

**RESEARCH OF PHYSICAL
DEVELOPMENT, FUNCTIONAL STATE
AND LIFESTYLE OF STUDENTS**



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Анотація

У статті розкриті результати досліджень кількісних і якісних показників рівня фізичного розвитку та функціонального стану студентів. На підставі анкетного опитування складено портрет способу життя сучасного студента ГДУ ім. Ф. Скорини. Здоровий спосіб життя багато в чому залежить від ціннісних орієнтацій студента, світогляду, соціального і морального досвіду. Громадські норми, цінності здорового способу життя приймаються студентами як особистісно значущі, але не завжди збігаються з цінностями, виробленими суспільною свідомістю. Тому у вузі необхідно забезпечити свідомий вибір особистістю суспільних цінностей здорового способу життя і формувати на їх основі стійку, індивідуальну систему ціннісних орієнтацій, здатну забезпечити саморегуляцію особистості, мотивацію її поведінки та діяльності. Проведені дослідження показують необхідність впровадження в освітній і виховний процес студентів різних здоров'язберігаючих технологій, нових форм, методів і підходів до формування здорового способу життя, одним з яких і є «Виставка Здоров'я». В умовах здорового способу життя відповідальність за здоров'я формується у студен-

та як частина загальнокультурного розвитку, що виявляється в єдності особливостей поведінки, умінні побудувати себе як особистість відповідно до власних уявлень про повноцінне морально-духовне і фізичне ставлення до життя. Актуальність дослідження визначається тим, що в наш час в умовах нескороминущого інформаційного стресу значно погіршується не тільки психічний, а й соматичне здоров'я населення, особливо молодого покоління. Цілий ряд об'єктивних процесів сприяє формуванню зневажливого ставлення широких верств населення до свого здоров'я, низького рівня культури здоров'я. У зв'язку з цим потрібно науковий пошук нових форм, методів і підходів у формуванні потребностного ставлення до здорового способу життя сучасного студента.

Ключові слова: студенти, здоровий спосіб життя, фізичний розвиток, функціональний стан, «Виставка Здоров'я».

Аннотация

В статье раскрыты результаты исследований количественных и качественных показателей уровня физического развития и функционального состояния студентов. На основании анкетного опроса составлен портрет образа жизни современного студента ГГУ им. Ф. Скорины.

Проведенные исследования показывают необходимость внедрения в образовательный и воспитательный процесс студентов различных здоровьесберегающих технологий, новых форм, методов и подходов к формированию здорового образа жизни, одним из которых и является «Выставка Здоровье». Требуется научный поиск новых форм, методов и подходов в формировании потребностного отношения к здоровому образу жизни современного студента.

Ключевые слова: студенты, здоровый образ жизни, физическое развитие, функциональное состояние, «Выставка Здоровье».



Problem statement. Now in the conditions of an enduring information stress not only mental, but also somatic health of the population, especially younger generation considerably worsens. Unfortunately, a number of objective processes promoted formation of negligence of a general population to the health, low level of culture of health [9]. As a result of devaluation of vital values at the turn of the century «health» lost leader positions, having conceded to «career» and «family» [4] in this connection maintenance, preservation and promotion of health does not become sense and the purpose of life of youth. According to opinion polls [10], need of good health and health for professional growth distinguishes only 17% of healthy students.

The state of health, physical development and physical fitness of students for the present did not reach desirable level. In higher educational establishment, the number of students with the weakened health (special medical group) increases. According to the conclusion of physicians, only 30% of students in the CIS countries have no deviations in the state of health, and other 70% have deviations of various degree therefore it is impossible to call them healthy [3].

The crisis phenomena of the last years in our society negatively affected the relation of student's youth to such values as a healthy lifestyle, sports activity. A considerable part of students does not get an education in the sphere of physical culture; they do not form the need for healthy lifestyle, for regular physical exercises and mass types of physically active recreation. The results of the tests for force, speed, dexterity, endurance show that physical fitness of entrants is at a low level [4].

The previously mentioned causes the need of cardinal measures concerning health saving of young people. Moreover, the main task in this direction is the preven-

tion of students' health violations, the formation of values and skills of keeping the basic principles of a healthy lifestyle and longevity as the low level of health of the population threatens a homeland security of the country [2, 7].

The analysis of researches and publications. The healthy lifestyle of the modern student in many respects depends on his outlook, social and moral experience and on valuable orientations. Often, the valuable potential of a healthy lifestyle, though is personally significant, does not coincide with those valuable installations which are present at consciousness of modern society. Therefore, in the course of accumulation by the identity of social experience the disharmony of informative, psychological, social and psychological, functional processes is possible. The similar disharmony can become the reason of formation of social qualities of the personality. Therefore, in higher education institution it is necessary to provide the conscious choice by the identity of social values of a healthy lifestyle and to form on their basis the steady, individual system of valuable orientations capable to provide self-control of the personality, motivation of her behavior and activity [11].

