INFLUENCE OF PHYSICAL TRAININGS TO REHABILITATION AND HEALTH PROMOTION OF STUDENTS-ATHLETES AND STUDENTS

ВПЛИВ ФІЗИЧНИХ ТРЕНУВАНЬ НА РЕАБІЛІТАЦІЮ І ПРОМОЦІЮ ЗДОРОВ'Я УЧНІВ-АТЛЕТІВ І УЧНІВ

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Анотації

The phenomenon of physical training in strength and ability to influence the preservation and improvement of human health is one of the most important The aim of present investigation was the examination of physical condition of students-athletes and students in regular classes of non-sporting group. 68 persons 14–16 years old were under our observation. Students were devided in two groups. Group one (36 persons) consisted of students who studied in special sport classes, group two (32 persons) included students of regular classes and formed the group of control. The numerical data proved the high functional indices of physical and functional condition of young players that are significantly higher than their peers data from non-sporting class. Physical education is not only a means of education and improving the physical fitness of students, but often the major factor in rehabilitation and health promotion in making and shaping of the body, the source and improving overall mental performance.

Key words: physical training, students-athletes, functional indices, Life capacity of Lungs (ml), Trunks power (kg).

Феномен физического воспитания в силе и способности влиять на сохранение и улучшение здоровья человека является одним из важнейших. Целью настоящего исследования было изучение физического состояния учащихся-спортсменов и учащихся в обычных классах неспортивной группы. 68 человек 14–16 лет находились под нашим наблюдением. Учащиеся были разделены на две группы. Первая группа (36 человек) состояла из учащихся, которые учились в специальных спортивных классах, вторая группа (32 человека) включала учащихся обычных классов и составляла контрольную группу. Численные данные подтвердили высокие функциональные показатели физического и функционального состояния молодых игроков, которые значительно выше, чем у их сверстников из неспортивного класса. Физическое воспитание является не только средством воспитания и улучшения физической подготовленности учащихся, но часто основным фактором в реабилитации и укреплении здоровья в создании и формировании тела, источником и улучшением общей умственной деятельности.

Ключевые слова: физическая культура, учащиеся-спортсмены, функциональные показатели, жизненная емкость легких (мл), становая сила (кг).

Явище фізичної підготовки в силі та здатності впливати на збереження та поліпшення здоров'я людини є одним із найважливіших. Метою даного дослідження було вивчення фізичного стану учнів-спортсменів та студентів на регулярних заняттях неспортивної групи. Під нашим спостереженням перебували 68 осіб 14–16 років. Учні поділялися на дві групи. До першої групи (36 осіб) входили учні, які навчалися у спеціальних спортивних класах, друга група (32 особи) включала учнів регулярних занять та формувала групу контролю. Числові дані довели високі функціональні показники фізичного та функціонального стану юних гравців, що значно перевищують дані їхніх однолітків з неспортивного класу. Фізичне виховання – це не лише засіб виховання та вдосконалення фізичної підготовленості учнів, але часто є головним фактором реабілітації та зміцнення здоров'я у створенні та формуванні тіла, джерелом та вдосконаленням загальної розумової працездатності.

Ключові слова: фізична підготовка, учні-спортсмени, функціональні показники, життєва ємність легень (мл), станова сила (кг).

Introduction. Over the past decade, trends of development of the Ukrainian society made the scientists to direct their eyes to the formation of health components, especially in the younger generation. It should be emphasized that these issues are in the center of attention of different sciences, e.g.: medicine, hygiene, health care, ecology, pedagogy, psychology, sociology, physical education and others [1, 7, 8].

Global science has developed a holistic view of health as a phenomenon that integrates at

least four components, i.e. physical, psychological (mental), social and spiritual. All these components are inseparable from one another; they are closely interconnected and together determine the health status of the person. In order to comfort the learning, to ease the research of methodology of phenomenon of health, scientists differentiate the concept of physical, mental, social and spiritual health. This principle of differentiation was founded in grouping indicators survey based on content of each area [7, 8].

