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ФІЗИЧНЕ ВИХОВАННЯ, СПОРТ І КУЛЬТУРА ЗДОРОВ'Я У СУЧАСНОМУ СУСПІЛЬСТВІ

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Збірник наукових праць
Східноєвропейського національного університету імені Лесі Українки
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У збірнику наукових праць подано окремі положення розвитку фізичної культури, фізичного виховання різних груп населення, підготовки фахівців для галузі. Охарактеризовано методи, засоби тренування, особливості підготовки спортсменів, адаптації організму людей різного віку в процесі фізичного виховання, адекватність яких підкріплюється педагогічними, психологічними та медично-біологічними експериментами.

Журнал є науковим фаховим виданням України, у якому можуть публікуватися результати дисертаційних робіт на здобуття наукових ступенів доктора і кандидата наук за напрямами «Педагогічні науки» (дивитися перелік наукових фахових видань, затверджений наказом Міністерства освіти і науки України від 12 травня 2015 р. № 528) та «Фізичне виховання і спорт» (дивитися перелік наукових фахових видань, затверджений наказом Міністерства освіти і науки України від 13 липня 2015 р. № 747).

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PHYSICAL EDUCATION, SPORTS AND HEALTH IN MODERN SOCIETY

Collected Research Papers

of Lesya Ukrainka Eastern European National University

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Ф 50 **Physical** Education, Sports and Health in Modern Society : Collected Research Papers of Lesya Ukrainka Eastern European National University / compiled by A. V. Tsos, S. J. Indyka. – Lutsk : Lesya Ukrainka Eastern European National University, 2017. – № 1 (37). – 170 p.

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Історичні, філософські, правові й кадрові проблеми фізичної культури та спорту

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THE **QUALITY OF LIFE OF STUDENTS WHO STUDY IN UKRAINE AND POLAND**

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Abstract

The current relevance of the research. The study of the quality of life is a core issue both at the scientists' level and the level of government workers in the world. The main goal is not only to extend lifetime, but to improve its quality too. Ukraine's desire to enter the European Community and the European Union is impossible without substantial improvement of the quality of life. However, the quality of life depends on the quality of labor potential, and hence on the prospects for the development of the country. Since the 70s of the XXth century, the state of the quality of life has begun to attract the attention of many researchers and practitioners in various fields of researches. The Council of the European Union adopted a development strategy in 2010 – 'Europe 2020: A Strategy for smart, stable and inclusive growth' based on the analysis of monitoring the quality of life of the European Union. The aim was to study the students' components of the quality of life, depending on the place of study (countries) and the origin (nationality). ***Methods:*** synthesis and analysis of the current scientific and methodological studies on self-assessment of the quality of life using the SF-36 questionnaire and the methods of mathematical statistics. ***Results.*** Analyzing the students' answers, we revealed the regularity among indicators of the physical and mental (psychological) components of the quality of life and the sex of the respondents, the year of study, self-evaluation of their study achievements, conditions of life. Besides, the main components that play the leading roles in shaping the overall picture of the quality of life and those that reduce the quality of students' lives were found out. Due to the analysis of the correlations between indicators of the physical and mental (psychological) components of the quality of life, the interdependent components that form the basis of the students' quality of life were highlighted. ***Conclusions.*** The study makes it possible to compare both the generalized results of the quality of the Ukrainian and Polish students' lives and the individual components that form the physical and mental (psychological) basis for the quality of life.

Key words: quality of life, students, study, Ukraine, Poland.

Ольга Андрійчук, Василь Пантік, Володимир Ковальчук, Сергій Савчук. Якість життя студентів, які здобувають освіту в Україні та Польщі. ***Актуальність.*** Вивчення якості життя населення є питанням, яке піднімається на рівні як науковців, так і державотворців у всьому світі. Основна мета – не лише подовжити тривалість життя, а й покращити його якість. Прагнення України увійти в Європейську Співдружність Країн та в Європейський Союз неможливе без суттєвого покращення якості життя населення. Водночас від якості життя залежить якість трудового потенціалу, а отже, і перспективи розвитку держави. Починаючи з 70-х років XX ст., стан якості життя населення став привертати увагу багатьох учених і практиків у різних галузях досліджень. Рада Європейського Союзу у 2010 році прийняла стратегію розвитку − «Європа-2020: стратегія розумного, сталого й інклюзивного зростання», яка ґрунтується на здійсненні аналізу моніторингу якості життя населення країн Європейського Союзу. ***Мета роботи*** – вивчити компоненти якості життя студентів залежно від місця

навчання (країни) й походження (громадянства). ***Методи дослідження***: узагальнення та аналіз сучасних науково-методичних досліджень питання самооцінки якості життя за допомогою анкети SF-36, методи математичної статистики. ***Результати роботи.*** Аналізуючи відповіді студентів, ми помітили певну закономірність між показниками фізичного й психічного (психологічного) компонентів якості життя та статі респондентів, курсу навчання, самооцінки навчальних досліджень, умов побуту. Окрім того, виявили основні компоненти, що займають провідні позиції у формуванні загальної картини якості життя й ті складники, які знижують рівень якості життя студентів. Завдяки аналізу кореляційних зв'язків між показниками фізичного та психічного (психологічного) компонентів якості життя, ми з'ясували взаємозалежність компонентів, що складають основу якості життя студентів. ***Висновки.*** Проведене дослідження дає можливість порівняти як узагальнюючі результати якості життя студентів, які навчаються в Україні та Республіці Польща, так і окремі компоненти, що складають фізичну й психічну (психологічну) основу якості життя.

Ключові слова: якість життя, студенти, освіта, Україна, Польща.

Ольга Андрийчук, Василий Пантик, Владимир Ковальчук, Сергей Савчук. Качество жизни студентов, получающих образование в Украине и Польше. ***Актуальность.*** Изучение качества жизни населения является вопросом, который поднимается на уровне как ученых, так и государственных чиновников во всем мире. Основная цель – не только продлить жизнь, но и улучшить её качество. Стремление Украины войти в Европейское Содружество Стран и в Европейский Союз невозможно реализовать без существенного улучшения качества жизни населения. В то же время от качества жизни зависит качество трудового потенциала, а следовательно – перспективы развития государства. Начиная с 70-х годов XX в., состояние качества жизни населения стало привлекать внимание многих ученых и практиков в различных областях исследований. Совет Европейского Союза в 2010 году принял стратегию развития – «Европа-2020: стратегия разумного, устойчивого и инклюзивного роста», которая базируется на осуществлении анализа мониторинга качества жизни населения стран Европейского Союза. ***Цель работы*** – изучить компоненты качества жизни студентов в зависимости от места учебы (страны) и происхождения (гражданства). ***Методы исследования*** – обобщение и анализ современных научно-методических исследований вопросы самооценки качества жизни с помощью анкеты SF-36, методы математической статистики. ***Результаты работы.*** Анализируя ответы студентов, мы проследили определенную закономерность между показателями физического и психического (психологического) компонентов качества жизни и пола респондентов, курса обучения, самооценки учебных исследований, условий быта. Кроме того, выявили основные компоненты, занимающие лидирующие позиции в формировании общей картины качества жизни и те составляющие, которые снижают уровень качества жизни студентов. Благодаря анализу корреляционных связей между показателями физического и психического (психологического) компонентов качества жизни, мы выяснили взаимозависимость компонентов, составляющих основу качества жизни студентов. ***Выводы.*** Проведенное исследование дает возможность сравнить как обобщающие результаты качества жизни студентов, обучающихся в Украине и Республике Польша, так и отдельные компоненты, составляющие физическую и психическую (психологическую) основу качества жизни.

Ключевые слова: качество жизни студенты, образование, Украина, Польша.

Introduction. The study of quality of life is an issue that rises level of at both the scientists and the statesmen in the world. The main goal – not only to extend life expectancy, but also to improve its quality. Ukraine's desire to become a full partner in European Union countries is impossible without substantial improvement of the quality of life. However,the quality of life depends on the quality of labor potential, and hence the prospects for development. Since the 70s of XX century, the state of quality of life began to attract the attention of many researchers and practitioners in various fields of research. Council of the European Union back in 2010, adopted a development strategy – 'Europe-2020: A Strategy for smart, sustainable and inclusive growth «based on the analysis of monitoring the quality of life of the European Union». The Attention of modern scientists aims to study the dependence of the quality of life of gender [1], the effect of systematic sports on the quality of life [6] features lifestyle and physical activity of students [5], the physiological mechanisms of adaptation processes to physical activity [3], the impact of the physical rehabilitation on the quality of life [2], especially the physical and psychological health, depending on the residence [4].

The objective of our paper is to study the components of the quality of life for students, depending on the place of study (countries) and origin (nationality).

Methods: synthesis and analysis of current scientific and methodological developments regarding self quality of life using the SF–36 questionnaire, mathematical data processing using MedStar.

This study involved students of 18–21 years who agreed to processing of their data. Depending on the study (country) and origin (citizenship), we formed three groups.Group1 – students who are residents of Ukraine and enrolled in Ukraine (Eastern National University Ukrainian); Group2 – students who are citizens of Ukraine, but studying in Poland (Academy of Jan Dlugosz in Czestochowa); Group 3 – students who are citizens of Poland and study at Polish (Academy of Jan Dlugoszin Czestochowa).To study the peculiarities of the overall quality of life, we analyzed the elements that form it: physical component and

mental component. Thus, according to the conventional method of calculation and analysis of the results of the questionnaire SF–36, the answers to each question ranging from 0 to 100 points. Low scores are indicators of certain limitations in the quality of studentslife, and 100 points – full health. The physical component of health (Physical component summary – PCS), includes 4 parameters: physical activity (feature) (PF); professional activities due to physical condition (RP); intensity of pain (BP); general health (GH).

From these figures we calculated the average value (X) and standard deviation (s) for a number of variations that is different from normal.

Research results. The data analysis shows that the most significant contribution to the overall structure of the physical health component plays a physical feature(PF) for all investigated groups of students. In this case, the highest rate ofstudentsphysical activity (94,95 ± 25,77) as of Poles (Gr. 3), somewhat lower is in Group1 – LesyaUkrainka Eastern European University (91,46 ± 13,11) and the lowest in Group 2 Ukrainian students who study abroad (73,86 ± 21,23). The rate of the professional activity, due to physical condition (RP) among Polish students (92,0 ± 29,28) is much higher than in other groups: Group 1 – 68,08 ± 32,0; Group 2 – 63,57 ± 26,13. Regarding the indicator of the intensive pain (BP), it reduces the quality of life of most Ukrainian students who study in Poland (61,14 ± 15,94), and almost the same for students of Ukrainian and Polish students studying in their home country (70,26 ± 22,78 and 70,73 ± 18,03, respectively). At the same time, the indicator of general health (GH) is the lowest among Polish students (60,31 ± 12,99), the highest – among Ukrainian students studying in Ukraine (69,39 ± 18,93), and theintermediate place is taken by students of Group 2. The data are presented in table 1 and shown graphically in figure 1.

Table 1

Key Indicators of Physical Health Component in Quality of Life Scores (X ± S)

Group of students	PF	RP	BP	GH
Group 1	91,46±13,11	68,08±32,0	70,26±22,78	69,39±18,93
Group 2	73,86±21,23	63,57±26,13	61,14±15,94	64,37±17,84
Group 3	94,95±25,77	92,0±29,28	70,73±18,03	60,31±12,99

Consequently, students studying in Ukraine (Group1), havethe highest indicators of the physical health as a component of quality – an indicator of physical activity (PF) – 91,46 ± 13,11, the lowest – the rate of professional activity, due to physical condition (RP) – 68,08 ± 32,0. Group 2, which includes Ukrainian students studying in Poland, have indicators lower in comparison with students of Group 1.

Index of physical activity occupies a leading position in the overall structureof the physical health (PF) – 73,86 ± 21,23, pain intensity – the largest decreases quality of life (BP) – 61,14 ± 15,94. Students of Group 3 – Polish students studying in the Academy of Jan Dlugosz in Czestochowa, the highest rates of physical activity (PF) – 94,95 ± 25,77 and professional activities caused to the physical condition (RP) – 92,0 ± 29,28; the lowest rate – index of general health (GH) – 60,31 ± 12,99.

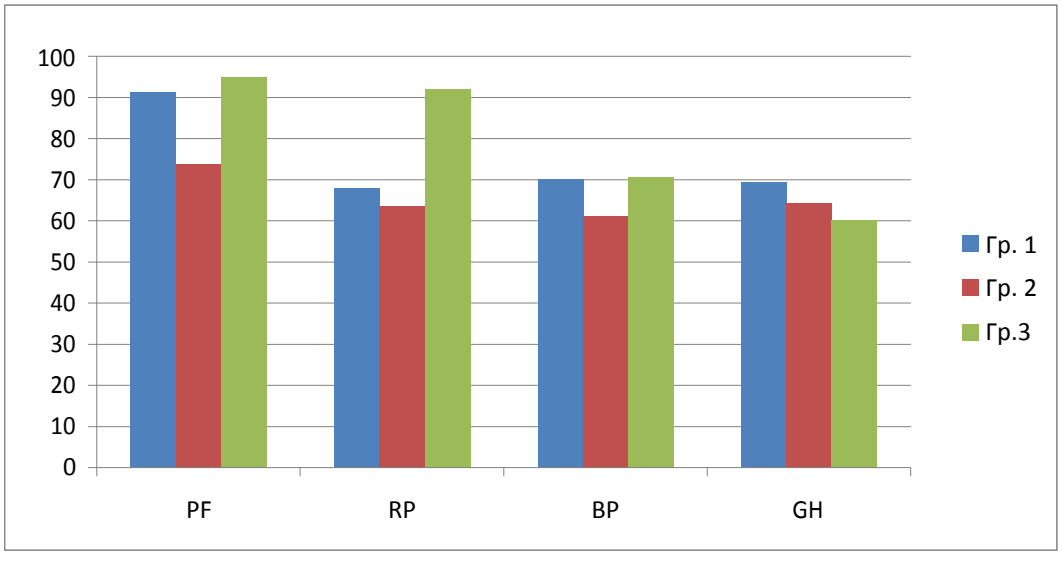

Fig. 1. *Key Indicators of Physical Health Component in Quality of Life Scores*

The psychological health component (Mental component summary – MCS), forms four parameters: vitality (VT); social feature (SF); professional activities due to the emotional state (RE); and mental health (MH). As the survey results, an indicator of vitality (VT) is the highest among students studying abroad (Gr. 2) – 66,0 ± 14,13, the lowest among Polish students (Gr. 3) – 58,25 ± 15,66. The rate of social activities (SF) is high in the Ukrainian students who continue their studies in Ukraine (77,12 ± 18,57), slightly lower among students in social activities – 73,75 ± 19,82; the lowest social activity is among Ukrainian students who study outside the country (65,71 ± 19,81). The rate of professional activity caused by the emotional state (RE) of Polish students is the highest of all mental health indicators – 92,0 ± 34,85, it is much lower among students in Ukraine (60,36 ± 36,46) and almost half lower the of Ukrainian students who study in Poland (47,62 ± 27,55). The indicator of the mental health among Polish students is the lowest compared to other groups (60,72 ± 14,01), slightly higher –among the Ukrainian students who study in Poland (62,06 ± 14,7) and of maximum value – students in Ukraine 66,6 ± 17,2. The data are presented in table. 2 and Fig. 2.

Table 2

Main Indicators of the Mental Health Component in the Quality of Life Scores *(X ± S)*

Group of Students	VT	SF	RE	MH
Group1	61,1±17,0	77,12±18,57	60,36±36,46	66,6±17,2
Group 2	66,0±14,13	65,71±19,81	47,62±27,55	62,06±14,7
Group 3	58,25±15,66	73,75±19,82	92,0±34,85	60,72±14,01

Thus, the most significant promotes the psychological health and quality of life of student Group 1 belongs to point of their social activity (77,12 ± 18,57), and the reduces quality of life and worsens psychological health – professional activity caused by emotional state (RE) (60,36 ± 36,46). Students in Gr. 2 who decided to get education in Poland,positive effects on the psychological health their vitality (VT) – 66,0 ± 14,13, at the same time is negatively represented of their professional activity caused emotional state (RE) – 47,62 ± 27,55. The Group 3 – Polish students – the highest component of psychological health is an indicator of their professional activity, caused the emotional state (RE) – 92,0 ± 34,85, the lowest – their vitality (VT) – 58,25 ± 15,66.

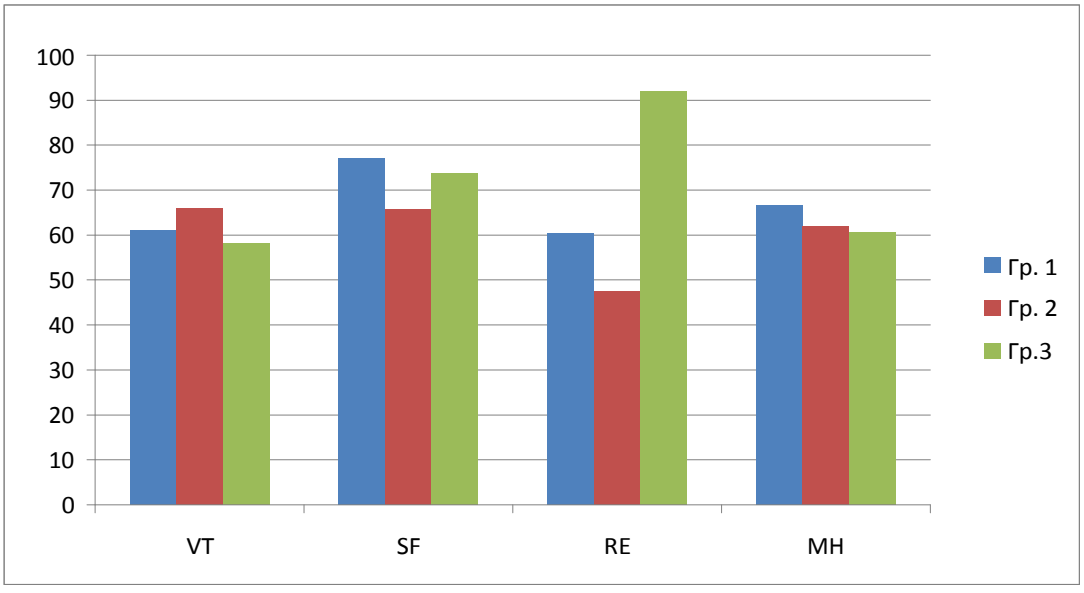

Fig. 2. *Main Indicators of Mental Health Component in Quality of Life Scores*

Summarizing the findings of two scales: physical health and psychological health, it could be argued that Polish students (Group 3) quality of life, higher compared to students of other study group (except for three indicators – life activity (VT), mental health (MH), general health (GH)). The lowest quality of life – of Ukrainian students, who study abroad (figure 3).

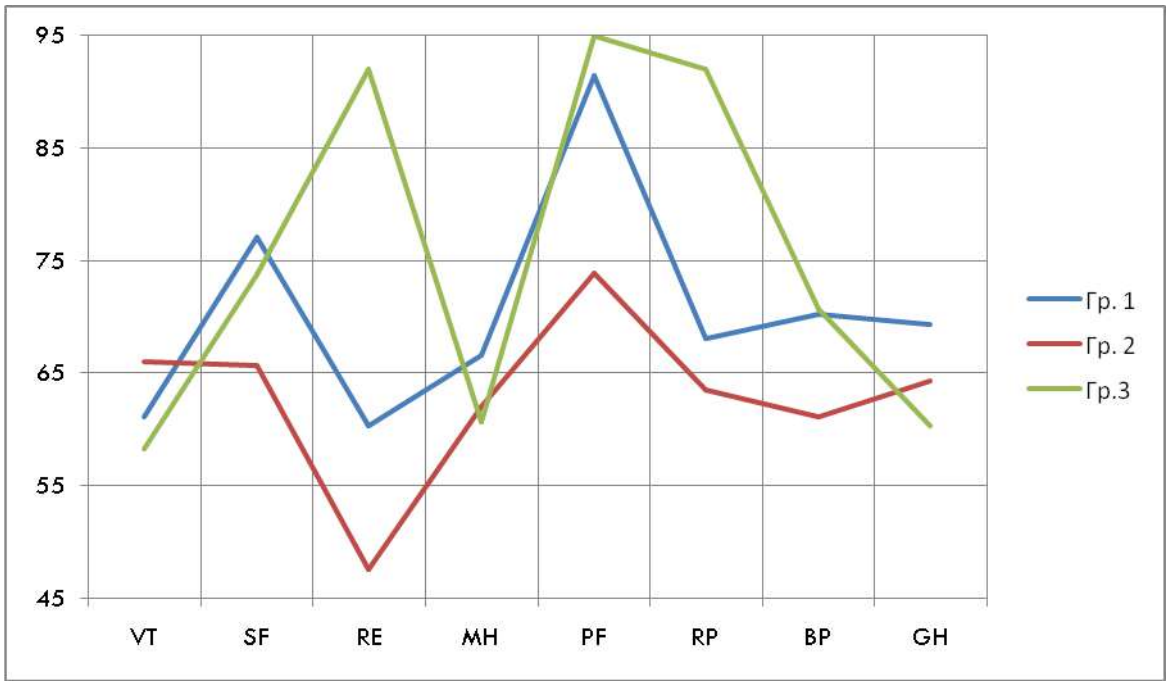

Fig. 3. *The Main Indicators of Quality of Life Scores*

Regarding the statistical significance of the difference between the figures obtained, theSchefft method for multiple comparisons, revealed that in terms of physical feature (PF) medium difference is not statistically significant between Group 1 and Group 3; in terms of professional activity, due to the physical condition (RP) – between Group 1 and Group 2; in terms of the intensity of pain (BP) – between Group 1 and Group 3 and Group 2 and Group 3; in terms of the general health (GH) – and between Group1 Group 2 and Group 2 – Group 3; in terms of vitality (VT) – between Group 1 and Group 2 and Group 1 and Group 3; in terms of the social activity (SF) – between Group 1 and Group 3 and Group 2 and Group 3; in terms of the professional activity, due to emotional state (RE) – between Hrupoyu1 and Group 2; in terms of the mental health (MH) – between Group 1 and Group 2 and Group 2 and Group 3. The difference between other indicators is statistically significant at the significance level $p \leq 0,01$. The data are presented in table. 3.

Table 3

Indicator	Group 1 – Group 2	Group 1 – Group 3	Group 2 – Group 3
PF	p<0,01	p=0,16	p<0,01
RP	p=0,52	p<0,01	p<0,01
BP	p<0,01	p=0,98	p=0,02
GH	p=0,1	p<0,01	p=0,36
VT	p=0,07	p=0,28	p≤0,01
SF	p<0,01	p=0,27	p=0,03
RE	p=0,02	p<0,01	p<0,01
MH	p=0,1	p<0,01	p=0,88

From these figures we calculated the average of the physical (PCS) and mental (MCS) component summary of life of students of studied groups. It was clarified that general indicators of physical health are higher than the rate of mental health in all groups of students. The Index of physical health highest is the among Polish students – 52,06 ± 6,48, slightly lower among the Ukrainian students studying in Ukraine – 51,12 ± 6,75 and the lowest – among students studying outside their country (46,94 ± 7,01). General indicators of the mental health among students studying in their home country is almost the same – Group 1 – 44,27 ± 10,11 and Group 3 – 44,95 ± 7,71. The data are presented in table. 4 and fig. 4.

Table 4

The Quality of Life Scores *(X ± S)*

Group of Students	PCS			MCS		
	X±S	min	max	X±S	min	max
Group1 n=513	51,12±6,75	23,28	70,77	44,27±10,11	11,7	62,96
Group 2 n–70	46,94±7,01	23,84	58,56	42,91±6,99	27,88	59,24
Group 3 n=100	52,06±6,48	32,07	86,26	44,95±7,71	16,946	59,797

As the results, Polish students have the highest rates of both physical and mental health and therefore a higher quality of life. The Ukrainian students who study in Poland have the lowest quality of life (physical and psychological health) among all studied groups.

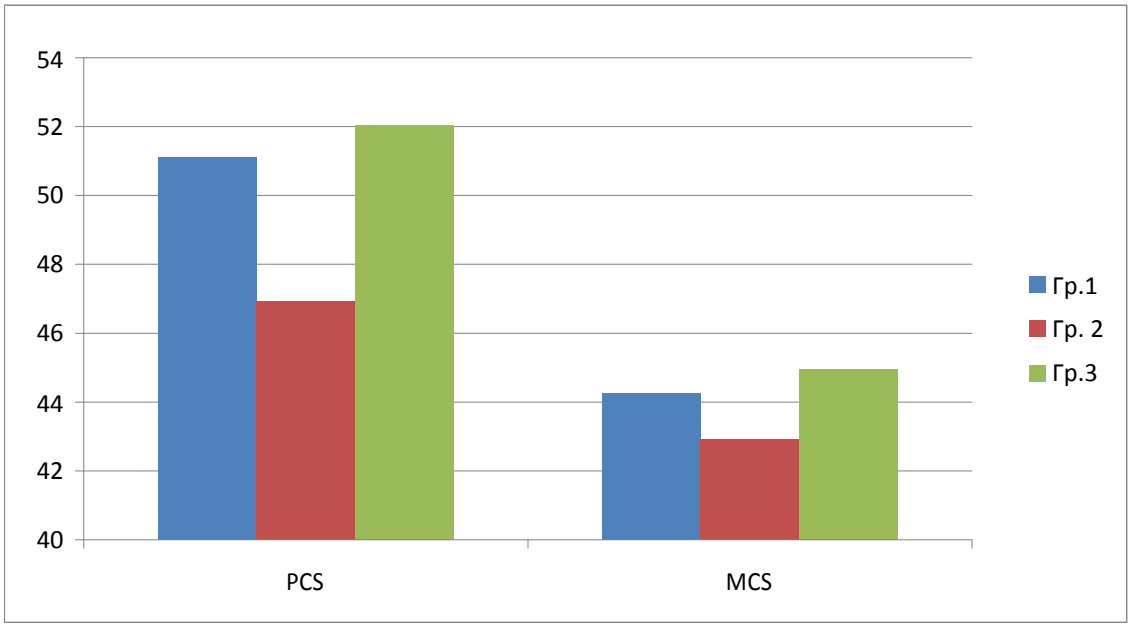

Fig. 4. *The Quality of Life Scores*

To establish a statistical difference between the physical component of quality of life between the study groups of students, we used Schefft method of multiple comparisons. Thus, it appeared that the differenceGroup1 and Group 2 is statistically significant (F = 11,85) on the level of significance of p <0,01. The difference Group 2 and Group3 is statistically significant (F = 11,79.) on the significance level p <0,01. A difference Group 1 and Group 3 not statistically significant (F = 0,78), p = 0,46. Thus, we can say that the indicators of physical health, have a statistically significant difference in Ukrainian students who study in Ukraine and Ukrainian students who study in Poland, and not statistically different from Polish students who study in their homeland. Also, there is a statistically significant difference between the result of the physical component of the quality of life among Ukrainian students studying in Poland and their peers,Polish students. Thus, we can conclude that the physical component of the quality of life for Ukrainian students depends on the country where they study. No evident significant difference between indicators of physical component of quality of life of students studying in their home country – the difference between the indices is random.

As for indicators of the psychological component of the quality of life in the studied groups of students, the difference averages is not statistically significant, p<0,05.

Conclusions. The quality of life of students we studied using questionnaire SF–36 consists of two general indicators – physical health and psychological health. The results indicate that Polish students generally have the higher quality of life. However, in terms of physical health statistically significant difference between the group of Polish students and a group of Ukrainian students studying at home is not found. The physical health of Ukrainian students who are educated abroad is lower.

Analyzing the indicators of the psychological health, statistically significant difference between the study group not found. Thus, the Ukrainian students who study outside their country have low levels of physical health (Group 2).

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THE **GENDER APPROACH IN THE PHYSICAL EDUCATION SYSTEM**

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Abstract

Because of global changes in gender roles the ideas of gender education gradually penetrate into educational establishments. However, on the lessons of physical education students study in accordance with general programs of state requirements for the level of general education despite gender differences. It is necessary to study the differences of organization educational process in accordance to gender, the introduction of which, will help students to the full self–realization in the institute. The purpose of the research – is to summarize the data of the main gender differences that should be consider in physical educational process of students. The analysis of literature sources about the difference in gender educational process of pupils of different ages showed that there is a gender imbalance in attending motor activity during extra–curricular time and differences in self–assessment of own possibilities. Beginning from the secondary school age, girls and boys have different sports preferences and motives for attending physical education lessons. It has been clarified that the gender approach in physical culture – is the process of physical education of young students according to their motor preferences and motivational attitudes depending on gender with a view to better meeting their needs. Regardless of gender, younger schoolchildren prefer to spontaneous gaming and good grades become the main motivation for the classes. Beginning from the secondary school age, boys become to prefer martial arts and game sports and girls would choose health–improving types of fitness. The desire to increasing the level of physical training motivate boys to visit classes and for girls is to reduce body weight and improve the figure. It is necessary to consider systematized data about motor activity priorities and motivational attitudes to visit classes of physical education in accordance with age and gender.

Key words: gender differences, approach, physical education, motivation, priority, gender, movement.

Михайло Дудко, Інна Хрипко, Наталя Бишевець. Гендерний підхід до системи фізичного виховання. У зв'язку з глобальними змінами ґендерних ролей ідеї гендерного виховання поступово проникають у навчальні заклади. Утім, незважаючи на статеві відмінності, на уроках фізичного виховання учні навчаються за спільними програмами відповідно до державних вимог до рівня загальноосвітньої підготовки учнів. Потрібно вивчити гендерні підходи до організації навчально-виховного процесу, упровадження яких сприяє повноцінній самореалізації учнів у навчальному закладі. ***Мета дослідження*** – узагальнення даних про основні гендерні відмінності, які потрібно враховувати в процесі фізичного виховання учнівської молоді. Аналіз літературних джерел із питань гендерного виховання учнів різного віку засвідчив, що існує стійкий гендерний дисбаланс у відвідуванні занять руховою активністю в позаурочний час та відмінності в самооцінці власних фізичних можливостей. Дівчата й хлопчики, починаючи із середнього шкільного віку, мають різні спортивні вподобання та мотиви відвідування уроків фізичної культури. Уточнено, що ґендерний підхід до фізичної культури – це процес фізичного виховання учнівської молоді з урахуванням рухових уподобань і мотиваційних установок учнів залежно від статі з метою більш повного задоволення їхніх потреб. Молодші школярі, незалежно від статі, схильні до спонтанної ігрової діяльності, а головними мотивами занять є прагнення отримати хороші оцінки. Починаючи із середнього шкільного віку, хлопчикам подобаються одноборства та ігрові види спорту, а дівчатам – оздоровчі види фітнесу. У хлопчиків та юнаків у структурі мотивації до відвідування уроків переважає мотив підвищення фізичної підготовленості, а в дівчат – бажання зменшити масу тіла й покращити статуру. Систематизовані дані щодо рухових пріоритетів і мотиваційних установок до відвідування уроків фізичної культури учнівської молоді залежно від віку та статі потрібно враховувати під час організації процесу їх фізичного виховання.

Ключові слова: гендерні відмінності, підхід, фізичне виховання, мотивація, пріоритет, стать, рух.

Михаил Дудко, Инна Хрипко, Наталья Бышевец. Гендерный подход к системе физического воспитания. В связи с глобальными изменениями гендерных ролей идеи гендерного воспитания постепенно проникают в учебные заведения. Однако, несмотря на половые различия, на уроках физического воспитания ученики учатся по общим программам в соответствии с государственными требованиями к уровню общеобразовательной подготовки учащихся. Необходимо изучить гендерные подходы к организации учебно-воспитательного процесса, внедрение которых способствует полноценной самореализации учащихся в учебном заведении. ***Цель исследования*** – обобщение данных об основных гендерных различиях, которые следует учитывать в процессе

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физического воспитания учащейся молодежи. Анализ литературных источников по вопросам гендерного воспитания учащихся разного возраста показал, что существует устойчивый гендерный дисбаланс в посещении занятий двигательной активностью во внеурочное время и различия в самооценке собственных возможностей. Девочки и мальчики, начиная со среднего школьного возраста, имеют разные спортивные предпочтения и мотивы посещения уроков физической культуры. Уточняется, что гендерный подход к физической культуре – это процесс физического воспитания учащейся молодежи с учетом двигательных предпочтений и мотивационных установок учащихся в зависимости от пола с целью более полного удовлетворения их потребностей. Младшие школьники, неза-висимо от пола, склонны к спонтанной игровой деятельности, а главными мотивами занятий является стремление получить хорошие оценки. Начиная со среднего школьного возраста, мальчикам нравятся единоборства и игровые виды спорта, а девочкам – оздоровительные виды фитнеса. У мальчиков и юношей в структуре мотивации к посещению уроков преобладает мотив повышения физической подготовленности, а в девушек – желание уменьшить массу тела и улучшить фигуру. Систематизированные данные по двигательным приоритетам и мотивационным установкам к посещению уроков физической культуры учащейся молодежи в зависимости от возраста и пола следует учитывать при организации процесса их физического воспитания.

Ключевые слова: гендерные различия, подход, физическое воспитание, мотивация, приоритет, пол, движение.

Introduction. The establishment of civilized norms of life based on equality is an important step in the development of Ukrainian society towards integration into the European community.

Problems of gender education and education research community require to develop specific approaches towards the educational process implementation of which ensures gender socialization of a child and contributes to the complete fulfillment of students in school and further study and careers [9].

Preservation and promotion of health of the younger generation and students in school is a priority educational community, but now experts point to the decline in interest of students in physical education and sport. This situation occurs due to several reasons, among which the researchers named imperfect methods of physical education in classes, low emotionality in classes, lack of healthy lifestyles [15].

In addition, the organization of educational process of physical training does not take into consideration motor motivational preferences and priorities of students of different gender.

According to experts, the salvation of the problem of the interest formation to physical training is possible through the use of gender equality in the system of physical education of students, aimed at taking into account the age and sex characteristics, physical development and physical fitness [4].

Analysis of a large amount of information on gender education of students showed that some scientists conduct research in this area [2; 8; 15; 16; 20].

Pointing out that physical education of children and youth mainly laid sexual dimorphism, based on biological differences between men and women, T. U. Krutsevych emphasizes that physical education programs in schools are designed for the average child and provide only the difference in test standards for boys and girls [7; 8].

The study of gender differences and generalizations we have analyzed helped to find specialists in physical education of students in school [18].

During the installation of motor preferences of younger pupils, S. A. Hrytsiuk showed no significant differences in motor priorities according to sex at a young age [3]. However, a significant difference in students' self–motor training, starting with the last two classes of the primary school was found on the example of O. U. Marchenko. According to the author, the guys are more emotional in their defeats and have high self–esteem of their physical abilities, while girls have low self–esteem [10].

While exploring the state and the formation of the students interest in physical education and sportsit was proved that students in middle and high school have indifference in physical training. The authors found that 43 % of girls of high school age and 22 % among boys oppose exercises. Among the reasons for the decline of interest in Physical Education J. Kravchuk [6] names deficiencies in content and methodology of physical education classes.

