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Complementary feeding with traditional and baby led weaning (BLW) methods - assessment of selected aspects of infant's diet

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ABSTRACT

Background: Infant nutrition is a topic of constant debate between parents and doctors. The recommendations themselves have been modified several times over the past 6 decades. Baby Led Weaning (BLW) method is gaining more and more popularity in infant nutrition during the period of expanding the infant menu. The main aim of the study was to evaluate selected aspects of dietary expansion in a group of their children, taking into account dietary expansion with the use of the traditional method and the BLW method.

Material and method: An exploratory cross-sectional study was conducted in December 2021-January 2022 among a randomly selected sample of 523 mothers of children in infancy aged up to 12 months. Data for the study were collected anonymously using the CAWI method. The information collected from 500 women was considered for the final data analysis taking into account the inclusion and exclusion criteria.

Results: 66.6% of the women surveyed (N=333) stated that their child is or was fed breast milk during the first six months. The child's diet was most often expanded with complementary meals after 6 months of age. This answer was indicated by 58.8% of respondents (N=294). 85.6% of the surveyed women (N=428) first introduced or intend to introduce vegetables to their diet. 13% of the respondents (N=65) introduced or planned to introduce vegetables and fruit at the same time. In the studied group of mothers the BLW method was not known or not used by 7 mothers (1.4%), 343 mothers used or intended to use the BLW method (68.6%), whereas 150 women knew the BLW method (30.0%), but did not use it or did not intend to use it during the expansion of their child's diet.

Conclusions: The majority of mothers surveyed used the BLW method during the expansion of their children's diet, accepting the principle that it is the child who decides whether and how much to eat, and the parent who decides what and when the child eats. Mothers both using the BLW method and not using the BLW method did not add salt or sweeten meals for their children. Despite these positive behaviours, further nutritional education is necessary, especially related to the length of breast milk feeding and its positive effects.

KEYWORDS: BLW; child nutrition; complementary feeding; infant dietary expansion.

BACKGROUND

Childhood nutrition in infancy is a topic of constant debate between parents and physicians. The recommendations themselves have been modified several times in the last 6 decades [1]. The Baby Led Weaning (BLW) method is gaining popularity in infant feeding during the period of expanding the infant menu [2]. Over the last decade, an increase in interest in this method of feeding has been registered on the Internet, according to information through the google search engine, the total number of records as of September 2017 was more than 700000 [1].

In the traditional approach to complementary feeding, parents usually feed their infants pureed foods (slurps) with a spoon, gradually introducing a greater variety of tastes and consistencies as they grow, until solid foods are introduced [3]. This method is characterized by the omission of feeding the child through the use of a spoon and serving food in a mushy form [4]. The premise of this method is to physically gain the ability to consume meals independently. From this time on, the infant is given the choice to effectively expand his/her menu, which previously consisted of milk only, into other products [2,5]. The infant receives products in solid form. These can be vegetables, fruit or pasta, among others. The food must be in a form adapted to the child, so that it can be held comfortably in the child's hand. These can be rings, pieces or florets of vegetables, e.g. cauliflower, broccoli etc.[4]. The whole mechanism is controlled individually by the infant, by using his/her abilities acquired during development, and also by instinct. Independent learning of eating by a child gives many benefits, not only nutritional ones [2]. At the beginning, the infant eats with its fingers, in the next stages it learns to eat using cutlery. The child continues to receive maternal food or modified milk [4].

The BLW method is one of the recommended methods of expanding the diet of infants by the Polish Society of Gastroenterology, Hepatology and Child Nutrition (PTGHiŻD). The Polish Society of Gastroenterology, Hepatology and Child Nutrition (PTGHiŻD) defines this method of feeding as a feeding with the omission of mushy consistency served with the use of cutlery, with the exclusive implementation of solid consistency eaten by an infant on its own. It is a method of expanding and supplementing feeding between 17 and 26 weeks of age [6,7,8,9].

The recommendations of both the Polish Society for Paediatric Gastroenterology Hepatology and Nutrition (ESPHAN)[6] and the European Society for Paediatric Gastroenterology Hepatology and Nutrition (ESPHAN) [10] take into account the fact that the child should decide whether to eat food and in what amount, while the parents decide what the child should eat [11].

