

VISUOMENĖS SVEIKATA

Health behavior of families having preschool-age children

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Key words: health behavior; preschool-age children; family.

Summary. The aim of this study is to assess health behavior among families growing up the preschool children. The study was performed in 2007 in Kaunas kindergartens selected randomly. The anonymous questionnaires were filled in by 271 families. Mothers answered to the questions more frequently than fathers did. Fathers were less educated than mothers. It was estimated that preschool-age children used fresh vegetables and fruits insufficiently. Two-thirds of children ate fresh vegetables at least once a day, and only 1 of 20 – 3 times a day. Children ate fresh fruits more frequently than vegetables: every tenth child used them three times a day. The tendency of relation between parents' education and frequency of eating fresh vegetables and fruits was established. More frequently they were used in families where parents had university education. Physical activity of examined families was insufficient. Half of the parents have never done their morning exercises, and about half of the preschool-age children did their exercises rarely (12.5%) or never (41.4%). The majority of children exercised every day in families where fathers had incomplete secondary/secondary education. Children spend much time passively watching TV or playing with computer. Harmful habits among parents are spread widely in the families: more than one-third of fathers and every thirteenth mother smoke regularly; alcohol is used in the majority of families.

Introduction

Parents, teachers, and all the community are responsible for children's health. Better results can be achieved if more attention is paid to the health in families, kindergartens, schools, and society in the whole.

Family is the main societal body and a natural setting where all the family members, especially children, grow and prosper. Parents are the first educators of health and they carry the main responsibility of child's development and nurturing (1). The future societies' health will depend much on what base they will create for health prevention and strengthening in early childhood. The awareness about healthy lifestyle begins to develop in early childhood, communicating with persons close to children (2). In family a child gains basic knowledge and hygiene habits, learns about culture, intercept the lifestyle of his/her family, forms a system of values and health behavior. Preschool years are a time of significant growth in the social, cognitive, and emotional areas. Cognitive, social, and emotional development of a child will be

complete if there is positive family surrounding, when parents promote healthy lifestyle and form adequate skills (3). However, it is determined that only 31% of parents speak about the harmful factors of health with their children (2).

The leading factors of lifestyle, having impact on health, are nutrition, physical activity, and harmful habits. Healthy nutrition is the core of the health and helps to protect and strengthen human health, to avoid diseases (4, 5). Proper food for children is essential for growth, development, good health, and support of adequate physical activity (6). The nutrition of preschool-age children at home strongly depends on family diet, because usually the children of this age eat what all family members are eating and what they are offered to eat. It is important to form healthy eating habits (7). It is relevant for children to eat more fresh vegetables, fruits, and berries, as they are the main source of minerals and vitamins (8).

If there is consumed more food than it is needed, the nutrients will be stored as fat. Children become overweight and obese, their metabolism is disturbed,

and their physical activity lowers. On the other side, insufficient physical activity and incorrect nutrition of a child can be a cause of overweight and obesity.

The problem of physical activity is relevant in the age of technical progress. In recent years, it is observed not only the lowering physical activity of adults and increasing numbers of obese people, but also the decreasing physical activity among children (9, 10). Children spend a lot of time playing with computer and watching TV (11). Sufficient physical activity is one of the main factors in prevention of chronic noncommunicable diseases, obesity, and better quality of life (12). If we want children to grow up healthy, we must motivate them to have sufficient physical activity (2, 13). On the other hand, human health can be strengthened by physical activity, too (14).

Such lifestyle habits as smoking and alcohol abuse do not correspond with health. From the first sight, smoking can appear of a little significance to preschool-age children. The majority of teachers and parents think that it is too early to perform the prevention of harmful habits among the preschool-age children (15). It is a wrong opinion, because the attitude of children to tobacco smoking and alcohol consumption is forming in the early childhood and the first years at school. Undoubtedly, the attitude of parents to these subjects is very important: if parents are nonsmokers, it is more reliable that children will be nonsmokers too (16). World Health Organization (WHO) recommends the prevention of smoking and alcohol consumption to start not at the time when a child tries to smoke or drink alcohol, but when he is not aware about these habits at all (17). In nowadays, the prevalence of smoking in the developed countries is decreasing. Non-smoking zones in cities and towns are established, and smoking is forbidden in hospitals and restaurants. The tobacco advertisement is prohibited, and it is emphasized that smoking is very harmful for human health.

