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Supporting and Modeling Children's Development in the Sphere of Healthy Nutrition in the Family and Educational Institutions

KEYWORDS

nutrition education in kindergarten and school, sensory learning in nutrition education, techniques and forms of work in nutrition education, development of interest in nutrition issues, nutrition education programs

ABSTRACT

The aim of the study is to emphasize the need for nutritional education at an early stage of children's development. The necessity of influencing this field is indisputable and stems from many theoretical and especially practical premises. The idea of this article is to draw the readers' attention to specific developmental needs that should be considered when designing work in the field of nutrition education with the youngest children.

This reflection concentrates around the question concerning activities related to nutrition education among children and factors that must be taken into account in the construction of nutrition education models.

The analysis of the source literature suggests that nutritional education is an effective tool that can be used in health promotion programs already in early childhood. Such educational means should be implemented using appropriate techniques, taking into account the specific problems and developmental needs of children. It should also take into consideration the environmental context.

The first part of the study presents the definition of nutrition education and shows nutrition education against the background of activities related to health promotion implemented in kindergartens / schools. In the further part of the study, the author emphasizes the importance of the educational and family environment in the process of developing interests related to nutritional issues.

Next, the author presents the possibilities of influencing taste preferences at an early stage of life and supporting the development of healthy eating practices among children. The author characterizes selected techniques for the implementation of nutritional education in an educational institution in cooperation with the family.

On the basis of the analysis of source literature, we can indicate the need to implement activities in the field of nutrition education at the first stages of child education to support and model the process of developing interest in nutritional issues.

Introduction

Within the last decade, campaigns related to nutrition education in the society have been broadly promoted, which results in the increased awareness of proper nutrition and in "good changes in the Poles' eating habits (we can, for example, see that they eat more vegetables and fruit, vegetable fats, fish, which contain vitamins C, E and D; also, they eat less red meat, animal fats and salt)" (http://www.izz.waw.pl). Nutrition education in society is fulfilled through various entities (media, opinion-making leaders, cooking bloggers, consumer organizations, etc.) and information channels. Popular techniques of spreading knowledge include cooking shows (they increase people's interest in healthy food, they motivate people to be careful while selecting food in the shops, i. e. to check the quality or read the ingredients; such shows also present optimum cooking techniques or various types of products), articles, graphics, educational movies, various mobile applications, family education and cooking workshops, training sessions, handouts, and diet coaching programmes.

We may conclude that campaigns for the improvement of the society's eating habits and nutrition status are effective. An important question is how we can carry out nutrition education activities among the youngest ones, i.e. children at the preschool and early school age. We do not have an instinct for good nutrition but have to learn this, because our tendency is to choose food that is tasty, cheap, well-known and easy to prepare.

The need to carry out nutrition education among children is unquestionable and results from many theoretical and practical premises. From the pedagogical point of

view, it is important to think about the factors that should be taken into account while creating nutrition education models. This is because nutrition education among children has to be carried out with the use of adequate techniques that take into consideration specific problems (neophobia, selective eating, oversensitivity) and developmental needs of children, as well as motivational factors and the environmental context.

In this article, we shall present the answers to the above-mentioned questions. In the first part, the author discusses the notion of nutrition education against the background of the campaigns promoting health in the kindergarten/school. Then, the meaning of the educational and family environment in the process of raising interest in nutrition and good eating habits among children and youth is discussed. Later, the opportunities to shape eating preferences at the early stage of life and to support the development of good nutrition habits of children are presented. In order to discuss those opportunities, selected techniques of carrying out nutrition education among the youngest children in an educational institution in cooperation with the family environment are presented in the last part of the article.

Nutrition education as an element of health promotion campaigns carried out in schools and kindergartens

According to the Regulation of the Minister of National Education of 14 February 2017 concerning the preschool and primary school curriculum, those educational institutions are obliged to create situations which facilitate the development of habits and behaviours that support healthy lifestyle. Nutrition education carried out among children and youth is an integral, key element of health-promotion campaigns, especially those related to shaping desired pro-health attitudes. Social analyses indicate that nutrition education is a very effective tool which can and should be used in health-promotion campaigns that focus on the development of good eating practices (Kelder, Perry, Klepo 1994).

