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PRACTICAL IMPLEMENTATION OF THE CONCEPT OF HEALTH-FORMING TECHNOLOGIES INTO THE PROCESS OF PHYSICAL EDUCATION OF PRIMARY SCHOOL AGE CHILDREN

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Abstract

The article considers the burning problem of positive influence of active tourism means on morbidity indices and degree of body resistance of primary school age children against unfavorable factors of the environment. The objective is to give a description of the morbidity of 1-4 grades students, to determine the degree of resistance of their organism to unfavorable factors of the environment and to determine the nature of the impact of active tourism means on these indices at primary school students in the process of physical education. The study consisted of ascertaining and educational experiments, which lasted one academic year each. 265 students of 1-4 grades took part in the ascertaining experiment. 91 students of 1, 3, 4 grades were involved in educational experiment and were divided into experimental and control groups.

As a result of the ascertaining experiment, 55.09% of children with certain disorders in their health were identified, among which the diseases of the bone and muscular system predominate. It was established that the indices of the morbidity and degree of body resistance of children to unfavorable factors of the environment tend to deteriorate in the age dynamics. Children were characterized by low level of physical health. In order to determine the impact on these indices, the concept of health-forming technologies on the basis of active tourism means was developed. As a result of the educational experiment, it was established that children from experimental groups in comparison with children from control groups experienced a statistically significant improvement in the level of physical health, the degree of body resistance to unfavorable factors of the environment.

Key words: active tourism, primary school students, morbidity.

Introduction. One of the leading directions of Ukraine's development in the 21st century is solving the problem of improving the health level of its population, starting with the youngest generation. Many specialists emphasize the deterioration of the health of children starting from the primary school age [1, 11, 12]. This situation is associated mainly with the low level of motor activity of modern primary school students [6, 7, 10]. The area of their interest is gradually shifted towards the digital technologies that provoke the choice of sedentary [5, 12]. Accordingly, formation and keeping motivational priorities at the necessary level, creating conditions for organization and performance of health-forming technologies, encouraging participation of children in proposed technologies, is one of the ways to solve a problem of increasing and forming health at primary school age children [9, 13, 14]. Means, these technologies are based on, can be various. There is a tendency of combining or interpenetration of several health-improving, physical-sport and even sport types into a single technology that attracts and make children interested, forming a stable motivation for exercise [4, 13]. Means of active tourism, combining both means of tourism themselves and means of orienteering, as well as elements of regional studies can serve as an example of this trend [2, 8]. Scientific basis, development and introduction of health forming technologies on the basis of active tourism means remain to be the direction of physical education development of primary school age children [3].

The priority goal of the process of modern physical education of schoolchildren is to obtain a sustainable health-improving effect, which provides grounds to improve the health level of the younger generation of the country [8, 13, 14]. One of the methods to determine the effectiveness of children's participation in health-forming technologies is the analysis of

their morbidity and determination of degree of body resistance to unfavorable factors of the environment, the dynamics of the level of children physical health. Today, the issues of the influence of tourism means on the primary school students' morbidity and its health improving potential to increase the degree of children's body resistance to unfavorable factors of the environment and the general level of physical health remain insufficiently studied.

Research objective is to determine the impact of active tourism within the functioning of health-forming concept on the degree of body resistance of primary school age children to unfavorable factors of the environment and the level of children's physical health.

Research methods: theoretical analysis and generalization of data of scientific and methodical resources, leading pedagogical expertise; pedagogical research methods; method of analysis of documentary materials, visits log and medical certificates; method of determining the degree of children resistance to unfavorable factors of the environment (by H. M. Serdiukovska); methods of physical health evaluation (by H. L. Apanasenko), mathematical statistics.

Research results and discussion. One of the priority directions of the modern school, along with educational tasks, is protection and strengthening of schoolchildren's health. Particular attention is paid to the physical health level of primary school students, which is characterized by children's morbidity level as well.

The pedagogical experiment consisted of ascertaining and educational stages, which lasted one academic year each. 265 students (131 boys and 134 girls) of the institutions of general secondary education from Sumy and Vinnytsia oblasts of Ukraine participated in the ascertaining stage.

According to the data from medical records, less than a half (44,91% (n = 119)) of primary school children (with 45,80% (n = 60) of boys and 44,03% (n = 59) of girls) were considered apparently healthy. Correspondingly, 55,09% (n = 146) of primary school students (54,20% (n = 71) boys and 55,97% (n = 75) girls) have some problems with physical health. There is a tendency of gradual decrease in number of apparently healthy children in age dynamics.

The systematization of the received information regarding the problems in school children's state of health was conducted in accordance with the International Classification of Diseases, 10th Edition. It proves that the most common among the investigated contingent (19.62% (n = 52)) diseases are the ones of musculoskeletal system and connective tissue. Such diseases are prevalent in all gender-age groups.