Health behavior among adult population has been widely studied for many years. For example, in Lithuania the international surveys of health behavior among adults (FINBALT HEALTH MONITOR) have been carried out every two years since 1994. However, there are almost no studies on health behavior among the preschool-age children (1, 18). Therefore, the international survey on health behavior has been started in Kaunas kindergartens this year for the first time.

The aim of this study is to assess health behavior among families having the preschool-age children.

Material and methods

The survey was carried out in Kaunas kindergar-

tens from 11 different city districts in 2007. The parents of 21 preschool establishments were examined. These establishments were randomly selected from the list of Kaunas kindergartens (every third). The groups of the surveyed parents were selected randomly, too. The approvals of a Local Ethical Committee and Kaunas Municipal Division of Culture and Education, the permission of heads of kindergartens and agreements of parents to participate at the study were obtained.

The anonymous questionnaire was applied. The international standardized questionnaire consisted of 56 items; most of them were of closed type. The demographical status of respondents, health behavior, and habits were assessed. The questionnaires were distributed among randomly selected parents. The total number of distributed questionnaires was 360; the questionnaires were filled in by 271 persons (the response rate was 75.3%). Unfortunately, the respondents answered not every question.

The parents having 3–7-year-old children participated in the survey. The age of parents varied from 20 to 49 years. The majority of respondents (56.4%) were middle aged (30–39 years), about one-third (31.3%) was of young age (20–29), and others were older (40–49).

The statistical package of SPSS 12.0 for Windows was used for the analysis of data. For the comparison of proportions, z criterion and chi-square criterion were used. Differences between the two proportions were regarded as significant when a value of P was <0.05.

Results

The percentage of mothers' filled-in questionnaires (93%) was significantly higher than of fathers. The educational level of mothers and fathers differed. More than half of mothers had the university education (55%), while fathers were less educated: they had the university education (42.1%) about 1.5 times less than mothers. One-third of fathers and one-fifth of mothers graduated vocational school, one-fifth of fathers and every seventh mother – secondary school.

Nutrition is a significant factor for human health, so it is very important what children are eating. Answering to the question, "What factors are the most important when buying food for family?" more than one-third of parents reported that the most important for them was benefit to the health; another significant factor was taste of the meal. For the majority of respondents the advertisement was of the lowest importance, while for some of them it has sense. One-third of parents preferred local products. More than

half of respondents nominated the price of products as the third-fourth place of importance, though for some parents the price is the most important factor. For one-fifth of the respondents, the most important factor when buying food for family was the distance of the shop to their home (Table 1).

The parents were asked how often per day children eat fresh vegetables and fruits. Two-thirds of children ate fresh vegetables (66.2%) and fruits (70.1%) at least once per day. Every twentieth child ate fresh vegetables three times per day. Fresh fruits were eaten more often than vegetables: three times per day they were eaten by every tenth child (Table 2). Therefore, one-third of preschool-age children consumed these products not every day.

While analyzing the educational level of mother and the frequency of eating fresh vegetables by child, we observed that in two-thirds of families (68.1%) where mother had university education children ate fresh vegetables once per day. The rest of respondents reported that their children ate fresh vegetables not every day. More than one-third of families (36%) where mothers had the lowest education answered that their children consume vegetables not every day.

Analogous data were observed when analyzing the frequency of using fresh fruits and mothers' education: children ate fresh fruits more frequently in families where mother's educational level was higher. The same results were seen comparing the frequency of consumption of fresh vegetables and fruits in relation to father's education.

