

SCTCMG 2021**International Scientific Conference «Social and Cultural Transformations in the Context of
Modern Globalism»****DESIGNING OF A SAFE HEALTH-PRESERVING
ENVIRONMENT IN THE EDUCATIONAL INSTITUTION**

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Abstract

This article substantiates the problem of designing a safe health-preserving environment in the educational organization. An attempt was made to build the educational process in such a way that it meets the principles of consistency, accessibility, openness, and variability, but contributes to the development of sustainable motivation for a healthy lifestyle, since this problem is quite relevant in theory and practice of modern pedagogy. The article presents an analysis of the current state of this problem, defines the concept of healthy lifestyle, describes a comprehensive program for creating a health-saving educational environment. The safe health-preserving environment is defined as a set of managerial, organizational, educational conditions aimed at strengthening and preserving social, physical and mental health, adapting adolescents through a set of psychological, pedagogical, medical and physiological methods of the educational process, preventing risk factors, and implementing health-improving measures. One of the conditions for the effective creation of a safe health-preserving environment is the readiness of teachers for health-forming activities, as well as the positive motivation for health-improving activities in adolescents. The study was carried out at Chelyabinsk Medicine College and involved 24 teenagers (girls aged 15–16), six teachers, three massage specialists, and one paramedic. The research results were processed in Excel 2000 and STATISTICA 8.0. using the Student's t-test for dependent and independent samples.

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Keywords: Health-preserving, educational environment, educational technologies, healthy lifestyle



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1. Introduction

Health is an invaluable asset of society and an individual. It serves as the main "visiting card" of a prosperous society, helps people to fulfill their plans, solve tasks, overcome difficulties, significant physical and emotional overload. It is necessary to strengthen health of the younger generation by creating a safe health-preserving environment in the educational process, i.e. a set of socio-pedagogical conditions, physiological components that contribute to the implementation of adaptive capabilities of adolescents. Among the components of the safe health-preserving environment are social, educational, educational and psychological and pedagogical tools. Medical, health-improving and sanitary-hygienic components play a crucial role (Nagovitsyn et al., 2020).

Sanitary and hygienic conditions affect health of children and adolescents: cleanliness; relative air humidity of 40–60 %; temperature of 18–24 °C; the coefficient of natural illumination (KEO) at the point farthest from the windows must be at least 1.5 %; natural light levels; equipment of the central system of domestic drinking water supply, sewerage and drainage systems; monotonous unpleasant sound stimuli; duration of the use of technical training aids in accordance with hygienic standards (Panachev et al., 2019).

The educational component of the safe health-preserving environment includes collective creative activities; traditions (holding various educational, creative events, as well as various charitable events, scientific conferences, exhibitions); methodical activities of teachers; physical culture and sports activities; social partnership; cooperation with parents. In this regard, teachers have to have highly developed professional skills and special knowledge of health-saving educational technologies. These technologies are a kind of "safety certificate" for the health of students; they contribute to the creation of a psychologically and emotionally favorable atmosphere and developed personality. As a result, students can preserve their health, develop required skills and abilities in general educational and adopt a healthy lifestyle, can use acquired knowledge in their everyday lives (Kuznetsova, 2007).

2. Problem Statement

The strategic goal of health-saving educational technologies is to develop intelligence, memory, thinking, imagination, speech, attention, physical qualities in students; education of morality, character, self-education and physical improvement. It is necessary to increase the activity of students, raise interest in their own health, create a positive emotional background (Saparkyzy et al., 2017). The adolescent acts as a subject of the value development of norms and rules of behavior, body improvement. Physical education classes help the student to master the axioms of a healthy lifestyle, increase physical activity, agility, endurance, and improve personal qualities. In addition, the student develops a respectful attitude towards himself as a person, increases self-esteem, self-confidence, and improves the psycho-emotional state.

3. Research Questions

The subject is a safe health-preserving environment of the educational organization, which is defined as a set of managerial, organizational, learning conditions aimed at strengthening and preserving social, physical, mental health through psychological, pedagogical, medical and physiological methods, preventing risk factors, and implementing health-improving measures.

