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
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## Characteristics of Healthbreakers in the Conditions of Realization of Health-Safety Technologies in Education Structures

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### Abstract

**Background:** One of the objectives of health conservation activities in the educational environment of the educational institution is to preserve and further develop public healthcare-saving experience accumulated by civilization. This will ensure the formation in educational institutions of such pedagogical conditions that are at least harmful to the health of all participants in the educational process.

In view of this, modern views on healthcare presuppose the study of students of general education institutions at the same time and as objects and subjects of vocational and pedagogical activities. Given that pedagogical systems are complex social entities, the effectiveness of the process of forming, strengthening and maintaining the health of all participants in the educational process depends on the level and quality of the subject-subjective interaction of all its structural elements.

The formulation of the question, in which students are simultaneously perceived both as objects of pedagogical management, and as subjects of health and conservation activities, actualizes the need for analysis of the characteristics of the subjects of health preservation in the realization of healthcare-saving technologies in education structures.

**Methods :** The basis of scientific research is the observation as a systematic purposeful study of the object; poll as the most common method of obtaining information; comparison-analysis as a method for comparing the features inherent in two or more objects. In addition, the study of healthcare providers as well as analysis of the main trends in the development of scientific views on health, the use of a set of methods: theoretical methods: a comparative analysis of psycho-pedagogical, and health-saving literature for the synthesis of scientific facts regarding the health aspects of preservation in society; retrospective analysis, scientific reflection to form a holistic view of the phenomenon of health conservation; empirical methods:



diagnostic (sociological observations).

**Results:** It is the study of the health of students of comprehensive educational institutions as well as the analysis of statistical data related to the preservation of health, the development of scientific views and the substantiation of the main stages of the formation of theoretical concepts for the preservation of human health in general, and the child in particular, the society's attitude to the problems of health preservation, which reflected the dynamic manifestation of universal values and needs. Pilot study 2012-2013 during pedagogical practice for 3-4-year students of the Faculty of Natural Sciences of the Poltava V. G. Korolenko National Pedagogical University named after, as well as analysis of the health status of students of general educational institutions of Poltava, based on which practice was conducted.

**Conclusions:** The state of health of students of comprehensive educational institutions of Poltava city has been studied and analyzed, the main tendencies in the development of public opinion on the preservation of health and health-saving activity are determined, the main problems of health care have been researched and substantiated. This article does not exhaust all aspects of the problem under consideration and updates the need for increased attention in relation to further fundamental research, theoretical developments and practices of historical heritage, the implementation of the most advanced technologies of healthcare in education.

**Keywords:** Health, health-saving technologies, health-saving activities, stages of healthcare

## 1. Introduction

Many studies conducted in different regions of Ukraine indicate a significant deterioration in the health status of children and adolescents: an increase in the incidence rate of virtually all classes of diseases, deterioration in physical development, and a decrease in the level of physical students' readiness.

## 2. Literature Review

Consideration of certain characteristic features of contemporary students as elements of subject-subject interaction in the professional activity of future teachers in the implementation of healthcare-saving technologies allows to distinguish:

- a set of indicators of physical, mental and social health;
- a set of factors that affect the level of health of participants in the educational process and, accordingly, selection for the use of adequate health protection technologies.

Physical health of students of general educational institutions as subjects of health-saving activity is characterized by such features:

- the absence of any diseases or defects in development;
- resistance to the effects of negative health factors;
- dynamics of indicators of development within the average norm;
- functionality of an organism within the limits of the average norm;
- availability of reserve capacity of the organism.

According to the data of the Ministry of Education and Science of Ukraine, regarding various posture disorders, which have approximately 60% of school-age children, neuroses - 30%, deviations from the norm in the cardiovascular system - 30-40%, convincingly [1, p. 17]. The results of the sample surveys indicate that almost 36% of Ukrainian secondary school students have a low level of physical health, 34% are below average, 23% are average, 6% are above average, and only about 1% - high [1, p. 18].

From this position, some scholars suggest to consider the organization of health protective work in an educational institution, as a parallel counter process, on the one hand, the transfer of healthcare-saving experience from teachers to students and, on the other hand, the process of active perception of students' knowledge of the subsequent formation of the corresponding health-saving skills and abilities.