It is characteristic for the student with the high level of the personality development not only the aspiration to learn itself, but the desire and ability to change itself, a microenvironment in which it is. His lifestyle is formed by the active self-change. Consciousness, incorporating experience of achievements of the personality in different types of activity, checking physical and mental qualities through appearances of activity, communication, forms complete idea of the student of itself. Along with it, the structure of consciousness joins ideals, norms and values, public in essence. They are appropriated by the personality, become her own ideals, values, norms, a part of the personality ker-

nel— her consciousness [6].

Major students' activity is mental labor that, undoubtedly, influences physical development of young men and girls that is of great importance for prevention of possible deviations of physical development, for increase in efficiency of students, influences cardiovascular system that is expressed in increase of a warm rhythm and increase in arterial blood pressure, and intellectual overloads cause adverse shifts in the work of heart and haemodynamics and can exert negative impact on students' health [12].

The analysis of scientific and methodical literature showed that the healthy lifestyle creates for the personality such sociocultural microenvironment at which there are real prerequisites for high creative devotion, working capacity, labor and public activity, psychological comfort and the psychophysiological potential of the personality is realized more fully [11].

The maintenance of students' healthy lifestyle reflects the result of individual distribution or group style of behavior, communication and the organization of activity. In the conditions of a healthy lifestyle the responsibility for health is formed at the student as the part of common cultural development which is shown in the unity of behavior features, the ability to construct itself as the personality according to own ideas of the full-fledged moral and spiritual and physical relation to life [1].

The relevance of the research is defined by the fact that now in the conditions of an enduring information stress not only mental, but also somatic health of the population, especially younger generation considerably worsens. A number of objective processes promotes formation of negligence of a general population to the health, low level of culture of health.

Due to this scientific search of new forms, methods and approaches in formation of the scornful relation



to a healthy lifestyle of the modern student is required.

The scientific novelty of the research is that quantitative and quality indicators of level of physical development and a functional condition of students are defined in the work. On the basis of questionnaire a lifestyle portrait of the modern student of F. Skorina Gomel State University is made.

The aim of the research – determination of physical development level, the students' functional condition and lifestyle of students of F. Skorina Gomel State University.

Research organization. The organization of the research provided the following sequence:

1. At the first stage data of scientific methodical literature and the advanced practice on identification of the most effective remedies and methods of determination of students' health state who are not demanding existence of the special expensive medical equipment were studied and generalized. The choice of an evident technique of the report of information on healthy lifestyle in the form of an action «Health Exhibition» by means of which it is perhaps interesting and practical to open all 8 healthy habits significantly influencing duration and quality of life is carried out.

2. At the second stage the researches within the actions «Health Exhibition» for students allowing to define key indicators of physical development, functional readiness and students' lifestyle, based on questionnaire about the existence of constantly practiced healthy habits were conducted and also to calculate biological age of each examinee on the basis of collected data with use of the computer Health age program.

The researches were conducted during the period from September, 2015 to November, 2016 on the basis of educational establishment F. Skorina Gomel State University. In total 201 students from four faculties participated in the research.

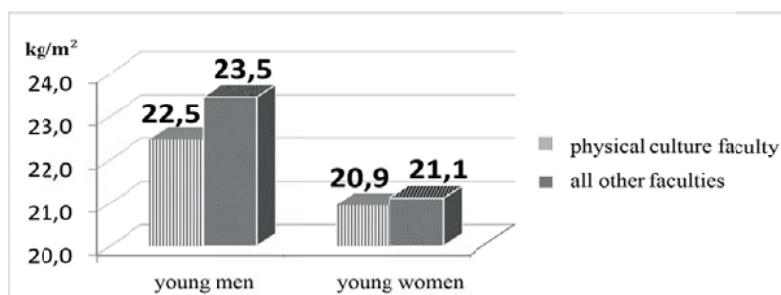


Fig. 1. Comparison of indicators of body weight index (IBW) at young men and young women of physical culture faculty and other faculties, kg/m²

3. At the third stage from November, 2016 to January, 2017 mathematical-statistical processing of the received results and their analysis by the means of Excel and Access Microsoft Office programs were carried out. The conclusions of the received results of the research were formulated.

The condition of physical development was judged by the following indicators: the body weight, length of a body standing, the index of body weight, fat percent in an organism, dynamometry of the right and left brushes.