In number of cases among primary school age children these diseases are followed by diseases of the eye and adnexa – 10,19% (n = 27), where 6,11% (n = 8) are boys and 14,18% (n = 19) are girls. There is decrease in number of such ICD diseases in age dynamics (only one case (2,7%) in the group of 10 year olds is recorded). The most common diagnosis in this nosology (including children with multiple diagnosis) is myopia.

The next most common diseases are respiratory ones – 3,02% (n = 8), where 3,82% (n = 5) are boys and 2,24% (n = 3) are girls, diseases of the endocrine system, digestive and metabolic disorders – 2,64% (n = 7), where 1,53% (n = 2) are boys and 3,73% (n = 5) are girls. The number of children with such disorders increases in age dynamics. Almost the same number of children (2,26% (n = 6)) had diseases of genitourinary and digestive systems (1,51% (n = 4)).

The results of the analysis of morbidity level of children under experiment mainly prove the results of analysis of Ukrainian children's level of physical health in the most common ICD diseases.

Analysis of the degree of children's resistance to unfavorable factors of the environment was conducted by the H. M. Serdiukovska's method. According to the data from visits logs and medical certificates for the period of academic year we found out the following: amount of sick days for 100 children – 976,13 days (1037,88 days for boys and 912,34 days for girls); number of sickness cases for 100 children – 210,04 cases (207,88 cases for boys and 213,62 cases for girls); number of children who have not been ill during academic year – 16,23% (n = 43) (16,79% (n = 22) boys and 15,67% (n = 21) girls); number of children who have been frequently ill during academic year – 20,75% (n = 55) (22,90% (n = 30) boys and 18,66% (n = 25) girls).

While conducting educational experiment the results of evaluation of physical health level (PHL) of primary school age children were analyzed. It was established that the majority of experiment participants belong to low PHL (61,13% (n = 162)). Below average PHL was typical for 29,43% (n = 78) students of primary school, average level was recorded in 9,43% (n = 25) primary school children. Safe physical health level – above average – was found only in 0,38% (n = 1) children.

While conducting ascertaining experiment a slight increase of PHL of primary school age children is recorded.

The results of the research do not allow remaining not involved into the problems of contemporary conditions of children's health.

In order to increase the children's resistance to unfavorable factors of the environment, the concept of health-forming technologies was developed and implemented in the process of physical education of primary school age children, the practical realization of which was carried out on the basis of active tourism.

The program, which is based on the means of active tourism, is characterized by stage nature, differential approach and provision conditions for more effective implementation. A characteristic feature of the proposed program is the use of tourism in harmony with the means of orienteering on the ground, elements of regional studies and means of physical education within the framework of physical recreation, which enables the organization of motor activity of primary schoolchildren with the effect of increasing the level of psycho-emotional component. Thus, the needs of children in the active rest, satisfaction from motor activity, entertainment and, as a consequence, in the recovery, are met.

In order to test the effectiveness of the proposed means of active tourism as a practical component of the concept of health-forming technologies, an educational stage of the pedagogical experiment was conducted, involving 91 children, two experimental and control groups. EG1 (26 children) and CG1 (25 children) were students of the first form, participants of EG2 and CG2 – students of 3, 4 forms with 20 children in each. Children of experimental groups were engaged in activities by the author's developed concept, children of control groups – by the program "Young Tourists of Local Lore" in the mode of extracurricular activities.

As a part of research, the developed technology effectiveness was assessed according to the indices of PHL dynamics among children from EG1 and CG1. Among the experiment participants at the beginning of the educational experiment, the distribution of children by the level of physical health in EG1 and CG1 was similar. In EG1 there were 15,38 % (n = 4) children with average PHL, where the girls prevailed – 21,43 % (n = 3). Below average PHL was recorded in 30,77% (n = 8), where there were 41,67% (n = 5) boys and 21,43% (n = 3) girls. Majority of children in EG1 had low PHL – 53,87 % (n = 14).

Similar situation was observed among children of EG1, where the number of students with average PHL was 12 % (n = 3), with 9,09% (n = 1) boys and 14,29% (n = 2) – girls, slightly lower number of students – 24 % (n = 6) (27,27% (n = 3) boys and 21,43% (n = 3) girls) had below average PHL. Low PHL was recorded in 64 % (n = 16), with 9,09% (n = 1) boys and 14,29% (n = 2) girls.

The changes in distribution of PHL of children, participating in the experiment, were recorded during the pedagogical experiment.

Positive changes occurred in the distribution of EG1 children by PHL, which reduced the number of students with low PHL to 26,92%, from below average to 15,38%, which was characteristic of both boys and girls. At the same time, there was an increase in number of students with an average PHL to 53,85%, with one student with a safe PHL appeared.

