



## FEATURES OF THE INFLUENCE OF FACTORS OF THE EDUCATIONAL ENVIRONMENT ON THE FORMATION OF THE HEALTH OF SCHOOL STUDENTS

### CARACTERÍSTICAS DE LA INFLUENCIA DE LOS FACTORES DEL ENTORNO EDUCATIVO EN LA FORMACIÓN DE LA SALUD DE LOS ESCOLARES

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#### ABSTRACT

In the context of the digitalization of the information society, the problem of adolescents' health formation during school education is gaining momentum. Lack of physical activity, poor nutrition, and excessive intense exertion have a significant negative impact on adolescents' health in school conditions. The purpose of the paper was to identify the features of the formation of the health of school students during the study period. The research method was chosen to analyze sources that included scientific literature, statistical data, as well as documents and information, and analytical materials. The results of the study show that adolescent health problems and primary morbidity in different countries are manifested mainly in early adolescence. The analysis of the researchers' opinions shows that in the studied countries, in different age groups of adolescents, the structure of morbidity and the dynamics of the incidence rate are uneven. The analysis of statistical indicators of the structure of morbidity and the dynamics of the incidence rate allows us to conclude that the effectiveness of health-promoting programs and prevention programs applied to school students is low.

#### Keywords:

Morbidity, health, adolescents, lifestyle, prevention, age groups, prevention programs.

#### RESUMEN

En el contexto de la digitalización de la sociedad de la información, el problema de la formación de la salud de los adolescentes durante la educación escolar está ganando impulso. La falta de actividad física, la mala alimentación y el esfuerzo intenso excesivo tienen un impacto negativo significativo en la salud de los adolescentes en condiciones escolares. El objetivo del trabajo era identificar las características de la formación de la salud de los estudiantes escolares durante el periodo de estudio. Se eligió como método de investigación el análisis de fuentes que incluían literatura científica, datos estadísticos, así como documentos e información y materiales analíticos. Los resultados del estudio muestran que los problemas de salud de los adolescentes y la morbilidad primaria en diferentes países se manifiestan principalmente en la adolescencia temprana. El análisis de las opiniones de los investigadores muestra que en los países estudiados, en los diferentes grupos de edad de los adolescentes, la estructura



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de la morbilidad y la dinámica de la tasa de incidencia son desiguales. El análisis de los indicadores estadísticos de la estructura de la morbilidad y la dinámica de la tasa de incidencia permite concluir que la eficacia de los programas de promoción de la salud y los programas de prevención aplicados a los escolares es baja.

#### Palabras clave:

Morbilidad, Salud, Adolescentes, Estilo de vida, Prevención, Grupos de edad, Programas de prevención.

## INTRODUCTION

The most important task of the state's policy in the fields of education and health is to create the necessary conditions for the formation of the health of the younger generation. Therefore, legislators assign a special role to secondary schools in this process. Adolescents' health protection is declared as a state priority, which is reflected in national projects. According to kyrgyz researchers, the socio-economic well-being of the country and its regions depends on solving this problem.

Considering the fact that health is interpreted in the works of scientists and experts as a complex multilevel phenomenon, several types of it are distinguished (physical, mental, and social health). In addition, there are various derived types of health (spiritual, moral, emotional, mental, and somatic) (Kopytov et al., 2023).

An analysis of scientists' opinions shows that at the present stage, there is a steady negative trend that determines changes in adolescents' health indicators (Kolesnikova, 2008). This is largely facilitated by the spread of digital technologies in the information society, the use of which leads to a sedentary lifestyle, a decrease in adolescents' interest in outdoor sports and physical culture, and reduced adaptive ability and functional and strength capabilities of the body (Bendíková & Balint, 2023). The significant volume and intensity of the academic load hurt the students, both at the end of the academic year and at the end of school.

Accordingly, the issues concerning the formation of approaches to a comprehensive assessment, including adolescents' health, dictate the need to study this issue.

The purpose of the paper is to study the features of the formation of adolescents' health, considering data on different age groups.

Modern research shows that the peak values of the increase in the adolescents' morbidity at school are at the age of 15-17 years. Two opposite trends are observed: on the one hand, the number of absolutely healthy adolescents is

rapidly decreasing; on the other hand, there is an increase in the number of chronic diseases among adolescents of all age groups (affecting the visual, digestive, endocrine, and musculoskeletal systems).

Researchers note trends in the manifestation of polysystemic diseases in adolescents, as well as an annual increase in functional abnormalities (Gavryushina et al., 2017). In some studies, the following age pattern has been stated: if school students develop 1-3 diseases at the age of 11-14, then at the age of 15-17, the disease number increases by 2 times. Accordingly, the health potential of the younger generation decreases annually. In such conditions, disease prevention in adolescents becomes a complex medical and socio-pedagogical problem, the solution of which requires the implementation of socio-pedagogical, sports, and wellness-related measures for adolescents, requiring, on the one hand, the implementation of diagnostic approaches and, on the other, the formation of habits and attitudes forming a healthy lifestyle in adolescents.

