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Level Of Health Of Student's Youth Under The Influence Of Different Sports-Recreational Classes.

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ABSTRACT

To establish influence of sports-recreational classes on the level of health of student's youth. Material: 121 students participated in the research during I and II courses, who from I course were divided into groups on desire to be engaged in different types of sports-recreational classes. Groups are created on: swimming in the pool (14 students), jogging (12 students), football (18 students), basketball (16 students), volleyball (15 students), fitness (22 students), and strength sports (11 students) and tourism (hiking, ski, water, bicycle – according to the comprehensive program) (13 students). Results: use of morpho-functional indicators gave the chance to establish dynamics of adaptation potential of students within two years who were engaged in different types of sports-recreational classes. Conclusions: it is established that during the biennial experiment the greatest shifts in indicators of adaptation potential are received at students who were engaged in sports-recreational tourism to what promoted both training in the fresh air and various means of tourist activity including preparation and participation in hiking on weekend and holidays.

Keywords: students, sports-recreational classes, health, tourism, adaptation potential.

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INTRODUCTION

In recent years the increasing number of the researches, devoted to role and value of exercise stresses, muscular activity and healthy lifestyle appear in the course of formation, strengthening and conservation of health of the person. It is shown [3] that health of the person is difficult, multidimensional concept which includes, at least, three components: physical, mental and social. There is the most part of researches [6, 9, 13] in which authors studied improvement problem by means and methods of physical culture which are carried out within different types of sports-recreational activity.

It is established [12, 21] that different types of recreational technologies provide a number of positive influences on organism of those who are engaged, namely: expansion of functionality of cardiovascular and respiratory systems, correction of anthropometric data, improvement of physical fitness, depression of risk of diseases, but other.

In the functional relation are noted: higher quality of health, improvement of adaptation processes, increase of working capacity and fitness; reduction in incidence rate and morbid feelings; faster and full influence of processes of recovery after physical and mental activities; intensifying of immune mechanisms of protection of organism; activity of metabolic processes in organism; normalization of ratio of body weight and body height; good posture, ease of gait and so on [5].

Much attention is paid to question of physical education of student's youth for today. A number of dissertation researches [5, 8, 9, etc.] is conducted in which advantage of separate types of sports classes is defined.

Physical education of students is the most effective, available and natural remedy of maintenance of the state of health of students at the sufficient level. For this time specialists in physical education carry out active work on development and deployment of new improving programs, techniques and the latest technologies in the educational process of institutions of the higher education.

There is a significant amount of those at whom health has the low level of adaptation opportunities of organism among students who treat the main medical group. Negative dynamics of indicators of cardiovascular system at rest and at load is observed at students behind a number of physical and functional properties, in particular the relation to own physical culture. At the same time application of the unified programs of physical education, which exists in HEI, not fully promotes the growth of level of their adaptation opportunities.

There is a threat of transition to special medical group at insignificant deterioration in the state of health of students. It demands development of the differentiated improving technology of physical education in which physical qualities of the personality inherent in students will be considered.

At the same time there is the general opinion that the existing 2-times classes in physical culture aren't enough for improvement and recreation of student's youth. It is connected with conditions of the insufficient motive system because students are in educational audiences long time, sitting at a table, working with the computer. In the investigation of it, violation of process of blood circulation, posture that leads to developing of various diseases and decrease in working capacity in them [19]. Therefore necessary prevention and overcoming noted undesirable consequences, which basic from means is physical exercises in the form of different types is sports-recreational activity, especially those which are carried out in the open air to which all kinds of tourism belong [18].

Therefore our researches were directed to definition of influence of different types of sports-recreational activity which is most often used at students, on the level of health of student's youth.

Dependence of health on living conditions, where in generalized view it is possible to carry also a way of life of the person, has rather significant effect on health.

And, it is considered that physical activity is the main source of health. However the question of measurement of activity or intensity of muscular work is important. So, M.M. Amosov [1] considered that

health of organism is defined by its quantity and suggested to estimate it by means of determination of the maximum productivity of bodies at preservation of qualitative limits of their functions.

Today most of researchers [1, 3, 6, 10] consider main components of health as complete phenomenon: physical, mental and social.

The physical component, most often is understood as the criterion which characterizes criterion in general, certainly, extremely important in support of processes of activity, to increase in resistance to a large number of stressogenic factors of the environment. So, health is such condition of activity which provides necessary conditions for performance of biological and socially-labor functions.

So, for example G.L. Apanasenko [2] considers that the main criterion of physical (somatic) health is power-potential of the person as its activity depends on possibility of consumption of energy from the environment, and its accumulation and mobilization for ensuring physiologic functions. Therefore under physical health there is, first of all, bodily health which determining aspect is:

- 1) structural functional protection (integrity) of systems and human organs;
- 2) high extent of adaptation to environment conditions;
- 3) ability to keep according to age firmness in the conditions of sharp changes of quantitative and qualitative parameters of true flow of sensory, verbal and structural information.