This method has many advantages. Gill Rapley [12], who characterized the BLW method from the theoretical point of view, stated that the individual learning of eating by the child improves the child's developmental skills. The infant is also more focused on the proposed food itself, rather than on the person feeding it. Children who learn to consume new foods without the help of a parent or caregiver, in addition to self-improvement of competence in individualized nutrition from a nutritional perspective, also exercise dexterity in better grasping of objects and coordination due to movement [5,11,13,14]. Infants to whom the BLW method is applied actively participate in the overall process of meal consumption. They experience individual contact with food, touching it, etc. They can be described as active participants during meal consumption. Another advantage of this method is that the meal is shared with the family. The parent does not feed the child, who learns to eat by himself, so he can consume the meal by himself at the same time. A positive feature of this method is that the baby can eat the same meal that has been prepared for the family, but care must be taken to ensure that the products are not a rich source of salt, simple sugars or fat, especially saturated fat. In this method of feeding, the infant individually decides which products he wants to consume and which he gives up [2].

The advantage of this method is also the fact that the infant regulates the mechanism of hunger and satiety, which is important in terms of the development of diseases associated with excessive body weight, such as overweight and obesity [15]. Children in whom the BLW method was applied and meals consumed in accordance with the rules of rational nutrition, in later years of life have a lower tendency to use improper habits and ways of eating. However, to a large extent it is the parents' eating habits and style that influences how the child will eat in later years and in adulthood. When parents eat according to the principles of proper nutrition and their offspring is also nourished in the same way, there is a good chance that in adulthood the person will follow healthy habits and will be less prone to dietary mistakes [2,16,17,18,19,20,21,22, 3].

Concerns raised by this method for parents or paediatricians include uncertainty as to whether the child is receiving a sufficient supply of iron, nutrients and enough calories through this method, and whether the child is being exposed to a greater likelihood of choking on food [19,23].

The disadvantages, especially at the very beginning of introducing this method, are the lack of order and cleanliness. This results from the fact that infants do not yet have fully developed skills regarding the proper way of catching food and putting it into their mouths. Additionally, feeding at the very beginning of diet expansion is something new and interesting for the child and they treat this activity as fun. However, this defect will be eliminated with time, when the child improves the mentioned skills needed during independent eating [2,23, 24,25,26,27,28,29].

There is also a modification of the BLW method known as BLISS. (*Baby-Led Introduction to Solids*). It differs from the BLW method in the fact that the parents of an infant are educated about products rich in iron and high in calories, as well as about products which are responsible for the higher probability of the infant's regurgitation. Other elements of the BLISS method are identical to those in the BLW method [15,23].

Every parent, regardless of whether he or she chooses the traditional or BLW method for expanding the diet, in order to make the child willing to eat or learn to eat selected products, should take care of the child's calm and friendly atmosphere during meals. It may happen that the baby does not want to eat a certain dish. Do not force him, it is his right. The food can be served another day. It is not necessary to withdraw it completely. Acceptance of newly introduced foods is a process that may take longer in some infants [4].

The main aim of the study was to evaluate selected aspects of dietary expansion in a group of their children, taking into account dietary expansion with the traditional method and the BLW method.

MATERIAL AND METHODS

Course of study

An exploratory cross-sectional study was conducted in December 2021-January 2022 among a randomly selected sample of 523 mothers of children in infancy aged up to 12 months. Data for the study were collected anonymously using the *Computer-Assisted Web Interview* (CAWI) method; the online questionnaire was distributed on forums and discussion groups designed for mothers. All participants were informed about the aim of the study and the way of providing data, voluntary participation in the study and its anonymity, and they agreed to participate in the study.

Prior to the actual study, a pilot study was conducted. It was conducted twice among the same group of 20 mothers with a one-month interval to avoid the freshness effect. The women surveyed had no comments on the questionnaire and the results obtained in the two surveys were reproducible. To assess the reproducibility of the results obtained by the questionnaire used, the κ (Kappa) parameter was calculated for each question of the questionnaire (results obtained in the pilot study and after one month) - for 71.5% of the questions a very good ($\kappa \geq 0.80$) concordance of answers was obtained, and for 19.2% of the questions a good ($0.79 \geq \kappa \geq 0.60$) concordance of methods was obtained. Only for 9.3% of the questions in the questionnaire analysed, the concordance between the results obtained in the baseline and repeat test was moderate ($\kappa < 0.59$). Cronbach's α coefficient for the standardisation sample was 0.91, which indicates high reliability of the selected questions.