In examining the motivational aspect of visiting physical culture lessons by pupils of secondary school age, E. Franks [14] found that the most influential factors that motivate students to engage in physical education, according to 82,2 % of respondents have a desire to improve their fitness and improve tone body. In addition, the boys entered as the effective incentives to employment desire to know themselves and their capabilities, get enough exercise in class, get a positive attitude.

Studying the performance ratio of students to physical education, Bondar established gender differences in the manifestation of the motives and interests of students of middle age in the field of physical culture and

sports: girls choose swimming, gymnastics varieties, water fitness and horse riding, and the boys – sports, fighting sports, pool and bowling [1].

Retrospective analysis of documents revealed by O. Faschuk helped to show persistent gender imbalance in attending classes of physical activity outside school hours, the number of women engaged in the sports was 20–25 % of pupils of youth sports schools. The analysis of questionnaire data allowed to find out that among boys is more popular team sports, and they have indicated interest in greater stability. The author acknowledges that physical education classes offer sports that are more preferable by boys, not girls [13].

According to the results of experimental work of N.V. Kovalev, there are gender differences in the amount of specially–organized motor activity of pupils in overtime. Yes, it is very small, regardless of gender, but slightly larger among boys and is between 9,0 % and 5,4 % of girls [5].

The main motivation of boys to attend classes on physical training in colleges according to V. Khomich are desire to increase the level of physical health, improve physical fitness, improve physique, while the lack of sports facilities and sports clubs reduce the interest of students to motor activity [15].

V. A. Sutula names main factor motivating students to exercise, expressed a desire to improve their physical fitness, while for female students the most effective factor is to optimize weight and to improve physique [12].

So, despite the fact that students according to gender differences have different existing behavioral patterns, biological maturation rate, level of physical fitness, educational institutions offer a program of physical training, which is designed for «average» student. The issue of gender approach in the system of physical education is important and needs further research.

The goal of the paper is to compile data on key gender differences that should be considered in the process of physical education of students.

The tasks of the paper:

- to achieve this goal we have formulated the following objectives;
- to examine the literature on gender upbringing of various types of educational institutions;
- to clarify the concept of «gender approach to physical education of students»;
- to analyze gender differences identified by specialists in physical education students in the school;
- to summarize information on motor characteristics and preferences of visiting and the main reasons for physical culture lessons in school by gender.

Methods. The study used methods such as research, analysis, data systematization and generalization of scientific and methodical literature.

Research results. While **s**tudying the question category of "gender approach", we paid attention to the research of I. Lebid [9], which examines gender socialization as a process of imitation of individual cultural and regulatory standards that society considers appropriate to their gender roles and convinced that the introduction of gender component in the educational process should help to harmonize relations between boys and girls and to improve disclosure of their personal potential.

Gender approach in educational process T. F. Otroshko understands as an extension of the living space to develop individual abilities of each child, the release of teachers from gender–role stereotypes to develop individual skills regardless of gender [11].

On the other hand, the gender approach in physical education according to I. V. Yevstihnevoya is taking into account age and gender characteristics of boys and girls, the formation of values of physical culture and healthy life because of the new ideas about the role of men and women in the society [4].

Studying and summarizing the achievements of specialists in gender pedagogy, gender approach in physical culture, we consider as a process of physical education of students based on motor preferences and motivational attitudes of students by gender in order to better meet their needs and involvement of an active lifestyle.

As a result of the research we have identified key gender differences that should be considered in the process of physical education of students (table. 1).

Obviously, consideration of the data will help teachers of physical training to adjust existing programs and to improve the process of physical education of students.

Conclusions and prospects for further research. According to the literature, an important role in solving the urgent problems of gender education of youth experts confer on the lessons of physical culture that by increasing the quality of physical education help to increase physical activity and thereby contribute to solving the problem of preserving and strengthening health of younger generation.

Table 1

Major Gender Differences that Should be Considered in the Process of Physical Education of Students

Type of Students	Separate gender differences			
	Moving Preferances		Main Motives for Doing Sports	
	B	G	B	G
Younger pupils	spontaneous games, swimming, horse riding		the desire to have good marks	
Middle age pupils	athletics, wrestling, bowling, billiards	gymnastics, aerobics, fitness, shaping, water fitness	enhancing physical fitness, chances to fulfill themselves and to compare their capabilities with the capabilities of other	improving physique
Older pupils	wrestling, fighting sports, football	health gymnastics, dancing, volleyball, athletics	improving physical qualities	avoiding troubles caused by not attending lessons
Students of vocational schools	sportsgames	fitness, shaping, health gymnastics, basketball	improving health and physical qualities	fashion of health lifestyle
Students of higher educational fascilities	swimming, athletics, table tennis, athletic gymnastics	gymnastics, fitness, step aerobics, stretching, cheerleading, sports aerobics	enhancing physical fitness, improving health	optimization of body weight, improving physique and posture

B – boys; G – girls.

The research we conduct helped to clarify the concept of «Gender approach in physical education», according to which the gender approach in physical training we considered as a process of physical education of students based on motor preferences and motivational attitudes of students by gender in order to better meet their needs and to improve involvement of an active lifestyle.

Gender features of valuable orientations of students of different types of educational institutions in the field of physical culture and sports and main reasons that affect their involvement in the attendance of physical education and sportsin schools were defined.

It was found that knowledge of gender peculiarities in the system of physical training will help to adjust training programs, to promote positive attitude towards education locomotor activity and to ensure the implementation of a differentiated approach in the process of physical education of students.

We plan to focus our further studies on the establishment of gender characteristics in sportssections of physical activity, physical condition and physical readiness of students depending on the type of educational fascility.

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THE ROLE OF MOTOR ACTIVITY IN THE SOCIAL INTEGRATION OF DISABLED INDIVIDUALS

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Abstract

The current relevance of the research. Over a significant period of human development disabled people were considered to be dependent and were regarded as weak, incapable, etc. Frequently, dependence, a result of disability, was exaggerated by teachers, family members and society. Adaptive physical culture and sportscan reduce dependence and social isolation, helping disabled people to become full members of society. ***Methods of the reseacrh:*** analysis and generalization of special, scientific and methodical literature, the Internet; standardized documents; comparative method, abstracting, logical and theoretical analysis. ***The results of the study.*** The main goal of lessons of adaptive physical culture and sports is to increase the level of social integration, welfare, reduction of the isolation of disabled people by changing public opinion about disability and their psychological attitude to themselves. To achieve this goal, first of all, it is necessary to reduce the level of discrimination which is associated with disability. Secondly, to encourage and stimulate disabled people to realize their own potential and, thirdly, to implement changes in society that promote the full social implementation of this category of people.At the same time, the competitions in adaptive sports, first was regarded as local, have turned into the widespread international sports events for athletes with different forms of disability. The success of the modern Deaflympics, Paralympic Games and World Games of Special Olympics is both a testimony and a factor in changing the attitude of society towards disability. Disabled people are not a burden or an issue of social expenditure, but they are assets of a society that can make a significant contribution to its development and prosperity. It is necessary to create appropriate conditions, eliminating physical and social barriers. Training sessions and competitions contribute to it in terms of creating a barrier-free environment, and changing public attitudes. ***Conclusions.*** Motor activity training of disabled people, their participation in competitions, can not only improve their physical, mental, leadership and other qualities, promote the development of communicative abilities, self-confidence, confidence in their own abilities, but also provide the preconditions for maximum full-fledged social integration of disabled people, as well as the humanization of public relations in general.

Key words: motor activity, adaptive physical culture and sport, disabled people.

Імас, Ольга Борисова, Ірина Когут. Роль рухової активності в соціальній ітеграціїї людей з інвалідніс**тю.** ***Актуальність***. Протягом значного періоду розвитку людства особи з інвалідністю вважалися залежними і розглядалися як слабкі, недієздатні, невмілі і т. п. Найчастіше, залежність, що виникає внаслідок інвалідності, є перебільшеною педагогами, членами сім'ї і суспільством. Адаптивна фізична культура і спорт здатні зменшити залежність і соціальну ізольованість, допомагаючи особам з інвалідністю стати повноправними членами суспільства. ***Методи дослідження***: аналіз і узагальнення спеціальної та науково-методичної літератури, інформаційних ресурсів мережі Інтернет; програмно-нормативних документів; компаративний метод, абстрагування, логіко-теоретичний аналіз. ***Результати дослідження***. Основною метою занять адаптивною фізичною культурою і спортом є підвищення рівня соціальної інтеграції, добробуту, зменшення ізоляції осіб з інвалідністю шляхом зміни громадської думки про інвалідність і психологічного ставлення їх до самих себе. Для досягнення поставленої мети, в першу чергу, необхідно знизити рівень дискримінації, пов'язаної з інвалідністю. По-друге – заохочувати і стимулювати осіб з інвалідністю, щоб вони усвідомили їх власний потенціал і, по-третє, здійснити зміни в суспільстві, що сприяють повноцінної соціальної реалізації зазначеної категорії осіб. У той же час, змагання в адаптивному спорті, що починалися як локальні, перетворилися в масштабні міжнародні спортивні заходи для спортсменів з різними формами інвалідності. Успіх сучасних Дефлімпійських, Паралімпійських ігор та Всесвітніх ігор Спеціальних Олімпіад є одночасно і свідоцтвом, і фактором зміни ставлення суспільства до інвалідності. Люди з інвалідністю – не тягар і не стаття соціальних витрат, а актив суспільства, який здатний внести вагомий внесок у його розвиток і процвітання. Необхідно лише створити відповідні умови, усуваючи фізичні та соціальні бар'єри. Тренувальні заняття та змагання сприяють цьому як в плані створення безбар'єрного середовища, так і зміни суспільних установок. ***Висновки***. Заняття людей з інвалідністю руховою активністю,

залучення їх до участі в змаганнях здатні не тільки вдосконалювати їх фізичні, психічні, розумові, лідерські та інші якості, сприяти розвитку комунікативних здібностей, самовпевненості, віри у власні можливості, а й забезпечити передумови для максимально повноцінної соціальної інтеграції осіб з інвалідністю, а також гуманізації суспільних відносин в цілому.

Ключові слова: рухова активність, адаптивна фізична культура і спорт, особи з інвалідністю.

Евгений Имас, Ольга Борисова, Ирина Когут. Роль двигательной активности в социальной интеграц**ии людей с инвалидностью.** ***Актуальность.*** В течение значительного периода развития человечества люди с инвалидностью считались зависимыми и рассматривались как слабые, недееспособные, неумелые и т. д. Зачастую зависимость, возникающая вследствие инвалидности, является преувеличенной педагогами, членами семьи и обществом. Адаптивная физическая культура и спорт способны уменьшить зависимость и социальную изолированность, помогая лицам с инвалидностью стать полноправными членами общества. ***Методы исследования*** – анализ и обобщение специальной и научно-методической литературы, информационных ресурсов сети Интернет, программно-нормативных документов, компаративный метод, абстрагирования, логико-теоретический анализ. ***Результаты исследования.*** Основной целью занятий адаптивной физической культурой и спортом является повышение уровня социальной интеграции, благосостояния, уменьшение изоляции людей с инвалидностью путем изменения общественного мнения об инвалидности и их психологического отношения к самим себе. Для достижения поставленной цели, во-первых, необходимо снизить уровень дискриминации, связанной с инвалидностью, во-вторых – поощрять и стимулировать лиц с инвалидностью, чтобы они осознали собственный потенциал, а в-третьих – осуществить изменения в обществе, способствующие полноценной социальной реализации указанной категории лиц. В тоже время соревнования в адаптивном спорте, начинавшиеся как локальные, превратились в масштабные международные спортивные мероприятия для спортсменов с самыми разными формами инвалидности. Успех современных Дефлимпийских, Паралимпийских и Всемирных игр Специальных Олимпиад является одновременно и свидетельством, и фактором изменения отношения общества к инвалидности. Люди с инвалидностью – не обуза и не статья социальных расходов, а актив общества, который способен внести весомый вклад в его развитие и процветание. Необходимо лишь создать соответствующие условия, устраняя физические и социальные барьеры. Тренеровочные занятия и соревнования способствуют этому как в плане создания безбарьерной среды, так и изменения общественных установок. ***Выводы.*** Занятия людей с инвалидностью двигательной активностью, их привлечение к участию в соревнованиях способны не только совершенствовать их физические, психические, умственные, лидерские и другие качества, способствовать развитию коммуникативных способностей, самоуверенности, веры в собственные возможности, но и обеспечить предпосылки для максимально полноценной социальной интеграции лиц с инвалидностью, а также гуманизации общественных отношений в целом.

Ключевые слова: двигательная активность, адаптивная физическая культура и спорт, лица с инвалидностью.

Introduction. Over a significant period of human development disabled people were considered to be dependent and were regarded as weak, incapable, etc. Usually, dependence, a result of disability, was exaggerated by teachers, family members and society. In particular cases, the dependence of disabled people is completely created by others who are unable to stimulate them to develop ideas, express their desires and make their own decisions. The society is often not ready to realize the importance of independence of disabled people. Studies showed that young people with developmental disabilities are usually isolated from physical culture and sports, because teachers and coaches are overly cautious and restrict them too much, worrying for their safety [4; 6].

Adaptive physical culture and sportscan reduce dependence and social isolation, helping disabled people to become full members of society [5].

There is a significant amount of scientific work, proving the positive impact of motor activity on people's lives. For example, there are separate studies showing positive changes of disabled people in a result of sports activities. They improve the ability to walk, run, jump, climb the stairs; improved body posture, muscle tone, sedentary balance, coordination, strength, etc [1; 3; 8; 10; 11]. However, within the framework of this study, an attempt to reveal the role of motor activity in the social integration of disabled people was made.

Connection with scientific plans and topics. The work was carried out in accordance with the thematic plan for 2016–2020, issued by Ministry of Education and Science on the topic 1.7. «Organizational and methodological basis for the development of adaptive sports» (state registration number 0116U001613).

The purpose of the study is to analyze the main provisions that reveal the role of motor activity in the social integration of disabled people.

Research materials and methods: analysis and generalization of special, scientific and methodical literature, the Internet; standardized documents; comparative method, abstracting, logical and theoretical analysis, content analysis.

Discussion and the results of the study. The use of physical exercises for health-improving purposes has been known since ancient times, but information about the first sports competitions for disabled people is

dated by the end of the 19th century, when sports clubs for people with hearing impairments were opened in Germany. Since then, adaptive sportshas started its active development and now includes a large number of competitions for athletes from various nosological groups, including the Deaflympic Games (for people with hearing impairments), the Paralympic Games (for persons with musculoskeletal disorders, visual impairments and mental development abnormalities) and the World Games of Special Olympics (for people with mental disabilities) [1; 4; 5; 11].

Competitions in adaptive sports, first was regarded as local, have turned into the widespread international sports events for athletes with different forms of disability. The success of the modern Deaflympics, Paralympic Games and World Games of Special Olympics is both a testimony and a factor in changing the attitude of society towards disability. Disabled people are not a burden or an issue of social expenditure, but they are assets of a society that can make a significant contribution to its development and prosperity. It is necessary to create appropriate conditions, eliminating physical and social barriers. Training sessions and competitions contribute to it in terms of creating a barrier-free environment, and changing public attitudes.

The main goal of lessons of adaptive physical culture and sports is to increase the level of social integration, welfare, reduction of the isolation of disabled people by changing public opinion about disability and their psychological attitude to themselves. To achieve this goal, first of all, it is necessary to reduce the level of discrimination which is associated with disability. Secondly, to encourage and stimulate disabled people to realize their own potential and, thirdly, to implement changes in society that promote the full social implementation of this category of people.

During the motor activity exercises the representation of the society about disabled people changes by shifting attention from the existing handicaps of their abilities. Due to joint motor activity, healthy people meet disabled people in favorable conditions and can assess the real possibilities of this category of people. The gained experience during the joint sessions is transformed into a better way for their representation about the capabilities of disabled people. Therefore, not focusing healthy people attention on the deviations of disabled people is largely ensured by joint participation in training sessions and competitions.

At the same time, motor activity change also disables people who have confidence in their abilities, the opportunity to acquire skills that affect the solution of many life problems, such as getting an education, employment, etc.; Their social skills are developing, the number of friends and acquaintances outside their families is increasing, leadership qualities, self-discipline and responsibility are formed, and the horizon for positive changes in their lives is expanding.

Adaptive physical culture and sportsalso contribute to the social and emotional development of disabled people by forming public consciousness, self-confidence, independence, adequate self-esteem, and also increasing their level of motivation for engaging in motor activity. These skills can be used in employment, because they are associated with increased confidence in their abilities and ensure the acquisition of important social skills necessary for work.

Many people with disabilities have come to terms with isolation and discrimination, because they feel themselves helpless, unable to change their position without role models and information about the lives of others with disabilities, they do not have the knowledge and tools to improve it. If they did not have examples of better living conditions, they would not be able to imagine the possibilities of improving their lives.

Healthy people often do not have enough information on disability issues and examples of positive interactions between people with disabilities. Sometimes even people with sincere intentions to help people with disabilities can ignore or contribute to their isolation, since they do not have enough information and skills necessary for their integration into society.

Achieving the maximum positive effect of physical culture and sports requires finding adequate measures that would create inclusive conditions for the participation of disabled people in sports activities and contribute to the formation of awareness of the characteristics of participants in the sports process, help to develop communication skills, mutual respect and mutual understanding. With appropriate communication, knowledge and skills, physical culture and sportscan become a powerful tool for changing the attitudes of society and empowering disabled people.

The importance of physical culture and sports as means to improve the lives of people with disabilities is reflected in a number of international agreements, policies, and programes: in 1978, UNESCO determined the value of motor activity for disabled people in the International Charter of Physical Education and Sport. In 1982, the United Nations developed the World Program of Action, a global strategy for increasing the level of prevention of disability, rehabilitation and equal opportunities. The Program announced the need to encourage all disabled people to various forms of sporting events by creating new and adapting existing

facilities and the correct organization of physical and sports activities. In 1993, the UN adopted the Standard Rules for the Equalization of Opportunities for Disabled People, which also dealt with the rights to engage in sports in this category of people [18; 19]. The UN Convention on the Rights of Disabled People is the first legally binding international instrument that addresses the rights of these citizens in the context of physical culture and sports. To ensure the implementation of the rights enshrined in the Convention, worldwide, in January 2006, the International Working Group on Disability in Sportswas established. Its members are representatives of the UN, international organizations, and civil society, academia and sports organizations. The working group monitors and ensures the popularization of physical culture and sports at the global level [2; 7; 9; 13–16].

It should be noted that the worldwide popularity of adaptive sports, its physical, social, humanistic and economic potentials contribute to the formation of a platform for educational and social mobilization, and serve as an ideal tool for reducing the level of isolation associated with disability, and promote socialization, independence, empowerment and the full integration of disabled people into society.

Media coverage of sports events with the participation of disabeled people can play a crucial role in creating a positive and adequate view of these people. For example, the growing popularity of the Paralympic Games has made a significant contribution to the recognition of disabled people and their integration into society. So, according to the organizing committee of the Paralympic Games in London in 2012, the total television audience during the Games was about 4 billion viewers. Only this event significantly increases public awareness about the capabilities of athletes with disabilities.

Physical culture and sports often become an effective factor that facilitates the integration of people with disabilities into the normal daily life of society. So, for example, the Brazilian boy Gabriel Muniz, was born without both feet, but he played football with other children in the yard of his house. Gabriel trained daily, playing his favorite game - football and became the best player and captain of the school team. Gabriel Muniz became the first child with a disability, who for his talent and perseverance was admitted to the junior school of FC Barcelona. The unique boy, who was noticed by the coaches of the Barcelona Academy, was also invited to play a few exhibitions matches in support of the World Cup in Brazil in 2014 [12].

In addition, one of the five innovations of the jubilee World Cup in 2014 in Brazil was his discovery, when the first kick was performed by a teenager with an exoskeleton. The exoskeleton, in which a boy with a disability opened the World Cup, allows you to exercise, not just to get up and walk. Born in Brazil, Professor Miguel Nicolelis, being the coordinator of the exoskeleton project, hopes that the hearts of millions of people who saw the opening of the Championship will open for charity and will be a pledge to reduce the level of social exclusion of people with disabilities.

Social isolation is not only an external barrier preventing access of disabled people to full social, economic, political, cultural realization, as a rule, it is also an internal barrier, as a result of which this category of people calls into question its necessity and importance for society. For example, many Ukrainian football players with amputations, repeated winners of international tournaments, reported that they thought about suicide when they lost limbs in the war in Aghganistan. Based on their own previous, stereotypical ideas about the lives of people with disabilities, they had no hope for a happy future. Participation in sports competitions gave these players the opportunity to understand that they are able to do much more than they could imagine. Their views on the limitations caused by their disability have been radically changed, giving them a more optimistic attitude and restoring faith in their future.

Physical education and sports allow people with disabilities to acquire the skills necessary to implement changes. Awareness, confidence, communication skills that people with disabilities receive in the process of training sessions, often are an incentive for participation in educational activities. Acquired leadership skills and teamwork skills are rapidly evolving and are easily transferred to this new field. A good example is the work of Valery Sushkevych, a Ukrainian politician, authorized by the President of Ukraine on the rights of people with disabilities, the president of the National Sports of Disabled People's Committee of Ukraine, the chairman of the All-Ukrainian Association «National Assembly of Disabled People of Ukraine». Valerii Sushkevych as a child was ill with poliomyelitis was forced to fight for his life and prove to him and others that he can achieve everything without yielding to the healthy people. While swimming, he became the champion of Ukraine, graduated from the physics and mathematics faculty of Dnipropetrovsk University. The political career of Valerii Mikhailovich is also impressive. Thanks to the offered bills, people with disabilities are getting more and more rights to full and equal life in our country. The way from the little boy who had been ill with poliomyelitis and overcame difficulties due to sportsand moral courage – to the Hero of Ukraine and the organizer of one of the best Paralympic and Deaflimpic teams of the world – is his rise to a seemingly unassailable peak.

People, who acquired disability during their lifetime, play a crucial role of connecting link between disabled and healthy people. Many last combatants became disabled because of war, they are considered as heroes. Because of particular circumstances, society is ready to listen to them more often than these people who are disable from their birth. People with acquired disability, as a rule, did not suffer from that social, economic, political restriction, which people with inheritable disability faced. They are able to be leaders, to demonstrate the right model of behaviour, and who stands for the rights of disabled people. The relevant confirmation of the above-mentioned can be Ukrainian athletes, who got hurt in the period of military operation in the east of Ukraine and during the event of Maydan in 2013-2017, they do not lose heart, and stand still for rights of all Ukrainians to the possibility to live in an indivisible, independent, strong and democratical state, where everyone without exception has equal rights and responsibilities for the full realization in society.

Conclusions and prospects for further research. Examining the relevant problems which characterize the vital activity of disabled people at the present stage of the development of society, it is established that, despite the considerable efforts of state and public organizations in terms of creating favorable conditions for the social integration of this category of citizens, unfortunately, there is a number of issues that slow the pace of their implementation. One of the important problems that negatively affect the social integration of disabled people in our country is the low awareness of the society about the possibilities of this category of people. Humanization of public relations will help to solve the existing problems of this category of people and as a consequence – positively affect their integration into Ukrainian society.

At the same time, engaging disabled people with motor activity, involving them in participating in competitions, can not only improve their physical, mental, mental, leadership and other qualities, promote the development of communicative abilities, self-confidence, confidence in their own abilities, but also provide the prerequisites for maximum full-fledged social integration of disabled people, as well as humanization of public relations in general.

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VOLUNTEER WORK FOR DEVELOPING SKILLS IN PROSPECTIVE SPECIALISTS IN PHYSICAL CULTURE AND SPORTS

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Abstract

Professional training assumes the formation of the young generation of spiritual values and ideals, behavioral stereotypes and concrete actions. The purpose of the research was to analyze the directions of using volunteer activity in the formation of professional and social competencies of students of the Faculty of Physical Education and Sports.

The realities of the training of specialists allowed us to single out professional and social competencies as a separate species. The graduate should have an understanding and perception of ethical norms of behavior, understand the need to observe the norms of a healthy lifestyle, be creative, sociable, tolerant. In his professional work should provide for the prospects of working with the formation of a system of goals, to design the content of educational and upbringing activities with self–monitoring and self–evaluation of the work performed.

It is determined that the pedagogical functions of volunteer activity are the orientation of the individual in social relations; The creation of an educational space; Ensuring the possibility of acquiring the experience of social and communicative interaction. The experience of using volunteer activity testifies to the need to ensure the unity of theoretical knowledge and practical activity, which is represented by the «model of formation» using different forms of organization in the following areas: educational, sports and social component within the framework of the students' practical training of the faculty of physical education and sport.

To assess the effectiveness of experimental work on the impact of volunteer work on the formation of professional and social competence, we used quantitative and qualitative assessments, which express the changes in the characteristics of individual students. In terms of readiness of the future teacher to education of students was recorded positive trend: students with low level of readiness was 36,4 % less; middle and high readiness – more by 26,4 and 11,1 % respectively, confirming the effectiveness of educational practice using components of volunteering and its impact on the formation of professional and social competencies.

Analyzing the experience of using volunteering at the Faculty of Physical Education and SportsKherson state university note that it promotes the professional experience of moral consciousness; encourages the development of motivational sphere student, his personal qualities, aspiration to self-development, to expand professional competence.

Key words: competence, volunteer activity, vocational training, students, functions, directions.

Ірина Маляренко, Борис Кедровський, Юрій Ромаскевич, Ольга Кольцова. Волонтерство у формуванні компетентностей майбутніх фахівців із фізичної культури та спорту. Професійна підготовка передбачає формування в молодого покоління духовних цінностей та ідеалів, поведінкових стереотипів і конкретних вчинків. Мета дослідження – проаналізувати напрями використання волонтерської діяльності у формуванні професійно-соціальних компетентностей студентів факультету фізичного виховання та спорту.

Реалії підготовки фахівців дали нам підставу виокремити професійно-соціальні компетентності як окремий вид. Випускник повинен володіти розумінням та сприйняттям етичних норм поведінки, усвідомлювати необхідність дотримання норм здорового способу життя, бути креативним, комунікабельним, толерантним. У своїй професійній діяльності потрібно передбачати перспективи роботи з формуванням системи цілей, конструювати зміст освітньо-виховної діяльності із самоконтролем та самооцінкою виконаної роботи.

Визначено, що педагогічними функціями волонтерської діяльності є орієнтація особистості в соціальних відносинах, створення виховного простору, забезпечення можливості набуття досвіду соціально-комунікативної взаємодії. Досвід використання волонтерської діяльності свідчить про необхідність забезпечення єдності теоретичних знань і практичної діяльності, що представлена «моделлю формування» з використанням різних форм організації за такими напрямами, як освітня, спортивна та соціальна складові частини в межах навчальних практик.

Для оцінки результативності експериментальної роботи щодо впливу волонтерської роботи на формування професійно-соціальної компетентності ми користувалися кількісними і якісними оцінками, які виражають зміни в характеристиках окремих студентів. За критерієм готовності майбутнього педагога до виховання учнів зафіксовано позитивну динаміку: студентів із низьким рівнем готовності стало на 36,4 % менше; із середнім та високим рівнями готовності – більше на 26,4 і 11,1 % відповідно, що підтвердило ефективність проведення навчальної практики із застосуванням складників волонтерської діяльності та її вплив на формування професійно-соціальних компетентностей.

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Аналізуючи досвід використання волонтерської діяльності на факультеті фізичного виховання та спорту ХДУ зазначимо, що вона сприяє формуванню професійного досвіду, розвитку етичної свідомості; стимулює розвиток мотиваційної сфери студента, його особистісних якостей, спрямованості до саморозвитку, розширення професійної компетентності.

Ключові слова: компетентності, волонтерська діяльність, професійна підготовка, студенти, функції, напрями.

Ирина Маляренко, Борис Кедровский, Юрий Ромаскевич, Ольга Кольцова. Волонтерство в формировани**ии компетентностей будущих специалистов по физической культуре и спорту.** Профессиональная подготовка предполагает формирование у молодого поколения духовных ценностей и идеалов, поведенческих стереотипов и конкретных поступков. Цель исследования – проанализировать направления использования волонтерской деятельности в формировании професионально-социальных компетентностей студентов факультета физического воспитания и спорта.

Реалии подготовки специалистов позволили нам выделить профессионально-социальные компетентности как отдельный вид. Выпускник должен обладать пониманием и восприятием этических норм поведения, понимать необходимость соблюдения норм здорового образа жизни, быть креативным, коммуникабельным, толерантным. В своей профессиональной деятельности необходимо предусматривать перспективы работы с формированием системы целей, конструировать содержание образовательно-воспитательной деятельности с самоконтролем и самооценкой выполненной работы.

Определяется, что педагогическими функциями волонтерской деятельности являются ориентация личности в социальных отношениях; создание воспитательного пространства; обеспечение возможности приобретения опыта социально-коммуникативного взаимодействия. Опыт использования волонтерской деятельности свидетельствует о необходимости обеспечения единства теоретических знаний и практической деятельности, которая представлена «моделью формирования» с использованием различных форм организации по таким направлениям, как образовательная, спортивная и социальная составляющие в рамках учебных практик студентов факультета физического воспитания и спорта.

Для оценки результативности экспериментальной работы по влиянию волонтерской работы на формирование профессионально-социальной компетентности мы пользовались количественными и качественными оценками, которые выражают изменения в характеристиках отдельных студентов. По критерию готовности будущего педагога к воспитанию учеников зафиксирована положительная динамика: студентов с низким уровнем готовности стало на 36,4 % меньше; со средним и высоким – больше на 26,4 и 11,1 % соответственно, что подтвердило эффективность проведения учебной практики с использованием составляющих волонтерской деятельности и ее влияние на формирование профессионально-социальных компетенций.

Анализируя опыт использования волонтерской деятельности на факультете физического воспитания и спорта ХГУ, отметим, что она способствует формированию профессионального опыта, развития нравственного сознания; стимулирует развитие мотивационной сферы студента, его личностных качеств, направленности к саморазвитию, к расширению профессиональной компетентности.

Ключевые слова: компетентности, волонтерская деятельность, професиональная подготовка, студенты, функции, направления.

Introduction. Professional training of future specialist getsnew significancein the modern development of social and political life in Ukraine.

The current system of training has a positive experience, traditions and teaching potential but it also hassome shortcomings and contradictions that do not allow it to ensure compliance to the leading tasks in the context of globalization of the modern society. In such a situation to develop and to actualize the basic model of professional and social competence of future specialist in physical education and sportsbecomes especially important.

A comprehensive theoretical and empirical analysis of the problem revealed contradictions between social needs in preparing young students able to implement professional, social and cultural activities and insufficient readiness of graduates for its realization.

A lot of scholars dedicated their works to social education in vocational training as a part of social pedagogy. Among them there are studies of V. M. Basova, V. H. Bocharova, M. P. Hurianova, A. V. Mudryk, L. Y. Nikitina, M. M. Plotkin, V. D. Semenov and others.

The works of H. M. Andreieva, A. F. Volovyk, V. A. Volovyk, L. V. Kurylo, I. I. Shulha are of particular importance for our research. They reveal essence, display value and describe the educational potential of volunteering. Therefore, it islegally to talk of the need to increase attention to volunteering as a way of formation of students' professional and social competencies within the university as it opens up the opportunities to perform personal initiative of students, orientations in social relations and skills development of social and communicative interaction between future specialists of physical culture and sports.

The objective of the study is to analyze usage of volunteering trends in forming professional and social competencies of students of the faculty of physical education and sports.

The goals of the paper:

1. To clarify essence of volunteering as a means of professional and social competence of students of physical education and sports;

2. To develop and to test the effectiveness of the model of formation of professional and social competences of the future specialist of physical education and sports considering volunteering.

Research materials and methods: the analysis of the scientific and methodical literature on the study; generalization of theoretical and empirical information; the analysis of the experience with volunteering for the faculty of physical education and sports in Khersonstate university.

Discussion and the results of the study. Scientists say that professionalspecialist training is characterized by certain quality criteria for which the institution of higher education is responsible and it is characterized by the following components:

– expertise skills: special, methodical, psychological and educational;

–professional skills:didactic, organizational, structural, prognostic, communicative;

– professional qualities of a personality, values, abilities, traits [3; 4].

The main categories of students studying are competences and results. Nowadays these two terms are the key ones to the European Higher Education Area. A lot of scientific publications were devoted to its analysis and designing.

Interpretation of the category «competence» covers knowledge, abilities, skills, beliefs, values, motives and feelings that allow the individual to be successful in a particular field of activity. Social competence effectively lets the individual perform social roles asa citizen, a family man, a professional, and so on.

Competences represent a dynamic combination of knowledge, understandings, skills, abilities and capabilities. Under the current requirements the following competencies are formed: social, personal, instrumental, general and professional.

Reality of specialists training allowed us to distinguish professional and social competence as a separate kind. Consequently, the graduate should possess the understanding and perception of ethical behavior, be aware of the need to lead healthy lifestyle, be creative, sociable and tolerant. He should predict prospects of the formation of the system of targets, designing the content of educational activity of self–control and self-assessment of the work done in his professional activities.

For these reasonsthe directions and components of professional and social competences were determined:

– *scientific and theoretical knowledge* (knowledge of organizational principles of physical culture and sports, psychological and educational characteristics of personality, the norms of behavior, technology of educational work and others.)

– *practical skills* (Gnostic ones – the ability to comprehend and evaluate their own activities, to make every person be interested in the basics of healthy lifestyle; the designing ones – the ability to predict educational activities, to develop programs (projects,technologies) of educational work;constructional ones-the ability to build models of their own activities in spite of the situation, to find original solutions; organizational ones – the ability to organize common activities, to form educational space; communicative ones – the ability to persuade, to motivate to the action, to do correction of a certain position),

– *personal qualities* (formation of ethical norms, humanity, social activities etc.).

However, the practical preparation is necessary to organize and conduct research, mastering the techniques and innovative technologies of work with talented youth, children with special needs, individual design techniques.

Any developed civil society with one of the main institutions such as volunteering is anintegral part of all democratic states in the world. In our opinion and as the professional practice activities in KSU confirms implementation of volunteering as a means of training and educatinginto the process of training specialists of physical culture and sports is effective.

The term «volunteering» is commonly understood as a specific, voluntary, free activity and the «volunteer" is a person who performs the non–profit, social and community activities to provide various kinds of assistance and promotes the action of national and international values related to the organization of mass sports, entertainment and other cultural and social events for free and voluntarily [1].

Depending on the purpose the volunteering areas are divided into: a)career guidance; b) rehabilitation; c) informational and educational; d) fundraising; e) recreative; f) social and domestic; g) diagnostic and correctional; h) educational.

Depending on the nature of work there are following activities: a) social rehabilitation to prevent and combat negative phenomena among young people; b) social care and protection of the most vulnerable categories of people; c) help to integrate into society [1; 4].

The process of forming professional and social competencies at the faculty occurs during classes, training and internship that provides the principle of unity of theoretical knowledge and practice. During the educational practice it was decided to introduce the elements of volunteering, the contents of which consist of the development, preparation and implementation of social projects, programs, sports events, sports holidays, etc. This necessitated the development of the model of professional and social competences of future specialist including volunteering (figure 1).