In other words, ability to maintain balance in the conditions of the non-equilibrium environment, thereby, providing an opportunity to react adequately to influence both from outside, and from inside. Physical activities and in general muscular activity, as most of people consider, are directed to change of level of physical health therefore for its performance physically healthy organism is necessary.

The purpose of the research

To establish influence of sports-recreational classes on the level of health of student's youth.

MATERIAL AND METHODS

121 students during I and II courses who from I course were divided into groups on desire to be engaged in different types of sports-recreational classes participated in the research. Groups are created on: swimming in the pool (14 students), jogging (12 students), football (18 students), basketball (16 students), volleyball (15 students), fitness (22 students), strength sports (11 students) and tourism (hiking, ski, water, bicycle – according to the comprehensive program) (13 students).

Researches were conducted within two academic years with use of 3 classes for a week 90 minutes everyone that gives the chance to consider about use of identical exercise stress in groups which were investigated.

Assessment of level of adaption potential which displays physical health of students and indicates opportunities of their organism to adaptation was defined according to the technique, developed by R.M. Bayevsky. The level of adaption capacity of cardiovascular system was defined in points by the formula (1):

$$AP=0,01\times HR+0,01\times APs+0,008\times APd+0,014\times A+0,009\times BW-0,009\times BL-0,27$$

where: AP – adaptation potential; HR – heart rate; APs – arterial blood pressure systolic; APd – arterial blood pressure diastolic; A – age; BW – body weight, kg; BL – body length, sm.

The offered technique allowed to allocate four levels (it is provided in points) adaptation opportunities of organism of the students, presented in table 1.

Table 1: Characteristic of levels of adaptation potential (according to R.M. Bayevsky [5])

Adaptation potential in levels (points)	Character of adaptation	Characteristic of levels of functional state of organism
<i>I level</i> less than 2,1	Satisfactory adaptation	High or sufficient functionality of organism which is considered physiologic norm
<i>II level</i> from 2,11 till 3,2	Tension of mechanisms of adaptation	Precondition or donosological. Sufficient functional opportunity are provided at the expense of functional reserves
<i>III level</i> from 3,21 till 4,3	Unsatisfactory adaptation	Decrease of functional reserves of organism where there are symptoms of certain diseases
<i>IV level</i> More than 4,3	Overstrain or disorder of adaptation	Sharp decrease of functional reserves of organism which indicates failure of mechanisms of regulation

Body length (BL) was measured in straightened situation with the help of the steel tape measure made of steel which calibrate in metric units with clear identification of centimetric tags. The examinee stood barefoot in position of heels together, arms are freely lowered throughout a trunk at measurement of length of body. Heels, buttocks, upper back and nape, concerned to a wall, the examinee looked directly forward and took a deep breath.

Exact scales of radial type, which calibrate, recording weight to the tenth part of kilogram were used for measurement of body weight (BW). Examinees were weighed without clothes. Heart rate (HR) was measured palpatory in time of sports-recreational classes. Numerical indicators were displayed in number of beats per minute (bpm⁻¹).

Arterial blood pressure (AP) was measured for the help of semi-automatic tonometer AND (UA-604). Measurement was taken at the same time in the morning before performance of physical activity and also in the course of physical exercises and trainings and after them.

RESULTS OF THE RESEARCH

We conducted the research of the state of health of students of technical colleges of Kharkov with use of morpho-functional tests and calculations of adaptation potential (AP) for the objective definition of influence of classes by different types of sports-recreational activity.

Considering that initial adaptation potential was miscellaneous in certain groups, we analyzed and compared indicators of dynamics of AP within two years in each sports-recreational group (tab. 2).

Table 2: Dynamics of changes of adaptation potential of students of 1 and 2 courses under the influence of different types of sports-recreational classes, quantity/%

№	Types of sports-recreational classes	Quantity who is engaged	Weekends				After the first year of study				After the second year of study			
			Levels of adaptation potential											
			I	II	III	IV	I	II	III	IV	I	II	III	IV
1	Swimming	14	3/21, 0	9/64,7	2/14, 3	-	3/21, 0	10/78, 3	1/0,7	-	4/28, 6	9/64,7	1/0,7	-
2	Jogging	12	2/16, 7	7/58,3	3/25, 0	-	2/16, 7	8/66,6	2/16, 7	-	3/25, 0	8/66,6	1/8,4	-
3	Football	18	3/16, 7	14/77, 7	1/5,6	-	4/22, 2	13/72, 2	1/5,6	-	4/22, 2	13/72, 3	1/5,5	-
4	Basketball	16	2/12, 5	12/75, 0	2/12, 5	-	2/12, 5	13/81, 2	1/6,3	-	2/12, 5	12/75, 0	2/12, 5	-

