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RESULTS OF NUTRITION ANALYSIS OF FREQUENTLY ILLNESS PRESCHOOL CHILDREN DURING THE WINTER SEASON

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ABSTRACT

Purpose of the study. Consists in a hygienic analysis of the state of nutrition in the winter season of children with frequent illnesses of preschool age.

Materials and methods of research: a total of 1,250 children aged 3 to 7 years were taken in order to analyze the composition of the daily diet of frequently ill children brought up in public preschool educational organizations №130 in Almazar District of Tashkent City and №11 and №12 in Tashkent District of Tashkent region.

This article provides a hygienic analysis of the composition of the daily diet of children of preschool age with frequent illnesses. 1,250 children between the ages of 3 and 7 were taken, who were brought up in controlled state preschool organizations. We analyzed the nutrition of schoolchildren of the preschool organization in the winter season of the year. The structural structure of the daily diet of children was established on the basis of the requirements of sanitary norms and rules No. 0016-21, and the quantitative indicators of the chemical composition of the daily diet and its number and quality indicators were evaluated on the "Chemical composition of food products". **Conclusion.** When the content of protein, fat, carbohydrates, vitamins and minerals in the food products consumed by children in public preschool organizations during the winter season was estimated, it was found that the daily diet did not correspond to hygienic requirements.

Key words: Nutrition, frequently illness children, diet, protein, fats and carbohydrates, vitamins and minerals.

INTRODUCTION

Today, several decisions have been made by our government to preserve the health of children, to organize their healthy and safe meals, an example of which is the following:

Resolution of the President of the Republic of Uzbekistan “On additional measures to ensure a healthy diet of the population” of November 10, 2020 №RP-4887; resolution of the Cabinet of Ministers of the Republic of Uzbekistan “On further improvement of the system of healthy nutrition in state preschool educational organizations” of July 25, 2019 year №626; resolution of the Cabinet of Ministers of the Republic of Uzbekistan “On additional measures to improve the system of healthy”. On the basis of these decisions, the feeding of children in public preschool organizations is carried out in the methods of State supply, outsourcing and catering.

According to the World Health Organization, children with frequent illnesses are a category of children who get sick more than 4-5 times in 1 year due to a violation of the body's protective system. Today, this problem is one of the most common in pediatric practice. According to WHO, about 20% of children fall into this category [1, 7]. The growth and development of children raised in preschool educational organizations, as well as their physical activity, depends on the healthy and rational nutrition of their time in the institution [3, 4]. In many foreign countries, state programs have been developed in order to ensure healthy nutrition of children brought up at the stage of preschool education and Primary Education [6]. For example, in China, a study was carried out between parents in order to assess the knowledge of the healthy diet of children, as a result of which knowledge about a healthy lifestyle and healthy nutrition was formed in children and their parents, a decrease in the incidence of children was achieved [2].

From the above, we can see that ensuring healthy and rational nutrition of children of preschool age is a factor that ensures their normal growth and development, preventing frequent morbidity.

The purpose of the study: consists in a hygienic analysis of the state of nutrition in the winter season of children with frequent illnesses of preschool age.

Materials and methods of research: a total of 1,250 children aged 3 to 7 years were taken in order to analyze the composition of the daily diet of frequently ill children brought up in public preschool educational organizations №130 in Almazar District of Tashkent City and №11 and №12 in Tashkent District of Tashkent region.

The studies were carried out during the period 2023-2024 years.

In the winter season of the year (December, January, February), 10.5 hours in the preschool educational organization were analyzed on the structural structure of the meal served only during breakfast, lunch and second breakfast in the conditions of state preschool educational organization.

The daily consumed meal of children with frequent illnesses in the months of the season and its composition is approved sanitary norms and rules №0016-21 “Hygienic requirements for the organization of safe and high-quality nutrition of children raised in preschool educational organizations of the Republic of Uzbekistan” [9] compliance with the requirements of sanitary norms and rules, and their chemical composition depends on the factor results, analyzing them based on the chemical composition of food products, and their results were carried out on the basis of meta-analysis.

Statistical processing of the results of the study used the practical application package of the personal computer “Statistica for Windows 7,0”.

Analysis of the results obtained. Based on the joint decision №1/12 of May 23, 2023 year “On approval and implementation of single seasonal cookbooks for the organization of healthy feeding of preschoolers” approved by the Sanitary-epidemiological survillance and public health committee and Preschool education Agency, the implementation of “Temporary single seasonal cookbooks” in order to assess the nutritional status of frequently ill children brought up in state preschool educational organizations, as well as hygienic assessment, an approved seasonal diet for the winter season was studied.

In order to find and scientifically analyze the main months and days of failure of the results obtained in the daily nutrition diet of children with frequent preschool age and their daily nutrition in a separate order in all seasons of the year, it was worthwhile to carry out a comparative analysis of the results obtained with physiological normative indicators and monitor the dynamics.