Nutrition education is an important part of preschool and school curriculum. It should be implemented at an early stage of a person's development because it plays a major role in promoting good eating habits for all his/her life. Early childhood is the time of intensive growth during which good eating habits are being shaped. Nutrition habits shaped in early years of life tend to be maintained in adulthood.

Nutrition education mainly consists in providing children and youth with proper knowledge that should be adjusted to their age. Even the youngest children are able to develop their knowledge of healthy food through watching the reality around them, perceiving the available images, patterns, and examples. When finishing preschool, they are quite familiar with the principles of good eating habits and healthy lifestyle (Kelder, Perry, Klepo 1994).

The youngest children often suffer from neophobia and selective eating, which is why nutrition education activities dedicated to them are focused on two priorities. The first one refers to modifying children's attitudes towards eating (or, possibly, shaping the attitudes that support healthy functioning), changing improper consumption models or acquiring new ones that are acceptable from the perspective of nutrition education objectives. The second priority includes the attempt to increase eating selected products, especially fruit and vegetables. In the next part of this article, we shall discuss selected methods and techniques with which one can achieve those objectives both in the preschool and family environment. However, it is worth mentioning that the foundation for the fulfillment of the above-mentioned objectives is making children interested in healthy food.

The meaning of educational and family environment in the process of making children interested in nutrition and acquisition of good eating habits

As already mentioned, making children interested in a subject is the basis for their conscious and attentive participation in the learning process. It is particularly important in the context of nutrition education because not only does it include giving a certain kind of knowledge, but it also aims at shaping relatively permanent attitudes and behaviours that may result from the children's interest in this topic.

According to the definition by Antonina Gurycka, such interest is a "relatively permanent, noticeable aiming at learning about the surrounding world, which takes the form of a directed cognitive activity of particular intensity, reflected in a selective approach to the surrounding phenomena" (Gurycka 1998: 23-24).[1] Wincenty Okoń believes that interest is "a learnt constituent of behaviour acquired in the course of a child's orientation and research activity" (Okoń 2001: 346). "Interests are a permanent curiosity, i. e. curiosity that occurs frequently and is uniform in its direction. Thus, curiosity is the basic element of the structure of interests" (Gurycka 1989: 13).

The development of interests depends on the influence of biogenetic factors (e. g. age, sex, innate properties such as talents, predispositions, intelligence), as well as social and cultural factors (such as the family home, school/preschool, peers, geographical-social environment – town/village) (Zawadzka 1995: 60). That is why, the role of the family and the institutional environment, i. e. preschool and school, seems to be crucial in the process of developing interest in nutrition.

[1] The definition by A. Gurycka is a global definition, which means that it includes three areas of interest: focused attention, the emotional factor and dynamic orientation.

Nutrition education is mainly carried out in the course of everyday relationships within a family, starting from the first moments after birth. "At this earliest stage of life, a child naturally adjusts to the environment in which he/she lives" (Surma 2012: 62); "he/she does not learn, but »absorbs« the world (Surma 2012: 65). It is in the family where various habits, including eating behaviours, are modelled. A child constantly acquires new skills related to choosing, preparing and eating particular kinds of food. Parents are those who create good or bad models in this area" (Platta, Pukszta 2018). However, "a child learns (…) due to his/her own activity, and the adult's role is creating proper conditions in which he/she will be able to develop features and competences necessary to adjust to the changing reality" (Surma 2012: 25), i. e. get to know proper nutrition behaviours and acquire adequate eating habits and attitudes. The family is the first, basic and crucial source of knowledge related to nutrition. Interpersonal relationships in the family are usually strong and durable enough to create an optimum environment in which interests are raised and shaped, something which facilitates the shaping of proper nutrition attitudes that are possible to maintain for the whole life of an individual.

An educational institution, such as a kindergarten or a school, is another important pedagogical environment which exerts a multi-direction influence on a child. Children usually spend a larger part of the day at school or in the kindergarten. That is why, it is important for those places to implement nutrition education activities such as correcting wrong eating habits or increasing the knowledge of proper nutrition (Platta, Pukszta 2018). It is important because the school/preschool, as the environment that supports family in upbringing, can correct the family's possible negligence in children's health education, including nutrition education.

In kindergarten children have the opportunity to participate in all kinds of classes and plays that are perfect occasions to learn about healthy food, or to taste new products/meals for the first time (Nekitsing, Blundell-Birtill, Cockroft, Hetherington 2019). At school, they get the chance to shape good eating habits, correct the wrong ones, learn about the principles of nutrition, the proper ways of preparing meals, as well as the selection and storage of food products.