Recently, the limitation of a purely medical approach concerning health was evealed that defines it as the absence of disease. According to modern concepts, health is considered to be not only a medical, but a complex problem, a complex phenomenon of global importance. So, health is defined as the philosophical, social, economic, biological, medical category as the object of consumption, capital contribution, individual and social value, the phenomenon of systemic, dynamic, that constantly interacts with the environment. The condition of health care system makes itself on average only about 10 % of the complex influences. The remaining 90 % is due to the environment (20 %), heredity (20 %), and the most – to the conditions and lifestyle (approximately 50 %) [1, 7, 8].

At present, it is exactly the dominant standpoint according to which health is determined by the interaction of biological and social factors that mediated external influences of body functions' peculiarities and features of their regulatory systems. There is a definition of health as a state of optimal human life [1, 8, 12]. There are many reasons for the deterioration of the nation's health: instability in all spheres, decrease in the standard of living conditions of the population, adverse environmental conditions, and dissolution of cultural and moral values.

Strengthening and preservation of health is a priority for major legislation and legal documents. The essence of the Ukraine's state policy on education of healthy person is recorded in the Constitution, "Concept of education of children and youth in the national education system", State National Program “Education in Ukraine in XXI century". Successful implementation of these legal documents depends not only on financial and material conditions, but primarily on the formation of culture of health of each person. [2, 3, 5]. The urgency of this problem promotes the basic research of the phenomenon of human health, its components, the search of new ways of positive impact [6]. The lack of physical activity in physical education classes that only 25–30 % of the hygienic standards meet the need for movement, the study highlights various forms and means of physical education. Classes in sections in out-of-school hours (extracurricular) can be considered as an opportunity to get the optimal amount of motor load. So, the positive health effects of swimming on the cardiovascular, respiratory, muscular systems compared with peers set are established [14].

The aim of present investigation is the examination of physical condition of students- athletes and students in regular classes of non-sporting group.

Materials and methods. 68 persons 14–16 years old were under our observation. Students were devided in two groups. Group one (36 persons) consisted of students who studied in special sport classes, group two (32 persons) included students of regular classes and formed the group of control.

Objective of the research. We studied the perfomance of physical condition of Lviv students who studied in special classes Sports Coach (football) and another group of students in regular classes of non-sporting. Physical development of the students was estimated according to their weight (kg), height (cm), life capacity of lungs (ml), trunks power (kg).

The research results. The following table 1 presents the physical condition of students-athletes.

Table 1

The physical condition of students-athletes

No	Type of readiness	Control indices (Benchmarks)	Indicators of training at age		
			14 years	15 years	16 years
1	Physical development	Weight (kg)	55,9±3,2	55,9±2,8	65,5±2,5
		Height (cm)	165,0±2,3	170,0±3,1	176,0±1,2
		Life capacity of Lungs (ml)	3900-4100	4500-4600	4800-5000
		Trunks power (kg)	100-120	120-140	15-160

In the Table, the numerical data attract attention due to the high functional indices of physical and functional condition of young players that are significantly higher than their peers data from non-sporting class. The restoration of the heart beat rate (HR) to baseline values after the measured loads (20 squats for 30 seconds) in this group of students was on average 1 min – 1 min 30 seconds). The index of general physical fitness in the race at 30 meters was 4,5–4,9 sec. The non-attendance in this group of schoolchildren was equal to 2–4 % and mainly because of colds [15]. In pupils from regular schools the indicators of physical development and functional status was significantly worse. VC Indicators 3500–3800 ml ran a distance of 30 m by 5,5 ± 0,4 s. Dynamometry oxygen index was 35 ± 1,8 kg. Results of heart rate recovery after the above-mentioned dosed stress were from 2 to 3 minutes.

The high levels of respiratory diseases, eye diseases and gastrointestinal tract were notable in the structure of morbidity in this group. Non-attendance was observed in 22 % of pupils. Therefore, when exercising the above-mentioned data must be considered.

Discussion. In the study of physical health, it was found that most pupils (the 9th grade senior schoolchildren) possess the low and below the average level of physical health [9].