Minimizing the negative impact of school educational environment factors requires the introduction of health-preserving technologies because the issues of enhancing and preserving health are the most important agenda of the school's educational.

## METHODOLOGY

The reliability of the obtained research results is ensured by the theoretical analysis of scientific literature, the analysis of statistical data, the analysis of practical experience in the formation of adolescent health, the analysis of documents and information, and analytical materials.

In the process of conducting the study, the opinions of authors from Kyrgyzstan and other researchers were considered. They tend to believe that the features of adolescents' health formation are more influenced by bad habits, poor nutrition, sedentary lifestyle, excessive use of gadgets and mobile devices, as well as excessive time spent online (Paganini et al., 2023; Nguyen & Nguyen, 2023).

The analysis of the concept of adolescents' health made it possible to identify both general and specific trends and patterns characteristic of various age groups in children (early, middle, and late adolescence). This made it possible to develop approaches to health formation (Novikov et al., 2023). The assessment of the features of the adolescents' health formation was carried out based on the chosen criteria (harmonious or disharmonious development, considering gender differences in the structure of chronic morbidity). In the works of kyrgyz researchers, the criterion

of the level of sanitary and hygienic culture in adolescents was used as a criterion for assessing their health.

Policy in the field of quality management of educational services and quality of medical care.

The implementation of which provides comprehensive views on the results of the school's educational activities. Researchers draw attention to the fact that in developed countries, public investments in preventive programs aimed at improving adolescents' health result in the social effect that correlates with the invested amount in the proportion of 1 to 14, that is, the effect exceeds investments by 14 times (Lebedkova & Evstifeeva, 2011).

In the context of solving the problems of family policy, the point of view of Russian researchers is important, according to which the provision of timely medical and social assistance to families with adolescents to increase health resources requires the implementation of motivational mechanisms for those families with adolescents who will actively participate in government programs (Mansurkulova et al., 2016).

Today, there is an objective need to introduce standards for providing social and medical care to families with adolescents (Baranov et al., 2014). According to Egorova (2018), the study of statistics on adolescents' health is an insufficient measure and it is possible to solve their health problems by making changes to the regulatory framework, including at the regional level, to strengthen the preventive component.

Paying attention to the problems of adolescents' health formation, Atambaeva & Mingazova (2015), chose adolescents in the Republic of Kyrgyzstan as the object of research, and the subject of their study was the analysis of trends and structure of morbidity where much attention was paid to the geography of the morbidity in girls (in the early and late adolescence) in the regions of Kyrgyzstan (age groups 0-14 years and 15-17 years). The authors state that during the study period (2007-2011), there was a tendency to increase in the primary morbidity and prevalence of diseases by 11 and 3%, respectively.

Depending on the class of the disease, trends in both age groups manifested unevenly: for example, for endocrine and genitourinary diseases, the prevalence of diseases was 42.7 and 56.7%, respectively, which was the highest indicator compared to the diseases of other classes. With concern, the researchers noted an increase in disability during the study period, where the increase was +32%, or from 12 to 16 cases per 10,000 people, without differentiation between children and adolescents.

However, there was an improvement in the situation in different age groups over the study period in the following disease classes: 1) diseases of the blood and hematopoietic organs: early adolescents: - 4.4%; middle adolescents: -43.8%; late adolescents: -43%; 2) endocrine diseases and eating disorders: early adolescents: -48.4%; middle adolescents: -90.9%; late adolescents: -69%. In this aspect, negative trends over the study period concern adolescent girls belonging to the 0-14 years old group, where an increase was observed in the following classes: congenital anomalies (+45.4%), diseases of the nervous system (+46.1%), and diseases of the musculoskeletal system and connective tissue (+88.6%).

The authors draw attention to the uneven geography of the spread of the main classes of diseases of various kinds. For instance, the Bishkek and Osh region are leading in terms of adolescent morbidity (Atambaeva, 2016).

Attention is drawn to the fact that the early adolescent group does not differentiate by age boundaries from the children's group, which affects the overall statistical accounting of adolescent morbidity. The research results for 2023 confirm that the main factors in the decline in the health of Kyrgyz school students are a lack of proper nutrition and physical activity (Scientists, 2023). Considering these results, it can be said that in the educational environment of schools in Kyrgyzstan, something needs to be changed in preventive approaches.