4. Purpose of the Study

The study was carried out at Chelyabinsk Medical College and involved 24 teenagers (girls aged 15–16), six teachers, three massage specialists, and one paramedic. The students were divided into the experimental and control groups (12 people each). All adolescents were healthy from the basic medical group. During the academic year, the students of the control group (CG) were engaged in the basic general education program. For the students of the experimental group (EG), a program aimed at creating a safe health-preserving environment was developed. The experimental part was carried out together with E.A. Artyukhova (as cited in Merzlyakova, 2006). The relevance of this program lies in the organization of a safe health-preserving educational environment for adolescents based on the principle of individualization. Self-massage techniques were used to improve health of adolescents and reduce a tension headache syndrome.

5. Research Methods

The study was carried out using the UPDK-MK software package 5.3.1221 by ZAO Neurokom, which represents a set of verified methods for determining psychophysiological qualities. Self-assessment of health was carried out according to the Voitenko method; the adaptive potential of the circulatory system (AP) was determined according to the modified formula by R.M. Baevsky: $AP = 0.011 CP + 0.014 BPs + 0.008 BPd + 0.014 B + 0.009 MT - (0.009 R + 0.27)$, where B is the age, MT is the body weight, R is the height, BP is the systolic blood pressure, BPd is the diastolic blood pressure, HR is the pulse rate per minute (as cited in Tsilitsky, 2018).

The research results were processed in Excel 2000 and STATISTICA 8.0 using the Student's t-test for dependent and independent samples. M mean was calculated, and differences were considered significant at $p < 0.05$.

6. Findings

Analytical studies showed that a healthy lifestyle and a balance of work and rest, the ratio of time spent on improving physical and spiritual qualities, as well as application of the principles of proper nutrition in their daily routine were found in 58 % of students. An analysis of the medical records showed that 28 % of adolescents belong to the second health group, including the number of colds suffered and the number of medical contraindications. The rest of the adolescents were referred to the first health group. Adolescents show significant interest in sports, especially in fitness programs (dance styles, aerobics) and some types of martial arts (tie-boxing, self-defense lessons). More than 70 % of the students

surveyed were interested in the principles of proper balanced nutrition to regulate metabolism. Many of them enjoy participating in health and fitness activities and competitions held by and outside the college.

At the initial stage, rather high indicators were observed on the scales of situational and personal anxiety according to Spielberg: 1) a high level of situational anxiety, with a predominance of concern about the future was observed in 41 % of the respondents in the control group and 42 % in the experimental group (low – in 3 and 2 %, respectively); 2) a high level of personal anxiety, emotional discomfort prevails, fear of the future was observed in 33 % of the respondents from the control group and in 31 % from the experimental group (low – in 3 and 4 %, respectively).

The results of diagnosing school anxiety using the Phillips test are as follows: 1) fear of testing knowledge (a negative attitude and anxiety during exams, public speaking), achievements, opportunities – a high level was observed in 38 % of adolescents in the control group and 35 % – in the experimental group; 2) frustration of the need to achieve success – an unfavorable psychological background that limits the adolescent in satisfying needs for success, achieving high results: a high level was observed in 34 % of the adolescents in the control group and 33 % – in the experimental group (Kondratiuk et al., 2015).

Among other factors, the most likely causes of increased anxiety are personality traits, as adolescence is the most emotionally unstable period with sharp fluctuations (from exaltation to depression).

The research was carried out within the medical organization where students are most susceptible to psychosomatic disorders due to the peculiarities of educational information and a busy learning schedule.

Assessment and analysis of the adaptive potential of adolescents showed that the majority of the students find it difficult to adapt. In the experimental and control groups, the average values of the adaptive potential were 2.71 and 2.81, respectively, which allows us to conclude about tension of the adaptation mechanisms. This is probably due to a sedentary lifestyle and a large learning load. Thus, a safe health-preserving environment should take into account physiological characteristics of students. At the same time, it is necessary to create an educational environment that would contribute to the preservation and strengthening of health of adolescents.

7. Conclusion

During the experiment, the following results were obtained: the number of students leading a healthy lifestyle increased by 33 % in the control group and by 42 % in the experimental group as compared to the beginning of the study.

The most effective indicator is raising interest in a healthy lifestyle (sports, nutrition) in the experimental group.