Target component	Target	Formation of professional and social competencies of the specialist of PT and SP				
	Objectives	1. The transfer of knowledge and skills into practice; 2. Learning the fitness technologies which are appropriate to the specific after–school surrounding; 3. Formation of experience of moral behavior; 4. Improving and strengthening the interests of the specialist of PT and SP				
	Principles	Task orientation	Consciousness and activity	Alternative	Social orientation	Self-development Self-determination Self-realization Self-organization Selfrehabilitation
		Harmonious development of personality	Accessibility and individualization	Health improving orientation of educational space	Consideration of emotionally enriched	
Content component	**CONTENT** **(The program of the educational practice)**					
	Sports and recreational activities	Volunteering		Art and creative activities	Work experience	
	Sporty ←	Social			→ Educational	
	THE CYCLE OF THE KEY POINTS					
	Planning and control	Organization of sporting and fitness activities.		Organization of assistance and cooperation	Creating the information surrounding for promoting healthy lifestyle, going in for sports	
Organizational-pedagogical component	**THE FORMS**					
	Frontal		Group	Individual		
	Informational and mass	Practical	Sports clubs, collective creative activities, training, rotation and others.	Design of personal achievement, creative tasks, counseling, working with a health diary, self–service and others.		
	The discussions, quizzes, chats, tours, meetings and so on.	Holidays Olympic sports, concerts, competitions, festivals and others.				
	THE METHODS OF EXPERIENCE FORMATION OF MORAL BEHAVIOUR					
	Projective	Watching and analysis	Informational	Practical	Tasks	Promoting and correction (competitive, incentives and penalties)
Diagnostic component	**THE CRITERIA OF THE RESULTS FORMATION OF LEARNING USING THE COMPETENCE APPROACH**					
	Cognitive ←	**Affective**			→ **Psychomotorical**	
	THE QUALITY MONITORING OF TRAINING					
	The interim and final control, the expertive survey of the specialists					
	THE LEVELS OF THE FORMATION					
	High, middle, low					
Resultative	The expected result	The high level of readiness of the competitive professional and competent specialist of PT and SP				

Chart 1. *The Model of Formation of Professional and Social Competence of the Future Specialist of PT and SP Using Volunteer Work During Practical Training*

The main theoretical and methodological approach in building the model was the integration approach that meantthe content-information interaction between the program material of the theoretical courses and practical training.

The developed «model of formation» includes interrelated components: targeted, meaningful, organizational, educational, diagnostic and effective.

The trust one is a component specifying the goals and objectives which defined the principles and approaches to self-fulfillment, self-organization and self-development of the student during the practical training.

The informative component of the educational model includes specific activities of a professor and students.

As it can be seen from the «model of formation» one of the activities is voluntary, represented by a sporting, social and educational components.

The organizational-pedagogical component displays the forms (frontal, group and individual) and the methods of work [2; 3].

The diagnostic and effective componentsincludethe criteria and levels of expected results.

This practice takes place during the school year.The student must take part in the organization and holding of not less than 10 fitness and sporting events with appropriate themes and types of social projects. Participating in the development and implementation of these projects stimulates the development of professional andconstructive skills, creates a personal need of tolerant interaction with different groups.

During participating in the activities the students gain skills according to the following components:

The educational component is represented by a number of the eventsto form the information space to promotethe healthy lifestyle, physical training and going in for sports.All students holddifferent lectures, workshops, trainings, Olympic classes, etc.

The sports component involves obtaining service skills, organization and conducting of sporting events and presentsthe resources of the faculty of physical education and sport. The activities provide such forms of student participation as Festival «Youth for the healthy lifestyle», sports festival «Street fest», «The Olympic running day», «Children Ahileia», «Olympic Stork», assistance in organizing sports competitions in gymnastics (Beresh Cup), cross-Fit and others.

The social component is represented by the organization and holdingthe events to help children orphans and children with disabilities.

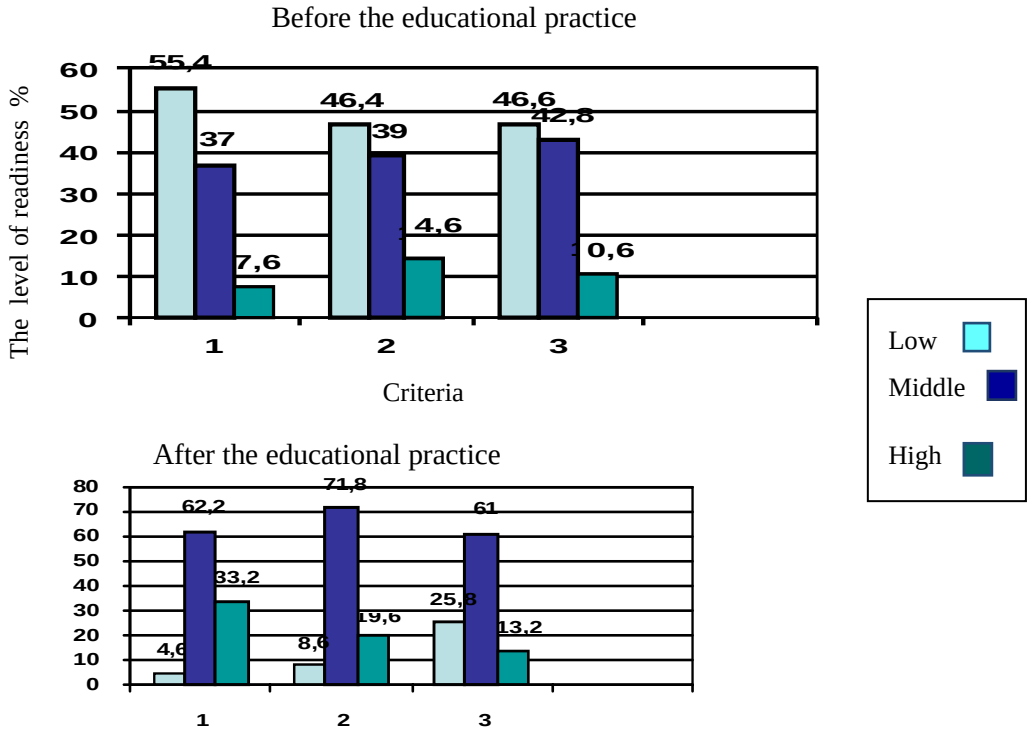

Fig. 2. *The Levels of Readiness of Future Teachers to Educate Students*

Note. 1 – research and theoretical readiness; 2 – practical preparedness; 3 – psychological readiness.

Every yearthe action «Help save a child» (to help children with cancer), the sportsand recreation project to work with children with autism and Down syndrome, various sports events in the regional orphanage, the charitable race «With faith in the heart», are held.

The main targets of these eventsare the moral and aesthetic education of youth by developing the Olympic ideals in them; building motivation to improve health, physical training and sports, the creative process; increasing the role of Olympic education. Overall, the number of people covered by each event ranged from 50 to 5,000 ones.

To estimate the effectiveness of experimental work as for the impact of volunteer work onto the formation of professional and social competence, we used quantitative and qualitative assessments, which express the changes in the characteristics of some students.

Measuring the level of professional ingredients and social competencies (scientific, theoretical, practical, psychological) was based on «The questionnaires to determine the level of readiness of the future teacher to educatepupils».

Thus, according to the criteria of readiness of the future teacher to educate students the positive trend was determined: the number of the students with the low level of readiness became 36,4 % less; the number of the ones with the middle and the high levels of readiness became 26,4 % and 11,1 % more. The features confirmed the effectiveness of educational practice using the components of volunteering and its impact onto the formation of professional and social competencies.

Conclusions. Thus, the process of formation of professional and social competencies within the educational practice can be represented as a gradual expansion of living space. We found out that the structural and creative community of students, based on the principle of active involvement into the process of training and socio–cultural assimilation and moral interaction using various forms of organization of the events, is the structural component in the educational practice.

Analyzing the experience of using volunteering at the faculty of physical education and sports in KSU it is important to note that it promotes the professional experience,the development of moral consciousness; encourages the development of motivational sphere of the student, his personal qualities, the aspiration to self–development, the expanding the professional competence.

The prospects for future research are in the implementation of voluntary activities into other forms of educational process of high educational institution with the further, more detailed testingof its effectiveness.

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EXPERT EVALUATION OF THE ORGANIZATION OF PHYSICAL EDUCATION IN EDUCATIONAL INSTITUTIONS WITHIN THE GENERAL SECONDARY EDUCATION SYSTEM

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Abstract

The current relevance of the research is due to a decrease and sometimes lack of motivation in students, especially high school age, to exercise so as the time limit for extracurricular forms of organization of physical education. ***The goal of the study*** was to determine the opinions of teachers of physical culture, on the organization of physical education in educational institutions of secondary education. The results of the research paper present data obtained from the survey author Physical Education teachers working in various schools of secondary education in Ivano–Frankivsk, on the organization of physical education in school. ***The research found*** that 21,2 % of teachers still do not take into account the views of students in choosing the variant modules. Identified guidance to teachers introduced new variant modules of the program of physical education. Described list of diseases that are ill students and other features of the educational process with physical training. ***The findings*** obtained in the study provide an opportunity to «look through the eyes of teachers» in the process of physical education in schools of general secondary education, recommendations for improving curriculum. The material can serve as methodical teacher to develop planning documents for schoolboy of all ages. The actual survey allows luggage improve teacher of physical culture in school.

Key words: the teacher, physical culture, the organization of process of physical education, high school.

Михайло Перегінець, Людмила Долженко. Експертна оцінка щодо організації процесу фізичного виховання в навчальних закладах системи загальної середньої освіти. ***Актуальність*** нашого дослідження зумовлена зниженням, а подекуди відсутністю мотивації в школярів, особливо старшого шкільного віку, до занять фізичними вправами як на урочних, так і на позаурочних формах організації процесу фізичного виховання. ***Мета дослідження*** полягала у визначенні думки вчителів фізичної культури щодо організації процесу фізичного виховання в навчальних закладах загальної середньої освіти. ***Результати роботи.*** У статті представлено наукові дані, отримані в результаті авторського дослідження поглядів учителів фізичної культури, які працюють у різноманітних закладах загальної середньої освіти м. Івано-Франківська щодо організації процесу фізичного виховання. Дослідженнями вставлено, що 21,2 % учителів досі не беруть до уваги думки учнів під час вибору варіативних модулів. Визначено рекомендації вчителів до запроваджень нових варіативних модулів до програми фізичного виховання. Описано захворювання, на які хворіють школярі, та низці інших особливостей організації навчального процесу з фізичного виховання. ***Висновки.*** Дані отримані в ході дослідження, дають можливість «поглянути очима вчителів» на процес фізичного виховання в навчальних закладах системи загальної середньої освіти, отримати рекомендації щодо вдосконалення навчальної програми. Матеріал може слугувати як методичний для розробки документів планування вчителів із фізичної культури для школярів різного віку. Фактичний багаж опитування дає змогу покращити роботу вчителя фізичної культури в школі.

Ключові слова: учитель, фізична культура, організація процесу фізичного виховання, загальноосвітні навчальні заклади.

Михаил Перегинец, Людмила Долженко. Экспертная оценка организации процесса физического воспитания в учебных заведениях системы общего среднего образования. ***Актуальность*** нашего исследования обусловлена снижением, а иногда отсутствием мотивации в школьников, особенно старшего школьного возраста, к занятиям физическими упражнениями как й урочных, так на внеурочных формах организации процесса физического воспитания. ***Цель исследования*** – определение мнения учителей физической культуры по организации процесса физического воспитания в учебных заведениях общего среднего образования. ***Результаты работы.*** В статье представлены научные данные, полученные в результате авторского исследования взглядов учителей физической культуры, работающих в различных учреждениях общего среднего образования г. Ивано-Франковская, по организации процесса физического воспитания. Исследованиями установлено, что 21,2 % учителей до сих пор не принимают во внимание мнение учащихся при выборе вариативных модулей. Определены рекомендации учителей к внедрениию новых вариативных модулей к программе физического воспитания. Описаны заболевания, которыми болеют школьники, и ряд других особенностей организации учебного процесса по физическому воспитанию. ***Выводы.*** Данные, полученные в ходе исследования, дают возможность «взглянуть глазами учителей» на процесс физического воспитания в учебных заведениях системы

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общего среднего образования, получить рекомендации по совершенствованию учебной программы. Материал может служить как методический для разработки документов планирования учителей по физической культуре для школьников разного возраста. Фактический багаж опроса позволяет улучшить работу учителя физической культуры в школе.

Ключевые слова: преподаватель, физическая культура, организация процесса физического воспитания, общеобразовательные учебные заведения.

Introduction. One of the tasks outlined in the «National Education Doctrine of Ukraine» is to ensure harmonious and full education of the individual, the development of skills and talents, and so that the enrichment of the intellectual potential of the people, their spirituality and culture. Solution of these educational tasks is assigned to comprehensive schools of different kinds (lyceums, gymnasiums, educational complexes, etc.) that form the foundation for adulthood and provide personal intellectual, spiritual and physical enrichment. However, the growth of the intellect and abilities of students primarly depend on the skills and creativity of teachers, because whatever advanced academic programs can be, they are only weapons in the hands of the teachers [1; 2; 3].

There is a number of scientific works in the context of professional work of the teachers, for example, works of such scientists as V. Balsevich A. Borschevsky V. Valiev, MI Vilna, E. Zakharin, L. Ivanov, L. Lubysheva, J. Nifaka G. Panchenko O. Svyertnyev and others.

A. Graf, E. Hohunova T. Krutsevych, B. Martyanova, B. Shiyan, were interested in organizational components of the professional work of the PE teachers [6].

PE teacher is a specialist in Physical Culture and Sport, who organizes and carries out educational work with students of comprehensive schools [5].

Certainly, teachers should improve their skills all the time, because when one believes that he has just reached everything after years of studying, degradation starts. Teachers also should participate in school's social life, always take care of the improvement of their general and cultural level. They should have broad outlook to find approaches to students easily. The teacher should show the perfect attitude to family and people around him while educating high moral and volitional qualities in students.

As any other professions, PE teacher's work activities are filled with a number of features that distinguishes it from the other specialties.

The process of physical education takes place in the gym or outdoors that is bigger than any audience, where background noise is quite enough, and all this requires a clear teacher's command voice whom students have to hear often on the background of children's cries.

In addition to this, PE teacher has to have knowledge of the use of special or non–standard sportive equipment and inventory that is quite extensive during the physical education lessons.

It is obligatory to have a high motor component which requires a display, demonstration exercise and insurance of the students in complex exercise performing. Therefore, it should be noted that the teacher of physical culture requires comprehensive physical acquirements of the sportsprovided by curriculum [4]. So teaching profession of physical training unites different social roles, and is designed to solve several problems that unfortunately need to be solved at all levels of the educational process.

The goal of the study was to determine the opinions of PE teachers about the organization of physical education process in comprehensive schools.

Materials and methods of the study. A set of complementary research methods, adequate to the task was used; as well as the theoretical ones: analysis of scientific literature, synthesis, comparison and synthesis of data; in the practical part the following methods were employed: observation, interview, experiment, the author surveys; methods of mathematical statistics. In general, the study involved 33 physical training teachers of Ivano-Frankivsk comprehensive schools.

Discussion and the results of the study. Teachers that participated in our research, worked in educational institutions of Ivano-Frankivsk, and had different educational experience and sportive professions. Teachers responded to the proposed list of questions that were designed to find out the teacher's opinions about the organization of physical education process and to compare with the student's vision of the physical culture lesson.

In particular, teachers' answers, namely to a question under which serial number they want to see a physical education lesson, have been analysed. In primary school 33,3 % of experts preferred the first and third lessons, 23,3 % – the second lesson and 10 % – the fourth lesson. At high school the third and fourth lessons were chosen and have got 30,3 % of teachers' support, least of all wanted to see a physical education lesson as a first because only 9,1 % of teachers have supported it. In the high school, 27,3 % of teachers have noted the third lesson as the best for teaching physical culture too, and the first and fifth have got less

supports – 6,1 %. So it is possible to sum up that the third physical education lesson is recommended as in a number of scientific and methodical literature as by the PE teachers by the fact that the lesson in the middle of school day gives the chance to school students to make a pause in cerebration, to have an active rest and to continue training with new forces (table 1).

Table 1

Recommendations on Physical Education Lesson Scheduling, *%*

№ of the Lesson	Primary School		Secondary School		High School	
	n=30	*%*	*n=33*	*%*	*n=33*	*%*
1	10	33,3	3	9,1	2	6,1
2	7	23,3	4	12,1	6	18,2
3	10	33,3	10	33,4	9	27,3
4	3	10	9	27,3	2	6,1
5	–	–	7	21,2	4	12,1
6	–	–	–	–	4	12,1
7	–	–	–	–	6	18,2
Total	30	100	33	100	33	100

Opinions of teachers, about the number of classes of physical culture within a week, differed but still the majority agreed that three physical education lessons would be optimal for all age groups (table 2).

Table 2

Number of Physical Education Classes Per Week, that Teachers of Physical Training Recommend, *%*

Number of the Lessons	Primary School	Secondary School	High School
1	3,3	–	–
2	36,7	30,3	45,4
3	46,7	54,5	48,5
4	13,3	15,2	6,1

From data that we have received in our research, it is possible to confirm the statement of scientists [4] that during school studying from first to the eleventh class the health of pupils worsens and the percent of school students with various diseases increases (table 3).

Table 3

Distribution of Students by Medical Groups of 2015–2016 Academic Year, *%*

Schoolage	X min	X max	$\bar{X}$	S	m
Basicmedicalgroup					
Primary school	68	96	85,7	8,5	2,5
Secondar school	70	95	81,4	7,2	2,1
High school	60	96	76,6	9,1	2,7
Preparationalmedical group					
Primary school	4	27	13,8	7,5	2,2
Secondary school	5	25	15,9	6,5	1,9
High school	4	32	19,9	7,8	2,3
Specialmedical group					
Primary school	5	–	5	–	–
Secondary school	3	10	4,8	2,4	0,7
High school	3	10	6,3	2,9	0,8

On a question «Is it necessary to carry out an assessment of physical education of school students?» 96,7 % of teachers have claimed that it is necessary and only 3,03 % haven't supported them.

Choosing the estimate system, 54,5 % of teachers have made a choice in favor of the existing, recommended training program of system «low, below an average, an average, above average and high levels». Twelve-ball system of estimation was supported by 30,3 % of the teachers, 15,2 % of the teachers would use «is reckoned», «isn't reckoned».

Classes with pupils of special medical groups, which 78,8 % of teachers approve, are carried out together with pupils of the main and preparatory medical groups. And only 21,2 % of teachers give such classes separately from the basic and preparatory groups.

Among leaders of the diseases which are most often found at pupils of primary school: respiratory diseases – 33,3 % and cardiovascular diseases – 20 %. In the high school 21,2 % of the digestive system and cardiovascular system diseases are observed (table 4).

Table 4

List of the Most Widespread Diseases that Occur in Students, *%*
(A Survey of Teachers of Physical Culture)

Types of Diseases	Primary School		Secondary School		High School	
	n=30	***%***	***n=33***	***%***	***n=33***	***%***
Respiratorysystem	10	33,3	6	18,2	5	15,1
Digestive system	4	13,3	7	21,2	8	24,2
Cardiovascular system	6	20	7	21,2	7	21,2
Vision system	3	10	1	3,03	–	–
Musculoskeletal system	1	3,3	6	18,2	4	12,1
Laziness	1	3,3	–	–	3	9,1
I don’tknow	5	16,7	6	18,2	6	18,2

If not to consider material support of educational institution, the choice of training program variable modules is caused: 21,2 % by traditions of educational institution, 15,2 % by a professional level of teachers, and by the desire of children and commitment of teachers to sports have got 12,1 % of the teachers’ support. There was also a big percent of teachers (39,4 %), that didn't know about the choice of variable module, thus there was an assumption that some teachers worked according to the outdated scheme of physical training educational process and don't pay attention to wishes of pupils.

The following question was «do you consider interests of pupils while choosing of variable modules by means of questioning». This question was in the answered affirmatively by 78,8 % of teachers, other 21,2 % – didn’t consider opinion of pupils.

Proposals of teachers were different about the variable modules that should be removed from the training program. The indicator didn't exceed 6,1 %, except the variable module «Tourism» where 18,2 % of teachers wished to exclude it from the training program, and explained it with the fact that this module was characterized by the increased injuries and demanded very careful pedagogical control of pupils during training (fig.1).

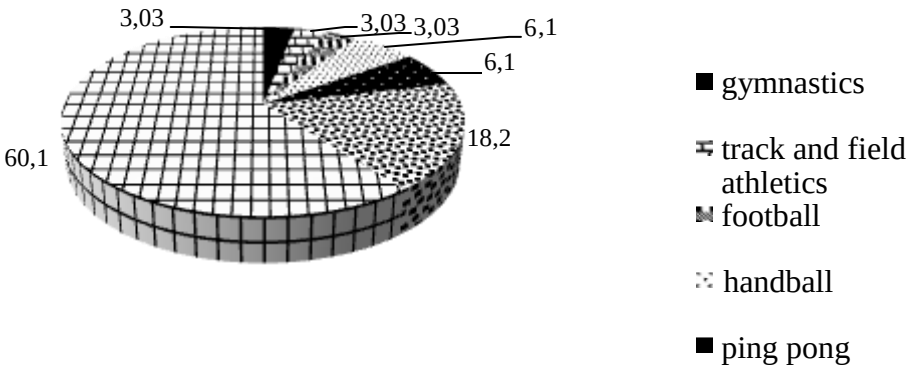

Fig. 1. *Types of the variable modules that should be removed from the program of physical aducation, %*

Generally, teachers recommend incusing several new modules in the program of physical culture. The greatest supports were got by modules: athleticism, sportsorientation and swimming (fig. 2).

Most of the teachers – 66,7 % have pointed that the 45-minutes lesson is enough for physical education. The idea of increasing the duration of the lesson in 60 minutes was supported by 33,6 % of the teachers.

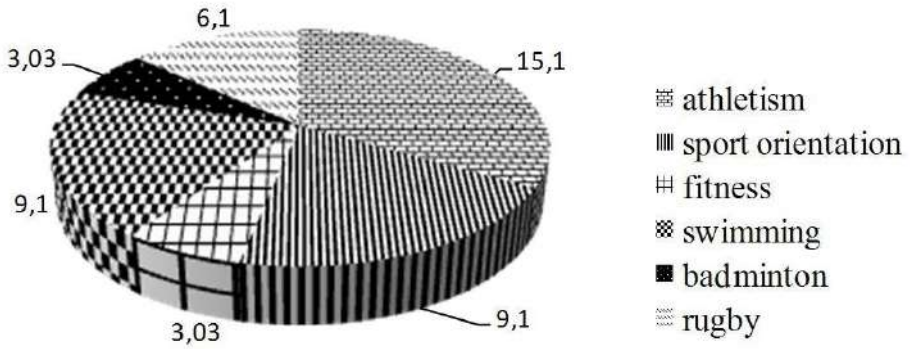

Fig. 2. *Types of the variable modules that are recommended by teachers*

Teachers often used among the types of motor activity for girls – volleyball 27,3 % and boys liked football and basketball 54,5 % to 15,1 %. 30,3 % of girls in high school liked volleyball, but 36,4% of boys liked football in the secondary and high school (table 5).

Table 5

The Most Common Types of Exercise Used in Physical Education Classes, *%*

Girls			
Secondary School		**High School**	
Volleyball	27,3	Volleyball	30,3
Football	–	Football	6,1
Gymnastics	21,2	Gymnastics	24,2
Trackandfieldathletics	9,1	Trackandfieldathletics	6,1
Badminton	3,03	Badminton	3,03
Basketball	12,1	Basketball	18,2
Relayrace	12,1	Relayrace	–
Types of sportsgames	12,1	Types of sportsgames	9,1
Pioneerball	3,03	Pioneerball	3,03
Boys			
Volleyball	–	Volleyball	18,2
Football	54,5	Football	36,4
Basketball	15,1	Basketball	21,2
Typesofsportgames	9,1	Typesofsportgames	9,1
Relayrace	9,1	Machines	15,1
Trackandfieldathletics	12,1	Trackandfieldathletics	–

The most common forms of classes that teachers use in after school sports were: sports competitions (30,3 %) and sports holidays (27,3 %), hours care in day care for younger pupils (18,2 %), other forms were not so supported.

Logistical support for most teachers, that make 63,6 % – isn't important, 27,3 % of teachers have almost everything they need and 9,1 % say that there is no maintenance and they lack basic ropes, jump ropes, varieties of balls and other equipment.

Teachers were asked, «What could they contribute for improving the implementation of the curriculum in physical education», we received the following answers: 27.3% was according to the desire of children and that their parents could help to improve the implementation of the curriculum (table 6).

Table 6

Teachers' Recommendations to Improve the Implementation Process of the Educational Process, %

Wishes of teachers	n	%
Proper organization of sports and recreation activities in the region	3	9,1
Administration'ssupport	5	15,1
Improving oflogistics	8	24,2
Betterteachers'payment	8	24,2
Desire of the children and parents	9	27,3

Conclusions and prospects for further research. We can conclude that unlike other teachers, a teacher of physical education, besides teaching their discipline, organizes sportive activities and training process.

Author's survey made it possible to obtain important and interesting data, so we know that there are some teachers that still do not take into account the views of students, we see recommendations of implemented new variant modules of the program and the list of diseases that exist in the students.

This data can be used to develop programs of physical training for children of all ages. Cause and effect relationships of the PE lesson indicate the need for transformation of educational thought in the plane of experts in the plane of the organization of process of physical training at school.

Prospects of further researches will consist further research activities for determination of motives and interests of school students in classes of physical culture, the assessment of physical fitness for pupils, that will allow to create practical recommendations for correction of process of physical training.

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METHODS FOR ASSESSING QUALITY OF LIFE: **INTERNATIONAL EXPERIENCE**

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Abstract

In this paper the quality of life as a multifaceted phenomenon has been studied. The problem of assessment of the quality of life has been investigated. Assessment of quality of life is an important tool for socio–economic policy of any state. Quality of life is defined as the degree of satisfaction of material, cultural and spiritual human needs. Component definitions emphasize the multidimensional nature of this concept and highlight different dimensions of quality of life (objective and subjective). Movement and physical activity is a crucial, fundamental factor in the formation, preservation and strengthening of health and human development.

The purpose is to analyze existing approaches to the assessment of the quality of human life and to summarize international experience.

To assess the quality of life of the population use two approaches, the aim and purpose of which are different. Characterized the international system for the assessment of quality of life. There are several systems of assessment of quality of life: General methodological concept of standards and quality of life (Standard of Living and Quality of Life), the methodology of the Economist Intelligence Unit (the division of The Economist Group), the new European development strategy for the next 10 years – «Europe 2020: Strategy for smart, sustainable and inclusive growth», the methodology of International Living (Ireland), the methodology of the EU, the methodology of the OECD (Organization for economic cooperation and development) in an innovative platform of the Better Life Initiative. These methodologies towards «health» are considering physical activity as the main indicator of the quality of human life.

Strategic management challenges for Ukraine are to improve the quality of life of people in conjunction with the creation of conditions for realization of innovation model of economic growth, achievement and transformation of the high standards of quality of life in a powerful factor of global competitiveness.

Key words: quality of life, approaches the international system of evaluation, indicators, physical activity.

Оксана Шинкарук, Лолита Денисова. Подходы к оценке качества жизни человека: междунар**одный опыт.** Рассматривается качество жизни человека как многокомпонентное явление и исследуются проблемы оценки качества жизни. Оценка качества жизни населения является важным инструментом социально-экономической политики любого государства. Качество жизни определяется как степень удовлетворения материальных, культурных и духовных потребностей человека. Компонентные определения подчеркивают многомерную природу этого понятия и выделяют различные измерения качества жизни (как объективные, так и субъективные). Двигательная и физическая активность является исключительно важным фундаментальным фактором формирования, сохранения, укрепления здоровья и развития человека.

Цель работы – осуществить анализ существующих подходов к оценке качества жизни человека и обобщить накопленный международный опыт.

Для оценки качества жизни населения используют два подхода, цель и назначение которых различные. Охарактеризованы международные системы оценки качества жизни. Различают несколько систем оценки качества жизни, а именно: общеметодологическую концепцию стандартов и качества жизни (Standard of Living and Quality of Life), методологию Economist Intelligence Unit (подразделения The Economist Group), новую европейскую стратегию развития на следующие 10 лет – «Европа-2020: стратегия разумного, устойчивого и инклюзивного роста», методологию International Living (Ирландия), методологию ЕС, методологию ОЭСР (Организации экономического сотрудничества и развития) на инновационной платформе Better Life Initiative. Указанные методологии в направлении «здоровье» рассматривают физическую активность как основной индикатор качества жизни человека.

Стратегическими управленческими задачами для Украины являются повышение качества жизни людей в сочетании с созданием условий для реализации инновационной модели экономического роста, достижения и преобразования высоких стандартов качествважизни в мощный фактор глобальной конкурентоспособности.

Ключевые слова: качество жизни, подходы, международные системы оценивания, индикаторы, физическая активность.

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Introduction. Quality of life is a complex, multi phenomenon that depends on objective factors (in particular, opportunities to meet human needs and interests of given socio–economic conditions) and on various subjective factors (social, psychological, socio–cultural, etc.) [1].

Improving the quality of life serves as a criterion and a necessary condition for human development. The concept of human development emphasizes the priority of human role, determines that the man is the goal of economic growth, not its resource. Human development concept was introduced in the science and the practice of public administration in 1990 [1].The goal of human development is to create an environment that allows people to live long, healthy and creative lives. The concept of human development, formulated more than two decades ago, has evolved over time. The report on human development during 2015 «Labor in the name of human development» presented an updated definition of human development. The improvements of human development are identified as a main factor in the workplace, which requires the implementation of strategies and policies in three broad areas: creating opportunities in employment, providing the workers' welfare and development of targeted actions [2].

Furthermore, human development aims at including the improvements of life quality. Quality of life reflects the basic prerequisites and degree of implementation of the human development requirements, the priority level of human development in the process of civilization and man's sense of self, identity and status of the environment.

Achieving a high level of human development is impossible without establishing a high quality of life. The existence of restrictions in any of the areas of social life greatly reduces the freedom of choice that is the basis of human development. The removal of restrictions and barriers to participation, activation of the social inclusion processes (inclusion) aim at ensuring the broad opportunities and freedoms – the main policy objectives of human development, the main purpose of which is also to improve the quality of life.

The international community recognized the life quality as one of the main characteristics of the social development of countries. The targets mainly on economic performance and implementation of scientific and technological progress without prioritizing development of the human factor are gradually fading.

The general manager of Eurostat V. Radermakher in the report «Measuring well-being and quality of life», highlighted the high quality of life is impossible without improving the health and ensuring the integration into society, creating a favourable environment and achieving a minimum level of material well-being. He indicated the complexity of the life quality evaluation is associated primarily with the formation of the objective and subjective system of indicators of international and national levels assessment. The general manager of Eurostat, commented on the findings of the Commission on the measurement of economic performance and social progress (Commission Stiglitz–Sen–Fitoussi), emphasized the need to improve the information base that evaluates the quality of life based on the involvement of different sources of information, identifying indicators, which are the most important management decisions. An important task is the coordination and achievement the objectives of sustainable economic growth and protecting the environment, improving the quality of education, health and the increase in physical activity, social infrastructure development, employment and poverty reduction, improving social cohesion and guarantee democratic freedoms in society [14].

Movement and physical activity is extremely important and fundamental factor for formation, preservation, promotion of health and human development.

The purpose is to analyze the existing approaches, which assess the quality of human life and summarize the accumulated international experience.

Discussion and the results of the research. Summarizing the different interpretations of the life quality, researchers distinguish three main types of definitions: global, component and narrow [13].

According to the global definition, quality of life is defined as the degree of the material, cultural and spiritual needs.

Component definitions emphasize the multidimensional nature of the concept and distinguish different dimensions of life quality (both objective and subjective). Under the common position, quality of life does not only characterize the conditions of achievement and satisfaction of conditions (achievements), but also allows to save results. A third approach to determine the quality of life involves the selection of only one or two categories and display specific content of different areas.

The urgency of the problems of life quality assessment is confirmed by the initiatives of international organizations, especially the UN, governments and the expert community. Thus, by the initiative of the President of France, Commission on the measurement of economic progress and social progress was created, whose recommendations are taken into account in planning and monitoring processes. Certain commitments

were taken by the European Commission, including through the establishment of the targets by 2020 in the EU strategy «Europe 2020: a strategy for smart, sustainable and inclusive growth» [4]. Back in 2007, at the conference «Beyond GDP» organized with the European Parliament, the Club of Rome, European Commission, Organization for Economic Cooperation and Development and WWF, new approaches to measuring social progress were declared. In particular, President of European Commission J. Manuel Barroso said that «GDP is certainly very valuable instrument of economic policy, but it may not fully reflect the diversity and seriousness of the problems today». We cannot solve the problem of present and future by the approaches and tools of the past. That is why it is time to move from the limits of GDP.

The organization for Economic Cooperation and Development (OECD) implemented a global project «Assessing social progress» («Measuring the progress of societies»), which aims at raising awareness, mobilizing political support for evaluating the progress and development of key economic, social and environmental indicators. During the meeting the leaders of the «Big Twenty» in Pittsburgh in 2009 particularly emphasized on the absolute necessity of development and practical development of new methods of measuring social progress that take into account the social and environmental aspects in the formation areas for balanced growth [12].

Measurement of social progress was devoted to the work of the World Forum on Statistics, Knowledge and Policy, held in Istanbul in June 2007. 1,200 representatives of governments, business, civil society leaders, academics from 130 countries participated in its work. The outcome of the Forum was the Istanbul Declaration, signed by the European Commission, World Bank, Organization for Economic Cooperation and Development, the United Nations and its many institutions and a number of other international expert groups. The discussion during the Declaration signing identified the necessity to answer such urgent questions [8].

– What to measure? The issue focuses on the need to define what is the object of measurement, conditions, resources or products and results, and the need for a clear vision of factors. And finally – the need to know what to strive for, what is the progress.

– How to measure? The issue focuses on the fact that there are serious methodological problems of measuring progress such as security, human rights, civic participation, participation in public life and some others.

– What are the criteria put in the basis of the measurement process? The issue focuses interest in what should be a priority: assessing the achievements, or conversely the inability to meet the needs; progress or regression; consider how profits and externalities.

– At what level measurement should be organized? The issue calls to determine what level of analysis should prevail: the individual level, the level of the household, family, community, region, country, etc.

– Why to measure? The issue emphasizes the need to determine the hierarchy of objectives for evaluation: evaluation of the impact of public policy evaluation for management decisions, evaluation of strategic planning, evaluation for international comparisons etc.

Assessment of the population quality of life is an important tool for social and economic policy of any state, as it allows: to set benchmarks of social and economic policy in the future; to analyze the current level of socio–economic development; assess poverty; determine the country's place in the global progress; conduct interregional comparison of the level and quality of life [5].

To assess quality of life two approaches are typically used, the goal and purpose of which are different. In the first approach the quality of life assessment conducted for international comparisons of various countries. In the second the quality of life at the country level is assessed for government decision–making about planning of social and economic development [9].