For the final data analysis, taking into account the inclusion and exclusion criteria, information collected from 500 women was taken into account. The study was conducted in accordance with the Declaration of Helsinki and the Act on the Profession of Physician and Dentist. A decision was obtained from the appropriate Bioethics Committee operating at the Medical University of Silesia in Katowice to conduct a study on parents' knowledge on expanding the diet of infants (PCN/CBN/0052/KB/101/22).

Inclusion and exclusion criteria

Inclusion criteria were: female sex, having a child between 0 and 12 months of age, consenting to the study and correctly and completely completing the questionnaire.

Exclusion criteria: male gender, age of child over 12 months, no consent to participate in the study, incorrectly completed questionnaire, including failure to answer questions.

Characteristics of the study population

The age of the interviewed women ranged from 19-45 years. The women were residents of both rural and urban areas and had varying degrees of education. The study involved 500 mothers with their children. Of the 500 infants surveyed, 242 were girls (48.4%) and 258 were boys (51.5%). 435 infants (87.0%) belonged to the age structure of 6-12 months and 65 infants (13.0%) were under 6 months of age.

Research tool

The research tool used in the study was the author's survey questionnaire. The questionnaire of the survey consisted of the following parts: parent's (mother's) metric and child's metric, as well as the author's survey consisting of 2 parts. The first part of the questionnaire concerned nutritional knowledge about expanding the diet of infants, while the second part of the questionnaire concerned selected aspects in the method of expanding the diet. The questions were both single and multiple choice. The questionnaires were filled in by the mothers of children.

Statistical analyses

The obtained results were processed and analysed in Microsoft Office Excel. The answers of the respondents were presented in the form of figures and tables. Statistical analyses were developed in the Statistica programme. For statistical calculations the following tests were used *Chi²NW* Statistical significance was set at $p < 0.05$.

RESULTS

Table 1 presents the results on the characteristics of the studied group of mothers and their children. Among the respondents the most numerous group were mothers in the age range of 26-32 years - 57.0% (N=285). 79.6% of the respondents (N=389) had higher education, while 20.2% of the mothers (N=101) had secondary education. Most of the respondents, 74.0% (N=370) had one child, 21.2% of the surveyed women (N=106) had 2 children. 4.2% of the respondents had 3 children (N=21), while 4 and more children had 3 women - 0.6%. The examined group of children consisted of 48.4% girls (N=242) and 51.6% boys (N=258). Among infants, the most numerous group were children aged 6-12 months - 87.0% (N=435). A smaller group were children less than 6 months of age - 13.0% (N=65).

66.6% of the women surveyed (N=333) stated that their child is or was fed breast milk during the first six months. 18.8% (N=94) of the women stated that their baby is or was fed in a mixed way 14.6% (N=73) of the mothers responded that their baby during this period is/was fed through the use of artificial feeding. Mothers were also asked about how they fed their child after the age of 6 months. 54.4% (N=272) of the women stated that the child was fed naturally, 29.0% of the respondents indicated the answer artificial feeding (N=145), while 8.6% (N=43) used mixed feeding, i.e. a combination of modified milk and mother's milk, and 8.0% stated that the child was not yet 6 months old. In the studied group of mothers the BLW method was not known or not used by 7 mothers (1.4%), 343 mothers used or intended to use the BLW method (68.6%), whereas 150 women knew the BLW method (30.0%), but did not use it or intended to use it while expanding their child's diet.

Table 1. Characteristics of the study group of children and mothers N=500

		N=500	%
Age of mothers	19-25 years	72	14.40%
	26-32 years	285	57.00%
	33-39 years	129	25.80%
	40-45 years	14	2.80%
Education of mothers	primary school	1	0.20%
	junior high school	4	0.80%
	vocation	5	1.00%
	high school	101	20.20%
	university	398	79.60%
Place of residence	village	142	28.40%
	in a city with less than 100 000 inhabitants	132	26.40%
	city with 100 000 to 500 000 inhabitants	99	19.80%
	cities with more than 500 000 inhabitants	127	25.40%
Number of children in the family	one child	370	74.00%
	two children	106	21.20%
	three children	21	4.20%
	4 and more children	3	0.60%
The sex of the child	girl	242	48.40%
	boy	258	51.60%
Age of children tested	0-6 months	65	13.00%
	6-12 months	435	87.00%
Feeding during the first six months of life	breastfeeding	333	66.60%
	mixed feeding (breast milk + formula milk)	94	18.80%
	feeding with formula milk	73	14.60%
Feeding during the second six months of life	breastfeeding	204	40.80%
	mixed feeding (breast milk + formula milk)	43	8.60%
	feeding with formula milk	145	29.00%
	the child is not yet 6 months old.	65	13.00%
Starting to expand the diet	after 3.5 months	3	0.60%
	after 4 months	16	3.20%
	after 5 months	132	26.40%
	after 6 months	294	58.80%
	after 7 months	55	11.00%