In the analysis of the nutrition ration of children of preschool age with frequent illnesses, we found in this study the hygienic analysis of the nutrition procedure in the state preschool organization in the winter season of the year №0016-21 “Hygienic requirements for the organization of safe and high-quality nutrition of children raised in preschool educational organizations of the Republic of Uzbekistan” sanitary norms, we consider it a solution to the tasks set before us to analyze and compare them with the established physiological norm and develop conclusions and practical recommendations based on it in the consumption ratio of the 24 types of products specified in the regulations and hygiene regulations.

The daily diet of children in state preschool educational organizations is given in table 1.

Table 1

№	Diet	Time
1	Breakfast	08:30 — 09:30
2	Lunch	12:00 — 13:00
3	Second breakfast	15:30 — 16:00

As can be seen from Table 1, the nutrition procedure of the state preschool educational organizations corresponds to the students of the current regulatory documents and was the basis for ensuring time standards. The results obtained are aimed at analyzing the daily diet in its next task.

During this study, the nutritional status of frequently ill children raised in public preschoolers and the products they consume daily were analyzed and assessed hygienically. The average amounts of food spent in the 2023-2024 winter season in public preschools are listed in table 2.

Table 2

In preschool organizations, the average of food products spent for 10 days during the winter season of the year

№	Product name	Norm	Factual consumption	Difference	%
1	Bread	100	84,9	-15,1	84,9
2	Wheat flour	30	19,5	-10,5	65,0
3	Potato starch	3	0,51	-2,49	17,0
4	Cereals and pasta	45	43,55	-1,45	96,8
5	Sugar	25	23,65	-1,35	94,6
6	Confectionery products	10	8,48	-1,52	84,8
7	Butter	20	20,01	0,01	100,1
8	Vegetable oil	8	8,09	0,09	101,1
9	Milk	200	176,09	-23,91	88,0
10	Kefir	100	75	-25	75,0
11	Smetana	5	1,5	-3,5	30,0
12	Cottage cheese	20	14,26	-5,74	71,3
13	Cheese	10	9,6	-0,4	96,0
14	Beef	80	77,89	-2,11	97,4
15	Fish	20	8,4	-11,6	42,0
16	Chicken egg	25	24,8	-0,2	99,2
17	Potato	120	102,09	-17,91	85,1
18	Vegetables	180	69,96	-110,04	38,9
19	Fruits, juices	150	33,87	-116,13	22,6
20	Dry fruit	10	10,04	0,04	100,4
21	Tea	0,3	0,18	-0,12	60,0
22	Cocoa powder	2	1,23	-0,77	61,5
23	Salt	5	3,75	-1,25	75,0
24	Yeast	1	0,35	-0,65	35,0

As can be seen from the data presented in the table 2, an analysis of the nutritional status of children brought up in frequently ill state preschool organizations in the winter season of the year shows that there are a number of products less than the norm set in Sannvaq, namely, milk 88%, kefir 75%, sour cream 30%, cottage cheese 71.3%, fish meat 42%, fish meat

The 10-day consumption rate of milk, vegetables, fruits and juices during the winter season is shown in Figure 1.

