, socioeconomic statuses and mothers' education levels in terms of eating fried meals, drinking sparkling drinks, eating fast food, sweets and chocolates (Swaminathan et al. 2019: 94-110).

The analysis and interpretation of the results of our research present a good image of the selected schools as the institutions that systematically implement healthy eating campaigns in the educational, organisational and upbringing aspect. The research has confirmed the key importance of the school as the institution involved in the process of promoting and teaching healthy eating among the children and their parents. Studies carried out in other countries, e. g. in Brazil (in two cities: Bauru and São Paulo) confirm the significance of school in the process of promoting good nutrition. The comparative study in Brazil was conducted in public and private primary schools among 341 students. Its results confirmed the efficiency of implementing healthy eating projects (Franciscato et al. 2019: 390-402).

The weak point of the analysed schools from the Biała Podlaska County is the integration of their actions with the practical actions of some parents, which may be explained with different conditions in the families or even with the parents' reluctance to introduce any changes. That is why, this aspect of the research results should be taken into account in the work of early education teachers in order to improve their cooperation with the parents. However, we have to emphasize that the issues presented in the article have not fully exhausted the subject of nutrition education, but they only drew our attention to the importance of healthy eating which will certainly be the subject of further analyses.

Bibliography

- Brzezińska A. (2019). *Psychologiczne portrety człowieka. Praktyczna psychologia rozwojowa*, Gdańsk: Gdańskie Wydawnictwo Psychologiczne.
- Demel M. (1980). *Pedagogika zdrowia*, Warszawa: Wydawnictwa Szkolne i Pedagogiczne.
- Dziwiż S. (2017). *Wdrażanie zasad zdrowego żywienia w szkołach publicznych – walka z otyłością i niedożywieniem*, “The Central European Journal of Social Sciences and Humanities”, no. 62 (376), pp. 61-71.
- Franciscato S.J., Janson G., Machado R., Pereira Lauris J.R., Javarez de Andrade S.M., Fisberg M. (2019). *Impact of the Nutrition Education Program Nutriamigos® on Levels of Awareness on Healthy Eating Habits in School-aged Children*, “Journal of Human Growth and Development”, no. 29(3), pp. 390-402, DOI: 10.7322/jhgd.v 29.9538.
- Gawęcki J. (2010). *Żywność człowieka*, Warszawa: Wydawnictwo Naukowe PWN.
- Harwas-Napierała B., Trempała, J. (ed.). (2004). *Psychologia rozwoju człowieka – część 2. Charakterystyka okresów życia człowieka*, Warszawa: Wydawnictwo Naukowe PWN.
- Jarosz M. (2008). *Zasady prawidłowego żywienia dzieci i młodzieży oraz wskazówki dotyczące zdrowego stylu życia*, Warszawa: Wydawca Instytut Żywności i Żywienia.
- Kunachowicz H., Czarnowska-Misztal E., Turlejska H. (2007). *Zasady żywienia człowieka*, Warszawa: Wydawnictwa Szkolne i Pedagogiczne.
- Kunachowicz H., Przygoda B., Nadolna I., Iwanow K. (2019). *Tabele składu i wartości odżywczej żywności*, Warszawa: PZWL Wydawnictwo Lekarskie.
- Molska K. (ed.). (2010). *Zasady zdrowego żywienia*, Warszawa: Wydawca Instytut Żywności i Żywienia.
- Swaminathan S., Thomas T., Kurpad A.V., Vaz M. (2019). *Perceptions of Healthy Eating: A Qualitative Study of School-Going Children in South India*, “Health Education Journal”, no. 68 (2), pp.94-110, DOI: 10.1177/0017896909103845.
- Syrek E. (2000). *Zdrowie w aspekcie pedagogiki społecznej*. Katowice: Wydawnictwo Uniwersytetu Śląskiego.
- Wolański N. (2012). *Rozwój biologiczny człowieka*. Warszawa: Wydawnictwo Naukowe PWN.
- Wolny B. (2012). *Szkolna edukacja zdrowotna ukierunkowana na doskonalenie jakości życia uczniów*, Lublin: Wydawnictwo KUL.
- WHO (2012). *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*, Copenhagen: WHO Regional Office for Europe, (Health Policy for Children and Adolescents, No. 6).
- Wojnarowska B., Kowalewska A., Izdebski Z., Komosińska K. (2010). *Biomedyczne podstawy kształcenia i wychowania*. Warszawa: Wydawnictwo Naukowe PWN.
- Żebrowska M. (ed.). (1986). *Psychologia rozwojowa dzieci i młodzieży*, Vol. I, Warszawa: Państwowe Wydawnictwo Naukowe.
- Appendix No. 2 to the Regulation of the Minister of National Education of 14 February 2017 on the core curriculum for preschool education and the core curriculum for general education in primary schools, incl. for pupils with moderate and severe

intellectual disability, and for general education in stage I sectoral vocational schools, general education in special schools preparing for employment, and general education in post-secondary schools (Journal of Laws 2017, item 356).

ADDRESS FOR CORRESPONDENCE

Stanisława Nazaruk
Pope John Paul II State School of Higher Education in Biala Podlaska
e-mail: stnazaruk@poczta.onet.pl