Currently, public and private institutions developed more than 150 welfare composite indicator to assess the effectiveness of the different governments in the economic, social and environmental field on international level. There are over a hundred initiatives to use quality of life in decision–making at national and local level. Performance by which the level and quality of life are estimated at the international level can be divided into quantitative and qualitative, quantitative include gross national product or national income per capita, income and its distribution in society, consumption various material goods according to the classes of goods, employment and so on. Quality indicators include indicators of quality of life conditions, life and human recreation and more.

It should be noted that quantitative indicators are needed to assess the objective aspects of quality of life. However, it is impossible to assess the achievement of social progress only with quantitative (economic) indicators, despite the relative ease of collection and interpretation.

At the moment there is no single approach to assessing the quality of life. The variety of approaches of measuring quality of life summarized in in SET 1.

Set 1

General Characteristics of the International Life Quality Evaluation System

Title	The Subject Performing Calculation	Calculation Principle	Indicators	Quantity of Covered Countries
General methodological concept of standards and quality of life	Scientific and academic community as a whole	Separation of macroeconomic indicators and social indicators	Gross national product per capita, consumer price index consumer basket, expenditures of households GFK basket, poverty, income inequality, life satisfaction and happiness, deprivation, optimism for the future, etc.	Depending on academic tasks
EIU index of life quality	Research organization Economic Intelligence Unit	Equivalent consideration of quantitative and subjective indicators	Health, family, social life, financial prosperity, political stability and security, climate, job security, political freedom, gender equality	111
Methodology EU European Statistical System Committee	European Committee of statistical system	Equivalent consideration of quantitative and subjective indicators	Material living conditions, or basic productive activity, health, education, leisure (recreation) and social communication (interaction) economic and physical security, public administration (government) and the fundamental rights and Nature environment, the general perception of life	
Life quality index International Living	Magazine International Living	Equivalent consideration of quantitative and subjective indexes	The cost of living, culture, economy, environment, freedom, health, infrastructure, safety and risk, climate	190
European Monitoring of life quality	European Foundation for the improvement of living and conditions of labor	A sociological examinations of life quality	Health, employment, deprivation (deprivation) income, education, family, social participation, housing, environment, transport, security, leisure, life satisfaction	34
Better Life Initiative	OECP	Integral assessment of parameters	Housing, income, employment, education, environment, health, management efficiency, social life, safety, satisfaction with living conditions, the balance between work and leisure time	34

General methodological concept of standards and quality of life (Standard o fLiving and Quality of Life) is used to assess social progress in different countries. The concept involves the delineation and assessment separate the two elements of social progress, the standard of living and quality of life. According to the concept of standards and quality of life, standard of living component reflects the economic (mainly macro) and other objective indicators [5], while the component of quality of life – mainly sociological indicators or purely social content (often subjective). The above methodology does not have a clear list of indicators used for assessment and arbitrary, while international comparisons it can be used a point and partly [3].

Segment economic indicators including GDP per capita, consumer price index, consumer basket, household expenditures, GFK basket, poverty, income inequality and so on. Subjective indicators – is the degree of life satisfaction and happiness, subjective assessment of their own deprivation, optimism for the future, etc. [10].

Methodology Economist Intelligence Unit (The Economist Group unit) provides an estimate of the quality of life index for 111 countries for the regression model, which is predominantly (80 %) based on the results of sociological polls. Along with subjective assessments of the quality of life obtained in the results of polls respondents of all ages, that ranged satisfaction with different aspects of quality of life on a 5-point scale, this methodology takes into account some objective determinants. Most attention was paid to the calculation of VVP per capita at purchasing power parity. To determine the rating of the country study evaluates the quality of life for nine areas (health, family, social life, well-being for the material basis of political stability and security, climate, job security, political freedom, gender equality) are indirect measurements relevant indicators. These indicators included in the index, and their significance is taken into account in accordance with scales determined on the basis of multifactor regression coefficients.

The new European development strategy for the next 10 years – «Europe 2020: A Strategy for smart, sustainable and inclusive growth», adopted by the European Council in 2010 and based on the analysis of monitoring the quality of life of the EU. Under Strategy 2020 identifies three key areas of growth: smart growth (developing an economy based on knowledge and innovation) Sustainable growth (creating economy that provides sustainable resource use, green economy); Inclusive growth (social inclusion, increase employment, achieve social and territorial coordination). After the conference «Beyond VVP» gradually actualize development issues a set of indicators to analyze the quality of life in EU member states. In 2011, the Committee of European statistical systems (European Statistical System Committee – ESSC) has decided to develop an appropriate set of indicators for EU member states. Currently, only made the first attempt to merge data from multiple sources to measure quality of life in the EU in the following areas: 1) material living conditions; 2) whether the main productive activity; 3) health; 4) education; 5) leisure (recreation) and social communication (interaction); 6) economic and physical security; 7) public administration (government) and fundamental rights; 8) the nature and the environment; 9) general perception of life [12].

Methodology International Living (Ireland) evaluation of quality of life used to study the progress of 190 countries. According to this method, the index of nine areas: 1) subsistence level (cost of living); 2) culture; 3) the economy; 4) the environment; 5) freedom; 6) health; 7) infrastructure; 8) security and risk; 9) the climate. Possible maximum score for each criterion is published annually by 100 world ranking.

EU methodology involves monitoring the quality of life in the EU, the European Foundation for the improvement of living and working conditions (European Foundation for the Improvement of Living and Working Conditions), founded in 2000 (Dublin, Ireland). The organization of the four–year interval collect, analyze, publish and disseminate data on 27 EU Member States and two candidate countries (Croatia and Turkey) 160 indicators that differentiate into 12 groups following areas: 1) health; 2) employment; 3) revenues; 4) education; 5) family; 6) public life; 7) housing; 8) environment; 9) transport; 10) safety; 11) rest; 12) life satisfaction [12].

Monitoring the quality of life in the EU based on subjective assessments and is an alternative source of information, as complementary objective assessment based on data from Eurostat. EC concerning statistics on income and living conditions (European Union Statistics on Income and Living Conditions, EU–SILC) is used to assess the quality and standard of living, to make interstate comparisons, compare best practices and measure social progress. This social inclusion is one of the priority areas of EU policy, as the quality of life affects dissatisfaction with life annexations social groups [12].

The methodology of OECD (Organization for Economic Cooperation and Development) is based on an innovative platform Better Life Initiative, presenting the results of the evaluation of quality of life directly to the citizens of 34 countries online 11 main areas: 1) income; 2) work; 3) balance of work and rest; 4) health; 5) education; 6) housing; 7) community; 8) participation in public life; 9) the environment; 10) security; 11) life satisfaction. The above methodology involves designing individual quality of life index each respondent who agreed to participate in an interactive survey [6]. The most important achievement developers of interactive survey Better Life Initiative creation can be considered adequate, accessible and comparable database users, enabling a better understanding of the factors influencing the quality of living.

These methodologies towards «health» view physical activity as the primary indicator of quality of life.

Until now evaluating the quality of life in Ukraine neglected. However, the inclusion of the agenda of the central authorities issues of quality of life, the creation of the Coordinating Council on quality and safety of human life (according to the Cabinet of Ministers of Ukraine of 26 December 2011 r. Number 1393) suggests a strengthening of the state to the issues of appropriate quality life and implementation of constitutional rights [7]. According to the Human Development Report for 2015 «Labor in the name of human development» Ukraine ranks 81 among 188 countries in the ranking of countries on the Human Development Index (HDI) 2014 [2].

Monitoring implementation tasks improving quality of life can be achieved by using the existing system of evaluation indicators, development of methodological approaches to measuring quality of life. This will determine the most problematic areas and take effective management decisions to improve the quality of life at the national level.

Conclusions and prospects for further research. Improving the quality of life combined with the creation of appropriate conditions for the implementation of an innovative model of economic growth, transformation and achieve high standards of quality of life in a powerful factor in global competitiveness Ukraine are strategic management tasks.

Identifying the main components and factors affecting the quality of life, the formation of quality of life management strategies will ensure harmonization objectives of economic growth, human development and environmental conservation. Physical activity occupies an important place in the direction of «health» in the system of assessing the quality of life of various international methodologies and approaches and requires further research.

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INCREASING THE **PHYSICAL ACTIVITY OF PRIMARY SCHOOL STUDENTS WITH CHEERLEADING MEANS**

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Abstract

Revelance of research is due to gain trend of worsening health of primary school students and necessity of search of innovative forms of modernization of system physical education in conditions of reforming the education system. The purpose of research is to experimentally substantiate the effectiveness of cheerleading practices as mean of increasing physical activity of primary school students in the process of extracurricular physical educative and sports work. Based on the generalization of scientific literature on the research problem found out, that cheerleading practices contribute to the effective functioning of the body's basic systems, formation of vital physical skills, increasing of physical preparation level, perfection of physical qualities. Proposed the program of cheerleaders` physical preparation with the purpose of increasing the level of their physical activity, where 50 % of the practice time is allocated to general physical training with a priority direction of development of endurance, strength, flexibility, coordination skills, dexterity in the process of both specially organized and substantive cheerleading practices. According to the results of the initial and control stages of diagnosis based on standardized tests (broad jump, jumps through the gymnastic bench on two legs for 10 seconds, lifting the torso from a prone position, flexion of the torso from sitting position, push-ups) proved that systematic practices contributed to an increase of physical development indicators and physical preparedness of students by 25 %. It has been proved, that cheerleading practices, as a model for improving children` health physical regime of primary school students, provide necessary amount of physical activity to pupils during extracurricular physical educative and sports work.

Key words: physical activity, cheerleading, pupils, extracurricular physical educative and sports work, health improving potential

Ольга Коломійцева. Підвищення рухової активності учнів початкової школи засобами черліде**нгу.** ***Актуальність дослідження*** зумовлена поглибленням тенденції погіршення здоров'я учнів початкової школи та необхідністю пошуку інноваційних форм модернізації системи фізичного виховання в умовах реформування системи освіти. ***Мета дослідження*** – експериментальне обґрунтування ефективності занять черліденгом як засобом збільшення рухової активності учнів початкової школи в позакласній фізкультурно-спортивній роботі. Запропоновано програму загальної фізичної підготовки (ЗФП) та спеціальної фізичної підготовки черлідерів для підвищення рівня їхньої рухової активності, де 50 % часу навчально-тренувальних занять відведено на загальну фізичну підготовку з пріоритетною спрямованістю розвитку витривалості, сили, гнучкості, координаційних здібностей, спритності в процесі як спеціально організованих, так і самостійних занять черліденгом. За результатами вихідного та контрольного вимірювань на основі стандартизованих тестів установлено, що в процесі систематичних секційних занять показники фізичного розвитку та фізичної підготовленості учнів збільшилися на 25 %. Доведено, що секційні заняття черліденгом як модель оздоровчого рухового режиму молодших школярів забезпечують необхідний обсяг рухової активності учнів початкової школи в позакласній фізкультурно-спортивній роботі.

Ключові слова: рухова активність, черліденг, молодші школярі, позакласна фізкультурно-спортивна робота, оздоровчий потенціал.

Коломейцева Ольга. Повышение двигательной активности учащихся начальной школы средствами черлиденга. ***Актуальность исследования*** обусловлена усилением тенденции ухудшения здоровья учащихся начальной школы и необходимостью поиска инновационных форм модернизации системы физического воспитания в условиях реформирования системы образования. ***Цель исследования*** – экспериментальное

обоснование эффективности занятий черлиденгом как средством увеличения двигательной активности учащейся молодёжи в процессе внеклассной физкультурно-спортивной работы. Предложена программа физической подготовки черлидеров с целью повышения уровня их двигательной активности, где 50 % времени учебно-тренировочных занятий отводиться на общую физическую подготовку с приоритетной направленностью развития выносливости, силы, гибкости, координационных способностей, ловкости в процессе как специально организованных, так и самостоятельных занятий черлиденгом. По результатам исходного и контрольного этапов диагностики на основе стандартизированных тестов (прыжок в длину с места толчком двух ног, прыжок через гимнастическую скамейку на двух ногах за 10 с, поднимание туловища из положения лежа, наклон туловища из положения сидя, сгибание и разгибание рук в упоре лежа) установлено, что систематические занятия в секции способствовали увеличению показателей физического развития и физической подготовленности учащихся на 25 %. Доказано, что секционные занятия черлиденгом как модель оздоровительного двигательного режима младших школьников обеспечивает необходимый объем двигательной активности учащейся молодёжи во внеклассной физкультурно-спортивной работе.

Ключевые слова: двигательная активность, черлиденг, младшие школьники, внеклассная физкультурно-спортивная работа, оздоровительный потенциал.

Introduction. Social and economic changes that occur rapidly in all spheres of society actualizes the problem of finding new approaches to the education of the younger generation**.** Analysis of regulations demonstrates the urgency of the problem of maintaining, strengthening and restoring the health of students, improve their physical fitness, formation of essential physical skills based on self-development and self-education.

However, the trend of deteriorating health of primary school students leads to search for innovative forms to modernization of physical education system. In modern conditions of development of the sports movement in Ukraine, consider that, in solving the aforementioned problems, using cheerleading is perspectively, as a means of increasing the physical activity, physical, mental and social improvement of primary school students, and therefore – attracting the youth to a healthy lifestyle.

The goal of the research – to prove experimentally the effectiveness of cheerleading practices as a means of increasing the physical activity of primary school students in extracurricular sport activities.

Research methods. The study used the following methods: analysis and systematization of scientific literature on the activation of physical activity of primary school students by means of cheerleading, pedagogical methods (pedagogical supervision, pedagogical experiment); summarizing and interpretation of results, methods of mathematical statistics.

Discussion and the results of the study. At present, the scientific and methodological literature there is no single established opinion on the interpretation of the term «physical activity». Thus, foreign researchers S. Boushard, R. Shephard, T. Stephens by human`s physical activity mean any body motion that performed by using muscles and is characterized by appreciable power consumption [12].

According to national researcher N. Levinets, physical activity – is the amount of different motions per certain period of time, that is normalized in terms of energy expended or the number of executed motions (locomotions). Their data provide an opportunity to determine the level of human physical activity, assess the condition of physical practice. The Last acts as one of the most important conditions of maintain optimal functional state of human`s organism, satisfy its biological needs [7, p. 83].

A. Antipova and A. Komkov define physical activity as human motion activity that aims to improve health, develop physical potential, achieve physical perfection for the effective implementation of their potential subject personal motivation and social needs [3, p. 5].

In the context of person-centered approach to the formation of children and youth physical culture note the views of scientist T. Krutsevych which considers the optimal level of physical activity as a factor in increasing the mental capacity of students as a powerful means of strengthening the health of primary school pupils.

Numerous scientific studies have shown that physical activity contributes significantly to the observance of human healthy life and in some cases reduce the negative impact of bad habits on the human body, increased stress resistance and distract from asocial behavior. Physical activity is generating and stimulating factor in the system of a healthy lifestyle is important for improving physical development and readiness of individuals, prevention of excessive body mass and obesity, and helps to reduce of risk of occurrence cardiovascular diseases, diabetes, osteoporosis, certain of oncologic diseases and depression [11].

According to T. Loza, locomotor activity is defined and predetermined by a set of physical activity in human life, in learning, work, during leisure and rest. So are two types of human physical activity: spontaneous

(motions aimed at satisfying natural human needs – personal hygiene, eating, sleeping) and specially organized (game activity, self-dependent physical exercises, sports activities) [8, p. 210]

Thus, the term «physical activity» is explained by scientists as natural and specially organized human motion activity, ensuring its physical and mental development. Researchers unanimously agreed that a necessary and a priority condition for improving physical activity level is to involve children and youth to exercise and sports activity as a factor in the maintenance and development of optimal physical and mental characteristics using a variety of forms, methods and means of physical education.

However, as current researches demonstrate, the level of physical activity level of students is extremely low and usually limited to physical education lessons, which, in turn, does not compensate for the required level of physical activity. Thus, almost 90 % of pupils have deviations in health, more than 50 % – unsatisfactory physical fitness. Drastically increasing the number of students classified the condition health to special medical group [5, p. 60]. It found that, two lessons in physical education does not form students' habit of regularly engage in physical activities and sports, and compensate the necessary level of physical activity only 10–20 % of hygienic norms of motions. Proved that proper physical preparation have only students that in addition to physical education lessons regularly engaged twice – three times a week in children` and youth sport schools or sports clubs [2; 5; 9]. Thus, significant potential to attract primary school students to physical culture sees in extracurricular sport activities as one of the forms of organization of students` leisure.

Based on generalising of scientific literature on the study (T. Bala, I. Maslyak [1] N. Kryvoruchko [4]) found that cheerleading practices contribute to the effective functioning of major body systems, formation of essential physical skills; increasing the level of fitness; improving physical and moral qualities.

In particular, this sport is characterized by the complexity of the structure of physical actions, provides intensive training and emotional and spectacular competitions. Cheerleading contains a wide difference of variety intense motions, that include elements of choreography, tumbling, artistic and rhythmic gymnastics, sport and folk dances. It consists of two main programs – Cheerleading and Perfomance Cheer. Cheerleading program consists of cheer, which may contain tumbling, stunts, pyramids, jumps and other means to call upon spectators to support the team and the basic part of the routine that includes required elements: stunts, pyramids, tumbling (which include jumps) basket tosses and dance. Perfomance Cheer is divided into three types: Pom (freestyle), Jazz and Hip Hop [1; 10].

The complexity of structure of cheerleaders` physical motions makes it necessary to remember significant amount on each other different motions. This makes the memory requirements for cheerleaders and their characteristics such as diligence, clarity and completeness of visual representations and fidelity of motions. Skills execution quality (precision, artistry, etc.) determines the necessity of formation self-control ability and correction of muscular effort, stability of attention, ability to concentrate and distribute attention, responsiveness, speed of thinking, ingenuity, self-criticism, perseverance. Cheerleading as sports mass movement, the goal has: to attract youth to a healthy lifestyle and participate in sport competitions; promote physical, cultural and spiritual development; empowering youth in the choice of their career, achieve of personal success; creating favorable conditions for disclosing potential. It is used for the full and harmonious physical development, health promotion and improvement of movement functions, posture [4, p. 9].

In order to determine the potential of improving health by cheerleading we conducted an experimental research aimed at determining the level of physical fitness and physical development of pupils that attending cheerleading practices and engaged with the author's sport educational program. Author program «Cheerleading» aims at mastering the pupils of primary school the basics of technique and tactics of performances, a sufficient level of physical qualities and abilities that will allow further specialized training to achieve a high level of individual and collective skills and its successful implementation in conditions of overall activity. The training program and curriculum designed for 36 weeks a year (102 hours of group practices and participation in competitions). The duration of one training practice in the first year is not more than academic hour three times a week. In addition, younger students perform daily morning exercises and individual tasks of the coach for physical improvements that contributed to the formation of positive motivation to regular self execution of skills and exercises.

The first phase of the experiment was defined homogeneous group of students 8-9 years old, which at the beginning of 2016–2017 academic year began practicing in the club. Using standardized tests (long jump from place pushing two legs, jump through gymnastic bench on two legs for 10 seconds, lifting the torso from a prone position, torso tilt of a seated position, flexion and extension arms in emphasis lying) was diagnosed output level of physical development and physical fitness and developed exercise program general

physical preparation (GPP) and special physical preparation (SPP). In developing the experimental program, we considered that the physical skill more effectively formed on the basis of sufficient physical fitness. In view of this, 50 % of the time practices were given on the exactly general physical preparation of primary school children (first year) with a priority focus on the development of endurance, strength, flexibility, coordination skills, agility (*table* 1).

Table 1

Set of Exercises used in the Author Program «Cheerleading» in Order to Create the Need for Physical Activity and Physical Perfection of Primary School Children

Development of Physical Abilities	GPP	SPP
Endurance	jumping rope, running at different speeds and duration, mobile games	handstand
Power	static and dynamic exercises theirs` own weight, with weights, aimed at developing muscle strength hands, hands, shoulder girdle, press, back, legs	handstand, stunts
Flexibility	active and passive exercises to develop flexibility in the shoulder, hip joints and flexibility of the spine	Skills that strengthen the joints
Coordination abilities	Sports; shuttle run, dance exercise exercises (somersaults, wheels) exercise in balance	organizing exercises (forming a column, moving in a column diagonally, etc.), special jumps (jump, leap jumping)
Dexterity	exercise that requires immediate response, the minimum time to overcome the short distances (running short distances, shuttle run, jumping rope, sports games).	Dance styles (jazz, funk, breaks, hip-hop), a dance unit using the basic elements of cheerleading

The results of the control measurements using standardized tests showed that eight months of systematic practicing cheerleading indicators of physical development and physical fitness of students increased on average by 25 % (*table* 2).

Table 2

Dynamics of Physical Development of Primary School Children

Test	Дівчата, (n 15)	Дівчата, (n 15)
	Experiment	
	Before	After
Long jump with two feet space pushing	80–95	100–110
Jump through gymnastic bench on two legs for 10 seconds	6–8	10–12
Lifting the torso from a prone position	8–10	12–16
Torso tilt of a seated position	5–6	7–9
Flexion and extension arms in emphasis lying	4–6	8–10

Conclusions and prospects for further study. It was found that physical activity – is a natural and specially organized human motion activity, ensuring its physical and mental development. Proved efficiency of the developed experimental program aimed at mastering by pupils the basics of technique and tactics performances, a sufficient level of physical qualities and abilities, increasing their physical activity.

The study suggests that cheerleading practices as a model of improving health by mode provides primary school children the necessary amount of physical activity primary school students in extracurricular sport activities. There are prospects for further study in exploring the problems of identifying the essential elements involved in developing skills in primary school children by means of cheerleading activities connected with extracurricular sport activities.

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THE ANAEROBIC POWER OF WOMEN WHO HAVE UNDERGONE PHYSICAL TRAINING

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Abstract

Introduction. Anaerobic power is an important factor determining the physical performance in various kinds of sports. Therefore, the aim of this paper is to present women's anaerobic power in soccer players (SP), table tennis players (TT) and weightlifters (WL). ***Methods.*** This study involved 3 groups of professional athletes women: 15 SP, 12 TT and 12 WL, which are of a similar age and sports' level. Anaerobic power in all athletes was recorded during 30-second Wingate test, with resistance set at 0,075 kp x kg (–1). ***Results.*** Relatively expressed total external work (TW), maximal power output (Pmax) and the fatigue index (FI) of tested athletes were similar. Mean power (Pmean) was different among the treatment groups (F=12,445; p<0,001), while in TT group these values were significantly lower than in SP and in WL athletes. Somatic variables in 3 groups of tested athletes have not changed. ***Conclusions.*** Type of practiced sport has an impact on the size of anaerobic power. Several years of sports training in table tennis has not changed the anaerobic potential of surveyed women while specific training in soccer and weightlifting increased only Pmean.

Key words: women, professional sport, anaerobic power, training.

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Цезар Міхальський, Мішель Зіч, Вієслав Пієта, Карол Піліс, Вієслав Піліс, Анна Піліс, Криштоф Штець, Джоанна Родзієвіч-Грухн. Анаеробна потужність у тренованих жінок. ***Актуальність.*** Анаеробна потужність – це важливий фактор, який визначає фізичну результативність у різних видах спорту. Отже, ***мета дослідження*** – визначення анаеробної потужності в жінок, які є футбольними гравцями (ФГ), гравцями в настільний теніс (НТ) і штангістів (ШТ). ***Методи дослідження.*** Дослідження проводили на трьох групах жінок, схожих за віковими й спортивним показниками, усі вони є професійними спортсменками: 15 ФГ, 12 НТ і 12 ШТ. Анаеробну потужність у всіх спортсменок визначали за допомогою 30-секундного Вінгейт-тесту із застосуванням набору опорів 0,075 кгс х кг (–1). ***Результати.*** У цілому загальна зовнішня робота (ЗЗР), максимальна вихідна потужність (МВП) і коефіцієнт утоми (КВ) однакові у всіх групах. Середня потужність (Рср) різниться в тестованих групах (F = 12.445; p <0.001): у групі НТ цей показник значно нижчий, ніж у ФГ і ШТ спортсменок. Соматичні відмінності в трьох тестованих групах не змінилися. ***Висновки.*** Вид спорту впливає на показник анаеробної потужності. Тренування з настільного тенісу, які проводили протягом декількох років, не привели до зміни анаеробного потенціалу в спортсменок, тоді як тренування з футболу й важкої атлетики привели лише до збільшення середньої потужності.

Ключові слова: жінки, професійний спорт, анаеробна потужність, тренування.

Цезарь Михальский, Мишель Зич, Виеслав Пиета, Карол Пилис, Виеслав Пилис, Анна Пилис, Криштоф Штец, Джоанна Родзиевич-Грухн. **Анаэробная мощность у тренированных женщин**. ***Актуальность.*** Анаэробная мощность – это важный фактор, который определяет физическую результативность в разных видах спорта. Таким образом, ***целью исследования*** было определение анаэробной мощности у женщин, которые являются футбольными игроками (ФИ), игроками в настольный теннис (НТ) и штангистами (ШТ). ***Методы исследования.*** Исследование проводили на трех группах женщин, сходных по возрастному и спортивным показателям, все они являются профессиональными спортсменками: 15 ФИ, 12 НТ и 12 ШТ. Анаэробную мощность у всех спортсменок определяли при помощи 30-секундного Вингейт-теста, с применением набора сопротивлений 0,075 кгс х кг (–1). ***Результаты.*** В целом, общая внешняя работа (ОВР), максимальная выходная мощность (МВМ) и коэффициент усталости (КУ) одинаковы во всех группах. Средняя мощность (Рср) различалась в тестируемых группах (F=12.445; p<0,001: в группе НТ этот показатель был значительно ниже, чем у ФИ и ШТ спортсменок. Соматические различия в трех тестируемых группах не изменились. ***Выводы.*** Вид спорта влияет на показатель анаэробной мощности. Тренировки по настольному теннису, которые проводились в течение нескольких лет, не привели к изменению анаэробного потенциала у спортсменок, тогда как тренировки по футболу и тяжелой атлетике привели лишь к увеличению средней мощности.

Ключевые слова: женщины, профессиональный спорт, анаэробная мощность, тренировка.

Introduction. The anaerobic power of women is lower in women than in men [1; 2; 3]. This power in women, like in men, plays an important role in recreational and professional sports, and is an effective

predictor of good performance in many disciplines of sports [4; 5; 6]. It is hypothesized that the ability to train this capacity is genetically determined [7]. At the present stage of knowledge there is evidence that beyond the biological natural development of the body, strength training is most likely to develop anaerobic performance in both women and men [8, 9]. In addition, plyometric training of lower limbs influenced the increase of the results in vertical and horizontal jumps, the shortening of the running time over the distance of 20 and 40 m and the increased strength of these limbs [10].

Among the anaerobic performance tests widely used is the Wingate test. Initially, it was performed with lower limbs for 30-second, followed by 15-second and 60-second versions, but finally the 30-second version became the basic test for evaluation of human anaerobic performance. The 30-second Wingate test evaluates the anaerobic power comprehensively, as it defines its major components: anaerobic capacity, maximal power output, anaerobic endurance, and others. It is also possible to perform the upper limb Wingate test with specially constructed cycloergometer with much lower resistance than the lower limb version. There were also variants of the Wingate test with different loads for men, women and children [11; 12; 13]. The disadvantage of the Wingate test is the specificity of the cycloergometer work that clearly prefers individuals with high muscle strength and above all those who have mastered the technique of cycloergometer work, such as cyclists or triathlon competitors.

The purpose of the presented work is to assess the anaerobic power of women practicing sports disciplines with different levels of development of anaerobic metabolism. Trained women were of similar age and represented a similar level of sport proficiency.

Materials and methods of the study. The study involved 3 women's groups: 15 soccer players (SP), 12 table tennis players (TT), 12 weightlifters (WL), which were of a similar age and represented a similar sports' level (II and I sport class). The length of surveyed athletes training ranged 3–15 years. The subjects reported to the laboratory 2 hours after a light meal, without taking coffee, medications or alcohol for at least 12 hours.

The study began with a determination of athlete's age and body mass (BM). Before the main test the 5-minute warm–up was conducted. Then the 30-second Wingate test was performed on the Excalibur Sports cycloergometer, with resistance set at 0,075 kp x kg (–1) BM. After the test total external work (WT – KJ/kg), maximal power output (Pmax – W/kg), mean power (Pmean – W/kg), and fatigue index (FI – %) were calculated.

Obtained data in first stage of study were analyzed in order to determine their distribution and after confirming their normality, arithmetic means and standard deviations were calculated. The comparison means arithmetic of treated sports group were calculated with one-way analysis of variance and Bonferroni test as post hoc test using SPSS software, version 24t using SPSS software, version 24. The level of statistical significance was set at $p<0.05$.

Discussion and the results of the study. The examined women did not differ by age or any of the examined somatic variables (tab. 1).

Table 1

Somatic Variables of Tested Women

Group	Age, *years*		BM, *kg*		BH, *cm*		BF, *%*		BMI, *kg/m2*	
	x	±SD	x	±SD	x	±SD	x	±SD	x	±SD
SP n=15	21,27	2,69	60,03	8,92	165,53	6,02	24,35	1,87	21,84	2,58
TT n=12	21,17	2,21	60,62	7,96	166,92	2,34	25,74	1,72	21,76	2,49
WL n=12	19,33	1,72	61,58	9,81	164,50	2,32	25,43	2,00	22,74	3,35
F	2,855		0,102		0,327		0,162		0,464	
p<	0,071		0,903		0,723		0,851		0,633	
SP vs. TT	1,000		1,000		1,000		1,000		1,000	
SP vs. WL	0,106		1,000		1,000		1,000		1,000	
TT vs. WL	0,170		1,000		1,000		1,000		1,000	

BM – body mass; BW – body height; BF – body fat.

However there was a significant difference in the anaerobic power indices among the examined groups in relation to Pmean ($F=12,445$; $p<0,001$).

Table 2

Anaerobic Power Variables of the Examined Women

Group	TW, *kJ*		Pmax, *W/kg*		Pmean, *W/kg*		FI, *%*	
	x	±SD	x	±SD	x	±SD	x	±SD
SP n=15	12,39	2,63	10,78	2,02	6,91	0,94	57,09	10,89
TT n=12	10,77	2,46	9,57	1,34	5,41	0,86	61,96	16,14
WL n=12	12,59	2,44	11,25	1,99	6,90	0,77	59,89	9,15
F	1,948		2,708		12,445		0,535	
p<	0,157		0,080		0,001		0,590	
SP vs. TT	0,313		0,287		0,001		0.939	
SP vs. WL	1,000		1,000		1,000		1,000	
TT vs. WL	0,252		0,094		0,001		1,000	

TW – total external work; Pmax – maximal power output; Pmean – mean power; FI – fatigue index.

Post hoc analysis revealed significant differences between groups TT and SP, as well as TT and WL ($p<0,001$) in relation to Pmean.

It has been revealed that in case of anaerobic power it has displayed significant sex differences between the components of its physical performance, namely: anaerobic capacity, maximal power output and anaerobic endurance [3; 14; 15; 16]. Men achieve higher anaerobic power (Pmax, Pmean) and lower anaerobic endurance (fatigue index) than women [3; 15]. The anaerobic power values of the women presented in the study were somewhat different and the results obtained by the table tennis players were similar to those of the non–training women. Allison et al. (2015) determined that non–training women in the US Army had Pmax=9,5±1,7 W/kg and Pmean=6,1±0,8 W/kg, and were significantly lower than those of men of similar age ($p <0,001$). The other 2 groups of athletes studied by us gained higher values of anaerobic power indices than those presented by untrained American women and table tennis players of similar age. This is due to the fact that football players in their training perform some of the exercises developing anaerobic power and the overwhelming part of the workout in weight lifting is focused on the development of this motor ability [16,17,18]. The differences between the studied groups of women are relevant to only Pmean parameter. However, there were no intergroup differences in Pmax, although among tested groups there were weightlifting competitors with high muscle strength. This motor ability greatly influences the size of anaerobic power and especially on Pmax [19]. In addition, the maximum muscle strength is reached between age 20 and 30, and it can significantly affect the development of anaerobic power in this decade of life [20].

In our study, however, such positive effects of high muscle strength on anaerobic power in weightlifting athletes have not been found despite the fact that these athletes were of the age corresponding to the maximum development of strength. Likewise, there was no difference in the anaerobic capacity of the women surveyed which are reflected by TW in the present study, although it would seem that footballers should have more developed this anaerobic performance component than the weightlifting athletes and table tennis players. Football players must develop periodically and repeatedly high anaerobic power in 90 minutes of play, which is less common in weight lifting and table tennis competitions.

It should also be mentioned that the Wingate cycloergometric test was not a specific type of work trained by any of the sport teams we have studied and that there were no preferences in the studied subjects, so that the results of the investigated anaerobic power appear to be reliable. It is also noted that the warm–up method before the Wingate test can affect the reliability of the obtained results. Lunn et al. (2015) claim that the best results of anaerobic power determined by the Wingate test are obtained when the last 5 seconds warm–up test is performed at 80 rpm. In the present study, participants performed a 5–minute warm–up on a cycloergometer at a steady speed of about 70 rpm, which should also guarantee reliable results of measured anaerobic power [21].

Conclusions.

1. The structurally and metabolically different nature of table tennis training from soccer and weightlifting athletes was the reason of lower Pmean results.

2. Table tennis training is an inadequate stimulus for development of anaerobic power.

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THE INFLUENCE OF RUN WORKLOADS IN A MIXED ENERGY SUPPLY MODE UPON THE FUNCTIONAL PREPAREDNESS OF STUDENTS WITH A HIGH FAT COMPONENT CONTENT

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Abstract

The current relevance of the investigation is conditioned by the necessity of creating new physical education programs, implementing which would promote the functional capabilities enhancement of students with a «high» content of the body mass fat component. ***The goal of the research*** is to ascertain the influence of run workloads in a mixed energy supply mode on the functional preparedness of students aged 17–21 with a «high» content of the body mass fat component. ***Research findings.*** Run workloads in a mixed energy supply mode with a three times per week periodicity have an efficient influence upon the functional preparedness of students with a «high» content of the body mass fat component. After 8 weeks of training the females' aerobic productivity level rose to «excellent», and it improved up to «satisfactory» level in males after 16 weeks of their training. Irrespective of sex, probable enhancement of the threshold of anaerobic metabolism relative indicators was registered after 16 weeks since the training sessions' start. Such run workloads did not influence the females' anaerobic productivity, while the males' volume indices of the anaerobic lactate energy supply processes improved. Exercises with stimulation of anaerobic lactate energy supply processes furthered the body mass fat component content decrease from «high» to «normal» level, and the muscle component increase – from «normal» to «high» both in the females and males. ***Conclusions.*** Stimulation of anaerobic energy supply processes during run trainings irrespective of a person's sex is likely to enhance the aerobic energy supply processes capacity in the maximum oxygen consumption indicators, as well as the aerobic energy supply processes volume in the threshold of anaerobic metabolism indices. Training sessions by the run workloads program conducted in a mixed energy supply mode didn't cause probable changes in the females' anaerobic productivity indices, while in the males they enlarged the volume of anaerobic lactate energy supply processes. Under the influence of such exercises as a whole the body mass fat component content gets reduced, while the muscle component content increases.