Techniques that support the child's knowledge of healthy food in the family and in an educational institution

In this part of the article we will present selected techniques of carrying out nutrition education in an educational institution, especially among the youngest children. We will discuss those which facilitate effective exposition to a new taste, those related to transmitting knowledge of proper nutrition (i. a. discussing the basic notions

related to food), and those which present the connection between good eating habits and health (especially the consequences of adopting a particular way of eating). The emphasis will be placed on the techniques of sensory learning that may be used by parents or teachers of preschool children in order to encourage the children to try new products or tastes. Ways of learning about proper nutrition in the family will also be mentioned.

As we have already mentioned, educational institutions are obliged to create educational situations in which students have the opportunity to gain knowledge and skills related to proper nutrition. Nutrition education in preschool/school may include activities that consist in the exposition to a taste or the transmission of information on particular products, good eating habits, etc. Such activities are mainly carried out within nutrition education programmes. Those programmes are adjusted to children's age, and particular activities should be educational, interactive and funny (Nekitsing, Blundell-Birtill, Hetherington 2019).

In Poland, many nutrition education programmes for youth are carried out. Most of them are conducted by the National Centre for Nutrition Education as tasks financed by the National Health Campaign for 2016-2020 supervised by the Ministry of Health. Campaigns such as "Fruit and vegetables at school," "We eat well with our school on the fork," "I am important – I care for myself," "We eat well, we grow strong," are an effective tool for shaping proper eating habits among the youngest children.

Detailed objectives of nutrition education include providing children with knowledge of the principles of good nutrition, shaping proper attitudes towards various diets (e. g. a vegetarian or low-calorie diet), teaching children how to make a menu, how to prepare food in order not to lose too many vitamins, how to store food, how to lay the table in an aesthetic manner, and how to create a good atmosphere while having meals (Posłuszna 2010).

It is worth mentioning that the influences related to nutrition education should be implemented at the earliest possible stages of children's lives. Mimi Tatlow-Golden, Eilis Hennessy, Moira Dean and Lynsey Hollywood (2013) proved that children at the age of 4 already start to understand the connection among growth, health and nutrition. Also, they are able to indicate healthy and unhealthy products, but it is difficult for them to give up unhealthy products. Isobel Contento and co-authors (1995) also write that children aged 3-5 can distinguish healthy from unhealthy food, and they understand concepts such as nutrients, calorific value, etc.

The basic way in which children learn about proper nutrition is learning through imitation in the course of socialization in the family life and at school. Children watch and imitate the behaviours of their parents, other family members, teachers and peers. That is why, it is very important to prepare and eat meals together, both

at home and at school. This way, the child has the opportunity to see new products eaten by his/her parents or teachers, and he/she can even try them without any sense of pressure. Also, it is a good idea to discuss the principles of healthy eating while preparing or eating a meal.

Moreover, nutrition education includes the activities aimed at accepting and increasing the amount of certain food products (which are often disliked by children), such as milk, groats, or fresh fruit and vegetables. These are interventions related to *sensory lessons*. Techniques related to this area are based on the conviction that even one-time taste or visual exposition to a new product may be enough for a child to gain a positive attitude towards it (Zajonc 1968; Rioux, Lafraire, Picard 2018). Also, regular activities related to exposition to a given taste result in the child's acceptance of a selected product in future. According to the research, after five expositions children increase the consumption of a given product, but most children usually need eight to ten expositions at regular intervals, e. g. once a week (Hausner, Olsen, Moller 2012; Caton, Ahern, Remy, Nicklaus, Blundell, Hetherington 2013). Similar results were obtained in many other analyses (Nekitsing, Blundell-Birtill, Cockroft, Hetherington 2019).

The efficiency of such interventions is reinforced when a child is rewarded after trying even the smallest piece of a new or disliked product. On the basis of the analyses that explore the connection between a reward and an exposition to a given taste, it was concluded that if a child was given a sticker after eating a small piece of disliked vegetable every day, he/she started to eat larger amounts of this vegetable in the long run (Cooke, Chambers, Añez, Croker, Boniface, Yeomans 2011; Fildes, Jaarsveld, Wardle, Cooke 2014). It turns out that combining exposition to a taste with strategies such as rewarding and modeling, bring good results which last even up to 6 months after stopping the nutrition intervention (Cooke, Chambers, Añez, Croker, Boniface, Yeomans 2011; Horne, Greenhalgh, Erjavec, Lowe, Viktor, Whitaker 2012).