In this context, it is possible to consider the health-saving process in the educational environment of an educational institution as an interaction within the aggregate ideal subject of this activity, whose effectiveness is determined by the awareness of the general civilization goal, which is of extreme importance for both of its parties [2]. The obtained data indicate that at present, "the infirmity of students with chronic diseases has reached 90% (the number of completely healthy children does not exceed 10%), more than 50% of them have poor physical fitness." Based on the analysis of official data of the Ministry of Health of Ukraine, we note that "for the period of training from 1 to 9, the number of healthy children decreases by 4 times, and children with visual impairment increases from 3 to 50%, the number of neuro-mental disorders increases from

15 to 40%, and disorders of the musculoskeletal system (scoliosis, osteochondrosis, complex forms of flattening) increases to 65%" [3, p. 7]. Similar trends in the deterioration of the health of students in general education institutions are observed by scientists in the CIS countries.

The Institute of Age Physiology of the RAO provides data that more than 90% of school-age pupils have diverse deviations in physical and mental health, and more than 50% of schoolchildren suffer from neurotic syndromes. Anxiety is caused by data that more than 35% of children entering school only already record

Analysis of the structure of functional disorders in school-age children indicates that in 50% of school-age children there were deviations in the development of the musculoskeletal system, 30% of schoolchildren had violations of the cardiovascular and respiratory systems, and about 70% of students suffered from hypodynamia.

The statistical data presented in the study of T. Orehova emphasize that during the period of studying in an educational institution the number of children with several diagnoses of diseases is constantly increasing. Children aged 7-8 years have on average two diagnoses of diseases, 10-11 years - three diagnoses, 16-17 years - 3-4 diagnoses, and 20% of senior pupils have five or even more functional disorders and chronic diseases [4, p. 92].

The dependence of the speed and quality of learning material on the state of physical health in students of general educational institutions was studied by L. Ponomariov. The conducted pedagogical experiments have shown that the ability to actively perceive and absorb information is significantly reduced in girls aged 11-12 years and in boys 12-13 years old. The author emphasizes that this process is significantly influenced by disorders of the functional state of the hearing (in 1,2% of the examined children) and vision (20,1%). It has been established that if the frequency of hearing disorders does not increase with age, then the number of cases of visual impairment increases significantly. Analysis of statistical data allowed to establish that in girls aged 14-16 there is a correlation between the highest indicators of mental performance and significant deterioration of the organs of vision (up to 32% of the total number of examined girls had deviations from the average norm). Studies have shown that chronic diseases (more than 10% of the surveyed), thyroid gland enlargement (in 37.5% of the examined children) have a negative impact not only on physical development, but also on mental performance, psycho-emotional balance and personal development of students [5, p. 23].

Within the framework of the pilot study in 2012-2013 during the pedagogical practice, students of the 3-4th year of the Natural History Faculty of the V.P. Korolenko Poltava National Pedagogical University were tasked with analyzing the state of health of schoolchildren of secondary schools of Poltava, based on which practice was conducted. The purpose of this study was to identify the health of students, the dynamics of the development of this indicator and analysis of the main causes of the current tendency to deteriorate schoolchildren's health, which in recent years has become steady.

### 3. Method

#### 3.1. Participants

According to the data obtained from the analysis of official data sources (Public Council at Poltava Oblast State Administration), the incidence rates for schoolchildren for 2012-2013 are 1164.0 and 1103.7 per 1000 pupils respectively. The structure of morbidity by major nosologies is given in table. 1.

Table 1

**Structure of the students` morbidity of general education structures in Poltava (% the children`s diseases total number)**

No	Type of diseases	% students
1	Diseases of the respiratory organs	65,2 %
2	Diseases of the digestive system	12,0 %
3	Diseases of the skin and subcutaneous tissue	9,1 %
4	Infectious and parasitic diseases	5,2 %
5	Ophthalmic and otolaryngologic diseases	3,9 %
6	Diseases of the bone and muscular system	2,8 %
7	Other diseases	1,8 %

The data of preventive checkups of schoolchildren in 2012 in Poltava indicate that only 11.6% of

children can be considered relatively healthy. That is, 88.4% of schoolchildren have health problems.

### 3.2. Materials

According to the data of children's health care institutions of the city, during the period of observation of a child under the age of 18 years, a gradual deterioration of the health status was revealed.

In adolescence:

- the frequency of diseases of the gastrointestinal tract and diseases of the endocrine system increases in 5 times,
- 3 times the frequency of detection of pathology of vision, diseases of ENT of organs and functional abnormalities in the cardiovascular system,
- 2.5 times diseases of the musculoskeletal system,
- 1,5 times the diseases of the central nervous system, which is associated with the impact on the health of the child environmental, social and everyday factors.