Table 2. Characteristics of the studied group of mothers and children considering the knowledge and fact of using the BLW method in expanding a child's diet

		Knowledge and use of the BLW method			Total (n)	p-value (Chi ² NW)
		I do not know and do not use the BLW method	I know, but I do not and do not intend to use the BLW method	I use/intend to use the BLW method		
Place of residence	Village	2 (1.41%)	44 (30.99 %)	96 (67.61%)	142	p=0.9
	City with less than 100.000 inhabitants	1 (0.76%)	44 (33.33%)	87 (65.91 %)	132	
	City with 100.000 to 500.000 inhabitants	2 (2.02%)	26(26.26 %)	71 (71.72%)	99	
	City over 500.000 inhabitants	2 (1.57 %)	36 (28.35 %)	89 (70.08%)	127	
Number of children you have	One	3 (0.81%)	100 (27.03 %)	267(72.16 %)	370	p=0.05
	Two	2 (1.89%)	42 (39.62%)	62 (58.49 %)	106	
	Three	2 (9.52%)	7 (33.33 %)	12 (57.14 %)	21	
	Four and more	0 (0.00 %)	1 (33.33 %)	2 (66.67%)	3	
Education	Primery school	0 (0.00%)	0 (0.00 %)	1 (100.00%)	1	p=0.08
	Junior high school	1 (25.00%)	1 (25.00%)	2 (50.00 %)	4	
	Vocation	1 (20.00%)	3 (60.00 %)	1 (20.00%)	5	
	High school	1 (0.99%)	35 (34.65%)	65 (64.36%)	101	
	University	4 (1.03%)	111 (28.53%)	274 (70.44%)	386	

Table 2 presents the results of the correlations between demographic features of the studied group and the knowledge and application of the BLW method in the studied group of mothers and their children. Statistical analysis showed that there was no statistically significant relationship ($p=0.9$) ($p>0.05$) between the place of residence and the knowledge and use of the BLW method in the studied group of mothers and their children, as well as the number of children ($p=0.05$), and mothers' education ($p=0.08$).

Table 3 presents the results of the relations between the knowledge and application of the BLW method in the studied group of mothers and their children, and various aspects of extending the diet of infants. 95.04% of mothers had heard about the BLW method and used or intended to use it in expanding their child's diet, and agreed with the statement that the parent decides what and when the child eats, and the child decides whether and how much to eat ($N=326$). Statistical analysis indicated that there was no statistical dependence between the knowledge and application of the BLW method in the studied group of mothers and their children, as well as the decision what and when the child eats ($p=0.22$). The analysis showed a significant statistical relationship between the method of milk feeding in the second six months of a child's life and the use of the BLW method ($p=0.02$) ($p<0.05$). An assessment of the initiation/planning of dietary expansion in the child was also performed. Most often the child's diet was expanded with complementary meals after 6 months of age. This answer was indicated by 58.8% of respondents ($N=294$). 85.6% of the surveyed women ($N=428$) first introduced or intend to introduce vegetables into the diet. 13% of the respondents ($N=65$) introduced or planned to introduce vegetables and fruits at the same time.

Table 3. Method of dietary expansion taking into account the knowledge and the fact of using the BLW method in expanding a child's diet