It was indicated that parents limited the consumption of some products by children. Varied sweets were restricted most frequently (45%) and chips (41.7%). Varied drinks, especially Coca-Cola, were limited by one fourth of parents. Fatty food, nuts were limited by 5.9% of parents, and 1.5% of parents reported they did not restrict any sort of food at all.

Two-fifths of parents (40.5%) followed the body weight of their children. If the weight of a child was too high, the majority of parents (77.8%) changed the nutrition habits of their child, followed the amount of eaten food, and only one-fourth of them (22.2%) increased the physical activity of their child.

We were interested in physical activity of families. Parents reported that less than one-third of their children do morning exercises almost every day (Fig. 1). It was estimated that every tenth mother and two times

Table 1. Distribution of answers to the question, "What are the most important items to you when buying food for your family?"

Item	Importance of items							Total n (%)
	The most important	2 nd place	3 rd place	4 th place	5 th place	Less	Not at all	
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	
Shop is nearby	49 (21.1)	12 (5.2)	19 (8.2)	49 (21.1)	61 (26.3)	28 (12.1)	14 (6.0)	232 (100)
The lack of time	5 (2.2)	19 (8.4)	8 (3.5)	15 (6.6)	57 (25.2)	83 (36.7)	39 (17.3)	226 (100)
Price	12 (5.2)	33 (14.2)	54 (23.3)	68 (29.3)	38 (16.4)	24 (10.3)	3 (1.3)	232 (100)
Advertisement	2 (0.9)	2 (0.9)	2 (0.9)	12 (5.3)	16 (7.1)	54 (24.0)	137 (60.9)	225 (100)
Benefit to the health	84 (36.5)	61 (26.5)	38 (16.5)	28 (12.2)	13 (5.7)	5 (2.2)	1 (0.4)	230 (100)
Taste	57 (24.5)	63 (27.0)	67 (28.8)	23 (9.9)	17 (7.3)	5 (2.1)	1 (0.4)	233 (100)
Prefer local products	32 (14.1)	48 (21.1)	47 (20.7)	33 (14.5)	22 (9.7)	23 (10.1)	22 (9.7)	227 (100)

Table 2. Frequency of using fresh vegetables and fruits among children

Frequency	Fresh vegetables		Fresh fruits	
	n	%	n	%
3 times a day	15	5.6	27	10.2
2 times a day	47	17.7	51	19.3
Once a day	114	42.9	107	40.5
Not every day	90	33.8	79	29.9
Total	266	100	264	100

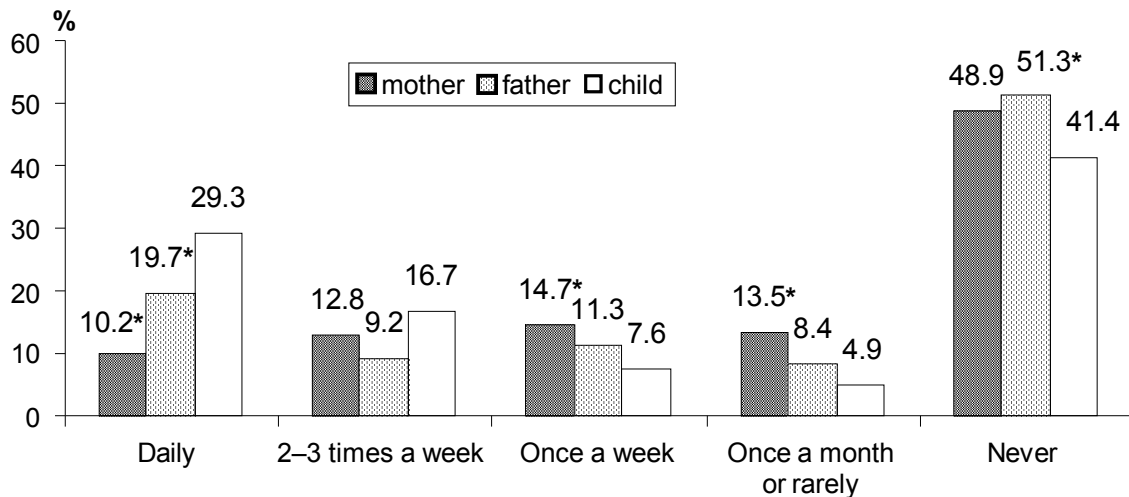


Fig. 1. Frequency of doing morning exercises
* $P < 0.05$ compared with a child.