5	Volleyball	15	1/6,7	11/73, 3	3/20, 0	-	1/6,7	12/80, 0	2/13, 3	-	1/6,7	13/86, 6	1/6,7	-
6	Fitness	22	2/9,1	18/81, 9	1/4,5	1/4, 5	2/9,1	19/86, 4	1/4,5	-	3/13, 6	18/81, 9	1/4,5	-
7	Strength sports	11	2/18, 2	8/72,7	1/9,1	-	2/18, 2	8/72,7	1/9,1	-	3/27, 3	6/54,5	2/18, 2	-
8	Tourism	13	1/7,7	9/69,2	3/23, 1	-	3/23, 0	9/69,2	1/7,8	-	5/38, 5	8/61,5	-	-

Output data demonstrates that in most of groups, which were investigated, students had the II level of AP which is precondition with the intense mechanism of adaptation and sufficient level of functionality which is provided at the expense of functional reserves. This condition defines very much at the healthy person as at the correct motive mode and living conditions there is an opportunity to transition on the I adaptation level which is characterized by high or sufficient functionality of organism that is considered physiologic norm. At the insufficient motive mode and influence of negative habits (use of tobacco and alcohol, low-quality food but other) the person reduces adaptation level (to III level) which is defined by decrease in functional reserves of the person where there are symptoms of certain diseases.

The number of those who did swimming increased (by 13,6%), jogging (by 8,2%), basketball (by 6,2%), volleyball (by 6,7%), fitness (by 4,5%) and tourism (by 5,9%) after the first year of study from III till II AP level. The number of students who played football increased (by 5,5%) and tourism (by 15,3%) from II to I level.

The number of students in volleyball groups increased by (6,6%) while the number of students of I level in swimming increased (by 7,6%), jogging (by 8,3%), rhythmical gymnastics (by 4,5%), athletic gymnastics (by 9,1%) and tourism (by 15,5%) for the second year of study from III to II AP level.

Besides, it is necessary to notice that students, who belong to III level of adaptation potential, remained in all groups at the end of researches, except tourism: 5 students from 13 (38,5%) had the highest level and 8 (61,5%) – the second level of adaptation potential.

DISCUSSION

In recent years there is a significant amount of scientific works concerning efficiency of classes of students as different types of sports activity [8, 15, 23].

At the same time, isn't defined in most of them how sports-recreational classes influence on health of student's youth. Also attention to need of formation of the conscious attitude towards the health, which is caused by motivation, is paid [9].

Results of our researches confirmed data of other authors on changes of adaptation potential of students under influence of sports-recreational classes [3, 6, 13]. The received by us results also supplement our researches [16, 17].

Analyzing indicators of adaptation potential of students of 1-2 courses under influence of sports-recreational classes, it is possible to notice that the level of adaptation opportunities increased due to classes to a large extent of sports-recreational tourism. We bind this fact to the fact that classes, competitions and immediately hiking take place in the open air and allow to eliminate or weaken influence on students of adverse factors of daily reality (nervously-emotional overload during study; hypokinesias – because of insufficient motive activity; excess weight – as a result of unplanned food).

Therefore, it would be logical to increase motivation of students to sports-recreational tourism classes and physical education in general, providing its effective influence on the level of physical health. As it is provided in works of many authors [4, 11, 20, 22].

CONCLUSIONS

1. It is revealed that only 13,2% were from total of students of the I level of adaptation potential, II – 72,7%, III – 13,2%, IV – 0,9% at the beginning of the experiment. Students had the II level of adaptation potential, which is precondition, in most of groups which were investigated. Students with the IV level of adaptation potential (sharp depression of functional reserves of organism which indicates failure of mechanisms of regulation) weren't, the III level had only 7,4%, II – 71,9% and – 20,7% at all at the end of the biennial research. These indicators demonstrate positive influence of sports-recreational classes on health of students.

2. It is established that during the biennial research the greatest shifts in indicators of adaptation potential are received at students who were engaged in sports-recreational tourism to what promoted both training in the fresh air, and various means of tourist activity including preparation and participation in hiking on weekend and holiday.

Ensuring sufficient muscular activity due to work of cardiovascular, respiratory, neuromuscular systems; use of moderate exercise stress which provides recreational effect taking into account change of conditions of vital activity and formation of emotional background of communication with the nature and friends; influence of recreational natural resources (moderate stay in the sun, clean air and water, influence of phytoncides, water-air hardening) promote to effective improvement of students during tourist activity.

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