Key words: females, males, run workloads, aerobic productivity, anaerobic productivity, body mass component content.

Юрій Фурман, Олександра Брезденюк. Вплив бігових навантажень у змішаному режимі енергозабе**спечення на функціональну підготовленість студентів із високим вмістом жирового компонента.** ***Актуальність*** дослідження зумовлена необхідністю створення нових програм із фізичного виховання, застосування яких сприяло б підвищенню функціональних можливостей студентів із високим умістом жирового компонента маси тіла. ***Мета дослідження*** – виявити вплив бігових навантажень у змішаному режимі енергозабезпечення на функціональну підготовленість студентів 17–21 року з високим умістом жирового компонента маси тіла. ***Результати роботи.*** Бігові навантаження у змішаному режимі енергозабезпечення періодичністю три рази на тиждень ефективно впливають на функціональну підготовленість студентів із високим умістом жирового компонента. У дівчат через вісім тижнів занять рівень аеробної продуктивності зріс до відмінного, а в юнаків через 16 тижнів покращився до посереднього. Вірогідне покращення відносних показників порога анаеробного обміну, незалежно від статі, зареєстровано через 16 тижнів від початку тренувань. Такі бігові навантаження не вплинули на анаеробну продуктивність дівчат, у той час як у юнаків покращилися показники ємності

анаеробних лактатних процесів енергозабезпечення. Заняття зі стимуляцією анаеробних процесів енергозабезпечення як у дівчат, так і в юнаків сприяли зменшенню рівня вмісту жирового компоненту маси тіла від високого до нормального та збільшенню вмісту м'язового компонента від нормального до високого. ***Висновки.*** Стимуляція анаеробних процесів енергозабезпечення під час занять бігом, незалежно від статі, вірогідно покращує потужність аеробних процесів енергозабезпечення за показниками максимального споживання кисню та ємність аеробних процесів енергозабезпечення за показниками порога анаеробного обміну. Заняття за програмою бігових навантажень у змішаному режимі енергозабезпечення не викликали вірогідних змін показників анаеробної продуктивності дівчат, у той час як у юнаків вони сприяли покращенню ємності анаеробних лактатних процесів енергозабезпечення. Під впливом таких занять у дівчат і юнаків зменшується вміст жирового компонента маси тіла й збільшується вміст м'язового компонента.

Ключові слова: дівчата, юнаки, бігові навантаження, аеробна продуктивність, анаеробна продуктивність, компонентний склад маси тіла.

Юрий Фурман, Александра Брезденюк. Влияние беговых нагрузок в смешанном режиме энергообеспечения **на функциональную подготовленность студентов с високим содержанием жирового компонента.** ***Актуальность*** исследования обусловлена необходимостью создания новых программ по физическому воспитанию, применение которых способствовало бы повышению функциональных возможностей студентов с високим содержанием жирового компонента массы тела. ***Цель исследования*** – выявить влияние беговых нагрузок в смешанном режиме энергообеспечения на функциональную подготовленность студентов 17–21 года с високим содержанием жирового компонента массы тела. ***Результаты работы.*** Беговые нагрузки в смешанном режиме энергообеспечения периодичностью три раза в неделю эффективно влияют на функциональную подготовленность студентов с высоким содержанием жирового компонента. У девушек через восемь недель занятий уровень аэробной производительности вырос к окличному, а в юношей через 16 недель улучшился к среднему. Достоверное улучшение относительных показателей порога анаэробного обмена, независимо от пола зарегистрировано через 16 недель после начала тренировок. Такие беговые нагрузки не повлияли на анаэробную производительность девушек, в то время как у юношей улучшились показатели емкости анаэробных лактатных процессов энергообеспечения. Занятия со стимуляцией анаэробных процессов энергообеспечения как у девушек, так и в юношей способствовали уменьшению уровня содержания жирового компонента массы тела от високого к нормальному и увеличению содержания мышечного компонента от нормального к високому. ***Выводы.*** Стимуляция анаэробных процессов энергообеспечения во время занятий бегом, независимо от пола, достоверно улучшает мощность аэробных процессов энергообеспечения по показателям максимального потребления кислорода и емкость аэробных процессов энергообеспечения по показателям порога анаэробного обмена. Занятия по программе беговых нагрузок в смешанном режиме энергообеспечения не вызвали достоверных изменений показателей анаэробной производительности девушек, в то время как у юношей они способствовали улучшению емкости анаэробных лактатных процессов энергообеспечения. Под влиянием таких занятий у девушек и юношей уменьшается содержание жирового компонента массы тела и увеличивается содержание мышечного компонента.

Ключевые слова: девушки, юноши, беговые нагрузки, аэробная производительность, анаэробная производительность, компонентный состав массы тела.

Introduction. The body aerobic and anaerobic productivity types are considered integral indicators of a person's functional preparedness. Scientifically determined are also statements about a link between a person's physical health and body's aerobic and anaerobic capacities [1; 7; 14]. Precisely for this reason, a number of scientists point out the necessity of enhancing man's aerobic as well as anaerobic body capacities with the aim of providing a proper health level [4; 5; 10].

At present physical education sessions conducted in accordance with the higher education establishments program do not ensure body's aerobic and anaerobic efficiency enhancement [4; 6; 10], because, as we believe, individual functional properties of students' bodies are not taken into account when dosing out physical exercises.

There are scientifically based records, according to which students' functional preparedness is measured, to a certain extent, by body weight fat component content. So with the increase of the latter to a high level both girls and boys' aerobic and anaerobic efficiency indices decline [2; 8].

As is well known, young students' functional capabilities improvement is carried out by employing physical exercises, which stimulate aerobic and anaerobic metabolic processes [4; 6]. Among the existent physical education methods, the widely available and effective means of functional preparedness enhancement is run, which purposively allows to improve aerobic and anaerobic energy supply processes [3; 10; 12].

There is a considerable body of work on a more significant influence of run workloads on body aerobic and anaerobic productivity in a mixed energy supply mode as compared to that performed in aerobic conditions [10; 11]. For that reason, as a way of functional preparedness correction of young people with a «high» body weight fat component content, we employed run workloads in a mixed energy supply mode.

The goal of the study is to ascertain the influence of run workloads in a mixed energy supply mode upon functional preparedness of students aged 17–21 with the a «high» body weight fat component content.

Materials and methods of the Study. Since in our previous studies it has been determined, that, irrespective of sex, the lowest aerobic and anaerobic efficiency indices are characteristic of students whose body fat component content exceeds the norm, we have researched possibilities of run workloads application with the anaerobic energy supply processes stimulation for the purpose of functional preparedness correction of young males and females with the a «high» fat component content.

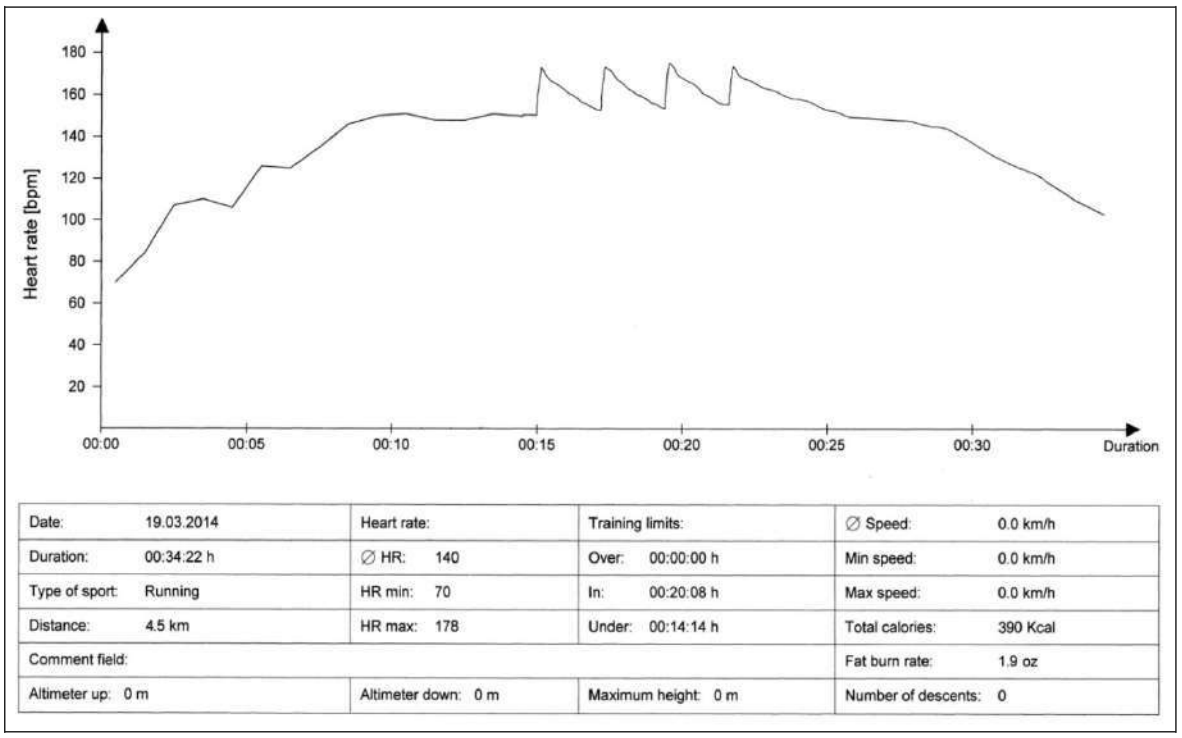
To realize the above mentioned idea at the beginning of the «forming» experiment pilot females (PG1, n=17) and males (PG 2, n=19) groups were formed from the students of Vinnytsia State Mykhailo Kotsubynskyi pedagogical university, who were never engaged in sports and by state of their health belonged to the basic medical group. The females and males of the mentioned pilot groups had run workloads sessions carried out in a mixed energy supply mode three times a week for the period of 24 weeks.

To prevent the negative influence of such training sessions upon the locomotor apparatus, we were mindful of the body mass index (BMI), which was within the normal range in students of the pilot groups.

Programs of training sessions in a mixed energy supply mode were characterized by doing four speed-ups 100 m each with the intensity close to maximal (heart rate of appr. 180 beats per min) by the students under investigation during running in the aerobic energy supply mode (heart rate of appr. 150 beats per min) after 7-8 minutes from the beginning of the run workload.

Energy input per one session totaled approximately 50 % of the maximum permissible value; run workload intensity made about 60 %, and during speed-ups – 80 % of maximum oxigen consumption. The interval between speed-ups made up 2 min. During the speed-ups anaerobic energy supply processes were stimulated, which during a two-minute interval between each were gradually passing into the aerobic energy supply mode. Thus the workload was being carried out in the energy supply mode of the muscle work shifting from aerobic to anaerobic and vice versa.

During two weeks from the training sessions' beginning, the external volume of the run workloads was gradually increasing, reaching the level consistent with a certain program. The report of the heart rate monitoring of one of the students under investigation during a training session in a mixed energy supply mode is presented in Figure 1.



Date:	19.03.2014	Heart rate:		Training limits:		∅ Speed:	0.0 km/h
Duration:	00:34:22 h	∅ HR:	140	Over:	00:00:00 h	Min speed:	0.0 km/h
Type of sport:	Running	HR min:	70	In:	00:20:08 h	Max speed:	0.0 km/h
Distance:	4.5 km	HR max:	178	Under:	00:14:14 h	Total calories:	390 Kcal
Comment field:						Fat burn rate:	1.9 oz
Altimeter up:	0 m	Altimeter down:	0 m	Maximum height:	0 m	Number of descents:	0

Fig. 1. *Heart Rate Monitoring Report of Student A. During a Training Session in a Mixed Energy Supply Mode*

Efficiency of training sessions influence upon functional preparedness of males and females was analyzed by the maximum oxygen consumption ($VO_{2\ max}$) and by threshold of anaerobic metabolism (TAM) indices, both of which correspondingly characterize the capacity and volume of aerobic energy supply processes; by capacity of anaerobic alactate (Wingate anaerobic test for 10 sec – $WAnT_{10}$) and lactate (Wingate anaerobic test for 30 sec – $WAnT_{30}$) energy supply processes; by volume of anaerobic alactate energy supply processes (maximum quantity of mechanical work for 1 minute – MQMK) [11; 14].

Indicators of body aerobic productivity were estimated by the relative value of maximum oxygen consumption according to the criteria of Y. P. Piarnat [7], and the physical health level – according to G. L. Apanasenko [1] (in females the «safe» health level refers to the $VO_{2\ max}$ relative value of at least 35 $ml \cdot min^{-1} \cdot kg^{-1}$, in males – of at least 42 $ml \cdot min^{-1} \cdot kg^{-1}$).

With the purpose of defining body mass, BMI, fat and muscle components content of the body mass the method of bioelectrical impedance with the use of «OMRON BF 511» device was applied. Quantitative contents of fat and muscle components were appreciated by the criteria of D. Gallagher [13], H. D. McCarthy [15] and Omron Healthcare. Test results were registered after 8, 16 and 24 weeks since the start of the «forming» experiment.

For operative calculation of individual aerobic productivity and energy consumption indices during running at certain heart rates, as well as for the purpose of evaluating body aerobic productivity of the people under investigation, we applied the author's original computer program «Health calculation» [9].

Statistical processing of the data obtained during the research was carried out with the help of mathematical statistics methods. Such figures as the arithmetical mean (x), root-mean-square deviation (±) and arithmetical mean error (±S) were defined. Considering the fact, that the obtained data contained permissible changeability for a normal distribution, we employed Student's t-criterion for setting confidence of differences in the arithmetical mean values of the research.

Discussion and the results of the study. Training sessions by the program of run workloads with the stimulation of anaerobic energy supply processes facilitated the increase of the students' aerobic productivity irrespective of sex (table 1).

Table 1

Influence of Training Sessions by Programs of Run Workloads in the Mixed Energy Supply Mode Upon Aerobic and Anaerobic Productivity Indicators of Students

Indicator	Sex	Mean values, x±S			
		Before Trainings	After 8 Weeks	After 16 Weeks	After 24 Weeks
$VO_{2\ max}$, $ml \cdot min^{-1} \cdot kg^{-1}$	female	34,74±0,25	37,03±0,44*	40,18±0,52*	40,07±0,45*
	male	37,12±0,49	39,86±0,46*	43,38±0,27*	42,92±0,35*
TAM, $W \cdot kg^{-1}$	female	2,28±0,05	2,33±0,07	2,68±0,08*	2,72±0,08*
	male	2,53±0,10	2,72±0,07	2,96±0,07*	3,03±0,08*
MQMK, $kgm \cdot min^{-1} \cdot kg^{-1}$	female	23,67±0,89	24,80±1,18	26,13±1,19	25,85±1,16
	male	30,10±1,11	34,03±0,95*	37,05±0,90*	38,54±0,84*
$WAnT_{10}$, $kgm \cdot min^{-1} \cdot kg^{-1}$	female	33,00±1,67	34,59±1,67	36,18±1,46	34,59±1,25
	male	59,21±3,07	60,32±3,07	64,74±2,68	65,37±2,30
$WAnT_{30}$, $kgm \cdot min^{-1} \cdot kg^{-1}$	female	29,06±1,60	29,47±1,53	30,06±1,46	29,65±1,39
	male	48,05±2,75	48,89±2,49	50,58±2,49	52,68±2,36

Note. Confidence of differences in indicators of output data:* – $p<0,05$.

After 8 weeks under the influence of training the mean values of the $VO_{2\ max}$ relative index in females and males increased correspondently by 6,59 and 7,38 %, and 16 weeks later – by 15,66 and 16,86 % ($p<0,05$).

Under the influence of trainings in the mixed energy supply mode the females' aerobic productivity level (APL) by the criteria of Y. P. Piarnat rose from «good» to «excellent» after 8 weeks since the training sessions start. In males trainings with the anaerobic energy supply processes stimulation facilitated the APL increase from a «below satisfactory» to a «satisfactory» level after 16 weeks since the training sessions start.

It is also worth mentioning, that before the start of the «forming» experiment the females' mean value of the $VO_{2\ max}$ relative index according to G. L. Apanasenko was below the «safe health level», and after 8

weeks since the trainings start it rose beyond the «safe health level». Under influence of training sessions by the run workloads program the males' «safe health level» was registered after 16 weeks of training.

Probable increase of the TAM values irrespective of sex was registered after 16 weeks of training (see table 1). Mean values of the relative TAM indicators increased by 17,54 % in the females and by 17,00 % in the males.

Run workloads in a mixed energy supply mode didn't influence the females' anaerobic productivity, while they enlarged the males' anaerobic lactate energy supply processes volume: their relative MQMK indicators increased by 13,06 % after 8 weeks since the training start, by 23,09 % – after 16 weeks, and 28,04 % – after 24 weeks (see table 1).

Exercises with stimulation of anaerobic energy supply processes furthered the body mass fat component content decrease from «high» to «normal» and the muscle component increase from «normal» to «high» both in the females and males. As can be seen in table 2, after 16 weeks of training the fat component content decreased by 5,85 % (after 24 weeks – by 8,29 %) in the females, and by 6,43 % (after 24 weeks – by 12,03 %) in the males. The muscle component content increased by 5,57 % after 16 weeks of training (after 24 weeks – by 8,85 %) in the females, and by 6,55 % (after 24 weeks – by 9,96 %) in the males.

Table 2

Influence of Exercises by Training Programs in a Mixed Energy Supply Mode Upon Body Mass, BMI, Body Fat and Muscle Components Contents of Students

Indicator	Sex	Mean Values, $x \pm S$			
		Before Trainings	After 8 Weeks	After 16 Weeks	After 24 Weeks
Body mass, *kg*	female	63,11±0,66	62,98±0,65	62,09±0,70	61,88±0,77
	male	77,81±1,27	77,45±1,27	76,29±1,21	76,16±1,18
BMI	female	23,28±0,30	23,24±0,27	22,95±0,29	22,88±0,31
	male	24,33±0,17	24,23±0,17	23,87±0,18	23,83±0,18
Fat content, *%*	female	35,71±0,46	34,81±0,42	33,62±0,46*	32,75±0,42*
	male	22,69±0,40	21,96±0,38	21,23±0,33*	19,96±0,28*
Skeletal muscles, *%*	female	26,55±0,19	27,05±0,16	28,03±0,24*	28,82±0,25*
	male	39,24±0,34	40,17±0,29*	40,76±0,30*	41,81±0,35*

Note. Confidence of differences in indicators of output data:* – $p<0,05$.

In summary, run workloads in a mixed energy supply mode can be employed as a means of functional preparedness level increase of students aged 17-21. Considering the dependence of functional preparedness of females and males of the mentioned age upon the body fat component content (i.e. while the fat component increases, aerobic and anaerobic productivity indicators decrease), the practical advisability of such physical workloads employment for students with the excessive body fat component is evident.

Conclusions and prospects for further research. Stimulation of anaerobic energy supply processes during run trainings irrespective of sex probably enhances the aerobic energy supply processes capacity by the maximum oxygen consumption indicators, as well as the aerobic energy supply processes volume by the threshold of anaerobic metabolism indices. Influence of the run workloads with the stimulation of anaerobic energy supply processes upon the anaerobic lactate productivity is conditioned by sex factor.

Such workloads did not cause probable changes in the females' anaerobic lactate productivity by the index of maximum quantity of mechanical work for 1 minute as compared with males. Irrespective of sex under the influence of exercises in a mixed energy supply mode the body mass fat component content decreases, while the muscle component increases.

One of the perspectives of further research can be considered the study influence of exercises by various run workloads programs on physical preparedness of students with a «high» body mass fat component content.

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PECULIARITIES OF THE FACTORS WHICH AFFECT THE PHYSICAL ACTIVITY OF HIGH SCHOOL PUPILS

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Abstract

Individual's' physical activity is closely related to health level and physical fitness, which in turn are important components of life quality. The development of modern society leads to a number of negative factors which influence the overall human activity, reducing level of physical activity and causing occurrence of hypodynamia. The main objective of the study was to identify the main factors that affect high school pupils' physical activity.To solve this task, methods of analysis of scientific and methodical literature, method of analysis and synthesis and sociological survey, were applied. The contingent surveyed were pupils of secondary schools aged 15–17 years. As result of research, peculiarities of the factors, which determine the content and scope of high school pupils' physical activity, were identified.

Key words: physical activity, pupils, factors, spare time.

Андрій Мандюк. Особливості факторів, що впливають на рухову активність учнів старшого шкільн**ого віку.** Рухова активність індивіда тісно пов'язана з рівнем здоров'я та фізичної підготовленості, які є важливими складовими частинами якості життя людини. Розвиток сучасного суспільства зумовлює низку негативних факторів, які впливають на загальну життєдіяльність людини, знижуючи рівень рухової активності та спричиняючи виникнення явища гіподинамії.

Основне ***завдання дослідження*** полягало у визначенні основних факторів, які впливають на рухову активність учнів старшого шкільного віку.

Для виконання поставленого завдання застосовували ***метод*** аналізу науково-методичної літератури, метод аналізу й синтезу та соціологічне опитування. Контингентом досліджуваних були учні загальноосвітніх шкіл віком 15–17 років.

У ***результаті*** дослідження виявлено особливості факторів, що зумовлюють зміст й обсяг рухової діяльності учнів старшого шкільного віку.

Ключові слова: рухова активність, учні, фактори, вільний час.

Андрей Мандюк. Особенности факторов, которые влияют на двигательную активность учеников старшего школьного возраста. Двигательная активность индивида находится в тесной связи с уровнем здоровья и физической подготовленности, которые являются важными компонентами качества жизни человека. Развитие современного общества предопределяет ряд негативных факторов, которые влияют на общую жизнедеятельность человека, снижая уровень двигательной деятельности и вызывая явление гиподинамии. Основной ***задачей исследования*** было определение основных факторов, которые влияют на двигательную активность учеников старшего школьного возраста. Для решения поставленной задачи применялся ***метод*** анализа научно-методической литературы, метод анализа и синтеза и социологический опрос. Контингентом исследуемых были ученики общеобразовательных в возрасте 15–17 лет. В ***результате*** исследования выявлено особенности факторов, которые предопределяют содержание и объем двигательной деятельности учеников старшего школьного возраста.

Ключевые слова: двигательная активность, ученики, факторы, свободное время.

Introduction. Motor activity is a determining factor that significantly affects the quality of life of each individual [1]. The volume of motor activity is one of the most important indicators of a sustainable lifestyle and an important factor that determines the health of humans [3; 11].

According to the WHO, 1,9 million deaths worldwide are related to physical inactivity and overweight and obesity causes at least 2,6 million deaths each year [12].

Official statistics shows that over the last 17 years the population of citizens of Ukraine has decreased almost 10 million. The negative trend to reduce the number of people is unfortunately still relevant today [4]. This situation is not the result of the effective functioning of a number of critical systems, including health care, education and physical education system [5].

The research of physical fitness and health of students of different ages indicates that adverse effects on the child were made since the period of study in secondary schools which eventually leads to a reduction in so-called «healthy» children. Shaping health–learning process in educational institutions becomes relevant because of two global trends observed in the country during the last two decades, the negative dynamics of deterioration of children's health while increasing the level of workload on children and its intensity [8]. By graduation, only one fifth of the students have formed a healthy form of recreation where regularity sports

serves as an important component behavior. Regarding the level of physical activity of youth, it does not meet the WHO recommendations [2].

Analysis of the research into this problem. The study of various aspects of motor activity in different age groups is a popular hot topic of research, not only in physical education and sports. The study of a human motor activity problem begins with the preschool period.

Problems of motor activity in her dissertation «motor activity as a factor of mental well-being of preschoolers», Catherine were studied Levshunova who found that increased physical activity during the development of the child socially meaningful space in different types of play contributes to the establishment and strengthening of ties between social, cognitive, emotional achievements preschooler mental development [7].

Motor activity of primary school children was studied by Trachuk C, who compared the energy consumption of boys and girls in the course of various forms of motor activity [10].

Assessment of specially organized motor activity of children 14–17 years was conducted by I. O. Kalynychenko and O. Savchuk [6].

It is worth mentioning the features about research motor activity of students in free time. Specifically, M. O. Ripak, exploring «The level of involvement of students of secondary school age to the independent exercise» found that one of the main reasons that prevent students from independently exercising is the lack of free time [9].

Studies of the motor activity of students were carried out in other countries. Swedish researchers Inheherd Erikson and Margaret Sederberh found that 50 % of students in upper secondary schools are not involved in motor activity in the classroom physical education and health. 45 % of these students are not involved in physical activity at leisure. Interestingly, the researcher's empirical material was gathered by interviewing the Internet [13].

Studies of the University of North Texas found that since 1980 the number of children aged 6–11 years who suffer from obesity has doubled. Among children aged 12–15 years, this figure has increased threefold. Experts of the University also argue that the most favorable place for the formation of a healthy and active lifestyle is education, which is visited by about 95 % of children [14].

Physical activity of children and adolescents in the Polish Republic was investigated by Paulina BuchoraWojtyla, who found that a sedentary lifestyle among children and adolescents increased with the age. The author also revealed a more positive attitude to various forms of motor activity among children living in rural areas [15].

Despite numerous studies of motor activity characteristics of children of different age groups, questions remain scarcely explored factors that contribute to this motor activity.

The goal of the work is to identify particular factors that determine the physical activity of high school age students

Research methods. The study employs the following methods: analysis of scientific literature, analysis and synthesis poll.

The synthesis poll of 10–11 classes students of L'viv, Ternopol, Ivano–Frankivsk and Khmelnitsky secondary schools is done. The total number of students was 926 people. The sample was 6 % of the population. Accuracy of the data – ± 4 %.

Research results. Studies of the factors that determine the physical activity of high school age students, was carried out as in the general context of motor activity as specific to motor activity during learning at school and in their free time.

The data obtained from the study show that the main factors, which the students of high school age prevent from systematic exercising of motor activity is «significant workload in school» and «lack of adequate amount of free time» (figure 1).

Excessive workload as a negative factor identified a total of 66,7 % of students, among them – 64,2 % of boys and 69,1 % girls. The lack of free time prevents systematic motor activity in general 59,5 % of students of high school age. Among boys the mentioned figure was 52 %, while among girls it was significantly higher and amounted to 66,6 %.

The workload and lack of free time as factors influencing physical activity of students are interconnected, because in many ways determine each other. The increase of time for training sessions in schools and need to do homework, certainly reduces the limits of entertainment, which is a favorable period for various forms of physical activity.

The third significant the factor in systematic physical activity of students of high school age was the need to implement relevant activities with friends, acquaintances or family. This indicated 21% of the students, the differences between girls and boy's indicators were not significant and amounted to 0,7 %.

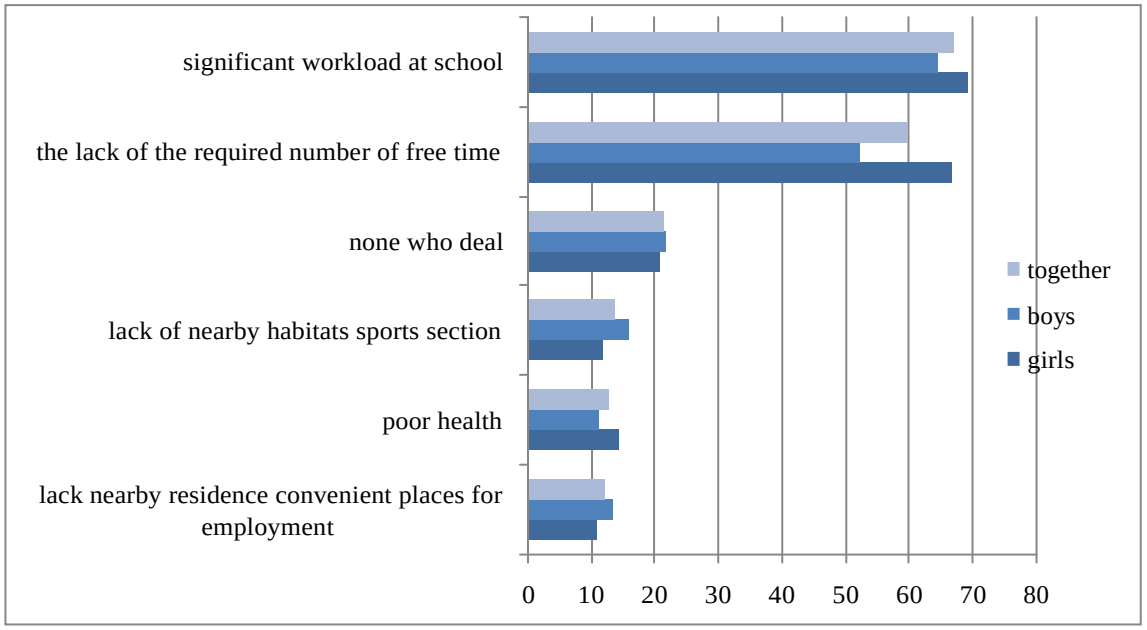

Fig. 1. *Factors that Hinder Systematic Motor Activity of Secondary School Students Aged 15–17 years (%), n = 926*

therefore, we can conclude that the 1/5 of high school students require different forms of group,to carry out systematic motor activities while the independent forms of physical activity, which is usually the most affordable, do not meet the preferences of students.

The deficiency of physical activity, which cannot cover forms of physical education, being performed during the school day, theoretically could compensate forms of physical activity performed in his spare time. Typically, individual free time spent on activities are related to obtaining some fun, entertainment and recreation. Clearly, not all students spend their leisure time to perform physical activity. That's why we tried to determine the factors that influence the decision of senior high school students to participate in various forms of motor activity in their free time (figure 2).

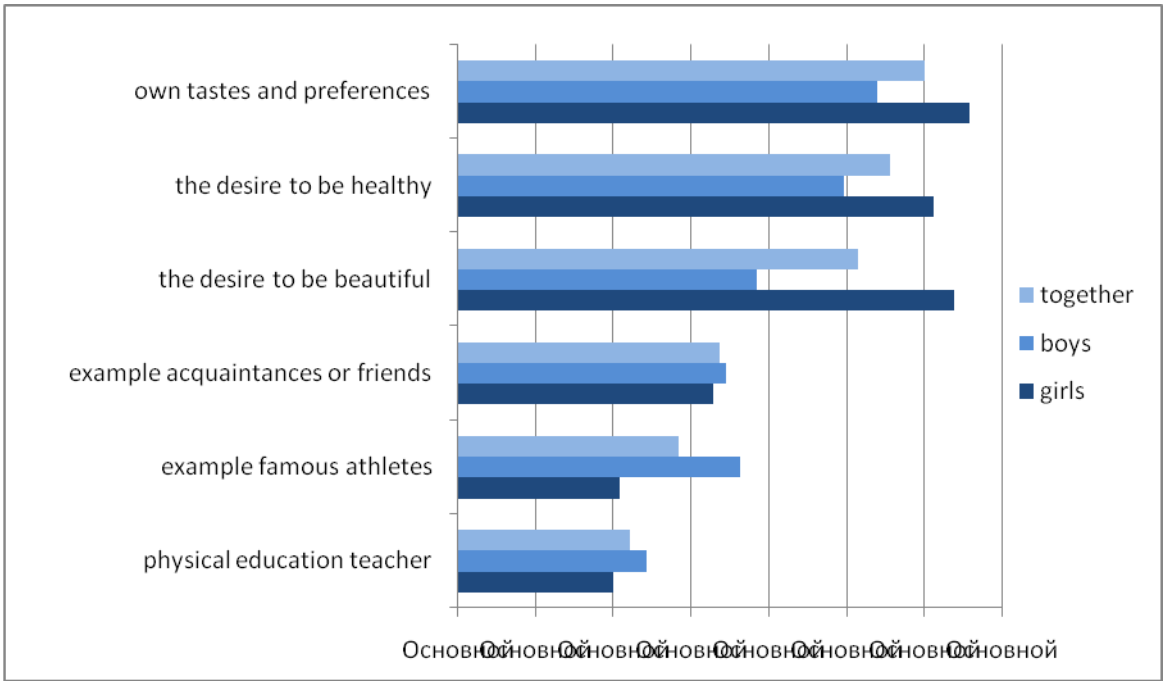

Fig. 2. *Factors that Determine Physical Activity of Secondary School Students Aged 15–17 Years in Their Spare Time (%), n = 926*

As shown in the figure, the main factor determining the physical activity of high school students in their spare time is «their own tastes and preferences», which were indicated by 59,9 % respondents. Among girls the figure was 12 % higher than boys and was 65,8 %.

Slightly more than halfof respondents among (55,5 %) reported that their physical activity at leisure affects «the desire to be healthy / healthier». Again, listed option was popular among girls (61,1 %). The figure was 49,6 % among boys.

A large percentage of girls received the answer «the desire to be beautiful» (63,7 %). By this measure the difference in responses between girls and boys was salient and amounted to 25,3 %, while rates among boys was 38,4 %.

One factor that was important for children is «an example of well-known athletes», this indicated 36,2 % of male respondents. Among girls, the figure was lower by 15,4 % and amounted to 20,8 %.

It is necessary to stop another factor that affects the motor activity of students in free time. It is a teacher of physical culture. The results showed that overall only 22 % of high school age students, organizing their own physical activity at leisure, taking into account the activities of the teacher of physical culture. Considering physical education classes, as the main form of physical education, should determine all other forms of physical activity, poor performance ascertains the impact of school physical education on personal physical activity of students.

Time allows students to engage in a number of forms of physical activity. Along with organized forms, such as training in sports sections focus is at secondary school or classes in sections Coach, is the most affordable form of especially unorganized physical activity, which can be sold on the open sports fields, parks, areas of leisure and so on. In this context, an important factor that may contribute to or interfere with motor activity are the weather conditions. Therefore, we found that seasons are the most convenient to perform motor activity of high school students. Responding to a question, respondents could specify one or more periods of the year (figure 3).

Quite expectedly the most convenient period to exercise the motor activity of high school students was chosen summer, this generally indicated 82 % of respondents. The choice of this season due to a number of factors, including: increasing the number of free time due to holidays, comfortable temperature, the opportunity to engage in various sports to outdoor sports fields of different types, to actively relax on the open water, increased duration of daylight.

Almost half of respondents (47,7 %) indicated that they are easy to engage in spring. Despite the fact that the weather conditions of spring and fall are fairly similar, the spring was a significant advantage over the autumn.