more fathers do their morning exercises almost every day ($P < 0.05$). Every tenth of parents exercised 2–3 times a week. It turned out that half of mothers and fathers never do their morning exercises. The number of children who never do their morning exercises comparing with parents was lower ($P < 0.05$). As usual, children perform their exercises in kindergartens. Analyzing the relation between frequency of doing morning exercises by a child and father's educational level, such tendency was observed: while educational level increases, the proportion of children doing their morning exercises every day decreases. Thus, the smallest part of children performs their morning exercises every day in families where fathers have the university education. The same part of children exercises 2–3 times per week in these families (Table 3). In comparing mother's educational level and frequency of child's morning exercising, the same tendency was observed: the largest number of children doing exercises every day was in families where mothers had

the lowest education.

Assessing physical activity of their families, about half of parents (55.1%) evaluated the physical activity of their children better as in average (very good, good, and better than average). Fathers' physical activity was evaluated worse than that of children: better as in average it was assessed by 40.7% of respondents, $P < 0.05$ (Fig. 2). Mothers assessed their physical activity better in comparing with fathers: 51.7% of mothers reported their physical activity better as in average ($P < 0.05$). Therefore, fathers reported physical activity as very good more frequently than mothers did ($P < 0.05$). The physical activity of their children as worse than average or poor was evaluated by 26.2% of parents. Fathers and mothers evaluated their own physical activity as worse than average and poor similarly.

The preschool-age children much of leisure time spent watching TV or playing with computer. More than half of children (55.6%) watch TV 1–2 hours per day, one-fifth – 3–4 hours per day. Every tenth

Table 3. Frequency of doing morning exercise among children in relation with father's education

Degree of education	Frequency of exercising of a child								Total	
	Daily		2–3 times a week		Once a week		Once a month or rarely			
	n	%	n	%	n	%	n	%	n	%
Incomplete secondary/secondary	17	37.0	2	4.3	2	4.3	25	54.4	46	100
Vocational	22	34.4	10	15.6	4	6.3	28	43.7	64	100
University	19	22.6	18	21.4	7	8.3	40	47.7	84	100
Total	58	29.9	30	15.5	13	6.7	93	47.9	194	100

$\chi^2=9.657$; $df=6$; $P=0.140$.