Polls of students and teachers of secondary schools of Poltava, conducted during the pilot survey of students and teachers of secondary schools in the city of Poltava, conducted during the pilot study by future biology teachers, highlighted the causes of bad health of schoolchildren, namely:

- violation of the regime and the quality of sleep and nutrition;
- decrease of motor activity and hypodynamia;
- lack of physical culture as a mass phenomenon;
- computer addiction;
- disadvantages of family education and insufficient attention of parents to a healthy lifestyle;
- widespread tobacco use, drinking beer, alcohol and drugs in childhood;
- lack of initiative of the heads of educational institutions in solving the urgent problems of healthcare, including the systematic introduction of health-care institutions in healthcare-saving technologies.

The mental health of the child plays an important role for the general level of health, as the internal state of mental well-being, a set of settings, qualities and functional abilities that allow the individual to adapt as quickly as possible to the environment. Allocate such criteria of mental health:

- awareness of the constancy and identity of their own physical and mental "I";
- conformity (adequacy) of psychic reactions of force and frequency of influence of environment, social circumstances and situations;
- the ability to plan their own livelihoods and implement these plans;
- ability to self-management behavior in accordance with generally accepted social norms, rules, laws;
- critical to oneself, to own mental activity and its results;
- the ability to change the way of behavior depending on changes in life situations and circumstances [6, p. 63].

### 3.3. Procedure

An analysis of the World Health Organization's statistics reveals that a significant proportion of mental disorders and diseases in children and young people have a so-called didacto-genetic nature, that is, directly caused or triggered by an educational institution. The information obtained as a result of numerous surveys establishes a clear link between the intensification of school education and the increase in the amount of training load on the one hand, and fatigue, the level of neuroticism, increased maladaptation and the deterioration of students' health on the other. In view of this, the ways of solving the so-called "school neuroses", the coordination of educational stresses with the age, physical and mental capabilities of the child, minimizing the adverse psychogenic impact of inadequate training loads becomes the subject of research by many scholars and psychologists.

## 4. Results

Many psychological problems that occur among students of general education institutions relates to the existing practice of in-depth immersion of students in educational activities, in which the child's personality goes to the background, and knowledge evaluation dominates. The scientist points out that such an organization of the educational process is guaranteed to lead to the formation of a complex of psychological disorders among children, among which the main is the refusal of the process of obtaining knowledge, rejection of the prospects of professional self-determination, undervalued self-esteem, social and psychological pessimism. The researcher stresses that "... the scale of this phenomenon has become so large that it begins to

act as a significant factor in social misery, which is that the enormous number of contingents of young people, having formed during the years of study low self-esteem and despondency to their own strength, it turns out not in a position to effectively build a line of personal and professional life "[7, p. 94].

## 5. Discussion and Conclusion

An increase in the intensity of risk factors, increased neuropsychological load, information overload, reduced motor activity, an increase in the number of children with the developed harmful habits - this is an incomplete list of negative factors, which in modern conditions have increased the impact on the state of mental health of adolescents [8, p. 39].

Studies conducted by V. Kaloshin found that in many cases the introduction of modern forms and methods of teaching into the educational process, the replacement of traditional educational programs with alternative, without proper pedagogical and medical substantiation, lead to an inadequate increase in the burden on children, their overwork and development pathological states. The obtained data indicate that over 80% of students experience unreasonable stressful situations, which largely prompted the early formation of chronic pathologies and mental disorders [9, p. 26].

The level of interaction between man and society, the adoption of her social norms and values is determined by the level of her social health.

Studies have been carried out to prove the fact that the effectiveness of social adaptation of the child is one of the indicators of its social health, as syndrome of school have adaptation is observed in more than 51% of students, and there is a tendency to further increase their number [10, p. 13]. Its main external features are reducing the level of success and violation of approved school norms of conduct. The results of the study by T. Antipenko, which revealed a stable relationship between the state of health and the adapted activity of schoolchildren, are of interest. Data obtained by the author as a result of surveys of students in grades 1-7 indicate that almost 2 times (from 43% to 80%) the number of pupils increased, which is calculated by the deterioration of their own health for social adaptation. During a sociometric experiment, it was found that no child, in which the first class had expressed neurotic reactions, did not belong to the group of "students" of the teacher, which proves the influence of teacher's pedagogical activity on the occurrence of mental disorders in schoolchildren [11, with. 17].

