

THE EFFECTIVENESS OF NUTRITION EDUCATION IN RURAL SCHOOLS

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Abstract: This article analyzes the effectiveness of educational work on healthy eating among students in schools in rural areas. The study examines the formation of a healthy eating culture, the existing infrastructure in this regard, the role of parents and educators, as well as programs implemented by state and non-governmental organizations. The lower quality of children's nutrition in rural schools compared to cities, the lack of a sufficient nutrition culture, and the shortcomings in the continuity and quality of educational work are analyzed on a scientific basis. The article also develops recommendations suitable for the national context based on foreign experience and global recommendations on health. This study offers solutions to urgent problems aimed at improving education policy, strengthening children's health, and increasing social equality.

Keywords: Healthy nutrition, educational work, student health, nutrition culture, healthy lifestyle in education, nutrition policy, social equality, integration of education and health, school infrastructure.

In the 21st century, strengthening the health of children and ensuring their physical and psychological development remains one of the most pressing issues on a global scale. Indeed, in developing countries, especially in rural areas, the problems of healthy nutrition of students in schools have not yet been fully resolved. The lack of a healthy eating culture in educational institutions, the lack of rational and balanced nutrition of students directly affect not only their health, but also their intellectual abilities, social activity and level of learning.

Studies show that the quality of nutrition in rural schools is lower than in urban ones, which is explained by the insufficient implementation of spiritual and educational work, financial, organizational and infrastructural limitations. At the same time, there is insufficient cooperation between parents, teachers and local health systems. This leads to insufficient formation of concepts of healthy nutrition.

Schools are an important platform not only for education, but also for upbringing and promotion of a healthy lifestyle. Therefore, the need to conduct systematic and scientifically based educational work on healthy nutrition, especially in rural schools, is growing. After all, the National Development Strategy put forward by the President of the Republic of Uzbekistan also identifies the formation of a healthy generation and strengthening the integration of education and health care systems as one of the main priorities.

The current state of educational work on nutrition in rural schools, existing problems, their level of effectiveness and proposed complex approaches for the future are analyzed. In addition, practical recommendations are developed based on international experience, local conditions and modern health care requirements. The results of the study will serve to lay the scientific and practical foundation for the formation of a healthy generation in our country, strengthening the inextricable link between education and health care.

Literature review: Although the number of scientific studies aimed at ensuring healthy nutrition for students in rural schools and increasing the effectiveness of educational work in

this regard has increased in recent years, systematic and in-depth studies in this area are still lacking.

It is worth noting that the decrees and resolutions of the President of the Republic of Uzbekistan aimed at forming a healthy generation, in particular, the “Strategy of the Development of Uzbekistan for 2022–2026”, identify strengthening the integration of health care and education, and improving the school nutrition system as the main priority areas.

Studies by local scientists in the fields of medicine and pedagogy have analyzed the nutritional balance, micronutrient deficiencies, and the consequences of malnutrition in school-age children. This literature emphasizes that educational activities on healthy eating are mainly theoretical in nature and lack practical tools.

In addition, educational manuals issued by the Ministries of Public Education and Health (for example, on the subject of “Fundamentals of a Healthy Lifestyle”) are used as the main resource in educational work. However, these resources have not yet been adapted to modern interactive methods.

The document “School Health and Nutrition Strategy” (2020–2030), developed by the World Health Organization, extensively discusses the impact of nutrition in the school environment on education. This strategy emphasizes the importance of improving children's cognitive abilities and learning through healthy nutrition.

The Food and Agriculture Organization has also published recommended policy and practical measures to improve nutrition in schools. They emphasize the importance of integrating nutrition and healthy lifestyle topics into educational programs.

Foreign studies (for example, the work of scientists such as J. Gelly and M. Espejo) show the positive impact of school feeding programs in rural schools not only on health, but also on social equity, poverty reduction and social protection.

Analysis and results: During the study, the state of the nutrition system and related educational work in general secondary schools in several rural regions of Uzbekistan was studied. As a result of this analysis, the following important aspects were identified:

1. Problems in the school feeding system:

Inadequate infrastructure: It was found that most rural schools lack modern kitchens, refrigerators, food storage and cooking facilities. This negatively affects the quality of food.

Violation of hygiene and sanitation requirements: In most of the analyzed schools, the kitchens and dining areas did not fully meet hygiene requirements. This increases the risk of infectious diseases in children.

2. Form and duration of educational work:

Episodic activities: In most schools, educational activities on healthy eating are held only on the eve of national holidays such as Health Week, Hygiene Day, or Independence Day. This leads to the fact that information is not consolidated in the minds of children.