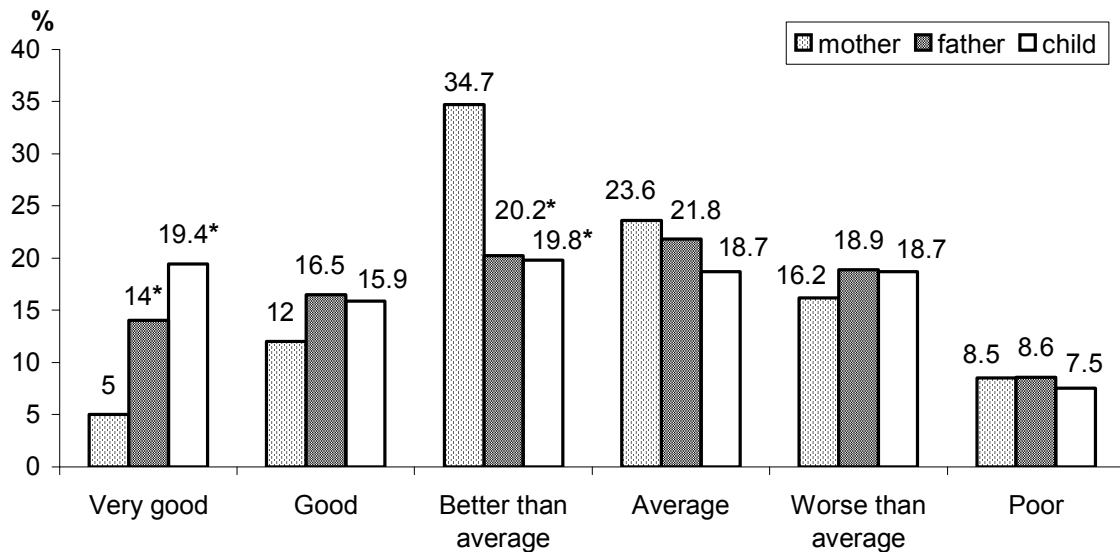


Fig. 2. Assessment of physical activity of family members

* $P < 0.05$ compared with mother.

child was permitted to watch TV as much as he/she wanted. The majority of respondents (81.7%) indicated having computer at home. It was determined that preschool-age children spent much time per day playing with computer. Even 39.7% of them spent 2 hours per day playing with computer. Most often children play different computer games (61.3%), and 3.3% use Internet. Half of children were allowed to spend time with computer by their own, and 30.2% of parents spent this computer time together.

The majority of children satisfy their physical activity demands in kindergartens (80.4%) and being outdoors (61.3%). However, more than one-third of children (34.7%) are physically active indoors.

The data of our study showed that smoking was common in the examined families. The prevalence of smoking among fathers was much higher than among mothers. More than one-third of fathers and every thirteenth mother reported they were regular smokers ($P < 0.05$). Every seventh father and every sixth mother indicated that they smoked occasionally (Table 4).

The highest number of regular smokers was among the parents of youngest age (20–29 years): 39.2% of fathers and 10.8% of mothers, $P < 0.05$. Analyzing the smoking prevalence by age, the following tendency was observed: the number of regular smokers has decreased with age. The largest number of regularly smoking fathers was in the group of the lowest education (53.3%), and the lowest – in the group of the highest (university) education (23.2%, $P < 0.05$). The part of regular smokers among fathers decreased as their educational level increased. Some differences in smoking habits and educational level were observed among mothers. Mothers having vocational school level smoked most frequently regularly (19.2%); the highest number of occasional smokers was in the lowest educational group (35.9%).

Alcohol was consumed in most families. The majority of fathers and mothers reported they used alcohol occasionally. One-fourth of mothers and every tenth father were nondrinkers. Every seventh of parents indicated that their older children consumed alcohol

Table 4. Smoking and alcohol consumption habits in families

Frequency	Mother				Father				Older brothers/sisters			
	smoking		drinking alcohol		smoking		drinking alcohol		smoking		drinking alcohol	
	n	%	n	%	n	%	n	%	n	%	n	%
Regularly	19	7.6	1	0.4	89	35.7	1	0.4	1	0.9	6	–
Occasionally	44	17.7	193	73.1	36	14.5	217	87.9	6	5.3	12	13.7
Nonsmokers/ nondrinkers	183	73.5	67	25.4	121	48.6	26	10.5	99	87.6	69	77.9
Do not know	3	1.2	3	1.1	3	1.2	3	1.2	7	6.2	9	8.4
Total	249	100	264	100	249	100	247	100	113	100	96	100