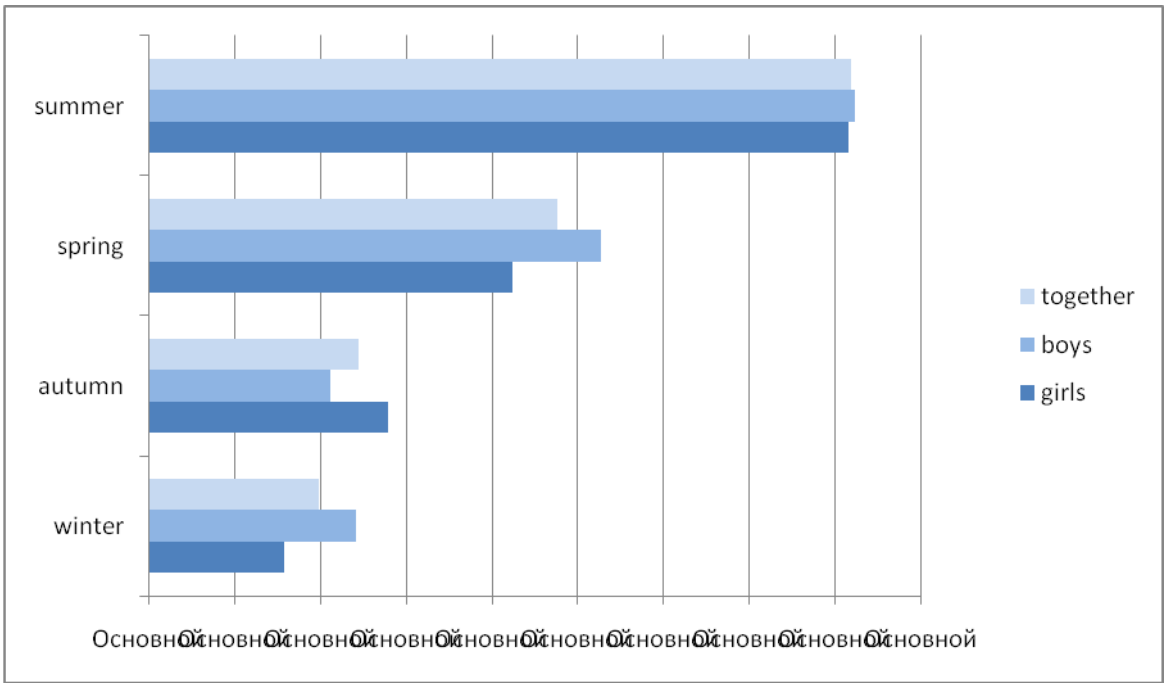

Fig. 3. *The Most Convenient Period for the Implementation of Motor Activity Students of High School age (%), n = 926*

The least popular among respondents was winter. Only 19,9 % of students in grades 10–11 considered that it isconvenient for practicing physical activity in general. Along with the objective negative factors that accompany the winter and do not contribute to the implementation of a number of forms of motor activity (reducing the average daily temperature, reduce the length of daylight and adverse weather conditions) this season has its advantages. First of all, it comes during the holidays, which falls on this day, significantly increasing the amount of their free time, as well as the opportunity to engage in certain types of physical activity, which are not available in other periods of the year. These types of motor activity are definitely skiing and skiing, ice skating, hockey and others. Low winter popular among high school age students can be attributed to a certain decline of organized study of winter sports in physical education class and poor development of appropriate infrastructure that would allow these classes to provide sports.

As noted in the information presented in Figure 1, the factor which prevents systematic occupation of physical activity, is the inability to deal with friends or acquaintances for 21 % of the high school age student For a third of surveyed students one of the reasons to engage in physical activity in leisure time is an example of peers (figure 2). That's why we tried to find out the importance of «collective factor» involved in the high school age students to various forms of physical activity. Understanding the impact of the environment on the choice of motor activity pupil allows a certain age, in our opinion, to optimize the list of forms of physical activity offered by the respective contingent of students in either school day and at leisure.

The results showed that students high school age most convenient to deal with friends or peers to which indicated 62 % of respondents (figure 4). Almost 30 % of students prefer self-employment physical activity.

A relatively small percentage of respondents (8,9 %) prefer joint sessions with parents or relatives. In our view, interest in joint sessions with family members proportionally has reduce from junior to senior school age, because of the peculiarities of mental processes and the difference in the level of physical fitness between parents and children.

Conclusions. The main factors that hinder systematic motor activity of high school students are excessive workload and lack of free time. Excessive workload negative factor considered 66,7 % of students, among them – 64,2 % of boys and 69,1 % girls. Deficit of free time is a factor that prevents systematic physical activity 59,5 % for high school age students. Among boys, the figure is 52 % among girls – 66,6 %.

The main factors that determine physical activity of secondary school students of the age 15–17 in spare time is «their own tastes and preferences» (59,9 %), «the desire to be healthy» (55,5 %) and «the desire to be beautiful» (51,4 %).

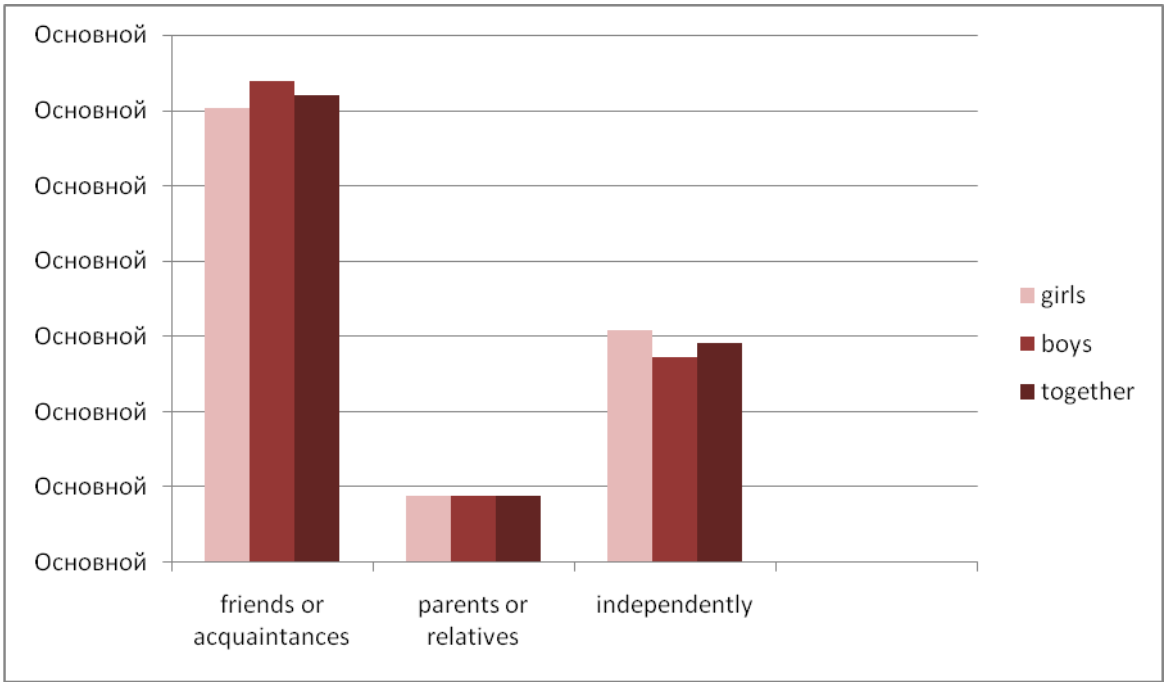

Fig. 4. *Ease Exercise Motor Activity Based on «collective factor» (%), n = 926*

The most convenient period for the motor exercises motor of high school students is summer, this was generally indicated by 82 % of respondents.

Most students of grades 10–11 (62 %) preferred pastime physical activity with friends or peers.

Prospects for further research. Further study of this subject should be directed to study the feasibility of the wishes of students of different age, for the organization of various forms of motor activity at the school day and at leisure. The study also needs ways to reduce the impact of negative factors that hinder the implementation of systematic physical activity.

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OVERCOMING THE FEAR OF OPEN WATER AT THE INITIAL STAGE OF LEARNING TO SWIM

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Abstract

The article deals with the fear of children of primary school age to open water, which appears at the initial stage of teaching swimming and is a serious obstacle to mastering the skills of swimming. Analysis of the scientific researches indicate a lack of reasonable methods of overcoming fears associated with the water during swimming training and scientific-methodological developments in the prevention and overcoming fears associated with water, which leads to certain problems and violations of logical consistency in teaching swimming. The following empirical methods as questionnaires, interviews, pedagogical observations are used. The article presents the results of a study of this problem, especially: the results of the survey of primary school children who arrived at the base of the summer camp «Lastochka» in Skadovsk of Kherson region in 2016 during the month of June as well as conversations and observations with them that took place in real conditions of training swimming. This study provided the opportunity to determine the origin of fear causes of primary school age children, to reveal the reasons and statistics of accidents at open water, to identify factors fear of open water of primary school age children. The article indicates signs of the most important physical symptoms associated with the fear of open water.

Methodical recommendations developed to overcome fears at the initial stage of swimming lessons in open water based on the principles of psychological impact on the minds of everyone as well as the use of innovative techniques while swimming. Methodical recommendations focus on the preparation and organization of lessons with children of primary school age, with the problem of fear of open water. They aim to overcome fear and to achieve the main goals of the swimming lessons in the summer camp to teach swimming every child.

Key words: swimming, fear, primary school age, water

Ольга Оображей. Подолання страху відкритих водойм під час початкового навчання плавання. У статті розглянуто причини страху перед відкритими водоймами, які виявляються на початковому етапі навчання плавання та є серйозною перешкодою для оволодіння навичками плавання. Аналіз наукових досліджень свідчить про відсутність обґрунтованої методики подолання страхів, пов'язаних із водою, під час навчання плавання й науково-методичних розробок із попередження та подолання страхів, пов'язаних із водою, що призводить до певних труднощів і порушення логічної послідовності в навчанні плавання.

У роботі використано такі емпіричні методи дослідження: анкетування, бесіди, педагогічне спостереження.

У статті представлено результати дослідження з указаної проблеми, а саме: результати анкетування дітей молодшого шкільного віку, які перебували на базі літнього оздоровчого табору «Ластівка» в м. Скадовську Херсонської області у 2016 р. протягом червня-місяця. а також бесід із ними й спостережень, що відбувались у реальних умовах проведення навчальних занять із плавання. У цьому дослідженні проаналізовано причини нещасних випадків на відкритих водоймах. Визначено чинники страху відкритих водойм дітей молодшого шкільного віку. У статті зазначено прояви найбільш важливих фізичних симптомів, що пов'язані зі страхом відкритих водойм

Розроблено методичні рекомендації подолання страхів на початковому етапі занять із плавання на відкритих водоймах, які ґрунтуються на засадах психологічного впливу на свідомість кожного під час занять із плавання. У методичних рекомендаціях основнуа увагу приділено підготовці та організації занять із дітьми з проблемою страху перед відкритими водоймами. Заняття спрямовано на подолання й досягнення основної мети – навчити плавати кожну дитину.

Ключові слова: плавання, страх відкритих водойм, молодший шкільний вік.

Оображей Ольга. Преодолении страха открытиях водоемов при начальном обучении плаванию. В статье рассмотрены причини страха перед открытыми водоемами, которые определяются на начальном этапе обучения плаванию.

Анализ научных исследований свидетельствует об отсутствии обоснованной методики преодоления страхов, связанных с водой, и научно–методических разработок относительно предупреждения и преодоления страхов, связанных с водой, которые, в свою очередь, приводят к определенным трудностям и нарушению логической последовательности в обучению плаванию.

В работе использованы такие эмпирические методы: анкетирование, беседы, педагогическое наблюдение.

В статье представлены результаты исследований по указанной проблеме, а именно: анкетирования детей младшего школьного возраста которые прибыли на базу летнего оздоровительного лагеря «Ласточка» в г. Скадовск Херсонской области в 2016 г. в период июня-месяца, а также бесед с ними и наблюдений, которые происходили в реальных условиях проведения учебных занятий по плаванию. Это исследование дало возможность определить

происхождение причин страха детей младшего школьного возраста, раскрыть причин несчастных случаев на открытых водоемах. Определены факторы страха открытых водоемов детей младшего школьного возраста. В статье указаны проявления наиболее важных физических симптомов, которые связаны со страхом открытых водоемов

Разработаны методические рекомендации преодоления на начальном этапе занятий по плаванию, которые базируется на принципах психологического влияния во время такого обучения. В методических рекомендациях основное внимание уделяется подготовке и организации занятий с детьми с проблемой страха перед открытыми водоемами. Занятия направлены на их преодоление и достижение основной цели – научить плавать каждого ребенка.

Ключевые слова: плавание, страх открытых водоемов, младший школьный возраст.

Introduction. The lack of swimming skills is a significant risk factor for human life. In our opinion, the main reason for it is inadequate supply of appropriate, material and technical equipped specialized training pools for swimming. Analysis of the scientific and methodological sources proves rather high percentage of accidents (13, 8 %) in open waters [4].

Organization of summer recreation for children involves the combination of health, recreational and educational areas in summer camps, the structure of which includes open water intended for swimming [3].

From experience of organization of physical education classes in the summer camp we found out that there is a fairly large percentage of younger students (45 %) who do not know how to swim, and the main reason is the fear of open water [5].

Fear is one of the types of emotions that occurs as a reaction to the emergence of a real or imaginary danger. Feeling of fear is a protective reaction of the organism, a danger signal. This dramatically impairs coordination of movements, loss of control, impaired activity of the central nervous system, there may be a sudden deceleration of all mental and motor reactions. This is a natural reaction, and it is a characteristic of every normal person [1]. When a child, who cannot swim falls into the water, she finds herself in a precarious situation, besides life-threatening. That is why the child captures intense fear on a subconscious level, and natural water retention is lost completely, which is a significant problem of the initial swimming training for primary school children [3].

The most favorable conditions for swimming training and overcoming fear of open water are created in summer camps, their daily routine is filled with a variety of fitness and sports events. In the system of summer camps various forms of swimming lessons are widely used that provided the program of physical education.

The conditions of the camp (the presence of well–organized groups based on children age, the flexibility to use a particular time of day) allows you to plan ahead and carry out the work at swimming training of children [5].

The works of scientists (G. A. Parawan; S. Sheckman; G. A. Dmitriev; D. F. Mosunov, V. G. Sazykin) were theoretically-methodological basis of the research problem.

Theoretical analysis of scientific research testifies to the absence of reasonable methods of overcoming the fears associated with the water when teaching to swim and scientific–methodological developments in the prevention and overcoming fears associated with water, which leads to certain difficulties and violations of logical consistency in teaching swimming.

The goal of the study is to develop methodological recommendations on overcoming fear, in the initial swimming training of children.

During the development of methodological recommendations to overcome fear, children who cannot swim, in the initial training set the following **goals:**

– to analyze the causes of accidents in open water;

– to identify the most common fears and the reasons for their occurrence in younger students that hinder teaching swimming;

– to develop methodological recommendations for the prevention of fears that hinder teaching swimming.

Research materials and methods. The study was carried out in educational and training sessions in swimming at the summer camp «Lastochka» in Skadovsk in 2016 during the month of June. The study involved 80 people who could not swim aged 7–10 years, of which 46 girls and 34 boys.

Analysis and synthesis of scientific and methodological sources, interviews, observations and questionnaires.

Analysis of scientific and methodological sources was carried out to determine statistics, causes of accidents in open water, the most common fears of children allowed to make a questionnaire to identify and overcome certain difficulties and violations of logical consistency in teaching swimming primary school children.

Discussion and the results of the study. According to St. Miles, 140,000 people die from drowning every year in the world, specified by G. N. Klintsevich – 200,000, according to UNESCO, up to 350,000. In

Kherson region, 140–180 people drown annually (former the USSR – 35–36 thousand, in Ukraine 5–6 thousand). The death rate from drowning is second only to deaths from road accidents [4].

For comparison, there is the average world statistics number of annual fatal accidents.

On average, each year a lot of people die on different reasons: railways – 574 people; in car accidents– 48 880 people; the plane crashes – 2049 people; ships disasters – 1500 people; other (domestic, industrial) – 10,000 people –around 63 003 people, including 1/6 of all the victims in the water.

The threat in the water may be due to the following factors:

A) external environment (swimming in unfamiliar places, the winter water,

stormy weather, swimming close to the boats, etc.);

B) the condition of the body, emotional stress – fear, physical and mental fatigue, age, sex, general state of health, previous diseases.

The methodological analysis of scientific sources allowed to determine the causes of accidents in open water, as shown in table 1.

In table 1 there are the percentage figures of the causes of accidents in open water. The highest percentage of bathing in alcohol intoxication is 13,8 %. The second place is the inability to swim 13,7 %. The third place is taken to the coverage of fear 13,1%. The fourth one is violation of the rules of boating 15 %. The fifth is lack of child care 9,3 %. The sixth place is pranks and violence 9,2 %. The seventh step is the reasons of suicide 6,9 %. The eighth place shared by unidentified circumstances and causes of overheating of the body 4,6 %. The ninth is a cause of disease of 4,5 %. The tenth place is a long swim and the loss of strength 4,3 %. The eleventh step causes of hypothermia 2,8 %. At last place causes of accidents in open waters 2,3 %.

Table 1

Characteristics of the Causes of Accidents in Open Water, *%*

Causes of Accidents	%
Bathing in an alcohol intoxication	13,8
Inability to swim	13,7
Coverage of fear	13,1
Violation of the rules of boating	11,5
Lack of child care	9,3
Pranks and violence	9,2
Reasons of suicide	6,9
Unidentified circumstances	4,6
Causes of overheating	4,6
Cause of disease	4,5
Long swim and the loss of strength	4,3
Causes of hypothermia	2,8
Causes of accidents	2,3

Scientific and methodical analysis of literature allowed to identify the common fears:

– the fear of depth;

– the inability to fix safely;

– unusual weather conditions;

– uncomfortable bottom to enter the water barefoot (mud, seaweed, pebbles, shells);

– unfamiliar environment (large number of strangers on the beach and in the water and the use of technical means in the area reserved for swimming people);

– the possibility of meeting underwater creatures;

– the fear of sudden appear of waves or water flows;

– the opacity of the water.

Researchers E. V. Voskresenskaya, E. V. Miller, N. V. Kuhtova found the most important physical symptoms associated with fear of open water:

– tachycardia;

– dry mouth;

– tremor, trembling in the limbs;

– the feeling of asthmatic asphyxiation and difficulty in breathing;

– nausea, vomiting;

– feeling dizzy, pain in the temples;
– fear of losing control;
– the feeling that the objects and actions are unrealistic;
– the feeling of unreality about his own «I»;
– numbness and tingling;
– hot flashes and chills.

If there is one of the symptoms, the swimming lessons should be postponed until the next time [2].

During the conversation with the children it was found that the reason of fear and unwillingness to learn swimming was: a bad swim in open water, when the child fell and swallowed some water; the situation when the boat turned down; non proper use of auxiliary means such as an inflatable vest, swimming boards and balls, sleeves and other means, violations of teaching swimming methods by parents.

It was found out that the negative information about the dangers of swimming, children learn from their parents who in the presence of children transfer tragic events related to open water. The reason for the fears of children is also views of various horror films, the plot of which associated with a tragedy in open water and accompanied by bloody scenes and death.

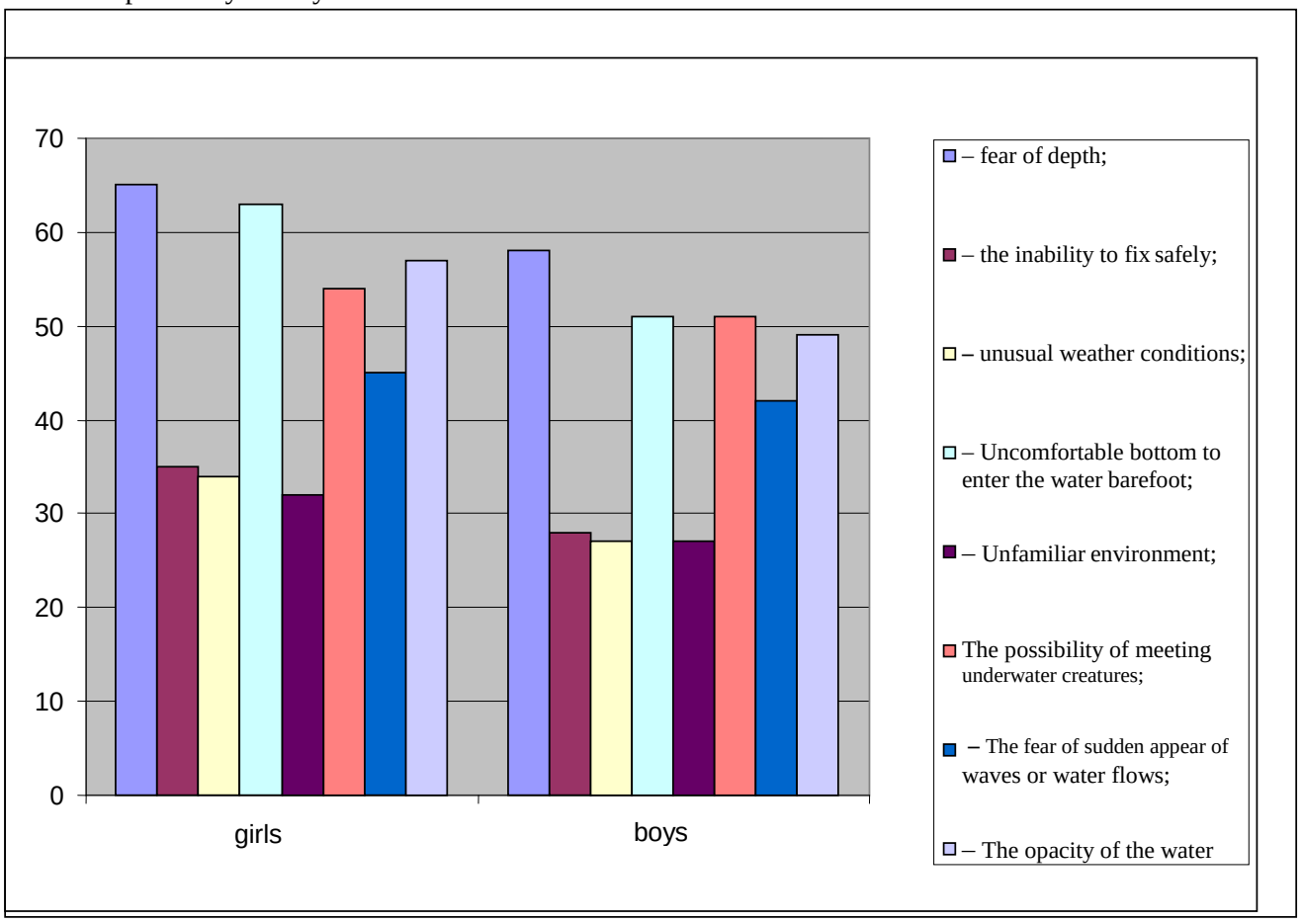

Fig. 1. *Indicators of Factors of Fear of Primary School Children, %*

In the diagram, pic.1, the percentage indicators show the fear factors of boys and girls: the highest percentage is the fear of depth 65 % girls and 58 % boys. Fear of uncomfortable bottom to enter the water barefoot is 63 % girls and 51 % boys. The percentage of children who had the fear of opaque water was 57 % girls and 49% boys. The fear of underwater creatures is 54 % girls and 51 % boys. The fear of a sudden appear of waves is 45 % girls and 42 % boys.

The fear of the inability to fix safely is 35 % girls and 28 % boys, the fear of unusual weather conditions is 34 % girls and 27 % boys. The fear of the unfamiliar environment is 32 % girls and 27 % boys.

The preventing fear can be done by methodically proper formation of initial training in swimming, that would help maximize the accumulation of persistent positive conditioned reflexes connections in response to unusual situations, such as:

– avoidance of conversations about the danger of exercise;

– maximum division of the exercise on the background of its whole performance;

– avoidance of premature self-exercise;

– sequence in training;

– analysis and clarification of details technology, taking into account trainer's comments about mistakes;

– completing training on the successful performance of a dangerous exercise to create confidence and a favorable emotional background for the future trainings;

– the creation of prevention (excluding injuries) training conditions, including the provision of insurance.

The main measures to prevent the state of fear are:

– obligatory observance the principles of availability, consistency, algorithmic learning in the educational process;

– accounting degree of readiness (physical coordination, mental) before learning new complex exercises;

– development of volitional qualities (courage, determination, confidence);

– injury prevention in the classroom;

– the use of suggestion and auto-suggestion before performing dangerous exercises based on the principles of psychological impact on the minds of everyone;

– the use of innovative techniques while swimming. [1; 3]

Methodical Recommendations in Overcoming Fear of Water in the Initial Teaching to Swim.

1. Before the classes in water methodical preparatory classes are carried out to clarify the problem of fear, the aim of which is overcoming the negative attitudes of the whole group and preparing children conscious attitude to learning.

2. The first lesson in the water has to convince the child in the safety of the lessons and to instill confidence in successful learning, to inspire confidence to the instructor. It is necessary to conduct a lecture with a demonstration of some exercises that will introduce children with the laws of interaction between body and water environment.

3. Each lesson should start on the land and remind the rules of behaviour in open water (entry and exit from the water only with the permission of the teacher, introducing special commands), as well as demonstrations of exercises, which will be studied in water (learning swimmer movements on the ground is a good psychological preparation).

4. It is recommended at the beginning of the lesson to announce the whole plan of the lesson. Then the children move from performing one exercise to another, overcoming fear and at the end of the lesson their mood will get better understanding completed tasks.

5. In the first stage of teaching swimming it is used a complex of preparatory exercises for the mastering of water. They allow beginners to know the properties of water, training exhales into the water, perform simple swimming movements.

The instructor needs to teach the children the rules of using the equipment, visually to establish the suitability of their use, to verify the degree of preparation for each participant. Proper use of equipment in some cases will help to overcome fear.

It is necessary that the pupil wanted to get rid of his own fears. The instructor, in turn, should inspire a faith in a child himself, show patience and endurance. The primary task in overcoming fear is the need to accustom the child to the water, that will allow to navigate in the unusual circumstances of the aquatic environment and, as a result, confidence in their abilities.

Overcoming the psychological barrier to water and physical stiffness are major ways to the extinction of a steady negative association to stay in the water. However, in cases when a child cannot overcome the fear of water, it is important not to insist. Give him the opportunity to sit and watch as others swim. After some time he will understand that it's not so bad. All exercises for initial swimming training should be chosen according to didactic principles of conscious education of children. Thus, children must be convinced that the ability to swim is a vital skill that is a prerequisite for the security of their lives. The instructor should be aware that such factors as comfortable temperature of air and water, known depth, water transparency have a positive effect on the psychological state of children, especially at the first lessons.

Conclusions and prospects for further research. Fear associated with open water is one of the most common varieties of children's fears, which is a serious obstacle to mastering the skills of swimming. We showed the methodical recommendations of preventing fear related to open water while the initial training of swimming, which are based on the principles of the psychological impact on the minds of everyone as well

as the use of innovative techniques while swimming. Using these methodical recommendations to prevent fear associated with open water can greatly facilitate the process of initial training in swimming and create the possibility of swimming training of everyone.

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CHILDREN'S TOURISM AS A MEANS OF IMPROVING MOTOR ACTIVITY OF PRIMARY SCHOOL PUPILS IN RURAL SCHOOLS

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Abstract

The article contains data on the optimization of the motor activity of pupils of 7–10 years of rural schools by means of tourism. Positive and negative factors that influence the organization of extracurricular work in physical education with children of primary school age in the conditions of rural school are determined. Analysis of their own experimental data made it possible to determine that the volume of motor activity of a high level of rural schoolchildren is unsatisfactory, which does not allow raising the functional reserves of the organism to the proper degree. At the same time, studying the motives and needs of rural schoolchildren for physical activities, it was found that tourism is one of the most popular species. The received results became a basis for working out the program of after–hours physical culture and recreation classes «Young tourists», the content of which is presented in the article.

Key words: physical activity, children of 7–10 years, rural schools, tourism facilities.

Владислав Рубан. Дитячий туризм як засіб підвищення рухової активності учнів початкових класів сільськ**их шкіл.** У статті вміщено дані щодо оптимізації рухової активності учнів 7–10 років сільських шкіл засобами туризму. Визначено позитивні та негативні чинники, які впливають на організацію позакласної роботи з фізичного виховання з дітьми молодшого шкільного віку в умовах сільської школи. Аналіз власних експериментальних даних дав підставу визначити: обсяг рухової активності високого рівня сільських школярів є незадовільним, що не дає змоги належною мірою підвищувати функціональні резерви організму. Водночас, вивчаючи мотиви й потреби школярів сільської місцевості до видів занять фізичними вправами, установлено, що одним із найбільш популярних видів спорту є туризм. Отримані результати стали основою для розробки програми позаурочних фізкультурно-рекреаційних занять «Юні туристи», зміст якої представлено в статті.

Ключові слова: рухова активність, діти 7–10 років, сільська школа, засоби туризму.

Владислав Рубан. Детский туризм как средство повышения двигательной активности учеников начальн**ых классов сельской школы.** В статье содержатся данные по оптимизации двигательной активности учеников 7–10 лет сельских школ средствами туризма. Определяются позитивные и негативные факторы, которые влияют на организацию внеклассной работы по физическому воспитанию с детьми младшего школьного возраста в условиях сельской школы. Анализ собственных экспериментальных данных позволил определить: объём двигательной активности высокого уровня сельских школьников является неудовлетворительным, что не позволяет повышать в должной степени функциональные резервы организма. В то же время, изучая мотивы и потребности школьников сельской местности к видам занятий физическими упражнениями, мы установили, что одним из наиболее популярных видов спотра является туризм. Полученные результаты стали основой для разработки программы по внеурочным физкультурно-рекреационных занятиям «Юные туристы», содержание которой раскрывается в статье.

Ключевые слова: двигательная активность, дети 7–10 лет, сельская школа, средства туризма.

Introduction. Improving the process of physical training of the younger generation today regarded as one of the priorities of social and educational problems. For health of pupils special role played by the use of various modes of movement and exercise health focus, which would satisfy the requirements of the educational process and answered the laws of physical development of junior pupils.Special significance is the organization and carrying out various forms of physical education of schoolchildren considering the region of residence – especially in rural areas, where there are socio-economic and environmental conditions that are different from the conditions in cities [5, p. 212; 8, p. 38].

Rural social and natural environment from a position of environmental and health and psycho-emotional comfort for life support of man is different from the city in terms of preserving and promoting human health, has some undeniable benefits and significant drawbacks.

Positive factors in this sense are: life in close proximity to nature; distance from the transport downloading a large city, an aggressive advertising; the possibility of maximum use in physical education health and other forces of nature [5, p. 213].

On the other hand, as the V. M. Hahulia mentions [8, p. 38] there are some typical negative factors affecting the efficiency of the organization and a time limit and extracurricular classes in most rural schools.

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These include: weak material base; insufficient development of the sphere of additional education in meeting the athletic interests and requirements of pupils; lack of monitoring of the physical condition of pupils; no clear system in organizing extracurricular activities.

Proceeding from the above, the use of means of child's tourism in physical education of school children living in rural areas will increase their level of physical activity, and therefore – to optimize the level of physical condition.

Theoretical analysis of professional literature and advanced global experiment on the study revealed that in the physical education of children of primary school age researchers [1, p. 5; 4, p. 10; 6, p. 25; 7, p. 70] proposed to use a wide range of different means of physical activity direction of which is determined by the need to address the general and specific objectives.

Thus, O. V. Shiian [10, p. 20] substantiated the content of physical education classes for elementary school with priority elements of badminton to improve physical fitness and physical health of children. Programming fitness of Nordic walking classes in physical education of younger students dedicated research is O. M. Sayinchuk [6, p. 25]. I. I. Holovach [2, p. 211] developed a training program with the use of eco–tourism for pupils of primary school age aimed at formation of ecological culture of pupils and improve the performance of their physical condition

A variety of recreational and health technologies and elements of sports in physical education of junior pupils propose to use S. V. Trachuk [7, p. 71] M. V. Cherniavsky [9, p. 187] A. O. Zhuk [3, p.130] and others.

However, studies that have been devoted to developing program content of extracurricular activities with priority elements of tourism with primary school pupils in the conditions of rural school, clearly lacking.

Discussion and the results of the study. The investigations of motor activity for boys and girls 7–10 years of age who are studying in rural schools of Pereyaslav-Khmelnitsky district, Kyiv region (v. Kovalyn and v. Divychky) allowed to state the following. When analyzing the components of daily locomotor activity at baseline and sitting low levels found that a significant difference between the motor activity of rural and urban pupils were not found.

The average level of physical activity, which includes the time allotted for walks, morning gymnastics, outdoor games during the break at school children in the survey ranged from 10,3 to 12 % (2 hrs. 28 min. – 2 hr. 53 min.) the daily amount of time at this level of rural pupils is much greater than among children of primary school of urban schools. Obviously, this is due to the fact that rural children tend to move on foot to school, help parents in the household, etc.

Special attention in our study, we paid to high levels of motor activity of children, which includes a part in specially organized physical exercise, intense games, running, skating, skiing and more. At school age at improving the physical condition greatly affects exactly specially organized physical activity, which depends mainly on the structure and organization of extracurricular forms of educational process in educational institutions.

Based on the analysis of the data revealed that the longest duration of high motor activity observed in younger students in physical education classes. From the daily amount of time it is 1,4 –4,2 % (20–36 min.), slightly increasing with age. This volume of motor activity of high level is very poor and due to low extracurricular sports and recreation activities at rural schools (no sports clubs, organized sports and recreational classes, etc.).

At the same time, studying physical activity and motivation needs of pupils in rural areas to the types of exercise, it was found that the most popular type of motor activity in both boys and girls are outdoor games, dancing, football and tourism.

Thus, the results of the studies have become the basis for developing a program of extracurricular classes «Young tourists».

The program «Young tourists».

Goal and tasks of the program.

The goal – to promote the comprehensive development of the individual of primary school children, improving their physical condition.

Tasks:

– improve the adaptation and functionality of children by the major systems of the body in the course of local history tourist activities;

– improve natural (vital) types of motor movements and enriching experience;

– develop physical abilities;

– promote the development of mental processes and increase the amount of knowledge in the field of physical culture, tourism and local history;

– generate positive interpersonal relationships of pupils in the process of playing tourist activities adapted to their capabilities.

Age of Children and Form of Classes.

The program is intended for children 7–10 years of age, who referred to the main group health.

Program material is realized in organized forms of extracurricular classes: natural history walks; tourism and local history tour; Weekend trips with parents; one – and two–day trips and excursions for tourists; hiking holidays; outdoor games.

The Content of Motor and Cognitive Activities with the Use of Tourism in Extracurricular Activities for Children of Primary School Age.

During the program developing, we proceeded with the contents of the general tourist preparation that includes theoretical, physical, technical and tactical training and the personality traits.

Theoretical preparation:

– formation of representations about health as a value, which is necessary to protect from the childhood (a healthy life in the mode of the day, the value of exercise, sports, movement – the foundation of health, value of hardening, personal hygiene, diet and health, regime day – the foundation of a healthy lifestyle, forming a correct posture, breathing and health, care for eyes, dental care, self–control, man – nature – health);

– forming ideas about tourism as a means of healing and understanding the world (who are tourists?; types of tourism, ideas about tours, walking, hiking, national signs (weather prediction);

– the formation of primary tourism knowledge and skills (rules of safe behavior on the route, transport, information about the group and personal gear on foot and ski trips, demands on equipment, care of it, rules folding of backpack, set for a walk, a hike; original motion);

– formation of knowledge about personal hygiene of tourist and prevention of possible dangers in the forest (requirements for clothing, footwear, tableware of the tourist, providing first aid at slaughter, cut, contamination of eye, danger in the woods, if lost, met poisonous plants, exposed to rain accompanied by thunder);

– formation of knowledge of local history (the village where I live, my school, its location, the study of natural and social facilities of the village and surrounding area, strengthening and expanding knowledge about birds, animals and plants, native land, visiting parks and other natural objects of villages and neighborhoods);

– formation of knowledge about caring attitude to nature (objects of animate and inanimate nature, the formation of practical skills of caring nature: the elimination of waste, traffic on the route, environmental violations in the nearest natural environment);

– forming of the skills of elementary maps, plans, schemes (purpose of maps, types of maps – general, geographical, topographical, sports, simple topographical marks, a finding on the map, conditional prohibitive and permissive signs, scheduling school, street, plan routes);

– formation of skills in object–oriented spatial surroundings (enriching experience of orientation with the main and intermediate spatial directions, location of objects relative to itself, and in the process of mobile gaming tasks, outdoor games, walking, memorizing skills formation traversed path, to find the way home, find various items according to legend, use a compass).