Systematic exhaustion, nervous overload of children at school is exacerbated by a violation of the regime, unsatisfactory micro-social conditions. The importance of qualitative training of future biology teachers to the implementation of health-saving technologies in further professional activities is conditioned by the fact that the effects of diseases acquired at school age, affect the formation of an adult, future indicators of reproductive and physical health.

Influence of organizational and pedagogical factors on the level of social health of students of general educational institutions is based on factors such as the pedagogical style of the teacher;

- organization of modern classroom teaching technologies;
- the implementation of a pedagogical unit for the formation of a healthy lifestyle, which requires appropriate organization of educational space of the school;
- organization and character of psychological and pedagogical support;
- the organization and nature of health care;
- sanitary and hygienic conditions of education [12, p. 224].

The analysis of scientific and pedagogical literature indicates that several researchers have devoted their scientific research to the distinction between socio-economic and environmental factors, the long-term effect of which affects the health of children, among which the main ones are:

- insufficient readiness of biology teachers to implement health-saving technologies;
- inconsistency of programs, forms, methods, means and technologies of teaching functional and age-specific features of schoolchildren;
- overload of the educational process;
- stressful influence of authoritarian pedagogy;
- non-compliance with elementary sanitary and hygienic requirements for the organization of the educational process;
- Early start of pre-school systematic training [12, p. 56].

The rating of the factors most negatively affecting the level of health of the child determines the inconsistency of methods and technologies of teaching age and functional abilities of the child, which leads to violations of psychophysiological mechanisms, the domination of high-speed indicators of training on



quality, the creation of stressful situations associated with time constraints. The second risk factor is authoritarian pedagogy, which prevails in school. The third factor is the irrational organization of the educational process.

The main factors that determine the health status of students in general education institutions, the researcher calls:

- programs, methods, forms and technologies of training;
- volume of educational load;
- personal characteristics of the teacher;
- sanitary and hygienic conditions of training;
- organization of the educational process [12, p. 58].

Allocate negative factors that influence the deterioration of the health of children, among which:

- excessive nervous-emotional stress of children due to inconsistency of requirements of teachers to the intellectual and psychophysiological capabilities of students;
- assessment of the activity of students, built only on the comparison of them with each other by the consequences of the tasks;
- ignoring teachers of the peculiarities of perception of information and thinking of schoolchildren, causing fatigue, neuropsychic deviation of adverse environmental effects;
- bad nutrition of children;
- hypodynamics;
- low level of healing and improving work in school [13, p. 12].

Analyzing the most important reasons for reducing the functional level of students' health, distinguish:

- excessive intensification of the educational process, overload of curricula by factual information, which causes students to overwork and stress; stress-inducing technologies for conducting lessons and assessing students' knowledge;
- the inability of many teachers in the conditions of the modern organization of educational process to implement an individual approach to students, considering their psycho-physiological characteristics and state of health;
- lack of physical activity of students, which leads to hypodynamia and other disorders of schoolchildren's health;
- non-compliance with elementary sanitary-hygienic and physiological requirements for the organization of the educational process;
- incorrect organization of nutrition at school;
- insufficient level of hygienic and psychological knowledge of teachers;
- low level of health culture of pupils and their parents [14 p. 7].

Factors that determine the health of the child, can be divided in proportion to the degree of their impact:

- human factor - 25%;
- ecological factor - 25%;
- socio-pedagogical factor - 40%;
- medical factor - 10% [15, p. 32].

The main reasons for the deterioration of students' health are:

- violation of hygiene requirements for the organization of educational process;
- lack of proper rest;
- insufficiency of motor activity;
- constant stress associated with the overload of training programs;
- an authoritarian style of teacher communication;
- insufficient level of knowledge among teachers about age psychology and physiology;
- insufficient level of educational work with students on the formation of a healthy lifestyle;
- lack of teachers and parents of necessary knowledge on the preservation and strengthening of children's health [16, p. 219].

According to the data obtained during the pedagogical experiment, it can be concluded that, along with other negative factors, the decrease in the health of children (problem ecology, living conditions in the family, blurring of the ethical values of part of society, social tension, medical factors) to the state. The health

of children is directly influenced (from 22 to 27%) with factors of the internal school environment. Experimentally, the existence of a connection between health and excessive school load was established: by the end of the school day, 52% of students are deteriorating, as a result of educational overload, more than 60% of schoolchildren fall badly [17, p. 19]. Many cases of emotional disorders in children are associated with the ethical and psychological harm caused to pupils by teachers. The results of the observations make it possible to conclude that in the classes with an uncompromising teacher who meets the rigorous requirements, the current incidence is twice as high; almost three times as many children with so-called microsymptoms, indicating a disorder of neuro-mental health than in a class with a mild, benevolent teacher.