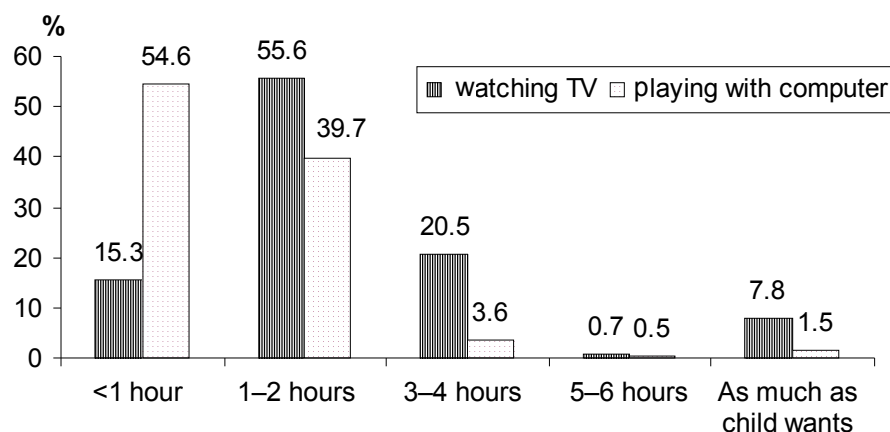


Fig. 3. The time spent per day watching TV or playing with computer by child

occasionally (Table 4). Among fathers using alcohol occasionally, the following tendency was observed: the number of alcohol users decreased as their educational level increased. The largest part of mothers who consumed alcohol occasionally had the vocational school level education. The lowest part of nondrinkers among mothers was in the highest educational group – 28.4%.

Discussion

One of the main health behavior principles is healthy nutrition. Nutrition plays a significant role in child's growth, resistance to different diseases and negative environmental factors (4, 7). Sufficient consumption of fresh vegetables and fruits is particularly important. There are some essential substances in vegetables such as vitamins, flavonoids, macro- and microelements, fibers, *etc.* having a protective effect against cardiovascular diseases, cancer, and other non-communicable diseases (19–21).

According to our data, every day fresh vegetables were eaten by two-thirds of children. In the earlier survey (conducted in Kaunas in 1999–2000) among parents having the preschool-age children, fresh vegetables every day ate only every fourth (25.4%) child (18). Comparing the data, we can conclude that the every day consumption of fresh vegetables by the preschool-age children has increased: the number of preschool-age children eating fresh vegetables in 2007 is 2.5 times higher than 7 years ago. Therefore, the frequency of the consumption of fresh vegetables is not sufficient: 3 times per day they were eaten only by every tenth child. Nutritional specialists recommend eating fresh vegetables and fruits 5 times a day, which is during every mealtime (20). According to the data of health behavior among Lithuanian adult population study, the consumption of fresh vegeta-

bles in 2000–2006 among males and females increased (22, 23).

Our data showed that the preschool-age children consumed fresh fruits (71.1%) more often than vegetables. However, one-third of children ate fresh fruits not every day. In the earlier survey carried out by Petrauskienė, at least once per day fresh fruits were eaten by 73% of the preschool-age children (18). Thereby, the frequency of consumption of fresh fruits has not changed.

The risk of chronic noncommunicable diseases could be lower if the consumption of fresh vegetables and fruits was higher in childhood. We observed the tendency that fresh vegetables and fruits were eaten more frequently in families where mothers' educational level was higher. According to the data of health behavior among Lithuanian adults, females with the university education ate vegetables more often than women with incomplete secondary or secondary education (23). Perhaps, lower frequency of eating fresh vegetables and fruits in families having preschool-age children was associated not only with mothers' educational level but with lower income of family, too. This is the goal of future surveys.

Nowadays, the problem of physical activity is very actual in varied ages. All over the world, the lowering physical activity of children is followed. Because of this the slower motion development, changes in health status, growing numbers of obese children occur (24). Only about one-fourth of the examined parents treated rightly and controlled body weight of children by increasing their physical activity. It was determined that one-third of children, every fifth father, and every tenth mother exercised almost every day. About half of parents reported never doing morning exercises at all. During the earlier survey (1999–2000), the low physical activity among family members was observed, too:

55% of fathers and 48.1% of mothers indicated they never did their morning exercises; at least 2–3 times per week exercised 42.6% of children, 22.3% of fathers, and 15.6% of mothers (18). Comparing these data, we can conclude that the physical activity of families is increasing, but the physical activity of about half of preschool-age children is insufficient. These children either do not exercise at all or exercise rarely. It is surprising that the number of children exercising every day in families where parents have university education is the lowest. Maybe the parents with high education are very busy and pay less attention to their children.