Physical Preparation:

– development of basic physical properties (development of endurance: cyclic exercise – walking, jogging, skiing, walking in the duty of running, outdoor games, the development of power – exercise dynamic nature of speed–power orientation of the limitation of static components: climbing, jumping, simple hang , throwing, exercise with a partner, general developmental exercises with objects, development speed – well-learned exercises performed at maximum speed, running short distances, outdoor games, exercises with elements of competition, development flexibility – with maximum amplitude – underneath motion, bending, jumping, throwing, climbing, general developmental exercises);

– development of coordination abilities (exercises in the deploying, outdoor games, relay races with overcoming the obstacles general developmental exercises with elements of novelty from different assumptions, exercising).

Development of Physical Qualities by Means of Tourism:

– development of special endurance (continued walking, skiing, orienteering – performance gaming tasks for finding various objects on trips, walks, hikes);

– development of special forces (exercises with a backpack overcome grass, earth, snow slopes of low altitude, walking in deep snow, sand, throwing snowballs, cones, etc.);

– development of high-speed special abilities (tourism exercises applied round – knitting units, installation of tents, work with personal equipment for speed, mobile games handover nature, walking, running speed with a view of the natural and social facilities);

– development of special coordination abilities (walking, running according to legend, overcome the various complex obstacles (both natural and specially equipped), walking, running assignments to determine trends; walking ‘mark on the track’, mobile games with search character; relay tourism focus).

Technical and Tactical Preparation:

– forming knowledge and skills to ensure the safety of walking and Nordic walking, hiking (special exercises for learning techniques and overcoming natural obstacles – stream, log, low slopes, moving along the paths of practicing rational technique of walking, walking on earth, herbs, snow–covered slopes with working ups and downs, in the same ski trip, rules of road safety in residential areas and transport);

– formation of ability to carry out targeted actions that can successfully meet the challenges of hiking and skiing, trekking (the distribution of power in the trip, hike, rational holiday route, halt, rational traffic on the route, the choice of places to camp, the creation of its convenience and safety by adults).

Conclusions. Application of tourism in extra-curricular activities in physical education with children of 7–10 years in rural schools will comprehensively address issues of improving physical activity, physical condition, personality development of children. It was revealed:

– the use of tourism in the form of extracurricular physical education of younger schoolchildren allowed to increase the level of physical fitness (the largest increase – as a result of general endurance and coordination skills);

– playing tourist and local lore activity creates conditions for the formation of skills to build a tolerant, friendly relations with their peers in the group;

– sports tourism and local history orientation provide an opportunity for more effective impact on the success of children mastering knowledge in the field of physical culture and rules of behavior in nature.

Prospects for further research will bein determining of pedagogical conditions of implementation of the proposed program «Young tourists».

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COMPARATIVE CHARACTERISTICS OF THE PHYSICAL TRAINING OF WOMEN BETWEEN 30 AND 49 YEARS OF AGE BASED ON INDICATORS OF PHYSICAL TRAINING DEPENDING ON THE BODY WEIGHT FAT COMPONENT CONTENT

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Abstract

The current relevance of the research. The paper is devoted to the research of fat body content influence on the parameters of physical state at 30-years women. It was determined that increasing of fat body content at 30–49 years women negatively affects speed, active spine flexibility, explosive strength, agility, power dynamic endurance of muscles of upper limb girdle and lower extremities, speed-power endurance of abdominal muscles, static fatigue of gluteal muscles and total endurance. Goal of research is to investigate the parameters of physical preparation of 30–49 years women depending on fat body content. Results of research: It is established the dependence between speed, active spine flexibility, explosive strength, agility, power dynamic endurance of muscles of upper limb girdle and lower extremities, speed-power endurance of abdominal muscles, static fatigue of gluteal muscles, total endurance and fat body content. The increasing fat body content at 30–36 years women leads to more negative effects compare to 37–49 years women. Conclusions. It is proved the reasonability of creation of special water fitness program for 30–49 years women. The purpose of such program is improving of physical qualities.

Key words: physical preparation, physical qualities, makeup of body mass fat content.

Світлана Сальникова. Порівняльна характеристика фізичного стану жінок 30–49 років за показниками фізичної підготовленості залежно від умісту жирового компонента маси тіла. ***Актуальність.*** У статті досліджено вплив умісту жирового компонента маси тіла на показники фізичної підготовленості в жінок 30–49 років. Установлено, що перевищення жирового компонента в жінок 30–49 років негативно вплинуло на прояв швидкості, активної гнучкості хребта, вибухової сили, спритності, силової динамічної витривалості м'язів плечового пояса й нижніх кінцівок, швидкісно-силової витривалості м'язів черевного преса, силової статичної витривалості сідничних м'язів та загальної витривалості. ***Завдання роботи*** – дослідити показники фізичної підготовленості жінок 30–49 років залежно від умісту жирового компонента маси тіла. ***Результати роботи.*** Установлено залежність прояву швидкості, активної гнучкості хребта, вибухової сили, спритності, силової динамічної витривалості м'язів плечового пояса й нижніх кінцівок, швидкісно-силової витривалості м'язів черевного преса, силової статичної витривалості сідничних м'язів і загальної витривалості від умісту жирового компонента. Перевищення вмісту жирового компонента в жінок 30–36 років призводить до більш негативних наслідків, ніж у 37–49-річних. **Висновки.** Доведена доцільність розробки програми занять аквафітнесом для жінок 30–49 років, спрямованих на покращення фізичних якостей, які зазнають найбільших інволюційних змін.

Ключові слова: фізична підготовленість, фізичні якості, компонентний склад маси тіла, жировий компонент.

Сальникова Светлана. Сравнительная характеристика физического состояния женщин 30–49 лет по показателям физической подготовленности в зависимости от содержания жировых компонентов массы тела. ***Актуальность.*** В статье посвящена исследуется влияние содержания жирового компонента массы тела на показатели физической подготовленности у женщин 30–49 лет. Установлено, что превышение жирового компонента у женщин 30–49 лет негативно повлияло на проявление скорости, активной гибкости позвоночника, взрывной силы, ловкости, силовой динамической выносливости мышц плечевого пояса и нижних конечностей, скоростно-силовой выносливости мышц брюшного пресса, силовой статической выносливости ягодичных мышц и общей выносливости. ***Задачи работы*** – исследовать показатели физической подготовленности женщин 30–49 лет в зависимости от содержания жирового компонента массы тела. ***Результаты работы.*** Установлена зависимость проявления скорости, активной гибкости позвоночника, взрывной силы, ловкости, силовой динамической выносливости мышц плечевого пояса и нижних конечностей, скоростно-силовой выносливости мышц брюшного пресса, силовой статической выносливости ягодичных мышц и общей выносливости от содержания жирового компонента. Превышение содержания жирового компонента у женщин 30–36 лет приводит к более негативным последствиям, чем в 37–49-летних. ***Выводы.*** Доказана целесообразность разработки программы занятий аквафитнессом для женщин 30–49 лет, направленных на улучшение физических качеств, которые испытывают наибольшие инволюционные изменения.

Ключевые слова: физическая подготовленность, физические качества, компонентный состав массы тела, жировой компонент.

Introduction. The problem of preserving and improving the physical health of women after 30 years is due to the subsequent activation of professional, creative and social activities, and the necessity to increase their longevity and preservation prior to menopause full reproductive function [16]. According to leading experts, since 30 years, women advisable to use such means of physical training, which would improve the physical state by stimulating aerobic processes of energy, increasing energy of physical work [7; 8; 16], reducing gravitational effects on cartilage formation joints and hardening of the body [9; 10; 12].

According to the Committee of international standardization of tests, physical state characterized by a state of health, physique, constitution functional possibilities of the body, physical work and physical training [5].

However, O. Pirogov, L. Ivashchenko, N. Strapko consider the physical state, as a human willingness to do physical work at home, at work, in physical training or sport. This approach to the definition of «physical state» reveals the following factors that influence on its level: physical capacity, physical development, functional and physical training, and for its assessment should take into account age and gender [1; 5, 14; 16].

To determine the major factors that characterize the physical state, informative selection criteria, developing shades, effective training programs aimed at improving it, O. Pirogov, L. Ivashchenko, N. Strapko had done multifactorial, numerous correlation and regression analysis of the indicators that reflect the physical development, physical training and morphofunctional state of the body [9].

S. Vasilenko stresses that the most simple, affordable and informative indicators characterizing the status of nutrition and health, is a mass index of the body (BMI) and percentage fat component in the body. With increasing, mass index and amount of fat in the body worse the physical capacity and adaptive potential of the circulatory system. E. Martyrosov and colleagues noted that a body has a significant correlation with indicators of physical capacity and the ability to adapt to environmental conditions, professional and sport activities.

Some scientists believe that it is advisable to assess the physical state of qualitative parameters of motor activity, namely for endurance, strength, speed, agility, flexibility, that is, the level of physical training[15].

According to the Concept of the National Program «Health 2020: Ukrainian dimension» about 60 % of the adult population of Ukraine has poor health. According to scientific research, the level of physical health of men in terms of maximum oxygen consumption (VO_{2max}) and life expectancy is lower than of women [14].

On the other hand, according to M. Bulatov [5], the incidence rate of Ukrainian women on 12 % higher than in men it is reflected on quality of life, particularly in reducing the physical and mental capacity, reproductive function, psychological problems [2; 10; 12].

In addition, the average life expectancy of Ukrainian woman is much lower than for women in developing countries. Most scientists believe that the main reason for this phenomenon is the limited physical activity of women.

However, scientifically it had been proven that under the influence of physical training may resume physical capacity and physical training for people from 30 to 50 [9].

The goals of our scientific research is to develop the programs of aqua fitness to improve the physical properties that undergo major changes of aging because of the results of comparing the level of physical training of women 30-49 years depending on the component composition of body weight.

To achieve this goal settled the following **tasks:**

to explore the indicators of physical training of women 30–36 and 37–49 years depending on the content of fat component weight.

Methods and organization of our research:

- the method of bioimpedansometry;
- pedagogical testing of physical training;
- methods of mathematical statistics.

The investigation of physical training was conducted considering the phase of the menstrual cycle. All researches studies were conducted after the menstrual phase (6-12 days after completion of menstruation) and after ovulation phase (days 16-24 at the end of menstruation). The investigations of women are carried out in phase's ovulation and menstruation (12–13 days after cessation of menstrual phase) due to deterioration of efficiency and coordination [1].

This researches clasp 107 women aged 30–49, previously not involved of aqua fitness. 58 people are from 30 to 36 years and 49 people are from 37 to 49 year old.

For the purpose of research, we formed two age groups of women: younger (30–36 years) and older (37–49 years).

From among women 30–36 years, 19 people have «normal» content of fat component, 31 – «high» 8 – «very high». In the older age group «normal» fat component has been recorded for 11 women and «high» and «very high» have 17 and 21 respectively.

The physical capacity of studying women was evaluated by the following indicators of physical training as: speed (running at 30 meters from the high start); explosive power (long jump from their seats); agility (shuttle run 4×9 m); dynamic power endurance of muscles of the shoulder girdle (flexion-extension arms in emphasis lying on gymnastic bench) and lower limb (flexion-extension legs to a standing position, holding the chair); speed-strength endurance abdominal muscles (flexion-extension of the legs as fast as possible, lying on the gym bench times for 15 s); static strength endurance of back muscles and neck (hold «to failure» posture «lying on his stomach with raised up and slightly dilute straight legs and hands») and gluteal muscles (hold «to failure» posture «lying on his stomach with a maximum raised above the couch, at 10º parted and knees bent at an angle of 45º feet, holding hands on the couch»); active flexibility of the spine (torso forward from a standing position, fingers touching the mark of measuring instrument) and overall endurance.

According to the opinion of scientists about inappropriate of using the tests, using of which makes it possible to determine the overall endurance in untrained individuals [1;15], for the prevention of acute pathological states including complications of function of the cardiovascular system, and despite the fact that aqua fitness held in aqueous medium, we are not used running tests, replacing them the test of 12-minute swimming [8].

For evaluation and analysis of the results we compared tied sampling, where the series reflect the difference characteristics depending on age. The difference of average values of physical training was performed by the t-test of Student [6]. The difference was considered at the level of significance of $p < 0,05$.

Discussion and the results of the study. The results of physical training of women 30-36 years and 37–49 led to the conclusion about the absence of age's differences for representatives of both group in such physical qualities as strength of muscle flexor fingers and overall endurance.

The results of our research of physical training of women in both age groups depending on the component composition of body weight show some differences manifestation of motor characteristics in women 30-36 years compared with 37–49-year-old.

Women of younger age group the exceeding of fat component had affected on the active flexibility of spine, explosive strength, agility, dynamic power endurance of muscles of the shoulder girdle and legs, speed-strength endurance abdominal muscles, the static power endurance and gluteus muscles general endurance (table 1).

For the representatives of older age group on the content of fat component such physical quality as speed was depended. However, the level of fat component for women 37–49 did not effect on the expression of other indicators of physical training.

As we can see from Table 1, studying women of 37–49 years old, who had a «high» content of fat component, the result of running on 30 m from high start was at 4,45 % significantly lower than of women with «normal» content of this component.

The research of the ability to show of explosive force in women with different content of fat component had shown that exceeding of standards of this component of body weight of women 30–36 noticeably effect on the results of the test «long jump from place» than for women of 37–49 years old.

The result of the test «flexion-extension legs, lying on the gym bench for 15s.» for women of 37–49 with «very high» content of fat component is to 24,37 % significantly lower than those who had «normal» content.

The result of the test «flexion-extension legs to a standing position, holding the chair» was also significantly lower (by 24,97 %) compared with representatives of the «high» level of fat component (see. table 1).

Women 30–36 years with «normal» content of fat component have the test's result «long jump from their seats» at 8,57 % ($p < 0,05$) better than who has the «high» content of this component, and more those who have «very high» content – by 21,18 % ($p < 0,05$). And the difference between this indicator also are registered in women with a «very high» and «high» content of fat component (by 11,61 %).

On the negative impact of fat component on the manifestation of women of 30–36 years indicates the presence of probable outcome differences shuttle race 4×9 m for women with «normal» content of fat component than those whose component is much higher than normal (2,99 %) (see. table 1).

A comparative analysis of the dynamic manifestation of power endurance of muscles of the shoulder girdle by the test «flexion-extension arms in emphasis lying on gymnastic bench» also showed that

exceeding the standards of fat component increasingly has the negative influence on the results of women of 30–36 than for women 37–49 year.

Table 1

Physical Training of Women of 30-49 Years with Different Content of Fat Component

Indexes	Age, Years	Mean Values, x ± S		
		Normal	High	Very High
Running on 30 m of high start, sec	30–36	6,66±0,05	6,81±0,11	7,49±0,21*$^{\Delta}$
	37–49	7,14±0,11	7,46±0,10*	7,38±0,11
long jump from place, cm	30–36	161,32±1,53	148,58±1,76*	133,13±5,04*$^{\Delta}$
	37–49	138,64±4,59	133,65±2,92	133,14±3,55
Shuttle run 4 × 9 m, sec	30–36	12,67±0,14	13,05±0,08*	13,43±0,38
	37–49	13,45±0,13	13,77±0,24	13,67±0,26
Flexion-extension arms in emphasis lying on gymnastic bench	30–36	10,42±1,02	7,81±0,61*	5,63±1,19*
	37–49	4,55±1,20	3,35±1,04	4,10±1,01
Flexion-extension feet from a standing position, holding back of a chair, many times	30–36	27,42±2,75	27,23±1,49	19,00±2,79*$^{\Delta}$
	37–49	19,27±2,29	20,35±1,46	16,29±1,12$^{\Delta}$
Flexion-extension legs, lying on the gym bench for 15 seconds	30–36	14,89±0,70	14,61±0,40	12,13±1,06*$^{\Delta}$
	37–49	14,27±0,80	12,94±0,77	11,48±0,35*
out of 1 sec #	30–36	49,58±3,26	47,71±3,95	39,50±4,91
	37–49	40,64±3,39	32,71±1,95	34,19±2,01
out of 2 sec #	30–36	60,84±4,28	55,55±3,03	44,13±5,30*
	37–49	48,27±6,28	48,65±4,67	41,76±4,79
Torso forward from a standing position, cm	30–36	7,84±0,83	6,29±0,53	3,38±0,93*$^{\Delta}$
	37–49	3,73±0,80	2,59±0,49	2,86±0,59
The test of 12-minute swimming by K. Cooper, m	30–36	219,74±19,16	179,19±10,98	159,38±16,58*
	37–49	227,27±24,94	207,35±12,19	182,71±13,31

The result of this test was worse for individuals of 30–36 years with «high» and «very high» content of fat component compared with those who had «normal» content of fat component, respectively 33,48 and 85,24 % ($p < 0.05$).

Unlike the women of 30–36, for women of 37–49 years the content of fatty component has no significantly influence on the result of the test.

The result of the power dynamic endurance of the muscles of the lower extremities for women 30–36 years with «normal» content of fat component significantly exceeded average values of those whose content was «very high» (at 44,32 %) and «high» (43 29 %).

The index of speed-strength endurance abdominals by the test «flexion-extension of the legs as fast as possible, lying on the gym bench for 15 seconds» among the women 30–36 was to 22,80 % significantly lower in those who had a «very high» content of fat component, compared with those whose content was defined as «normal».

We found the dependence of static power endurance gluteus muscles on the content of fat component for women 30–36 years. Thus, for women in this age group who had «very high» content of these components, the duration of the maintenance posture «lying on his stomach with the highest elevated above a couch, diluted to 10º and bent at the knees at an angle of 45º feet, holding hands on the couch» was lower at 37,88 % if to compare with women whose component did not exceed the rate ($p < 0,05$).

Studying the flexibility of women 30–36 years with different content of fat component also revealed the dependence of the test's result «torso forward from a standing position, fingers touching the mark of measuring device» on the content of the component.

Thus, for the representatives of the youngest age group the «very high» content of fat component, comparing with those who had «normal» and «high» the active flexibility of the spine was worse respectively 2,31 and 1,86 times ($p < 0$, 05). It should be noted that for women 30-36 exceeding of the specified component influence to the reducing of such qualities as flexibility, more than for women of 37–49 years.

Unlike for women of 37–49 years, in which the content of fat component does not affect on the result of the test of 12-minute swimming by K.Cooper, for the women of 30–36 increasing of this component to 'very

high' has negative impact on the manifestation of endurance. Thus, the result of this test was worse to 37,88 % ($p<0,05$) in participants with «very high» content of fat component, comparing with «normal».

Conclusions. The analysis of the results of our research shows that women of 30-49 have the manifestation of physical properties from content of fat component. The exceeding of fat component in younger women leads to more negative outcomes than older women. Thus, the exceeding of fat component for women 30–36 years has negatively effect on the expression of speed, active flexibility of the spine, explosive strength, agility, dynamic power endurance of muscles of the shoulder girdle and legs, speed-strength endurance abdominal muscles, the static power endurance glutei muscles and overall endurance. For women of 37–49 with exceeding of fat component deteriorated only dynamic power endurance of muscles of the lower extremities and speed-strength endurance abdominal muscles. For women of 37–49, opposite to 30–36, the exceeding of fat component had not affect to the display of dexterity.

So, in order to improve the physical capacity of women 30–49 years old, appropriate to develop the programs of aqua fitness training that would help to improve the physical qualities.

Prospects for further research. Further studies will be used to study the dependence of physical training from the content of muscle component of body weight for women of 30–49 years old.

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THE DEVELOPMENT OF MOTIVATION TOWARDS PHYSICAL TRAINING AND SPORTS IN STUDENTS OF PROFESSIONAL SCHOOLS

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Abstract

From practice it is known that highly productive labour is in most cases protected not only by the existence of an interest in working for their profession, but in the adaptability of his body to perform motor operations associated with its production activities. As indicated by research students usually lost before any kind of motor activity, if it causes a physical fatigue. The realities of the economy indicate the need for the establishment and expansion of labour market, where there is a large demand for skilled workers in the manufacturing sectors of many industries. On this basis, a significant portion of our youth is aware of this fact and endeavour to obtain such a profession for which there is the greatest demand for production, linking their future with the hope of a paying job, and with it, with its stable and worthy future life. With this in vocational and technical institutions are in the process of physical education at Ministry of education of Ukraine approved the program, which is aimed at strengthening of health of schoolchildren, prevention of occupational diseases, integrated development of physical qualities, motor abilities and skills. But this program does not include teaching methods, which affects the formation of the motivational abilities of students of vocational and technical institutions, and the development of physical qualities, motor abilities and skills that are an integral component in their future professional activities of a skilled worker. Since an increased level of physical qualities is an integral component in some of the production occupations in such industries: construction, metallurgical industry, oil industry, food industry, agriculture, engineering, mining and other sectors of the economy.

Key words: physical training, students, profiling, applied, physical education, physical qualities, motor skills, success, profession, motivation, schools.

Богдан Семенів, Петро Біленький, Олена Голубєва, Орест Василів, Тарас Приставський. Формування**я в учнів професійно-технічних навчальних закладів мотивації до занять фізичною культурою та спортом.** Із практики виробництва відомо, що високопродуктивна праця в більшості випадків забезпечується не лише наявністю зацікавленості в робітника своєю професією, але й пристосованістю його організму до виконання рухових операцій, пов'язаних із його виробничою діяльністю. Як засвідчують наукові дослідження, інтерес учнів зазвичай утрачається до будь-якого виду рухової діяльності, якщо вона викликає в нього швидку фізичну втому. Реалії економіки країни вказують на необхідність створення й розширення ринку праці, на якому зараз виникає великий попит на кваліфікованих працівників у виробничих сферах багатьох галузей народного господарства. Ураховуючи це, значна частина нашої молоді усвідомлює такий факт і прагне отримати такі професії, на які є найбільший попит на виробництві, пов'язуючи своє майбутнє з надією на високооплачувану працю, а разом із цим – зі своїм стабільним і достойним майбутнім особистим життям. Водночас у ПТНЗ здійснюється процес фізичного виховання за затвердженою МОН України програмою, яка спрямована на зміцнення здоров'я учнів, профілактику професійних захворювань, комплексний розвиток фізичних якостей, рухових умінь і навиків. Але разом із тим ця програма не враховує методики навчання, що впливає на формування мотиваційних здібностей учнів ПТНЗ та на розвиток фізичних якостей, рухових умінь і навиків, які є невід'ємною складовою частиною в майбутній професійній діяльності кваліфікованого працівника, оскільки підвищений рівень фізичних якостей – невіддільний компонент у деяких виробничих професіях у таких галузях, як будівництво, металургійна промисловість, нафтогазова галузь, харчова промисловість, сільське господарство, машинобудування, гірничодобувна та інші галузі народного господарства.

Ключові слова: фізична підготовка, учні, профілююча, прикладна, фізичне виховання, фізичні якості, рухові навики, успішність, професії, мотивації, навчальні заклади.

Богдан Семенив, Петр Биленький, Елена Голубева, Орест Василив, Тарас Приставский. Формирование мотивации в учеников профессионально-технических учебных заведений к занятиям физической культурой и спортом. Из практики производства известно, что высокопроизводительный труд в большинстве случаев

обеспечивается не только наличием заинтересованности рабочего своей профессией, но и в приспособленности его организма к выполнению двигательных операций, связанных с его производственной деятельностью. Как указывают научные исследования, интерес учащихся обычно теряется к любому виду двигательной деятельности, если она вызывает у них быструю физическую усталость. Реалии экономики страны указывают на необходимость создания и расширения рынка труда, на котором сейчас возникает большой спрос на квалифицированных работников в производственных сферах многих отраслей народного хозяйства. Исходя из этого, значительная часть нашей молодежи осознает этот факт и стремится получить такие профессии, на которые есть наибольший спрос на производстве, связывая свое будущее с надеждой на высокооплачиваемую работу, а вместе с этим – со своим стабильным и достойным будущими личной жизнью. Вместе с этим в ПТУЗ осуществляется процесс физического воспитания по утвержденной МОН Украины программе, которая направлена на укрепление здоровья учащихся, профилактику профессиональных заболеваний, комплексное развитие физических качеств, двигательных умений и навыков. Но вместе с этим эта программа не учитывает методики обучения, которая влияет на формирование мотивационных способностей учащихся ПТУЗ и на развитие физических качеств, двигательных умений и навыков, которые являются неотъемлемой составляющей в будущей профессиональной деятельности квалифицированного работника, поскольку повышенный уровень физических качеств является неотъемлемой составляющей в некоторых производственных профессиях в таких отраслях, как строительство, металлургическая промышленность, нефтегазовая сфера, пищевая промышленность, сельское хозяйство, машиностроение, горнодобывающая и другие отрасли народного хозяйства.

Ключевые слова: физическая подготовка, учащиеся, профилирующая, прикладная, физическое воспитание, физические качества, двигательные навыки, успешность, профессии, мотивации, учебные заведения.

Introduction. Analysis of literary sources allows us to state about the absence of methods from the motivation formation of student interest of vocational and technical educational institutions towards physical culture and sport taking into account the profile of physical training. Age dynamics of physical development of man indicates that just the stage is from 14–15 to 17–18 years is different from other by accelerated growth of physical qualities.

That is why, based on research data to recommend for the development of physical qualities, movement abilities and skills to apply appropriate techniques, which at this time are carefully designed in sports, which belongs to training programs for this age contingent of students of vocational schools. Through the efforts of many scientists, including V. A. Maxymovych, G. G. Lapshyna, L. P. Pylypeya, R. T. Rajewskyj, V. A. Romanenko, A. I. Podlyesnoho, S. I. Prysyazhnyuk, defining the content, forms and methods of use of physical culture and sports to increase the efficiency of young specialists training, making it possible to organize in many higher educational institutions purposeful work on physical training of students considering their chosen profile [2; 8; 9; 14].

Thus, V. A. Kabachkov and S. A. Polijevsjkyj created a model PPFP of students from educational institutions of technical and vocational education, on the basis of created by them professiogram of professionally applied physical training, PPFP relevant tasks, as well as the selection of appropriate sports, their elements and exercise for PPFP, elaborated practical recommendations for specific trades workers [5; 8].

Recommendations from PPFP for different working trades are developed on the concept of V. A. Kabachkov and S. A. Polijevskyj, beginning with 1971, were included in all programs of physical education of students from educational institutions of technical and vocational education and became the theoretical and methodological basis professionally aimed physical education for training specialists of working professions [5; 8].

Research conducted on the comparative effectiveness of the use different organizational methods of general physical and special physical training, in the control and experimental groups of vocational and technical educational establishments and showed the advantage lessons on physical education with the help of circular training method, especially in the development of physical qualities. The results of the experiment allowed to conclude that the passage of the program material in physical education in professional technical colleges using circular lessons gives positive results, promotes successful development of general, special and professional-applied physical preparation. Thus, circular training, introduced in the lesson of physical culture, contributes to the progression of loads, increases the motional density of classes, making lessons more emotional and varied. [10; 13].

V. Kovalj (2012), assumes that obligatory element of physical education of PTC students is professionally applied physical preparation, which is the basis of formation of skills and physical qualities, which are necessary to perform professionally oriented tasks, production of functional resistance to the terms of this activity [5].

Y. Zhylin, T. Bondar (2015) assume, that the improvement of physical education in professional technical educational establishments consists in development of pedagogical methods of tasks realization of physical culture formation of personality, not only as strategic, but also as part of professional competence. You need to choose the educational material, that does not contradict interests, motives and needs of vocational students, because only conscious understanding of the role of physical training can promote the absorption of values [1].

Y. Kozeruk (2015) in the research process has established that use a variety of didactic conditions of activities can get the training effect at a lower cost of adaptation, rather reach a higher level of quality and reliability of motional skill. In determining the effectiveness of this forming technology of pupils motional skills from vocational schools, it was found the improvement in physical condition and motional readiness [6; 7].

If during lessons on physical education find appropriate teaching methods which would promote the formation of students' motivation to physical training and sports, it will give an opportunity to develop the necessary physical qualities and motional skills to future specialists to enhance special working capacity, the prevention of occupational diseases throughout his career at a high level.

Satisfaction with the results of work occurs not only on financial compensation, but also on the feeling, even subconscious physical satisfaction of its availability. Otherwise, work activity is becomes exhausting and a man refuses it, in spite of its financial attractiveness. Many students of vocational schools when choosing future profession pay attention to this side - a decent pay for their work, but do not imagine the physical and physiological stress, that await them in their future careers. In modern methodological developments for PTEI, designed by various authors, it emphasizes the need to include them in training exercises similar in structure and muscle tension to professional [1; 4; 7].

In other words process of physical education of young workers should wear profiling or professional – applied character [4; 5].

In the same sources (V. Maxymovych, S. Prysyazhnyuk, R. Rajewskiyj, V. Romanenko, B. Semeniv) it is noted basic characteristics of different groups of professional activity and requirements to physiological and physical qualities of workers, that provide productive work with the main tasks of the work programs with profiling of physical training to prepare professionals: operators, machinists, drivers, conveyorers, electricians, electro-gas welders, food industry workers, production of livestock products, professions working with high precision of work movements, construction workers, mining workers, pulp and paper production, metallurgy, waterway transport [9; 13; 14].

In the corresponding programs on PPFP are defined their task, means and sports for sectional [2; 4; 8]. Thus the development of operational programs of PPFP rely on teachers of physical education, taking into account the level of material and technical support and conditions of physical education process in each professional and educational institution [9; 10; 13].

Group of scientists from the physical education V. Plisko, Y. Kozeruk, O. Bulanov (2013) have found that the current content and organization of physical education in the PTE system, despite significant achievements, still can not satisfy the growing demands to physical preparedness of future workers. Improving the efficiency of the production process also causes the necessity reorganization of physical education and strengthen the role and PPFP place [3].

A result of analysis of scientific and technical literature and practical classes on physical education of section TFG, it was found that the low efficiency of physical training considering the chosen specialty is caused by low motivation and interest of students of professional and technical educational institutions to the lessons of this type of physical training. Despite significant advances in the section profiling physical preparation of school youth, scientists on physical education do not consider motivational peculiarities of PTEI students to physical training and sports considering the chosen specialty.

All this testifies to our further research.

To set by an experimental way the effectiveness of the adversarial method with the help of conducting classes on profile of physical training of students of vocational schools for the development of physical qualities, motional abilities and skills considering the chosen specialty.

Accordance with the purpose of formulated objectives:

1. To carry out theoretical analysis of scientific and pedagogical sources of problems the profile of physical training of students of vocational schools.

2. To investigate the physical qualities that is the most necessary to future professionals of different specialties and respond to the age development.

3. To justify and experimentally verify the effectiveness of the adversarial method use of conducting classes on the profile of physical training of students of vocational schools for the formation of motivational abilities in learning.

Materials and methods of the study. Research methods caused by the goal, the tasks and the actual material:

– theoretical: analysis of teaching and normative documentation, psychological, pedagogical and methodological literature in order to determine status and prospects of research problem; comparison of different views of scientists on investigated problem for determining the research directions and conceptual-categorical apparatus;

– empirical: pedagogical monitoring of educational process, teacher questionnaires and tests for the diagnosis of physical fitness of students of vocational schools; pedagogical experiment (ascertain, forming) in order to obtain the information necessary for develop the methods of motivation formation of vocational students to physical training for sports considering the chosen profession, physical skills and motion abilities in the system of vocational students physical training, and also for check its effectiveness and improving the health of students, increasing special efficiency, improvement of success in the learning process, prophylaxis and prevention of occupational diseases.

– methods of statistical data used for the study of experimental research results for the purpose of qualitative and quantitative analysis and the validity of the findings.

The chosen by us and applied research methods are generally accepted in the physical education of pedagogy.

The research was conducted at the Lviv Polytechnic higher vocational schools, together with the Department of physical education of sport and health of Lviv National University of Veterinary Medicine and Biotechnologies named after S. Z. Gzhytskyj. 77 students, 22 teachers of general subjects, 18 teachers of special subjects of technology, 24 masters of industrial training took the participation in the investigation.

Discusion and research results. According to the survey as an open questioning of teachers of general and special subjects, masters of industrial training in September 2015, determined by a group of students on specialties which is the most necessary to use physical skills and motion skills.

Masters of industrial training and teachers of special subjects in the statement table were proposed to put on the «5-point» scale of assessment to power quality, which are necessarily applied in the mentioned specialties.

Survey results after the statistical analysis are outlined in presented below (table 1).

Table 1

Middle-assessment Survey Group of Specialists-teachers of Industrial Training of Lviv Higher Polytechnic Vocational School

N	Specialties	Total Points	Power endurance Dynamic	Absolute Power	Power endurance Static
1	repairman of cars, electric gas welder	13,7	4,6	4,4	4,7
2	electrician for repair and maintenance of electrical equipment	10,0	3,2	3,0	3,8
3	house painter, fitter gypsum structures, plasterer	14,5	4,9	4,8	4,8
4	Carpenter-building, parquet floor layer	14,0	4,8	4,7	4,5

Based on the survey results for the experiment 3 groups of students of LHPPC were selected, who are studying in the following specialties: car repairman, electro-gas welder, house painter – fitter of gypsum constructions, plasterer, carpenter and construction parquet floor layer and the control group. Total participated in the experiment were 77 students, young men aged 16–17 years. The control group consisted of 17 students, who have studied in specialty electrician for repair and maintenance of electrical equipment.

1. Mechanic on car repairs, electricity gas welder – 13.7 points.
2. Painter - fitter of gypsum structures, plasterer – 14.5 points.
3. Carpenter and construction, parquet floor layer – 14.0 points.

Control:

4. Electrician for repair and maintenance of electrical equipment-10.0 points.

Analyzing the results of the survey, we find that specialists for professional activities in selected groups for the experiment consider the need for an increased level of dynamic power and static and endurance in these industrial occupations in these productive occupations, absolute power holds in all groups last place. Experimental research lasted for 2015–2016 academic year with the second year students of Lviv Polytechnic Higher Vocational Lyceum for the aforementioned specialties.