Motor activity as a characteristic functionality of the human body is the criterion that determines compliance with its real value in the hands biological needs [10, 11].

In the study of morbidity with temporary disability of pupils and students, it was found that in a developed program of optimal motor activity the sick-days' disease (the duration of disease) decreased from 645.71 to 505.81 per 100 persons while the health index increased from 32.0 to 48,0 % [11].

The phenomenon of physical training in strength and ability to influence the preservation and improvement of human health is one of the most important, because in one way or another it causes positive changes [14].

The problem of health has been and still remains relevant. Its importance and interest in it have increased and, at present, attract the attention of specialists in different fields. Up till now, the health care system has not developed a concept due to which a person, in large measure, could be sufficiently guaranteed the right to be healthy. Scientists are in constant search of new pharmacotherapy and technical facilities, but they fail to develop effective methods and means of prophylaxis [1, 12].

Annual prophylactic dental examinations in young patients are important task in the general medical health control system. They help to reveal not only diseases of teeth but also periodontal diseases. It is also an important ethical problem to persuade young persons how important is to control the condition of oral health. In the Department of Therapeutic Dentistry of National Medical University in Lviv we practice preventive annual check-ups of the condition of students' oral health. Each person has to understand the direct influence of bad hygiene of oral cavity and general health. Problems with teeth and the periodontium especially proved to be one of the reasons not only of bad state of health but also of the low level of the persons' self-confidence. Underestimating the importance of explanation to the population the fundamentals of general health care and oral health in particular, medical practitioners would not be successful in prophylactic work.

The number of drug addicts and those people who take other psychotropic drugs increases in the country. This leads to disastrous health of young people, indices of degradation of physical development. Destructive factors are also alcohol and tobacco. The younger the body, the more destructive their performance. According to U. Bakiko 39.2 % of students have bad habits, 49.7 % do not have them, 11.1 % are undecided [9].

The problem of physical education of children and adolescents, its hygienic aspects are of practical and scientific value. Health promotion, improvement of physical fitness of children and teenagers are one of the most acute problems of social policy. Improving the health of schoolchildren in most cases determined by the level of physical qualities, the formation of which usually takes place in physical education classes. In recent years, the school system of physical education has no meaningful positive changes in this direction [13, 15, 16]. Physical education is not only a means of education and improving the physical fitness of students, but often the major factor in rehabilitation and health promotion in making and shaping of the body,

the source and improving overall mental performance. Improved physical education of students – important task of theory and practice of physical education. At present in school practice, unfortunately, there is a significant deviation from the targets of physical education and bringing them to a purely regulatory approach, worsening health of pupils and contradict the idea of forming harmoniously developed personality.

In the foreign media, the use of new technologies and the creation of the basis of the data bank on the physical condition of the child for the planning exercise, developing individual programs for self independent studies are reported [3, 8]. The health of children and adolescents should be considered as a criterion for readiness to perform labor and social functions [6, 12, 13].

The research of several authors [6, 9] indicate that the choice of physical activity and regulation of physical and health classes must meet both physical health and physical fitness of students. Attempts were made to resolve it by many domestic and foreign scientists, experts, managers and individual teachers [9].

Important is the problem of social adaptation of pupils, which is possible only in case of a high level of care that requires the creation of health – reservation of educational technology under conditions of high school. It is necessary to focus on the elements that contribute to the formation of students, the need for health promotion, healthy lifestyles, physical improvements, to promote interest in the use of exercise as one of the main factors of a healthy lifestyle. Equally important is the organization of educational process on physical training taking into account the region of residence – in rural areas where socio-economic and environmental conditions differ from the living conditions in cities [10, 13].