Changes also took place among the students of CG1, but they were less pronounced. Thus, the number of CG1 students with low PHL decreased to 48%. The increase in number of students of CG with below average level to 28% was due to a decrease in number of students with low PHL. Also, an increase up to 24% of students with an average PHL took place, which was less pronounced in comparison with the students of EG1. Positive changes in PHL of children in EG1 were achieved due to a differentiated approach to determining the physical activity with taking into account the PHL of children and the availability of special measures for accelerating the adaptation process to the conditions of school education.

With regard to the dynamics of changes in PHL indices of children from EG2 and CG2, it also allows confirming the effectiveness of the proposed measures of influence.

At the beginning of educational experiment in EG2 there were only 15% ($n = 3$) children with average PHL, the majority of which were girls – 10% ($n = 2$). There were 20% ($n = 4$) of primary school children with below average PHL (4 boys). 65% ($n = 13$), where 25% ($n = 5$) were boys and 40% ($n = 8$) – girls, had low PHL.

After the implementation of the complex of measures, there was a general tendency for positive changes in EG2 children. After the completion of the pedagogical experiment, one girl with above average PHL was recorded, which represented 5% of the total number of children, as well as there was a significant increase in number of children with average PHL up to 50% ($n = 10$), where 30% ($n = 6$) were boys, and 20% ($n = 4$) – girls.

The children under experiment were characterized by increase in number of children with below average PHL up to 30% ($n = 6$), with 10% ($n = 2$) of boys, and 20% ($n = 4$) of girls, which was caused by reducing number of children with low PHL down to 15% ($n = 3$), with 10% ($n = 2$) of boys, and 5% ($n = 1$) of girls.

With regard to the changes which took place in CG2 representatives during the experiment, they did not correspond to the ones in EG2.

At the beginning of educational experiment in CG2 there were 15% ($n = 3$) primary school age children with average PHL with 10% ($n = 2$) of boys, and 5% ($n = 1$) of girls. There were 35% ($n = 7$) of children with below average PHL, where there were 25% ($n = 5$) of boys and 10% ($n = 2$) of girls. Low PHL was recorded in 50% ($n = 10$) of children (10% ($n = 2$) boys and 40% ($n = 8$) girls).

At the end of educational experiment we recorded significant increase in number of children with average PHL up to 55% (n = 11), with 30% (n = 6) of boys and 25% (n = 5) of girls. At the same time we recorded decrease in number of children with below average PHL down to 25% (n = 5) (15% (n = 3) boys and 10% (n = 2) girls), as well as decrease in number of children with low PHL down to 20% (n = 4), with 5% (n = 1) of boys and 15% (n = 3) of girls. Children with above average PHL were not recorded.

Thus, with regard to the general tendency of changes during the pedagogical experiment, in 100% (n = 20) of children in EG2 there was an increase either in PHL or in score of PHL indices. Among the representatives of CG2 only 90% of primary school children improved their initial PHL.

The analysis of children's resistance to unfavorable factors of the environment in experimental and control groups allows for the conclusion that: representatives of control groups perform significantly ($p < 0,05$) better indices of decrease in number of sick cases and of shortening of sickness length, compared to the representative of control groups.

Making conclusions, it should be mentioned that as a result of the research we proved that means of active tourism possess great possibilities for improving physical health of primary school age children within the frame of developed concept.

Conclusions

1. 44,91% primary school age children (45,80% (n = 60) boys and 44,03% (n = 59) girls) are considered apparently healthy, correspondingly, 55,09% primary school students have some problems with physical health. The majority of sick cases are connected to diseases of musculoskeletal system, diseases of the eye and adnexa, functional failures of respiratory apparatus. Children are characterized with frequent sick cases during the academic year and low level of physical health.

2. The means of active tourism should be used together with means of orienteering on the ground, elements of regional studies and means of physical education in order to have above mentioned health-improving effect.

3. The children who are engaged in activities by the developed concept on the basis of active tourism are characterized with significant improvement of resistance to unfavorable factors of the environment and increase of physical health level, compared to the children who are involved into the program "Young Tourists of Local Lore".

The area of future research covers investigating and implementing health-forming technologies in the process of physical education of middle school students.