The study showed that harmful habits are widely spread in families. Every third father and every thirteenth mother are regular smokers; some of the parents smoke occasionally. In some families, older brothers/sisters are also smokers, thus being as negative examples for the preschool-age children. According to the data of 1999–2000 survey, 46.3% of fathers and 9.0% of mothers were regular smokers (18). So, the decrease in smoking prevalence, especially among fathers, was observed in families. Young fathers and mothers smoked most frequently regularly. The majority of regular smokers among fathers were with the lowest education, and among mothers with vocational education. The same situation was observed in health behavior survey among adults in Lithuania (23).

Smoking, alcohol abuse, unhealthy nutrition, and insufficient physical activity are the main risk factors for many diseases. These factors are widely spread in families having the preschool-age children. That is why health behavior development is very significant and must be realized through the educational programs for parents and children in kindergartens. Parents who follow the principles of healthy behavior are good example for children developing healthy lifestyle habits and skills.

Conclusions

1. The consumption of fresh vegetables and fruits among the preschool-age children is insufficient. Two-thirds of children ate fresh vegetables at least once a day, and only 1 child of 20 – 3 times a day. Children ate fresh fruits more frequently than vegetables: 1 of 10 used fruits 3 times a day.

2. Physical activity of examined families was insufficient. Half of the parents have never done their morning exercises, and about half of the preschool-age children did their exercises rarely (12.5%) or never (41.4%). Children spend much leisure time passively watching TV or playing with computer.

3. Harmful habits among parents are spread widely in the families: more than one-third of fathers and every thirteenth mother smoke regularly; alcohol is used in the majority of families.

Šeimų, auginančių ikimokyklinio amžiaus vaikus, gyvenenos ypatumai

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Raktažodžiai: gyvenena, ikimokyklinio amžiaus vaikai, šeima.

Santrauka. Lietuvoje pirmą kartą atliktas tarptautinis šeimų gyvenenos tyrimas. *Darbo tikslas.* Įvertinti šeimų, auginančių ikimokyklinio amžiaus vaikus, gyvenenos ypatybes. Tyrimas atliktas 2007 m. atsitiktinai atrinkose Kauno miesto ikimokyklinėse ugdymo įstaigose. Anoniminės anketinės apklausos būdu apklausta 271 šeima. Į anketos klausimus dažniau atsakinėjo mamos. Mamų ir tėčių išsilavinimas skyrėsi: tėčių, turinčių aukštąjį išsilavinimą, buvo 1,5 karto mažiau nei mamų. Nustatyta, kad ikimokyklinio amžiaus vaikai vartoja nepakankamai šviežių daržovių ir vaisių. Bent kartą per dieną šviežių daržovių valgė du trečdaliai vaikų, tris kartus per dieną – tik kas dvidešimtas vaikas. Šviežių vaisių ikimokyklinukai valgė šiek tiek dažniau nei daržovių: tris kartus per dieną jų valgė kas dešimtas. Nustatyta vaiko šviežių daržovių ir vaisių valgymo dažnio sąsąją su tėvų išsilavinimu: dažniau šių produktų valgo šeimos, kur tėvų išsilavinimas aukštesnis. Šeimų fizinis aktyvumas nėra patenkinamas: pusė tėvų niekada nesimankštino, apie pusės ikimokyklinukų fizinis aktyvumas yra nepakankamas, t. y. jie iš viso nesimankština (41,4 proc.) ar mankština retai (12,5 proc.). Didžiausia dalis vaikų beveik kasdien mankština šeimos, kuriose tėčių išsilavinimas yra nebaigtas vidurinis/vidurinis. Vaikai daug laiko praleidžia pasyviai prie televizoriaus ar kompiuterio. Šeimos, auginančiose ikimokyklinio amžiaus vaikus, tarp tėvų yra paplitę žalingi įpročiai: daugiau kaip trečdalis tėčių ir kas trylikta mama reguliariai rūko, daugelyje šeimų vartojami alkoholiniai gėrimai.

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