Fat percent in an organism was defined by a fat analyzer Omron BF-306. Its principle of action is based on a technique of a bioelectric

impedance [8].

The functional condition of an organism was estimated on the following indicators: vital capacity of lungs, peakflowmetry and arterial blood pressure at rest, heart rate at rest and after loading (a three-minute step test).

Results of a research and their discussion. The comparison of indicators of physical development level and a functional condition of an organism and students' lifestyle was carried out in the research. The group of students of physical culture faculty was chosen as a standard. Their indicators were compared to similar data of students of other faculties. The received results are presented in tables 1 and 2.

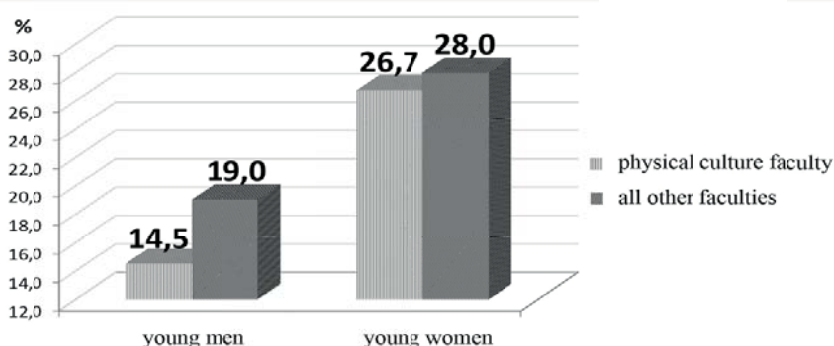


Fig. 1. Comparison of indicators of body weight index (IBW) at young men and young women of physical culture faculty and other faculties, kg/m²



Table 1

The summary table of the studied indicators at young men, (n=89)

Indicators	Physical culture faculty, n1=31	All faculties, except physical culture faculty, n2=58	
	Value, M1±σ	Value, M2±σ	Reliability of distinctions, P
Age, years	19,4±1,3	18,9±0,9	>0,05
Growth, cm	179,4±4,4	176,5±5,1	<0,05
Weight, kg	72,4±5,9	73,3±10,1	>0,05
Index of Body Weight (IBW)	22,5±1,4	23,5±2,7	>0,05
Content of fatty tissue (on weight), %	14,5±3,6	19±4,9	<0,01
Dynamometry (right brush), kg	48,3±7,4	43,7±7,9	>0,05
Dynamometry (left brush),kg	45±6,6	38,7±7,8	<0,05
Spirometry,l	5,2±0,6	4,5±0,6	<0,01
Pulse at rest, beats/min	68±4,5	71,3±4,1	<0,05
Pulse after loading, beats/min	110,6±9,5	122,7±9,3	<0,01
Pikfloumetriya, l/min	605,6±37,5	590,5±40	>0,05
Arterial blood pressure (ADS/ADD), beats/min	120,3/76,9±7,6/8,3	121,7/77,5±10/10,4	>0,05
Quantity of healthy habits	5,1±0,7	4±0,9	<0,01

Table 2

The summary table of the studied indicators at young women, (n=122)

Indicators	Physical culture faculty, n1=18	All faculties, except physical culture faculty, n2=104	
	Value, M1±σ	Value, M2±σ	Reliability of distinctions, P
Age, years	19±1,5	18,7±1	>0,05
Growth, cm	166,9±5,9	165,9±4,7	>0,05
Weight, kg	58,4±6,8	58±6,8	>0,05
Index of Body Weight (IBW)	20,9±2,2	21,1±2,3	>0,05
Content of fatty tissue (on weight), %	26,7±4,4	28±4,9	>0,05
Dynamometry (right brush), kg	35±6,5	27,9±4,2	>0,05
Dynamometry (left brush),kg	32±6,5	24,8±4,4	>0,05
Spirometry,l	4±0,7	3,2±0,5	>0,05
Pulse at rest, beats/min	72,3±2,9	76±7,5	>0,05
Pulse after loading, beats/min	121,5±15,4	133,4±10	>0,05
Pikfloumetriya, l/min	482,5±40	430,4±53,4	>0,05
Arterial blood pressure (ADS/ADD), beats/min	111,6/73,5±6,6/4,4	110,8/84,4±7,7/24,7	>0,05
Quantity of healthy habits	5,4±0,7	4,4±0,9	<0,05



The researchers showed that students of physical culture faculty have authentically lower level of pulse both at rest, and after physical activity, in comparison with the students of other faculties.