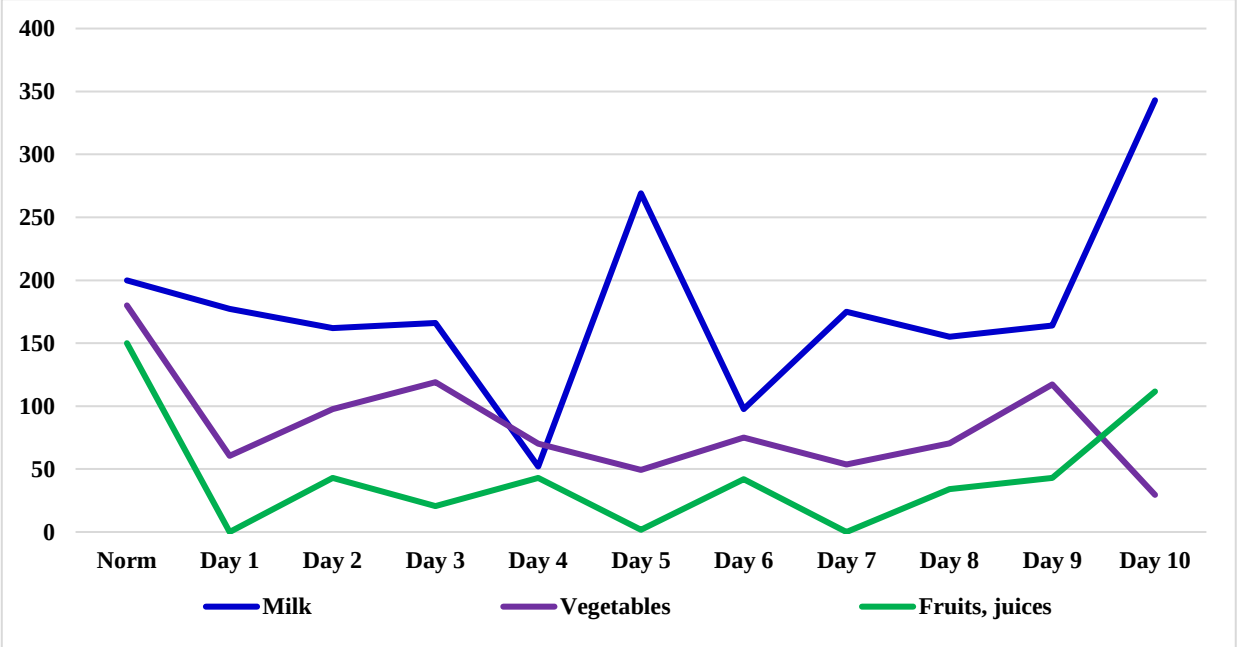

Figure 1. The daily consumption rate of milk, vegetables, fruits and juices during the winter season

The lack of daily ration of milk and dairy products, vegetables, fruits and juices creates conditions for the occurrence of changes in the body associated with a lack of trace elements in the body, such as vitamins of A, C, D, K, PP and group B, calcium, magnesium and phosphorus.

Foreign studies show that in the body of children who often get sick, there is a deficiency of magnesium, zinc, manganese, cobalt, phosphorus and calcium micronutrients. One of the areas of wellness of children in the group of children with frequent illnesses is considered to be labor-intensive and long-term rehabilitation [5, 8].

Table 3

The level of daily consumption of macronutrients in the winter season

Days	Component			Energy value (kcal)
	Protein	Fat	Carbohydrate	
Day 1	49,46	52,34	176,76	1375,91
Day 2	54,01	62,64	208,37	1613,32
Day 3	49,50	56,60	173,32	1400,68

Day 4	51,72	65,72	168,75	1473,36
Day 5	46,65	48,22	196,43	1406,30
Day 6	59,40	51,36	213,95	1555,60
Day 7	54,00	65,69	153,54	1421,37
Day 8	41,34	47,80	206,55	1421,80
Day 9	53,68	53,09	175,51	1394,56
Day 10	54,36	63,55	194,31	1566,64
10 days	**523,12**	**576,90**	**1900,61**	**14629,54**
Average 1 day	52,3	57,7	190,1	1463,0
Norm	**63,65**	**64,7**	**203,7**	**1650,31**

The potato consumption rate is 61.4% in the spring month, which is seen to be 38.6% lower than the daily physiological norm of 1.6 times.

Table 4

The amount of vitamins in food products consumed in the winter season

Nutrient	Norm (Sanitary norm and rules)	Mean quantity	Difference	%
Vitamin A (mkg)	500	843,2	343,2	168,6
Vitamin B (mg)	0,9	0,6	-0,3	61,3
Vitamin B_2 (mg)	1	0,8	-0,2	82,4
Vitamin B_6 (mg)	1,2	1,0	-0,2	79,3
Vitamin B_9 (mkg)	200	86,8	-113,2	43,4
Vitamin B_{12} (mkg)	1,5	2,8	1,3	184,2
Vitamin C (mg)	50	37,3	-12,7	74,7
Vitamin D (mkg)	10	0,9	-9,1	9,4
Vitamin E (mg)	7	6,9	-0,1	97,9
Vitamin PP (mg)	8	15,2	7,2	190,6

Assuming the data presented in Table 4, we can see that the daily average of most vitamins ingested through food products is less than the current established norms. This causes biochemical reactions in which these vitamins are involved as coferments, as well as changes in metabolism.

Table 5

The amount of minerals in food products consumed in the winter season

Nutrient	Norm (Sanitary norm and rules)	Mean quantity	Difference	%
Calcium, Ca (mg)	900	466,5	-433,5	51,8
Magbium, Mg (mg)	200	175,2	-24,8	87,6
Phosphorus, P (mg)	800	743,4	-56,6	92,9
Ferrum, Fe (mg)	10	8,8	-1,2	87,5
Iodum, I (mkg)	100	40,7	-59,3	40,7
Selenium, Se (mkg)	20	26,2	6,2	130,8
Zincum, Zn (mg)	8	5,9	-2,1	74,2

From the data presented in Table 5, it can be seen that only the Selenium micronutrient corresponds to the physiological norm requirements established in the sanguine. Of the remaining micronutrints, calcium was consumed less by 48.2%, magnesium by 12.4%, phosphorus by 6.1%, iron by 12.5%, iodine by 59.3% and zinc by 25.8%.

Conclusion. In the winter season of 2023-2024, it was found that the average indicators of food products spent when a meal for children raised in state preschool educational organizations was estimated, macro and micronutrients in them, the energy value of which is less than the physiological norms established in the current Sanitary norm and rules №0016-21. This causes a decrease in the immune system in children, increased susceptibility to frequent illness, a derailment of metabolism, and lagging children behind growth and development.

Taking into account the elevated ones, the enrichment of the nutrition diet of children raised in state preschool educational organizations with micronutrients consisting of a complex of vitamins and minerals, compliance of the diet with the requirements of the physiological norm, leads to an improvement in children's immune status, harmonic growth and development, the normal course of metabolic processes.

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