Peculiarities of the organization and the conducting of practical classes on physical culture are defined by government program. Improving the educational software subject "physical culture" is one of the main ways to improve the quality of the lesson of physical culture. In recent years, a lot of research with the account of the hygienic requirements for physical education of students, based on physiological laws of influence of motor activity on the body are dedicated to the issue of improvement of software physical education of students. In the process of education the new training programs for students of 1–4 and 5–9 are implemented. Therefore, functions and expertise of the teacher of physical culture must firstly be aimed at maintaining the health of students. Of particular concern is the health of children. In 30–40 % of students the nasopharyngeal disease was revealed; 20–40 % – posture; 50 % – defects of vision (literature). Experts say that the lack of evidence-based system of physical education students is one of the main causes of poor health in students of secondary schools and their level of physical fitness [4, 5]. In view of Vaskovo Y. this is due to the fact that there is neither a holistic concept of the system, nor the ways of its restruction.

The emotional sphere is of great importance for health. The scientific and technological revolution, the growth of all kinds of information, global environmental changes increase the demands on psychophysiological potential of man, his health, whose role in the social values of society increases. Our mood, in many cases, depends on the mood of others, their emotional reactions, their attitude towards us. Unfortunately, tactlessness, hooliganism, misbehavior, bureaucracy are still present and have an adversely affect on health. So, any exceed in the limits of specific emotional relationship somehow mysteriously leads to the deviations in the functions of internal organs. Long lasting nervous stress can cause abnormalities in the heart, the gastrointestinal tract or other organs.

The crucial point is that the body has not stopped working, but its usual program of activities is somehow violated and the organism fails to return to its working rhythm. Naturally, it is necessary in such cases, if possible to switch the emotional excitement of the motor zone of the brain. Thus, the movement becomes an obstacle for the development of the cardiovascular, nervous and other diseases [12].

The condition of health of Ukrainians is influenced by the emission of harmful substances. According to the statistical data of the Ukrainian Scientific Hygienic Center, Ministry of Health of Ukraine, 800 thousand tons of solids, 1305 thousand tons of carbon monoxide, 375.000 tons of nitrogen oxide are emitted into the environment. About 20 million people in

Ukraine live in the areas of chemical pollution. Over the past 10 years, the incidence of the morbidity of population in the Lviv region increased from 81,536 to 124,450, and in the Carpathian region from 72,235 to 87535. The medical and demographic situation in Ukraine become worse especially after the Chornobyl disaster [3].

The low health level among the recruits testifies to the poor health of young people in general. Over the past 10 years, the number of healthy recruits dropped by half. Among them there is a lag in physical development, but the most common are respiratory diseases, eye diseases, gastrointestinal and musculoskeletal system. These data entry are from the areas of Transcarpathian region, where the incidence of morbidity rate ranges from 179,26 to 408,25 ‰ [4, 17].

In one article format is virtually impossible to consider all spectrum factors in ensuring the human health. Further research should be aimed at finding the new methods and tools to support and protect the human health.

Conclusions. Our investigations proved high indices of physical and functional condition of young Lviv students who studied in special classes Sports Coach (football) players that are significantly higher than their peers data from non-sporting class. The phenomenon of physical training in strength and ability to influence the preservation and improvement of human health is one of the most important Physical education is not only a means of education and improving the physical fitness of students, but often the major factor in rehabilitation and health promotion in making and shaping of the body, the source and improving overall mental performance.

References

1. Apanasenko H.L. Sanolohiia (medychni aspekty valeolohii) : pidruch. dlia likariv-slukhachiv zakl. (f-tiv) pisliadyplomnoi osvity / H. L. Apanasenko, L. A. Popova, A. V. Mahlovanyi. – Lviv : PP «Kvart», 2011. – 303 s.

2. Bakiko U. Mistse zghubnykh zvychok ta rukhovoi aktyvnosti u zhytti suchasnoho studenta / U.Bakiko // Fizychna kultura, sport ta zdorovia natsii. – 2011. – S. 86–90.

3. Datsenko U.U. Hihiiena ta ekolohiia medytsyny. – Lviv, Afisha, 2000. – 247s.

4. Fera O.V., Mykyta Kh.I., Sofiikanych H.I. Analiz pokaznykiv zakhvoriuvanosti pryzovnykiv vikom 18–24 roky peredhirskykh raioniv endemichnoho rehionu Zakarpatskoi oblasti // Naukovyi visnyk UzhDU – Uzhhorod. – 2009. – №35. – S. 137–142.