The percentage of fat is reliable less at students of physical culture

faculty probably due to bigger development of muscle bulk, considering average values of BMI at them (data of BMI also indicate relative deficiency of muscle bulk at students of other faculties); authentically and most brightly this difference on the % content of fat

in a body is expressed at young men (Figures 1 and 2).

Data of dynamometry confirm more symmetric development of the right and left hand force in students of physical culture faculty (difference in force of the right and left brush – about 7-8% whereas other students have about 11%), and in general their bigger force that especially brightly is expressed at girls (almost twice); this distinction is reliable only for the left brush at young men (Figure 3).

Data of spirometry and peak-flowmetry also confirm the best functional condition of respiratory system at students of sports faculty, in comparison with other faculties, and at young men – it is better, than at girls that correlates with the level of physical activity and the constitution of the specified groups of students; however these differences in data are reliable ($p < 0,05$) only in the spirometry relation at young men (Figures 4 and 5).

Data on a step test (pulse at rest and after loading) show the best functional condition of cardiovascular activity and the best adaptation to physical activity (fitness) at students of sports faculty that correlates with the data on their bigger physical activity received when questioning in comparison with other faculties; the difference in these data is reliable for young men, however is doubtful for young women (Figure 6).

The existence in students' lifestyle of the following seven healthy habits, considerably influencing duration and quality of life, is analyzed in the research: regular physical exercises (No. 1), regular big breakfast (No. 2); lack of having bites between the main meals (No. 3); 7-8 hour night dream (No. 4); does not smoke (No. 5), does not take alcohol (No. 6); lack of surplus of the body weight (No. 7).

All data on lifestyle habits correspond to criterion of reliability of distinctions ($p < 0,05$).

Distribution of quantity of the healthy habits connected with life

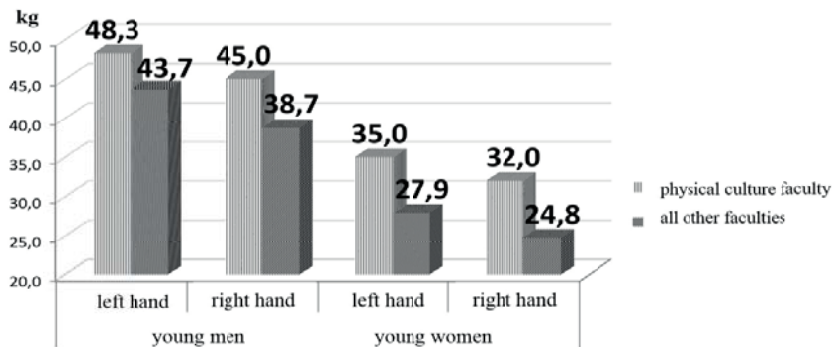


Fig.3. Comparison of dynamometry indicators at young men and young women of physical culture faculty and other faculties, kg

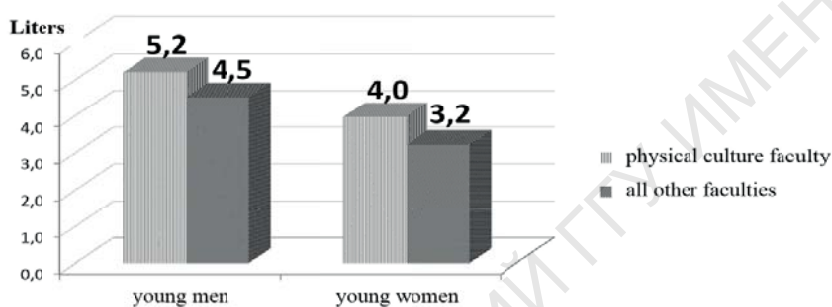


Fig. 4. Comparison of the vital capacity of lungs (VCL) indicators at young men and young women of physical culture faculty and other faculties, liters

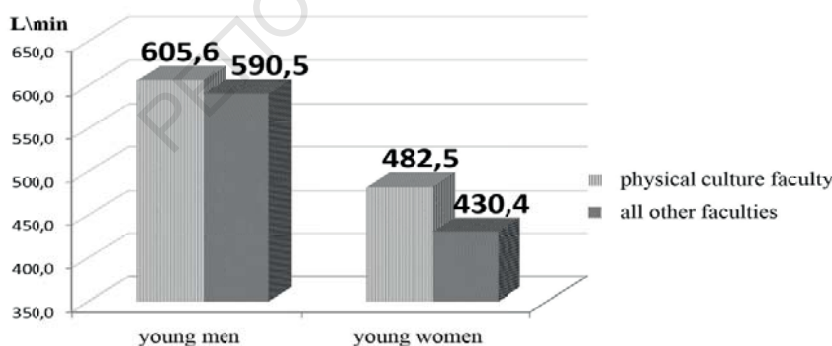


Fig. 5. Comparison of peak speed indicators of an exhalation at young men and young women of physical culture faculty and other faculties, l/min