There was a significant decrease in the situational and personal anxiety in the experimental group by 16 and 17 %, respectively, against the background of an insignificant change in these indicators in adolescents in the control group.

There was a significant improvement in the results of school anxiety according to the Phillips test: fear of testing was observed in 31 % of adolescents in the control group and in 15 % in the experimental group; frustration of the need to achieve success is an unfavorable psychological

background that limits the child in meeting his needs for success, achieving high results. It was observed in 24 % of adolescents in the control group and in 10 % in the experimental group.

In adolescents from the experimental group, a tendency to decreasing general anxiety and social stress was observed; fear of self-expression and failure to meet expectations of others was reduced; increased physiological resistance to stress and decreased fear of teachers were also observed.

These results allow us to conclude that the motivational and stimulating tools used in the experimental group made it possible to improve the emotional and psychological background and create a favorable microclimate in the educational organization.

The results of testing by the HAM method (health, activity, mood) revealed a significant improvement in these indicators in the experimental group (health – by 13 %, activity – by 22 %, mood – by 25 %). At the beginning of the study, no significant differences were observed between the adolescents.

In the dynamics of the study, a significant decrease in heart rate, systolic and diastolic blood pressure was recorded in adolescents in the experimental group.

A significant decrease in body weight in the experimental group was observed against the background of a tendency to increase it in adolescents in the control group. This might be due to the fact that during the experiment, the students of the control group did not monitor their diet, and the physical activity of adolescents was limited only to physical culture classes.

A significant decrease in the values of adaptive potential of adolescents in the experimental group was observed (tension of the circulatory system became satisfactory). At the end of the study, this indicator was significantly lower in the students from the EG compared to the CG, which indicates increased adaptive reserves of the cardiovascular system in adolescents from the experimental group compared to the control one.

The results of self-assessment of the health status using the Voitenko questionnaire made it possible to reveal a higher number of negative judgments (by 18.9 %) in the control group.

There were no significant changes in the chronotypes of adolescents, but the number of "larks" in the experimental group increased by 7 %, and the number of "owls" decreased by 5 % compared to the beginning of the study, which indicates the choice of a more optimal morning mode of working capacity in the experimental group.

The nature of the safe educational environment created for adolescents in the experimental group, a health-preserving orientation, long-term work on the introduction of this environment into the educational process contributed to the healthier cardiovascular system, an increase in its functional and adaptive reserves. There was a significant decrease in tension of adaptation mechanisms of the cardiovascular system in the experimental group. In the control group, students demonstrated an insignificant decrease in the indicator of the cardiovascular system (a tendency to improve). In addition, the use of self-massage for a head and a collar zone improved the physiological indicators of the body and brought a positive effect, as evidenced by the indicators in the experimental group. The reason for such transformations was a safe educational environment that provides for the improvement of physical development, motor skills, self-massage, adherence to the principles of a healthy lifestyle, control over spiritual development, constant self-education, rational combination of physical and mental stress, etc.

To correct anxiety in adolescents from the experimental group, we chose one of the verbal methods of heteroregulation – a conversation that was conducted once a week to relieve tension and anxiety. Interests of students were found out, and the conversation flowed into the subject's sphere of interests or hobbies. Students were able to distract themselves from various thoughts, anxieties. In addition, we used the method of passive relaxation and combined it with the method of audio relaxation. Discs with soothing music and noises of nature lasting 20 minutes were recorded. For independent individual lessons, each subject of the experimental group was asked to choose a musical or noise accompaniment (noise of forest, sea), after which the audio sequences were "uploaded" to cell phones; for those who did not have the opportunity to listen to the recording from the phone, CDs were recorded.

To achieve high results in educational activities, especially those related to medical specialization, which involves knowledge of a large amount of theoretical information and practical skills, students must develop a high level of psychophysiological reactions of the body, which is necessary in case of increased nervous excitement when passing exams, providing medical assistance.

In general, the study confirmed the effectiveness of passive relaxation techniques combined with the audio relaxation technique in reducing the anxiety. In addition, statistically significant data were obtained. They indicate that the developed methodology and accompanying conditions have changed the functional indicators of the students in the experimental group.

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