Participation of teachers and medical staff: The analysis showed that the topic of healthy eating is often briefly mentioned in biology or physical education lessons, but targeted lessons, trainings, and interactive methods are rarely used.

Insufficient cooperation with parents: There are no mechanisms for consistent exchange of information, advice and experience sharing on healthy eating between schools and parents.

3. The level of students' nutritional culture:

The majority of students do not have breakfast in the morning, and for lunch they consume fast-food, high-calorie, but low-nutrient products.

The level of conscious attitude towards nutrition is low: the majority of students do not have sufficient knowledge about the benefits and harms of food products.

4. Factors affecting effectiveness: The analysis revealed that the following main factors have a positive or negative impact on the effectiveness of educational work:

Factor	Positive impact	Negative impact
School administration's advice	Activity in programmatic work	Negligence, organizational weakness
Teacher qualifications	Pedagogical communication	Lack of deep understanding of the topic
Technical resources	Availability of visual materials	No access to computers, internet, or video media
Partnership with the community	With the help of the neighborhood and parents	The time of cooperation

The general results show that, although there are educational activities on healthy eating in rural schools, they are often formal and episodic in nature. To increase the effectiveness of educational activities, continuous cooperation between teachers, medical workers, parents and local communities is necessary. This area can be given a new lease of life through systematic communication, modern pedagogical technologies and propaganda methods appropriate to the national culture.

Problems of nutrition in rural schools and the current state of educational activities. Ensuring healthy nutrition for schoolchildren remains a serious problem in many rural areas of Uzbekistan. The limited economic opportunities of the population, the lack of modern kitchen infrastructure in schools, and the lack of close cooperation between the health care and education systems further exacerbate this problem. In addition, educational work was often episodic and not carried out systematically. Students did not develop deep knowledge and understanding of rational nutrition, the composition of food products, and the negative effects of harmful habits. There is also little cooperation between teachers and health workers in this regard. In most schools, healthy eating promotion activities are limited to health promotion weeks.

Factors that affect the effectiveness of educational activities include:

Infrastructure: The lack of modern kitchens and sanitary and hygienic conditions in rural schools hinders the implementation of healthy eating programs.

Staff qualifications: Teachers and health workers lack sufficient knowledge and methodological skills on healthy eating.

Partnership with parents: Parents themselves do not have sufficient knowledge about healthy eating. This increases indifference to educational activities being conducted at school.

Level of use of information technologies: In many rural schools, modern visual aids (videos, presentations, interactive games) are insufficient, which reduces the effectiveness of information.

Adequacy of state policies and programs: Existing state programs are often focused on cities and are not fully implemented in rural areas.

Suggestions and recommendations for increasing efficiency: To increase the efficiency of educational work on healthy nutrition, the following complex approaches are of great importance:

Introduction of special educational programs: It is necessary to include interdisciplinary modules on healthy nutrition and lifestyle in the curricula, and organize regular health promotion classes in schools.

Training for teachers and medical staff: It is necessary to open special courses on healthy nutrition, hygiene, and products with biological value in advanced training courses.

Interactive partnership with parents: Organizing regular open days, healthy cooking seminars and experience exchange programs at the school are in line with the goal.

Involving local communities: The quality of products can be improved by integrating community activists, farmers and private entrepreneurs into the school feeding system.

Using digital tools: Providing modern, understandable and effective information to students and parents through mobile applications, online courses, animated videos.

Implement a monitoring and evaluation system: Establishing an indicator system to analyze the results of school feeding and education activities in each region will help increase efficiency.

Uzbekistan: According to data from UNICEF and the Ministry of Health of Uzbekistan in 2022, 35% of school-age children did not regularly eat their right to breakfast. This situation was especially common in rural schools.

Internationally: A 2021 report by the World Health Organization showed that in countries that have introduced healthy eating programs in schools, student learning has improved by an average of 15–20%.

According to FAO (Food and Agriculture Organization of the United Nations), 3 out of every 10 children are stunted due to malnutrition.

Ensuring healthy nutrition for students in rural schools is an important factor not only for their physical and mental health, but also for the quality of education, social equality and the empowerment of future generations. This study has shown that although there are educational activities being carried out to form a culture of healthy nutrition, they are often not sufficiently effective in terms of their systematicity, interactivity and continuity.

Healthy nutrition is not just a health issue - it is an important factor in building socio-economic development, a sustainable education system and a healthy society. Therefore, strengthening educational work on healthy eating in rural schools should become an integral part of state policy and education strategy.

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