Ensuring a high level of child's education that meets the needs of a modern post-industrial society should be the main result of the educational process in a general educational institution. In view of this, the term "education" can be noted as a personal property of a person, which is formed in the process of education and expresses a certain degree of mastering it as part of social experience, as well as the ability to use the experience in further life.

Studying the problem of balance of education and health that will give the child a high level of knowledge and thus will not hurt her, analyzing the factors that cause overload of students should be noted:

- intensification of the educational process as a result of ignoring the health-saving features of modern educational and methodical kits;
- the orientation of teaching activities of the teacher only on the educational process without considering the psychophysiological and individual characteristics of the child;
- low level of healthcare-saving competence of teachers in designing the educational process in various forms of educational activity [18, p. 14].

Studies conducted in recent years have shown a beneficial effect on the health of the child reducing the density of information flow and strengthening control over hygiene factors. However, many scholars point out that traditional approaches (reducing the academic load, rigid hygienic regulation of conditions of training, increasing the time for physical education lessons) do not fully meet the requirement for the health of children in the learning process.

Analysis of scientific and pedagogical literature allows to identify the basic directions of healthcare of students to which include medical, physical culture, health and valeological directions.

Researchers working within the medical field for solving healthcare problems of schoolchildren are associated with activities that provide:

- improvement of diagnostics of diseases;
- improving the quality of preventive and curative measures;
- provision of sanitary and hygienic conditions for the organization of educational process in educational institutions (compliance with established sanitary norms of food, day regime, lighting, educational equipment and school premises).

Regulation of hygienic conditions of the organization of educational process in general educational institutions reflects in the normative documents the requirements of the medical direction of healthcare. However, in many educational institutions sanitary-and-hygienic standards are not respected, sanitary work is carried out at an inappropriate level, children are often subjected to educational and psycho-emotional overload, mainly on the background of lack of motor activity. Traditional and effective for the health of children, adolescents and young people in the studies of physical culture and health trends are considered the means of physical culture. Physical education and physical culture work in a comprehensive educational institution is an integral part of the formation of a general and health-preserving culture of the individual, which is the basis for maintaining the health of children, the development of functional capabilities of the body, the provision of a healthy lifestyle [19, with. 3, 21].

Physical culture and health direction as an integral part of the system of physical education of students of general educational institutions, ensures the expansion and accumulation of knowledge, skills and abilities of students not only from physical culture and sports, but in the future forms the notion of the aesthetics of movements and physical exercises, influencing the increase of their level health.

The foundation in the studies of valeological direction is valeological education, which directs its attention to the assimilation of social experience in the field of healthcare.

Analyzing the subject of research in this direction, among the main should be highlighted:

- development of projects on the formation of the culture of youth health;

- timely acquisition of knowledge about a healthy lifestyle;
- development of the appropriate style, forms of behavior and level of physical culture.

Investigating the social value of valeological knowledge, it should be noted that the formation of a certain style of life of a young person regarding health - a healthy way of life, is one of the directions of socialization. These two categories are interdependent and affect each other, which manifests itself in the process of social and pedagogical mechanisms: institutional (educational institutions, mass media), traditional (family, parents), stylized (youth subculture) and interpersonal (peers)" [20, p. 17].

Consequently, the analysis of the subjective characteristics of modern students, the formation of which is aimed at health preservation activities of the future teacher of biology, allows us to draw conclusions about the main directions of the implementation of healthcare-saving technologies in educational institutions:

- education for health and the formation of a healthy lifestyle, prevention of violations of physical, mental and social health, maladaptation processes;
- organization of training based on environmental compatibility, considering age and psycho-physiological features of development, sanitary and hygienic requirements and norms.

The student as a subject of the educational process is a separate part of the process of health preservation, the state of his health depends and simultaneously affects the implementation of health-saving technologies in the learning process. It has been established that the level of knowledge and skills of future teachers in preserving health is directly related to the formation and preservation of children's health and, consequently, is an important element of the implementation of health-saving technologies in professional activities.

Conflicts of interest

The authors declare that there is no conflict of interest.

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