In addition to what has been said about Kyrgyz adolescents, special mention should be made of the activities of the United Nations Children's Fund (UNICEF) in Kyrgyzstan, whose mission operated in the period from 2012 to 2016. According to this fund, adolescents are young people aged from 10 to 19 years. The fund's staff found that with the transition to an older age group, the health profile of Kyrgyz adolescents changed significantly due to the expansion of additional factors that caused a decline in their health.

According to the fund, the problem of deteriorating mental health in adolescents is a troubling issue. Anemia has become widespread in early adolescents. The key activity of UNICEF is the implementation of educational programs to promote a healthy lifestyle, implemented in general education and professional educational organizations in Kyrgyzstan. In cooperation with the Ministry of Health of the Republic of Kyrgyzstan, this fund develops joint programs to improve the health of the younger generation (C4D, DenSooluk, Mother and Child Health Preservation (OZMIR), HIV/Most Vulnerable Adolescents (NPRP)) (Adolescent health, 2016).

Paying attention to similar problems, the research team including Mustafaeva et al. (2023), studied the health situation of adolescents in the Republic of Azerbaijan. It can be difficult to understand the overall morbidity pattern because the statistics are gathered for the 0-17-year-old group. Unlike previous researchers, the following age groups of adolescents were subject to statistical accounting for the period 2014-2019: 9-13 and 14-17 years old.

According to the criterion of the structure of primary morbidity in early and late adolescents in Azerbaijan, the following trend has been manifested: when the absolute value of this indicator was reduced by 37%, its share decreased by 48.6% during the study period (Mustafaeva et al., 2023). Through statistical analysis, scientists concluded that there was a high proportion of the number characterizing primary morbidity (more than 50%) in the group of early adolescents (9-13 years old), which confirms the conclusions of previous researchers, despite different statistical methods of analysis.

According to the research team from Tajikistan (Umarov et al., 2019), socio-economic, environmental, and hygienic factors have a significant impact on the health of adolescents in Tajikistan. Given the accepted boundaries of age periodizations, it should be recognized that researchers have not quite accurately established the age limits of adolescence (15-19 years) since adulthood begins at the age of 18 (Umarov et al., 2019).

Data on early and middle adolescence (10-12 years and 13-15 years, respectively) were not considered. Paying attention to the statistical data on the health status of adolescents for 2011-2018, it can be noted that from 2014 to 2018, there was a tendency for a decrease in the morbidity of adolescents. In comparative terms, the health index of boys is much higher than that of girls.

The proportion of newly diagnosed diseases in Tajik adolescents increased by 1.5 times during the study period. More than 60% of all diseases occurred in girls. The analysis of the morbidity structure allowed scientists to establish the fact that respiratory and digestive diseases prevailed in adolescents with the morbidity reaching 25 and 16%, respectively.

Analysis of the data on dispensary monitoring of this age group allowed the researchers to conclude that there was a positive trend as it had increased by 3 times compared to the baseline period. The authors, referring to the national program of the Republic of Tajikistan «Development of adolescents and their social participation», expressed the opinion that the by-laws provided for its implementation would contribute to improving the health situation of Tajik adolescents.

## CONCLUSIONS

Summing up the results of the paper allows us to conclude that the school educational environment influences the features of health formation and should be the object of close attention from the subjects of family, educational, and health policy of the state. Based on the opinions of scientists, it is concluded that to a greater extent, this effect on adolescent health is negative and is caused by a lack of physical activity, the use of digital devices, food catering for students, unhealthy lifestyle of students at school, intense and excessive academic loads, as well as insufficient interest in physical culture and sports. Various studies show that different criteria are used to assess health and there is no single research methodology. Not all scientists agree on the age limits of adolescence and the criteria for measuring adolescents' health, which significantly affects the perception of the statistical picture of adolescent health in different countries.

An analysis of the research shows that researchers most often focus on the age of 15-17, that is, late adolescents, leaving the early and middle adolescents without assessment. The analysis of statistics shows that in the context of primary morbidity, special attention should be paid to the early adolescents when organizing preventive measures with them, as their health potential decreases equally in school conditions in different countries, and naturally declines 1.5-2 times by the onset of middle and late adolescence.

This trend is common to all countries. Based on medical statistics data, it was found that in various age groups of adolescents, the structure of morbidity and the dynamics of the incidence rate were uneven, which indicates the low effectiveness of health and prevention programs in the studied countries (Russia, Kyrgyzstan, Azerbaijan, Tajikistan, etc.) as of the studied period, as well as the insufficient quality of social and medical care for adolescents. The analysis of Kyrgyzstan's experience shows that in some cases, state authorities join forces with international funds for assistance to adolescents which helps at the state level to implement health-preserving preventive programs for school students and take into account socio-economic and socio-hygienic factors that manifest themselves in school education.

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