5. Grad Rafal / Physical activity and leisure time amond 13–15 yar-old teenagers living in Biala Podlaska. Physical Education of Students 2013, vol. 2, pp. 74–79 doi: 10. 6084/ m.9. figshare 156385.

6. Kostiuk P. M. Otsinka stanu zdorovia shkoliariv Ukrainy ta faktoriv, shcho na noho vplyvaiut / P. M. Kostiuk, E. I. Lapkovskyi. Fizychna kultura, sport ta zdorovia natsii: Zbirnyk naukovykh prats. Vinnytsia – 2011. – S. 202–206.

7. Mahlovanyi A.V. Orhanizm i osobystist. Diahnostyka ta keruvannia / A.V. Mahlovanyi, V. M. Belov, A. V. Kotova. – Lviv : «Medychna hazeta Ukrainy», 1998. – 250 s.

8. Mahlovanyi A. V. Osnovy informatsiinoho polia zdorovia osobystosti / A.V. Mahlovanyi // Visnyk Chernihivskoho natsionalnoho pedahohichnoho un-tu im. T.H. Shevchenka. – 2010. – Vyp. 81. – S. 285–289.

9. Palchuk M.B. Poperednii kontrol pokaznykiv fizychnoho rozvytku shkoliariv 9–kh klasiv yak nevidiemna skladova navchalnoho protsesu / M.B. Palchuk. – Fizychna kultura, sport ta zdorovia natsii. – Vinnytsia, 2011. S. 283–287.

10. Panhelova N. Faktory, yaki vplyvaiut na orhanizatsiiu fizychnoho vykhovannia molodshykh shkoliariv u miskii ta silskii mistsevosti / N. Panhelova, V. Ruban // Sportyvnyi visnyk Prydnistrovia: naukovo-praktychnyi zhurnal. – 2016. - №1. – S. 211-214.

11. Serheta U.V. Rukhova aktyvnist ta yii rol u pidvyshchenni pratsezdatnosti ta zberezhenni zdorovia osib pidlitkovoho ta yunatskoho viku / U. V. Serheta, U. L. Dunets // Fizychna kultura, sport ta zdorovia natsii. – Vinnytsia, 2011. – S. 247–352.

12. Skakun V. Zdorovje – eto nahrada za mudrost // V. Skakun. Nauka v olympyiskom sporte. – 2012. – №1. – S. 98–103.

13. Shyian O. Porivnialnyi analiz pokaznykiv fizychnoho stanu uchniv serednoho

viku, yaki navchaiutsia u silskykh i miskykh zahalnoosvitnikh shkolakh / O. Shyian. Sportyvnyi visnyk Prydniprovia: naukovo-praktychnyi zhurnal. – 2016. – №1. – S. 235–240.

14. Sybil M.H. Vplyv plavannia na fizychnyi rozvytok i somatychne zdorovia shkoliariv / Sybil M., Bodnar U., Kobryn V. // Fizychna kultura, sport ta zdorovia natsii. – Vinnytsia, 2011. – S. 360–-368.

15. Svystun Yu.D. Fizychna pidhotovlenist ta otsinka funktsionalnoho stanu yunykh futbolistiv u zmahalnomu periodi / Yu.D. Svystun, V.M. Trach, I.M Chornobai, Kh.Ie. Shavel // Pedahohika, psykholohiia ta medyko-biolohichni problemy fizychnoho vykhovannia ta sportu. – 2014. – №1. – S. 54–59.

16. Trifonova M. Competeney in ict of students in “pre-school and primary school pedagogy” – educational gualification degree bachclor and educational gualification degree master / Trakia yournal of Sciences 2010, vol. 8/3, pp. 316–319.

17. Zaporozhchenko V.H. Obraz zhyzny y vrednye pryvychky / V.H. Zaporozhchenko. – M. : Medytsyna, 2004. – 32 s.