		Knowledge and use of the BLW method			Total (n)	p - value (Chi ² NW)
		I do not know and do not use the BLW method	I know, but I do not and do not intend to use the BLW method	I use/intend to use the BLW method		
The parent decides what and when the child eats, and the child decides whether and how much to eat - do you agree with this statement.	Yes, I agree	5 (71.43%)	142 (94.67%)	326 (95.04%)	473	p=0.22
	No, I do not agree	1 (14.29 %)	5 (3.33%)	14 (4.08 %)	20	
	I have no opinion	1 (14.29 %)	3 (2.00%)	3 (0.87%)	7	
Milk feeding during the first six months of a baby's life	Natural feeding (breast milk)	4 (57.14%)	88 (58.67%)	241 (70.26%)	333	p=0.006
	Artificial feeding (modified milk)	0 (0.00 %)	34 (22.67%)	39 (11.37 %)	73	
	Mixed feeding (combination of breastfeeding and formula milk)	3(42.86 %)	28 (18.67 %)	63 (18.37%)	94	
Milk feeding during the second six months of a child's life	Not applicable (child not yet 6 months old)	0 (0.00%)	13 (8.67%)	27 (7.87%)	40	p=0.02
	Natural feeding (breast milk)	3 (42.86%)	65 (43.33%)	204 (59.48%)	272	
	Artificial feeding (modified milk)	2 (28.57 %)	57 (38.00%)	86 (25.07 %)	145	
	Mixed feeding (combination of breastfeeding and formula milk)	2 (28.57 %)	15 (10.00 %)	26 (7.58%)	43	
First product introduced to the child's diet and/or planned for introduction	Vegetables	6 (85.71%)	128 (85.33%)	294 (85.71%)	428	p=0.64
	Fruits	0 (0.00%)	4 (2.67%)	3 (0.87%)	7	
	I introduced vegetables and fruit at the same time	1 (14.29 %)	18 (12.00%)	46 (13.41 %)	65	
Supplementation of the diet with vitamin D	Yes	7 (100.00%)	146 (97.33%)	337 (98.25%)	490	p=0.61
	Not	0 (0.00%)	3 (2.00%)	6 (1.75%)	9	
	I don't know	0 (0.00 %)	1(0.67%)	0 (0.00%)	1	
Sweetening or planning to sweeten the child's meals	Yes	0 (0.00%)	2 (1.33%)	4 (1.17 %)	6	p=0.79
	Not	7 (100.00%)	148 (98.67%)	337 (98.25 %)	492	
	I don't know	0 (0.00 %)	0 (0.00 %)	2(0.58%)	2	
Adding or planning to add salt to the child's meals	Yes	2 (28.57%)	5 (3.33%)	18 (5.25 %)	25	p=0.24
	Not	5 (71.43%)	143 (95.33%)	319 (93.00%)	467	
	I don't know	0 (0.00 %)	2 (1.33%)	6 (1.75%)	8	

Mothers were also asked whether they sweeten or plan to sweeten their child's meals. The vast majority, 98.4% (N=492) stated that they do not intend to sweeten their meals. Only 1.2% of the women (N=6) stated that they sweeten or plan to sweeten their meals. Two mothers (0.4%) answered that they did not know if they wanted to sweeten their meals. The vast majority of mothers 93.4% (N=467) stated that they do not or do not intend to add salt to their meals. 5% of the mothers (N=25) stated that they salt or plan to salt their meals. 1.6% of the respondents said they did not know if they wanted to add salt to their meals (N=8).

According to the mothers surveyed, the greatest advantages of the BLW method were „greater independence of the child". This answer was indicated by 70.2% of the respondents (N=351), the next most frequently chosen answer was: , "the child develops biting and chewing skills to a better extent" and was selected by 341 respondents (68.2%), the next most frequently selected advantage was the answer , "gaining the ability to control hand movements and putting pieces of food into the mouth"-this answer was indicated by 65.0% of respondents (N=325). Other answers were: "free time for the parent", "no advantages of this method", "convenience for the parent", "the child himself decides what from the things given by the parent will eat, in what quantity, order" -These answers were indicated by 0.8% of the respondents (N=4).

The month of introduction or planning to introduce a particular meal texture was also included in the survey. This was a multiple-choice question Regarding purees, crumbled food and pap consistency, 99.2% of respondents (N=496) introduced or planned to introduce it between 6-7 months of age and 0.8% of respondents (N=4) at 8 months of age. Finger foods 38.8% of respondents planned to introduce finger foods between 6-7 months of age (N=194); 35.2% at 8 months (N=176); 17.2% at 9 months (N=17.2%). Regarding meals of any texture, 33.8% of mothers declared that they had introduced or intended to introduce them between 6-7 months of age (N=169), while 12.0% (N=60) after the age of 12 months.