References

1. Antypkin, Yu.H. Volosovets, O.P., Maidannyk, V.H., Berezenko, V.S., Moiseienko, R.O. Stan zdorov'ya dytyachoho naseleńnya - maybutnye krayiny (chastyna 1) [Child health status - the country's future (part 1)]. *Zdorove rebenka*. 2018;13(1):1-11. doi: 10.22141/2224-0551.13.1.2018.127059 (in Ukrainian).
2. Butenko, H.A. Sredstva ozdorovitel'nogo turizma i oriyentirovaniya kak osnova rekreatsionno-ozdorovitel'noy tekhnologii dlya detey mladshego shkol'nogo vozrasta [Means of health tourism and orientation as the basis of recreational and health technology for children of primary school age]. *Visnyk Chernihivskoho Natsionalnoho Pedagogichnoho Universytetu*. 2015;129:36-41. (in Russian).
3. Goncharova, N. Fundamental principles of the concept of health-forming technologies in the process of physical education of primary-school aged children. *Journal of Education, Health and Sport formerly Journal of Health Sciences*. Kazimierz Wielki University in Bydgoszcz, 2017; 7(8): 633-648. (in Ukrainian).
4. Goncharova, N. Fizicheskoye razvitiye i funktsional'noye sostoyaniye detey mladshego shkol'nogo vozrasta [Physical development and functional state of children of primary school age with different levels of somatic health]. *Pedagogy, Psychology and Medical-Biological Problems and Physical Education and Sports*. 2007; 5:57-59. (in Russian).
5. Dębski, S.S., Skalski, D., Lizakowski, P., Grygus, I., Stanula, A. Zdrowotne właściwości zachowań ruchowych – wybrane zagadnienia [Health-related properties of motor behavior – selected issues]. *Medycyna i zdrowie*. 2017;2:12-44. (in Polish).
6. Dudina, O.O. Tereshchenko, A.V. Sytuatsiynyy analiz stanu zdorov'ya dytyachoho naseleńnya [Situational analysis of the health of the child population]. *Visnyk sotsialnoi hihiieny ta orhanizatsii okhorony zdorovia Ukrainy*. 2014;2(60):49-57. (in Ukrainian).
7. Formela, M., Skalski, D., Grygus, I., Nesterchuk, N., Lizakowski, P. Bezpieczeństwo społeczności lokalnych w kontekście roli rodziny i szkoły w organizacji czasu wolnego dzieci i młodzieży [Safety of the local communities in the context of the role of the family and the school in the organization of the leisure time of children and teenagers]. *Medycyna i społeczeństwo*. 2018; 113-125. (in Polish).
8. Kashuba, V.O., Goncharova, N.M., Butenko, H.O. Efficiency of the use of health tourism as the basis of recreational and health technology in the physical education of junior pupils. *Pedagogic, psychology, medical-biological problems of physical training and sports*. 2016;2:19–25. <http://dx.doi.org/10.15561/18189172.2016.0203>

9. Kashuba, V.A., Goncharova, N.N. Modern approaches of monitoring children's physical state in the process of physical education. *Pedagogic, psychology, medical-biological problems of physical training and sports*. 2010;1:71-74. <http://www.sportpedagogy.org.ua/html/journal/2010-01/10kvappe.pdf>. (in Ukrainian).
10. Kashuba, V.A, Futornyj, C.M, Andreeva, E.V. Sovremennye podkhody k zdorov'esberezeniiu studentov v processe fizicheskogo vospitaniia [Modern approaches to students' health-preservation in process of physical education]. *Physical education of students*. 2012;7:50-58. (in Russian)
11. Moiseienko, R.O., Dudina, O.O., Hoida, N.H. Analiz stanu zakhvoryuvanosti ta poshirenosti zakhvoryuvan' u ditey v Ukrayini za peryod 2011-2015 roky [The analysis of the morbidity rate and prevalence of children diseases in Ukraine over the period 2011 to 2015]. *Suchasna pediatriia*. 2017;2(82):17-27. doi 10.15574/SP.2017.82.17 (in Ukrainian).
12. Niankovskiy, S.L., Yatsula M.S., Niankovska, O.S., Tytusa, A.V. Dynamika stanu zdorov'ya shkolyariv v Ukrayini za danimi anketnoho opytuvannya [Dynamics of the health status of schoolchildren in Ukraine according to the questionnaire survey]. *Zdorove rebenka*. 2018;13(5):425-431. doi: 10.22141/2224-0551.13.5.2018.141554 (in Ukrainian).
13. Polka, N.S., Hozak, S.V., Yelizarova, O.T. Optyimizatsiya fizychnoho vykhovannya u zahal'noosvitnikh navchal'nyy zaklad [Physical education optimization in educational institutions]. *Environment&Health*. 2013;2:12-17. (in Ukrainian).
14. Futorny, S., Goncharova, N., Butenko, H. Sovremennoye sostoyaniye protsessa fizicheskogo vospitaniya detey mladshego shkol'nogo vozrasta: problemy i puti ikh resheniya [The current state of physical education process of children of primary school age: problems and their solutions]. *Fizychna kultura, sport ta zdorovia natsii*. 2018;5(24):120-124. DOI: <http://doi.org/10.5281/zenodo.1293642> (in Russian)