Another strategy used in nutrition education is an intervention related to multisensory learning. Exposition to a taste stimulus is associated with influencing the sense of sight, hearing, touch and smell. Despite the fact that the strategy of the exposition to a taste exerts the strongest influence on promoting the consumption of selected products, taste is not the only sensory factor to which a child is exposed. When a child tries a taste of a specific product, other sensory systems (modalities) are involved: hearing (the name of food, the sound made while chewing it), sight (visual perception of the product), touch (perception of its texture in the hands and consistency in the mouth), and smell (the child feels the smell of food) (Dazeley, Houston-Price 2015: 1-6).

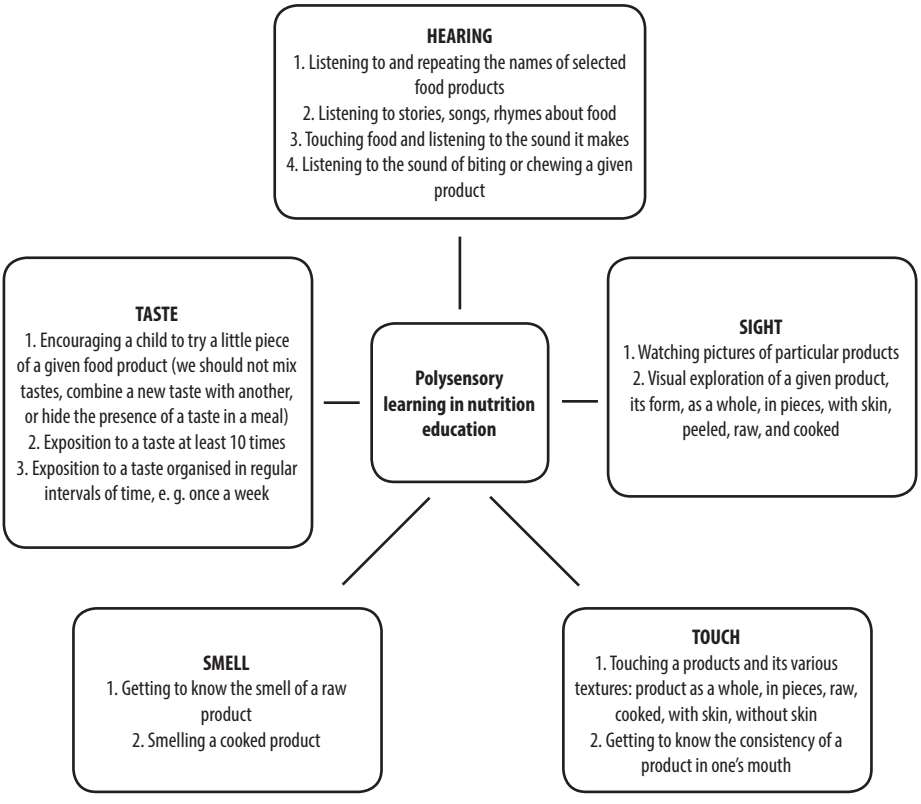
Contemporary studies carried out among preschool children suggest that nutrition education activities should also stimulate senses other than taste. The fact is that the dominant sense which is simulated in nutrition education is taste. However, it is worth to activate other channels of influence (touch, smell, hearing and sight) in order to optimize the effects of nutrition interventions, especially among the youngest children with selective eating or neophobia which is often connected with oversensitivity of particular senses.

One of the basic and frequently used techniques is visual exposition to a particular product. It is worth mentioning that the research on visual exposition carried out through boards and books with pictures brought different results as for their efficiency in increasing the acceptance of selected food products.

Also, it is good to make it possible for children to eat some (especially complementary) meals with their fingers, so that they can learn new textures of selected products. Exposition to the smell of food also facilitates the general impression of a taste and may influence the willingness to try a given product. Effective supportive techniques also include singing or rhyming texts that include the names of selected products (Dazeley, Houston-Price 2015).