DISCUSSION

In Poland, there is still a too low percentage of children being fed naturally, which is not a good practice because breast milk benefits both the breastfeeding mother and her offspring [30]. The WHO's goal by 2030, as part of projects to improve global health, is to encourage women to practice feeding their child only breast milk for the first six months of life and then as much as the mother or her child wishes [28]. In our study, 54.4% of the women said that mothers practice natural feeding after the first six months of life. The study by Gawęda and Woś shows that in the first 6 months of the child's life, almost 50% of the women participating in the study breastfed their child. In the following six months, however, only one in three mothers fed her child with natural food. Also in this case, when comparing both six months, a decreasing trend is noticeable in the second one [32]. Similar results were also obtained in the study by Łukasik and Berek. Their study shows that during the first six months, 57.1% of mothers fed the child naturally, while during the second six months, 35.7% of children were fed naturally. Again, there is a noticeable decrease in the practice of the natural feeding method in the second half of the year, compared to the first [33]. In Poland, there is still a noticeable difficulty in fulfilling the goals related to the promotion of the natural method in infant feeding. Lack of willingness to breastfeed by mothers may be caused by a deficit of hospitals that are supporters of natural feeding and provide theoretical and practical help to mothers during lactation; there is also a lack of training in breast milk feeding and lactation for hospital staff who are responsible for supervising mothers and their offspring. There is also a deficit of funds allocated for lactation counselling provided by trained lactation consultants. Perhaps improvements in these aspects could increase the practice of breastfeeding by mothers, so it would be worth working on these aspects [34, 35, 36].

Many articles have been written in recent years on the use of the BLW method, but nevertheless this method still requires continuous research and scientific confirmation. However, despite the benefits associated with this method, health professionals are reluctant to advise the adoption of this new approach, especially given the many concerns related to the possible negative impact on the child's health, increased risk of choking and higher probability of low intake of energy and micronutrients, especially iron, as it is the child who decides about the quantity and quality of food, choosing from different options given to him/her during meals [37, 38, 39]. It should be emphasized that in the traditional method of nutritional expansion presented by ESPGHAN and PTGHiZD, it is the child who decides whether and how much to eat, and the parent who decides what to give the child [6, 10]. Some authors suggest the use of the BLW method as a standard of complementary feeding because self-awareness of satiety and appetite contributes to healthy eating and behavioural patterns in the future [40].

In our study the frequency of using the BLW method (68.6%) was lower than the knowledge of the method itself (correct answers from questions about this method were 95.6% and 86.2% respectively). Despite the fact that 30% of the respondents knew this method, they did not use it or did not intend to use it, which proves that despite the knowledge about BLW, some of the respondents prefer the traditional spoon feeding of a child.

In the own study, according to the respondents the greatest advantages of the BLW method, which encouraged them to use this method included: greater independence of the child, better development of biting and chewing skills by the child, gaining the ability to control the movements of the hand and putting pieces of food into the mouth, or observation of different foods, getting to know other consistencies by the child, eating food by the child at its own pace, or eating the meal freely. The benefits of this method, which the women mentioned, are the main reason for wanting to implement this method when expanding the child's diet. This method offers many benefits that contribute to the proper development of the infant and even the prevention of some metabolic diseases. We can mention such benefits as the prevention of obesity, due to the support of the infant's self-regulation, the higher consumption of fruit and vegetables, the better development of the child's motor skills, or the positive influence on the mother's and father's behaviour. The child is activated to consume meals with the family, there is no pressure on the time and amount of food consumed, as well as interaction with the food served, widely analyzing also the sensory aspects, through various textures of the food served, which affects the formation of a more beneficial relationship of the child with food [41]. According to the study by Brown and Lee, infants whose parents used the BLW method were more prone to satiation and independent compared to children fed traditionally. Their mothers did not intervene in the amount of meal consumed, promoting self-regulation of the hunger and satiety centre. According to the authors, this method is the standard for expanding the diet, because having knowledge about hunger and satiety can influence the creation of healthy behavioural and nutritional patterns in the following years of life [11, 14, 17, 40]. According to Townsend and Pitchford, children fed with BLW consumed more complex carbohydrates, whereas spoon-fed infants preferred the consumption of sweets, which proves that the BLW method promotes healthy eating [42].

In our study the biggest disadvantages of BLW, which were mentioned by the respondents were: a greater risk of choking, disorder, the problem with determining the amount of eaten food and the fear that the child will eat too little, more time and attention, or associating this method by the child as a form of play. According to the work of Arantes et al [43], the disadvantages of the BLW method reported by mothers were the following: disorder caused by eating food, wasting food or the risk of choking the child while consuming the meal.