Table 3

Distribution of quantity of healthy habits among students of various faculties, %

Quantity of healthy habits	Physical culture, %	All faculties, except physical culture, %	Average, %
7	5,1	1,2	2,0
6	30,8	9,9	13,9
5	38,5	30,2	31,8
4	23,1	34,6	32,3
3	2,6	17,9	14,9
2	0,0	4,9	4,0
1	0,0	1,2	1,0
0	0,0	0,0	0,0

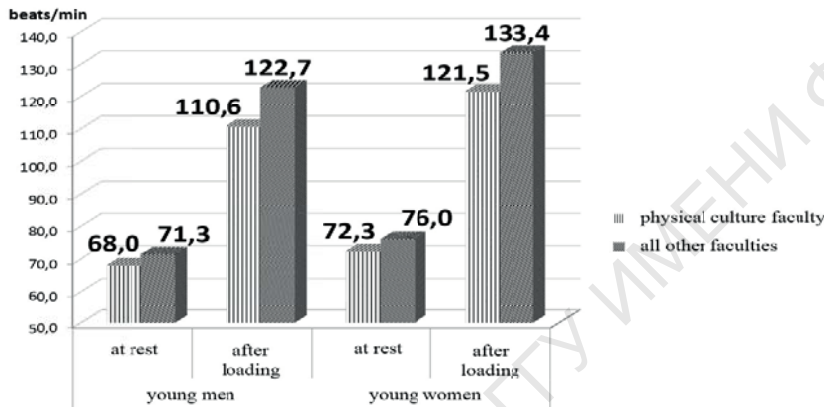


Fig.6. Comparison of heart rate indicators before and after a step test at young men and young women of physical culture faculty and other faculties, beats/min

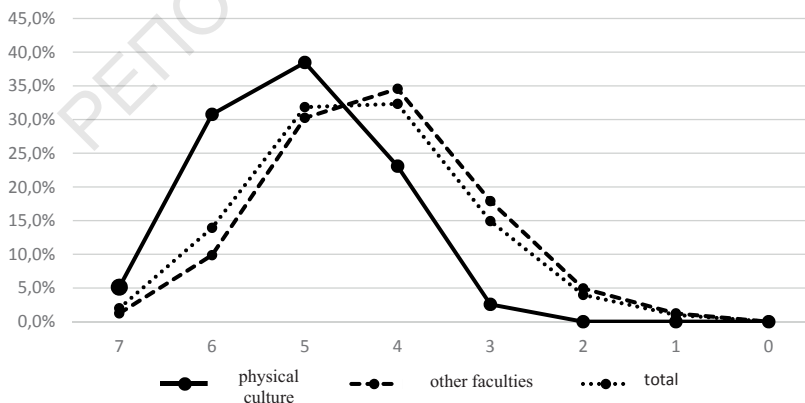


Fig.7. Distribution of quantity of healthy habits among students of different faculties, %

expectancy and duration of healthy life among students of various faculties is reflected in table 3 and in figure 7.

By the quantity of habits both among young men, and among young women the similar tendency is observed:

- the maximum of healthy habits practices at students of physical culture faculty (more than 5 – it is 20% higher than an average among students of other faculties, on average – on 1 healthy habit it is more),
- among students of other faculties, except physical culture faculty – 4 and more habits practice on average.

At the same time, less than 3 healthy habits practice only 5% of students, and the main number of students (about 2/3) – practice 4-5 habits (whereas students of physical culture faculty – 5-6 habits), and this tendency is characteristic both of young men, and of young women.

The general tendency that young women of all faculties have bigger number of healthy habits than young men is noted. This difference as among students of physical culture faculty as an average among young women of other faculties is less than 9%. At the same time, it makes more than 25% for students of biological faculty and the faculty of foreign languages.

Differences in the obtained data speak about stronger motivation to a healthy lifestyle at young men of physical culture faculty in comparison with other male students.

Conclusions. Thus, an important role for the assessment of health state is played by the factors of lifestyle and physical development. Deviations in its level can hide different diseases. Underestimation of these deviations can affect in the next years at future professional and work activity.

Modern identification of deviations in physical development and their correction increase the level of students' health.

The data, obtained in the re-



search, speak about the need of introduction of various health saving technologies, new forms, methods and approaches to formation of a healthy lifestyle in students' educational process. «Health Exhibition» is one of such approach.

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