It should be mentioned that the research carried out among children aged 12-36 months indicated that making children familiar with unknown fruit and vegetables, with the use of various sensory modalities, for 4 weeks, increased their readiness to touch and taste those products (Dazeley, Houston-Price 2015). Similar conclusions were reached by H. Coulthard and A. Sealy, who claim that a single session of polysensory play with fruit and vegetables is enough to encourage children to trying them (Coulthard, Sealy 2017).

Figure 1. The basic techniques of polysensory learning that can be used by parents or teachers of preschool children to encourage them to try new products



Source: (Dazeley, Houston-Price 2015: 1-6).

The above-mentioned techniques aim at increasing the consumption of certain food products. However, as we have already mentioned, one of the objectives of nutrition education is the transmission of knowledge of healthy eating. Within this area, teachers may use various forms of exerting influence, such as tasks, workshops with the use of activating methods, organizing meetings with dieticians, art or literature competitions. It has to be mentioned that the activities should be based on a four-grade model of learning through experience,[2] with the application of activating and interactive methods (Wolny 2013).

[2] Education based on experience, which is considered more effective than traditional ways of teaching, recognizes various styles of learning. A popular scheme of the process of experiential learning is Kolb's model. According to this author's suggestion, the process of learning includes cycles, each of which is divided into four stages: experience, observation and reflection, generalization and application (Manolis, Burns, Assudani, Chinta 2013: 44-52).

Also, it is worth mentioning peer education. Learning through watching eating habits of peers has become a popular strategy of interventions promoting health among teenagers abroad. This strategy has not been broadly applied in nutrition education in Poland. However, research results show that nutrition education carried out by school peers is feasible and generally accepted by education leaders, students and teachers (Story, Lytle, Birnbaum 2002, pp. 121-127).

As we have mentioned at the beginning of the article, nutrition education takes place all the time, in the course of everyday family relationships. However, it is worth mentioning that nutrition education activities carried out in an institution and in the family should be complementary. Thus, it seems important to include the family into the nutrition intervention offered at school or in the kindergarten. The effectiveness of such a solution has been confirmed in the research by S. Aktaç, G. Kızıltan, and S. Avcı (Aktaç, Kızıltan, Avcı 2019).

Parents should be involved in the campaign that is being carried out because it is they who exert the strongest influence on shaping their children's proper nutrition behaviours and habits. Nutrition education activities should be focused on making parents interested in the issue of healthy eating. The programme dedicated to children should also help parents develop their knowledge and change their previous eating behaviours.

Therefore, parents' education may be carried out through educational materials given to children. Such materials may include tasks to be performed together with family members. Also, parents may be offered workshops and training sessions concerning the recommended ways of feeding children, as well as lectures on the connection between the child's way of eating and the development of selected civilization diseases.

It is also worth noting that if, under the influence of an educational campaign dedicated to children, their parents' knowledge and behaviour concerning nutrition also changes, it is more likely that such good changes will occur among the children and other family members as well. Thus, through the education of children we are able to educate their parents. It is because we can notice the connection between the educational materials given to children and their parents' change in certain eating habits and increase in their nutrition awareness (Kozłowska-Wojciechowska, Uramowska-Żyto, Jarosz, Makarewicz-Wujec 2002).

Children's insufficient level of knowledge concerning proper nutrition, as well as their incorrect eating habits can usually be ascribed to improper eating behaviours of their families. Due to nutrition education activities, parents may effectively change their own attitudes, behaviours and eating preferences, they can increase their level of knowledge of healthy food, and, in consequence, they may become models to be imitated by their children (Aktaç, Kızıltan, Avcı 2019: 415-431).

Conclusion

Nutrition education directed to children does not have to be adjusted to their specific needs and skills. It is because children are at different levels of the cognitive, emotional and social development. At each of these stages they have different needs and abilities. Also, they present various attitudes towards themselves and the reality that surrounds them. And it is this aspect, which is important from the pedagogical point of view, that must be taken into account while planning a nutrition intervention or an educational programme. While working with the youngest children, it is necessary to create the situations in which students can repeat experiences based on fun, and in which they are exposed to new, tasty and healthy food products. Elder children gain the ability to process more and more information. While working with them, cognitive motivation processes play an increasingly important function. As children grow up, they become able to establish objectives and improve their cognitive self-regulation. Thus, nutrition education of elder children should take into account environmental and emotional factors, and it should be based on the previous identification of motivational aspects so that we can create the space for independent practicing of gained skills, establishing objectives and cognitive self-regulation (Contento 2018: 682).

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