The negative perception of this method by some parents may also be influenced by health professionals who are not convinced of the child's motor skills needed for individual feeding without the help of the parent. These fears of medical workers influence their lesser promotion of this method among parents and it is connected with insufficient knowledge of this method in terms of theory and application of BLW in practice. Additionally, there are no clinical trials concerning this method and no clear position of the WHO, which may also affect the reduced recommendation of this method by medical services [43].

The study also analysed how the child's diet was expanded in terms of actively practicing, or planning to sweeten the child's meals. The study titled: , "Comprehensive assessment of the diet of children aged 5 to 36 months- nationwide survey 2016" showed that there is a big problem, which is not only the practice but also the excessive supply of salt and sugar in the diet of infants and young children. 30% of children in infancy and 83% of children over 12 months consumed foods with added salt. The practice of parents sweetening their children's meals was also noted as a major problem. The supply of sugar given to infants and young children exceeded the recommendations, which was an argument for introducing changes in the menu, as up to 75% of children over 12 months consumed too much of this ingredient [44]. In our study, the vast majority of mothers (98.4%) declared that they do not practice or do not plan to sweeten their children's meals. Only 6 mothers practiced sweetening their infants' meals. This is a very good result, taking into account the fact that during the first 12 months of a child's life, one should refrain from adding salt to meals in order to prevent cardiovascular diseases [45]. After the child is 1 year old, it is also recommended to reduce the addition of this ingredient to meals, replacing it with herbs. Salt does not only come from adding salt to meals, it is important to be aware that many ready-made products have this ingredient in their composition. When planning a child's diet, it is also good practice to replace traditional salt with less sodium [46]. Similar results were obtained in a study by Funkowicz, Gawlik et al. as 91.3% of parents did not sweeten their children's meals [47]. In our study we also analysed the practice or willingness to add salt to the meals of their children. The vast majority of mothers, 93.4%, did not decide to add salt to their child's food. Only 5% of the mothers practiced adding salt to their children's meals. Similar results were obtained in a study by Funkowicz, Gawlik et al. In their study 88.0% of parents declared that they do not currently practice or intend to add salt to their child's meals [47]. Such a high percentage of parents who refrained from adding additional sugar to meals or adding salt is undoubtedly a positive manifestation, because parents are aware that ingredients such as salt and sugar do not play a positive role for the child's organism, and their supply may result in deterioration of health and should be avoided by not adding them to meals [47].

In conclusion, there is still a perceived lack of knowledge, including lack of practical skills, regarding selected aspects in the expansion of the child's diet, during infancy. Despite the fact that in the own study mothers showed proper use of nutritional knowledge in the practice of expanding their child's diet, however, it should be ensured that parents continue and extend the knowledge of nutritional knowledge, at subsequent stages of the child's life. Continued deepening of knowledge of the principles of healthy nutrition and the use of theoretical skills in everyday life may result in greater awareness and responsibility in making appropriate nutritional choices, which may have an impact on better nutritional habits in the following years of the child's life, as well as in adulthood.

STRENGTHS AND LIMITATIONS

The results of our study should be interpreted taking into account its limitations. Limitations of the study include the lack of diversity of the study group in terms of place of residence (mostly urban) and level of education (predominantly tertiary). All information was provided by mothers, which may cause information bias. Moreover, the survey was conducted using the CAWI method, which is repeatedly criticised for its lack of insight into the data collection process, although it is worth noting that this type of data collection method is widely accepted and convenient for collecting large amounts of information in groups that are often difficult to access.

The advantage of the study is the very large size of the group of 500 mothers; until now most of the studies on the use of BLW method were carried out on smaller groups. It is also worth mentioning at this point that few studies on this topic have been conducted so far.

CONCLUSIONS

1. The majority of mothers surveyed used the BLW method when expanding their children's diet, accepting the principle that it is the child who decides whether and how much to eat, and the parent who decides what and when the child eats.
2. In the study group of children, the frequency of breastfeeding in the first six months of life was high. However, in the second six months, the percentage of breastfeeding mothers relatively decreased.
3. Mothers both using the BLW method and not using the BLW method did not add salt or sugar to their children's meals. Despite these positive behaviours, further nutritional education is necessary, especially related to the length of breast milk feeding and its positive effects.

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