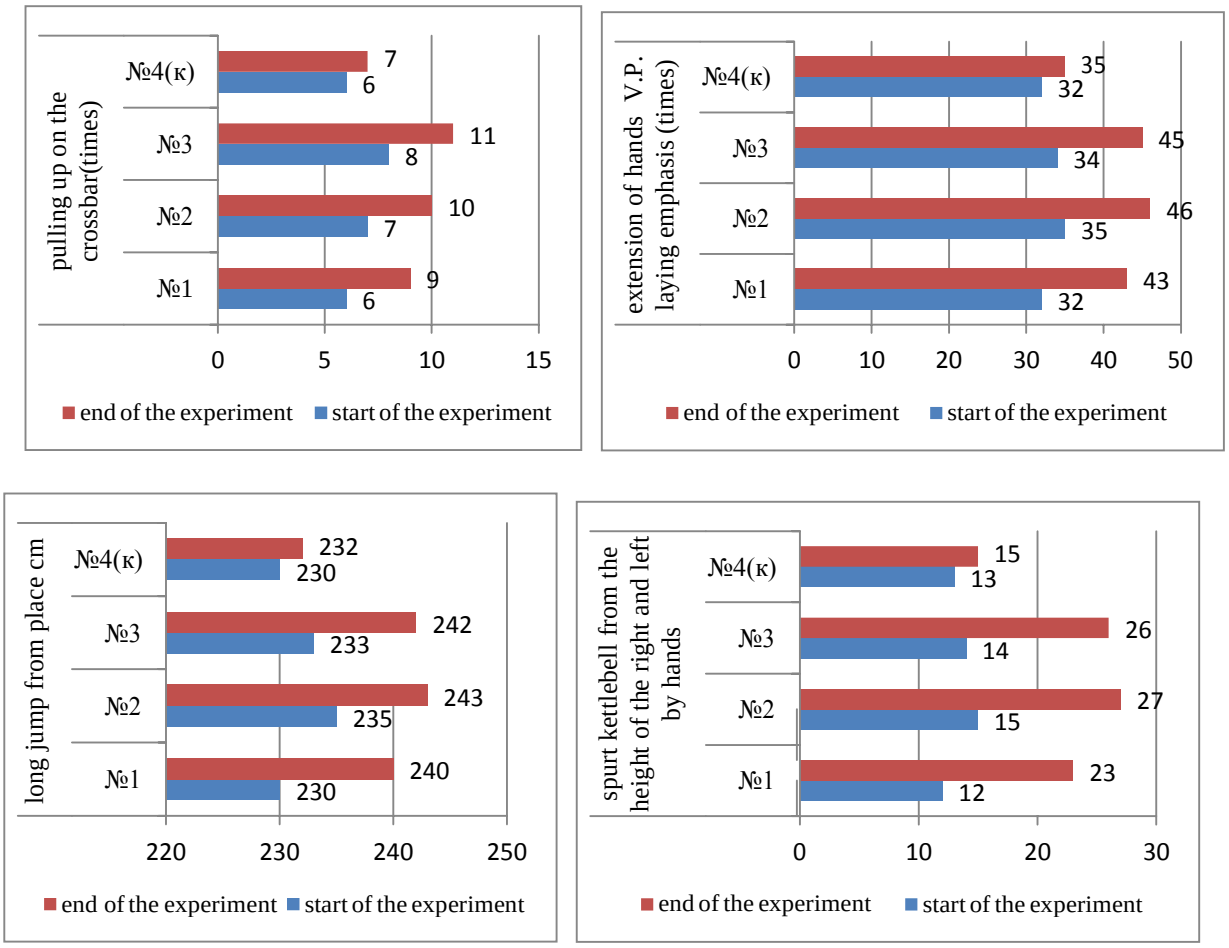

Fig. 1. *Dynamics of Physical Training of Students at the time of LHPPC Pedagogical Experiment*

During the course of pedagogical experiment students in the control group were engaged in the traditional for all vocational schools of Ukraine «Curriculum» in physical education. Students in the experimental group at the beginning of the experiment reported that it will be held the competition championship group, championship course, championship college, by type of physical testing, describing strength physical qualities inherent to members of professions defined by open questioning. Participants in the experiment were reported that the triple of winners for each type of testing will be awarded with diplomas and will represent their group in the championship course, college.

Summarizing the results of pedagogical observations you can note conscientious attitude of boys from the experimental groups to strength training, strict exercise, demanding some willpower, increase their satisfaction results, not only their physical growth opportunities but also increase the level of success of the special and general subjects.

Table 2

Success, on Average, with Special-subjects of Students of Lviv Polytechnic Higher Vocational School for the Period of Pedagogical Experiment (by 12th Scale)

№ of Order	GROUPS	The Success (in Points)		Excellent., Success	Differences of Success
		Beginning of Experim.	The End of Experim.	Points	%
1	Control group: electrician	7,21	7,69	0,48	6,2
2	mechanics, electric welder (1 exp.)	6,05	7,35	1,3	17,6
3	house painter, plasterer, tiler (2exp.).	5,78	8,04	2,26	28,1
4	carpenter-builder parquet floor layer (3 exp.)	5,65	8,01	2,36	29,4

Table 3

Success, on Average, on General Subjects of Students of Lviv Polytechnic Higher Vocational School For the Period of Pedagogical Experiment (by 12th Scale)

№ of Order	GROUPS	The Success (in Points)		Differences of Success	Differences of Success
		Beginning of Experim.	The End of Experim.	Points	%
1	Control group: electrician	6,17	6,97	0,8	11,4
2	mechanics, electric welder	5,67	6,81	1,14	16,7
3	house painter, plasterer, tiler (2exp).	5,12	7,36	2,24	30,4
4	carpenter-builder parquet floor layer (3 exp.)	5,03	6,74	1,71	25,3

Conclusions and prospects for further research.

1. Consciously or subconsciously, students from the experimental groups sought to increase their physical quality and to be one of three best students in one or more types of testing and to represent their group at higher competitions.

2. The use of the competitive learning method during physical education classes of students LHPPC made it possible to motivate active physical training and sports, to improve the success of both general subjects and on subjects of special training. As a result of the experiment it can be argued that the use of competitive methods of teaching during physical education classes improves overall ability to work as a future employee and special.

3. In considering the magnitude performance testing of physical qualities of students LHPPC during experiment, their dynamics and percentages of medium- group indices of experimental and control group we can note a significant increase in power quality of students of experimental groups over the control students.

Джерела та література

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THE CURRENT STATE AND THE PECULIARITIES OF PHYSICAL ACTIVITY OF TEENAGERS IN UKRAINE AND POLAND

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Abstract

Thematic justification is determined by searching for ways to optimize the level of human physical activity. Studying the level of physical activity of residents of neighboring countries of Ukraine and Poland, which have differences in systems of education, culture, socio–economic structure, will assist in searching for ways to optimize the level of physical activity of the population of both countries. Special focus of the study will be on the problem of studying physical activity of children and youth, the proper level of which is a guarantee of nation's health. Research objective is to establish the current state and characteristics of physical activity of 13–15–year–old children living in Poland and Ukraine. *Research results.* The article provides a comparative analysis of the results of a survey of Polish and Ukrainian 13–15–year–old school students. A comparative analysis of indicators of physical activity of 13–15–year–old children living in Poland and Ukraine was also conducted. It has been established that children of both countries equally prefer sedentary activities in their spare time. Ukrainian school students give a higher evaluation to physical education classes and their own level of physical aptitude. At the same time, there is a tendency among Ukrainian school students towards the decrease of the level of physical activity from 13 to 15 years of age if compared to Polish school students. Conclusions: obtained pedometer indicators are below normal, which is indicative of a sedentary lifestyle of students of this age group (Ukrainian students – 7,9 thousand steps per day, Polish students – 9,7 thousand steps per day). Polish students have a tendency towards increasing the volume of physical activity (13 years old – 8,8 thousand steps per day, 15 years old – 11 thousand steps per day). Conversely, students in Ukraine tend to decrease the volume of physical activity (13 years – 9,9 thousand steps per day, 15 years – 6,7 thousand steps per day).

Key words: physical activity, children, school students, Ukraine, Poland

Алла Соловей, Ольга Римар, Марта Ярошик, Наталія Сороколіт. Сучасний стан та особливості рухової **активності підлітків України й Польщі.** Актуальність дослідження зумовлена пошуком способів оптимізації рівня рухової активності людини. Вивчення рівня рухової активності мешканців сусідніх держав України та Польщі, які мають відмінності в системах освіти, культури, соціально–економічного устрою, дасть змогу полегшити пошук шляхів оптимізації рівня рухової активності населення обох країн. У дослідженні особливу увагу приділено проблемі вивчення рухової активності дітей і молоді, належний рівень якої є гарантією здоров'я нації. ***Мета дослідження*** – установити сучасний стан та особливості рухової активності дітей 13–15 років, котрі проживають у Польщі й Україні. ***Результати дослідження.*** У статті представлено порівняльний аналіз результатів анкетування польських та українських школярів 13–15 років. Також проведено порівняльний аналіз показників рухової активності дітей 13–15 років України й Польщі. Установлено, що діти обох країн однаково надають перевагу малорухливим видам діяльності у вільний час. Українські школярі вище оцінюють урок фізичного виховання і власний рівень фізичної підготовленості. Водночас в українських учнів простежено тенденцію до зниження рівня рухової активності з 13 до 15 років, порівняно з польськими школярами. ***Висновки.*** Отримані показники крокометрії є нижчими за норму, що свідчить про малорухливий спосіб життя учнів цієї вікової групи (українські діти – 7, 9 тис. кроків на день; польські – 9,7 тис.). В учнів Польщі спостерігаємо тенденцію до збільшення обсягу рухової активності (13 років – 8,8 тис. кроків на день; 15 років – 11 тис.). І навпаки, у школярів України простежено тенденцію до зниження обсягу рухової активності (13 років – 9,9 тис. кроків на день; 15 років – 6,7 тис.).

Ключові слова: рухова активність, діти, школярі, Україна, Польща.

Алла Соловей, Ольга Римар, Марта Ярошык, Наталья Сороколит. Современное состояние и особенности двигательной активности подростков Украины и Польши. ***Актуальность*** исследования обусловлена поиском путей оптимизации уровня двигательной активности человека. Изучение уровня двигательной активности жителей соседних государств Украины и Польши, которые имеют различия в системах образования, культуры, социально–экономического устройства, позволит облегчить поиск путей оптимизации уровня двигательной

активности населения обеих стран. В исследовании особое внимание уделяется проблеме изучения двигательной активности детей и молодежи, надлежащий уровень которой является гарантией здоровья нации. ***Цель исследования*** – установить современное состояние и особенности двигательной активности детей 13–15 лет, проживающих в Польше и Украине. ***Результаты исследования.*** В статье представлен сравнительный анализ результатов анкетирования польских и украинских школьников 13–15 лет. Также проведен сравнительный анализ показателей двигательной активности детей 13–15 лет Украины и Польши. Установлено, что дети обеих стран одинаково предпочитают малоподвижные виды деятельности в свободное время. Украинские школьники выше оценивают урок физического воспитания и собственный уровень физической подготовленности. Вместе с тем, в украинских школьников наблюдается тенденция к снижению уровня двигательной активности с 13 до 15 лет по сравнению с польскими школьниками. ***Выводы.*** полученные показатели шагометрии – ниже нормы, что свидетельствует о малоподвижном образе жизни учащихся данной возрастной группы (украинские ученики – 7, 9 тыс. шагов в день, польские – 9,7 тыс.). В детей Польши наблюдается тенденция к увеличению объема двигательной активности (13 лет – 8,8 тис. шагов в день; 15 лет – 11 тыс.). И наоборот, в учеников Украины снижен объем двигательной активности (13 лет – 9,9 тыс. шагов в день, 15 лет – 6,7 тыс.).

Ключевые слова: двигательная активность, дети, школьники, Украина, Польша.

Introduction. Physical activity is an integral part of a person's life, which, of course, determines the quality of life of an individual. Numerous scientific studies prove that physical activity of the country's population depends on socio–economic and cultural factors. In the XXI century, due to a scientific and technological progress, daily physical activity of the world's population decreased to a critical level. According to global studies, at least 60 % of the world's population does not adhere to the necessary level of physical activity. Reduction of the level of physical activity is the fourth most important risk factor for mortality in the world. According to scientific studies, only 13 % of Ukrainians adhere to the necessary physiologically reasonable level of physical activity, while this indicator is higher in the European Union countries. Therefore, today, searching for ways to optimize the level of physical activity of the population is up to date. Studying the level of physical activity of residents of neighboring countries (Ukraine and Poland), which have differences in systems of education, culture, socio–economic structure, will assist in searching for ways to optimize the level of physical activity of the population of both countries. Special focus of the study will be on the problem of studying physical activity of children and youth, the proper level of which is a guarantee of nation's health.

A sufficient number of scientific studies is dedicated to the problem of studying the level of physical activity of various population groups. In his studies, A. Mandiuk considers the issue of physical activity in school students' leisure structure. Also, A. Mandiuk studied peculiarities of physical activity of school students in the USA. Comparative analysis of the attitude to various forms of physical activity of Ukrainian and Polish school students had been studied by I. Bodnar and A. Kindzer.

At the same time, today there is little research containing data on the peculiarities and problems of physical activity of children abroad, in Poland in particular, and their comparison with data obtained in Ukraine. With this taken into account, the **objective of our research** was to: establish the current state and peculiarities of physical activity of 13–15–year–old children living in Poland and Ukraine.

To achieve this objective, the following **tasks** were being accomplished: carrying out a comparative analysis of the attitude to various forms of physical activity of 13–15–year–old children living in Ukraine and Poland and also determining and comparing the volume of physical activity of 13–15-year-old children in both countries.

To reach the stated objectives, the following research **methods** were used: analysis of references, sociological methods of research (questioning), pedagogical observation (methods of time tracking and pace counting), methods of mathematical statistics.

Discussion and the results of the study. In order to determine the attitude to various forms of motor activity of 13–15-year-old students a questionnaire was conducted at general education schools in Ukraine and Poland. The survey involved 224 students from the city of Lviv and 226 students from the city of Wroclaw.

An analysis of the results of the held survey showed that answers of students in Ukraine and Poland have common and distinctive features.

Differences can be observed in results of the evaluation given to physical education classes as the main form of physical activity. Comparison of students' evaluation to physical education classes showed that the majority of students in Ukraine highly appreciate the lesson (9–10 points: students in Ukraine – 72 %, students in Poland – 42 %). Polish schools' students evaluate physical education classes with a more critical mind (8 points or less: students in Ukraine – 26 %, students in Poland – 58 %). This may indicate a more positive or declarative attitude of Ukrainian school students to physical education classes (figure 1).

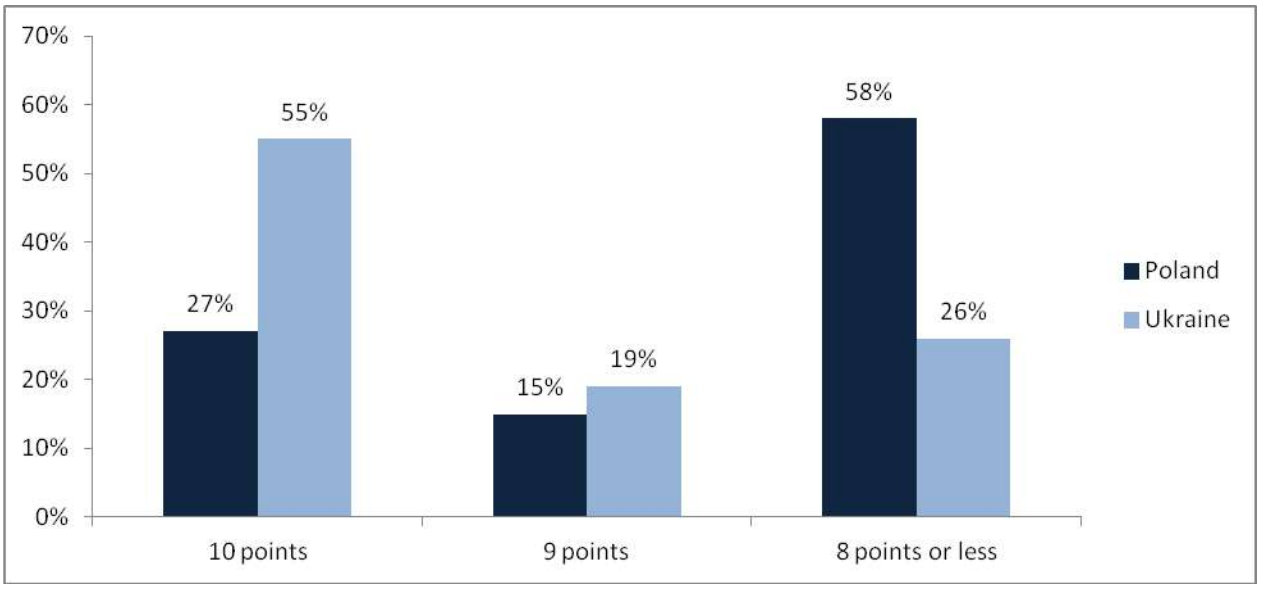

Fig. 1. *Physical Education Classes Evaluation*

Differences in responses are observed in students' assessment of their physical fitness. An analysis of the answers showed that Polish school students, in comparison with the Ukrainian ones, assess their physical fitness with a more critical mind (below average and low level of physical fitness: 6 % of students in Ukraine, 18 % of students in Poland), whereas the majority of Ukrainian school students assess their physical readiness as average – 46 % and above the average and high – 49 %, and as for the students of Poland, 35 % assess their physical fitness as average and 48 % – as above average and high (figure 2). The results obtained may indicate either better physical fitness of Ukrainian school students or a falsity of subjective assessment of their physical fitness by Ukrainian school students.

An analysis of the survey results of Ukrainian and Polish students revealed common, identical answers to questions.

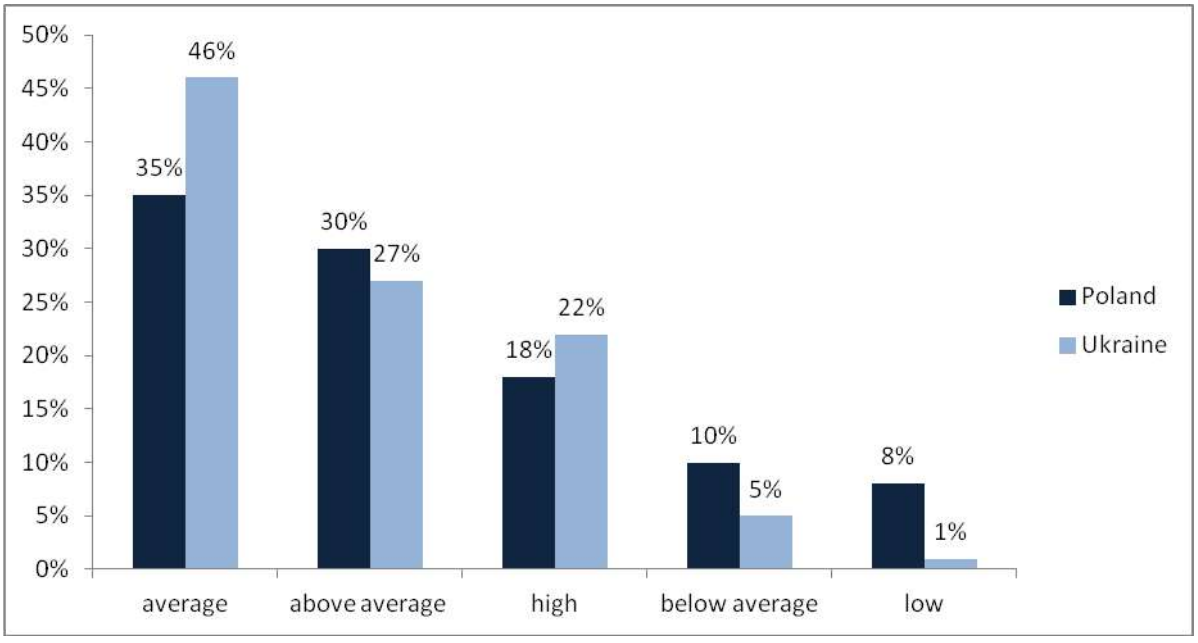

Fig. 2. *Physical Fitness of Students*

Research results showed that motives driving students of Ukraine and Poland at the age of 13–15 years to attend education classes completely coincide. 62 % of students answered that they attend the class in order to improve their physical fitness; 20 % say that the class is beneficial; 13% of students say that the class is

fun and interesting; 5 % – other answers. Results obtained indicate that the main motive that encourages students of both Ukraine and Poland to attend physical education classes is to improve physical fitness.

In their spare time, during weekends, students of Poland and Ukraine prefer the same sedentary activities. Thus, 28 % of Ukrainian students and 31 % of Polish students spend their free time playing computer games and communicating through social networks; 27 % of Ukrainian students and 32 % of Polish students are most willing to watch TV shows and listen to music. Only 30 % of students in Ukraine and 22 % of students in Poland prefer walks in their spare time.

Received indicators demonstrate that the majority of questioned students (Ukraine – 56 %, Poland – 71 %) are not involved in sports sections, which, in our opinion, can be due to many factors. Thus, in recent years, both in Poland and in Ukraine, the number of state institutions providing an opportunity to visit sports clubs free of charge has decreased significantly (figure 3).

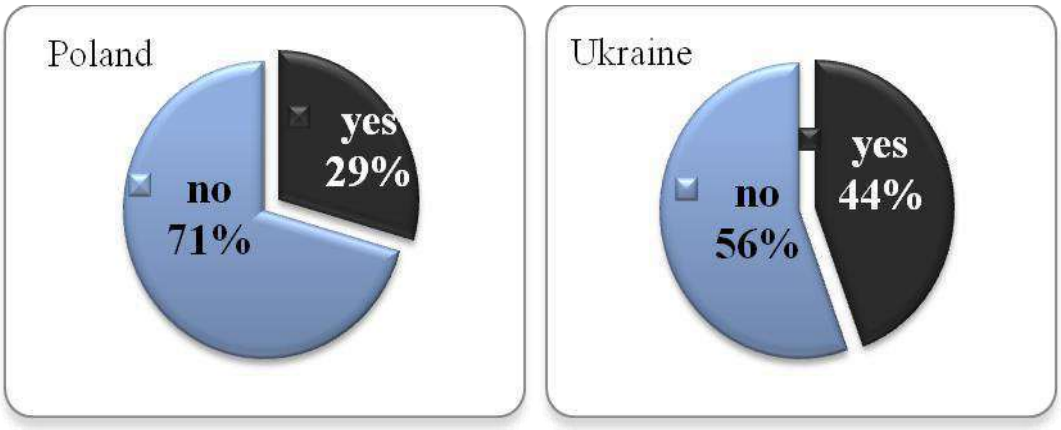

Fig. 3. *Children's Involvement in Sports Sections and Clubs*

Using a survey, we determined those types of physical activity that students find interesting. Ukrainian and Polish school students are most interested in such types of physical activity like sports games (Poland – 36 %, Ukraine – 31 %), riding a bike, a skateboard and roller skates (Poland – 28 %, Ukraine 42 %), as well as swimming and workouts at the gym.

For a detailed evaluation of the level of physical activity, we used methods of time tracking and pace counting and 60 students from Ukraine and 60 students from Poland participated in the research. The observation provided us with the opportunity to estimate the average daily physical activity of 13–15-year-old children living in such megapolises.

Research results showed that pupils in Poland at the age of 13 take an average of 8,8 thousand steps per day, at the age of 14–9,5 thousand steps and at the age of 15–11 thousand steps per day. Students of Ukrainian schools at the age of 13 take 9,1 thousand steps per day, at the age of 14–8,1 thousand steps and at the age of 15–6,7 thousand steps (figure 4). Research results showed that students of both countries do not complete the daily minimum rate of physical activity, which is 10 thousand steps per day. Obtained indicators are below the norm, which indicates a sedentary lifestyle of children of this age group in both countries.

When comparing the pace counting indicators of school students in Ukraine and Poland, a different trend can be observed. If physical activity of students in Poland grows with their age (13 years – 8, 8 thousand steps, 15 years – 11 thousand steps), then it's the contrary in case with the Ukrainian students – physical activity decreases with age (13 years – 9,9 thousand steps, 15 years – 6,7 thousand steps) (figure 4). What is curious, is that physical activity of thirteen-year-old Ukrainians and Poles is practically the same. However, with age, students in Poland tend to increase the level of physical activity from 9 to 11,000 steps per day. Conversely, students in Ukraine tend to decrease the level of physical activity from 9 to 7 thousand steps per day. As a result, fifteen-year-old Ukrainian school students are significantly behind the Poles (7 versus 11 thousand steps per day) in terms of daily physical activity (at $P<0.05$). Reasons for such a decrease in physical activity of Ukrainian school students are well known – intensification of the educational process, a decrease in students' interest in physical exercises, etc. However, reasons for the increase in physical activity of Polish school students undoubtedly requires further research.

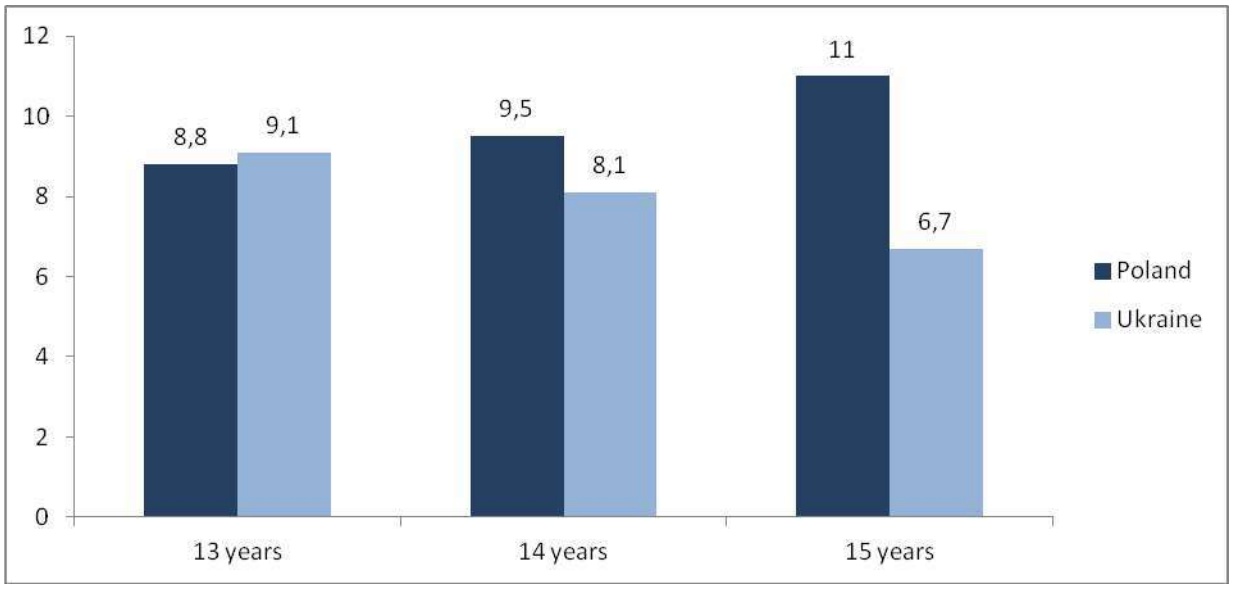

Fig. 4. *Pace Counting Indicators for 13–15-year-old Children*

Conclusions and perspective for further research. Thus, the analysis of the survey results showed that when it comes to various forms of physical activity, students in Ukraine and Poland have common and distinctive features.

Differences are observed in results of the evaluation of physical education classes as the main form of physical activity. Comparison of students' evaluation to education classes showed that the majority of students in Ukraine highly appreciate the lesson (9–10 points: students in Ukraine – 72 %, students in Poland – 42 %). Polish schools' students evaluate physical education classes with a more critical mind (8 points or less: students in Ukraine – 26 %, students in Poland – 58 %).

Differences in responses are observed in students' assessment of their physical fitness: Polish school students, in comparison with the Ukrainian ones, assess their physical fitness with a more critical mind (below average and low level of physical fitness: 6 % for pupils in Ukraine, 18 % for students in Poland), which may indicate either better physical fitness of Ukrainian school students or a falsity of subjective assessment of their physical fitness by Ukrainian school students.

An analysis of the survey results of Ukrainian and Polish students revealed common, identical answers to the questions. Motives driving students of Ukraine and Poland at the age of 13–15 years to attend education classes completely coincide. The main motive driving students of Ukraine and Poland to attend education classes is to improve their physical fitness (62 % of answers).

In their spare time students of Poland and Ukraine prefer the same sedentary activities (28 % of Ukrainian students and 31 % of Polish students spend their free time playing computer games and communicating through social networks; 27 % of Ukrainian students and 32 % of Polish students watch TV shows and listen to music). Received indicators demonstrate that the majority of questioned students (Ukraine – 56 %, Poland – 71 %) are not involved in sports sections, which, in our opinion, can be due to many factors. Ukrainian and Polish school students are most interested in such types of physical activity like sports games (Poland – 36%, Ukraine – 31 %), riding a bike, a skateboard and roller skates (Poland – 28 %, Ukraine 42 %), as well as swimming and workouts at the gym.

Pace counting results showed that students of both countries do not complete the daily minimum rate of physical activity, which is 10 thousand steps per day. Obtained indicators of average daily physical activity are below or near the norm. This indicates a sedentary lifestyle of children of this age group (Ukrainian students – 7,9 thousand steps per day; Polish students – 9,7 thousand steps per day).

There is a tendency for students of Poland to increase physical activity (13 years – 8, 8 thousand steps, 15 years – 11 thousand steps). And, on the contrary, Ukrainian students decrease their physical activity with age (13 years – 9, 9 thousand steps, 15 years – 6,7 thousand steps). Thus, daily physical activity of fifteen–year–old Ukrainian school students (at $P<0,05$) is behind the Poles (7 versus 11 thousand steps per day). Reasons for such a decrease in physical activity of Ukrainian school students are well known – intensification of the educational process, a decrease in students' interest in physical exercises, etc. However, reasons for the increase in physical activity of Polish school students undoubtedly requires further research.

Therefore, further research will be dedicated to studying the social and economic conditions of both countries and their impact on the level of physical activity of teenagers.

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THE PHYSICAL ACTIVITY OF GYMNASIUM AND SECONDARY EDUCATION TEACHERS

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Abstract

Despite a noticeable increase in health awareness of active participation in physical culture, the vast majority of society still does not see a dependency between health and physical activeness. Only a few consider the lack of movement as one of the most harmful factors. Many researches, both Polish and foreign, point to insufficient level of physical activeness among citizens of the European Union, also including Polish ones. The report was aimed at determining the level of declared physical activity of gymnasium and secondary education teachers from Bialski region. In addition, an attempt was made to assess the impact of such variables as sex and subject taught on the level of respondents' physical activeness. There was applied a method of diagnostic survey using an IPAQ questionnaire (International Physical Activity Questionnaire) – short version, last 7 days. The research material consisted of 221 randomly selected gymnasium and secondary school teachers from Bialski region. Due to the subject taught, respondents were divided into two groups: physical education teachers (n=76) and teachers of other subjects (n=145). The largest percentage of groups surveyed consisted of people who had a sufficient level of physical activity, whilst the one third met the criteria of the high level. Only physical activeness of moderate nature significantly differentiated groups surveyed in favour of physical education teachers. Taking sex as a criterion of division of the population surveyed, among the women, a considerable differentiation appeared in the area of walking, whereas the male population did not show significant differences only in the area of intense activity.

Key words: teachers, physical activeness, health.

Анджей Сорока, Джоанна Бай-Корпак. Фізична активність учителів середніх шкіл та гімназій. Незважаючи на значне збільшення інформованості про вплив фізичної культури на здоров'я, основна частина суспільства все ще не бачить залежності між здоров'ям і фізичною активністю. Мало хто розуміє, що гіподинамія є одним із найбільш небезпечних факторів. Багато польських і зарубіжних дослідників указують на недостатній рівень фізичної активності в громадян Євросоюзу, у тому числі й у поляків. ***Мета дослідження*** – визначити номінальний рівень фізичної активності вчителів середніх шкіл та гімназій, які працюють у Бяльському районі. Крім того, ми спробували оцінити вплив таких чинників, як стать і предмет викладання, на рівень фізичної активності респондента. Для проведення анкетування використано опитувальник IPAQ (Міжнародний опитувальник із фізичної активності) – короткий варіант, тривалість – сім днів. Дослідження проводили на 221 учителю середніх шкіл і гімназій Бяльського району, яких обрано випадковим чином. Ґрунтуючись на предметах, котрі вони викладають, респондентів поділено на дві групи: учителі фізкультури (n = 76) та педагоги, які викладають інші предмети (n = 145). Виявлено, що люди, котрі мають достатню фізичну активність, складають найбільший відсоток у групах, тоді як лише в 1/3 респондентів відзначено високий рівень активності. При використанні гендерної приналежності як критерію, за яким респондентів поділяли на групи, можна відзначити, що серед жінок істотні відмінності виявлено під час занять ходьбою, тоді як у чоловічій групі достовірних відмінностей не виявлено тільки при інтенсивних тренуваннях.

Ключові слова: учителі, фізична активність, здоров'я.

Анджей Сорока, Джоанна Бай-Корпак. Физическая активность учителей средних школ и гимназий. Несмотря на значительное увеличение информированности о влиянии физической культуры на здоровье, основная часть общества все еще не видит зависимости между здоровьем и физической активностью. Только немногие понимают, что гиподинамия является одним из наиболее опасных факторов. Многие польские и зарубежные исследователи, указывают на недостаточный уровень физической активности у граждан Евросоюза, в том числе и у поляков. ***Цель исследования*** – определить номинальный уровень физической активности учителей средних школ и гимназий, которые работают в Бяльском районе. Кроме того, мы попытались оценить влияние таких факторов, как пол и предмет преподавания, на уровень физической активности респондента. Для проведения анкетирования использован опросник IPAQ (Международный опросник по физической активности) – короткий вариант, длительность – семь дней. Исследование проводили на 221 учителе средних школ и гимназий Бяльского района, которых выбрали случайным образом. Исходя из предметов, которые они преподают, респондентов поделили на две группы: учителя физкультуры (n=76) и учителя, которые преподают другие предметы (n=145). Выявлено, что люди, имеющие достаточную физическую активность, составляют наибольший процент в группах, тогда как лишь у 1/3 респондентов отмечается высокий уровень активности. При использовании гендерной принадлежности как критерия, по которому респондентов разделяли на группы,

можно отметить, что среди женщин существенные различия выявлены при занятиях ходьбой, тогда как в мужской группе достоверные различия не выявлены только при интенсивных тренировках.

Ключевые слова: учителя, физическая активность, здоровье.

Introduction. Systematically undertaken physical activity, which is an individual's indicator of health culture and health responsibility, determines a proper development of organism as well as prevents from degenerative changes and diseases of civilisation [1; 12]. A rationale for active participation in physical culture seems to be almost obvious – it results from an extremely important role of activity in achieving and improving health potential of a human.

A lifestyle has an influence on our health in about 50 % [20]. Its basis is the physical activeness which has a positive effect on the improvement of morphofunctional indicators and others related to physical fitness and efficiency as well as on the mental condition of an individual.

Defining physical activity as any body movements associated with the work of skeletal muscles, causing an increase of energy expenditure above the level of basic metabolism [8], we represent the view that any kind of effort involving locomotor system has a positive effect on human body.

Due to the role of physical activity, its measurement becomes an aware challenge for scientists from all over the world. Determination of the level of society's physical activeness helps to assess public health. However, there is no compatible position on the minimal physical effort. According to some authors, it is an effort which does not exceed 4–5 units on MET scale (Metabolic Equivalent of Task), and at the same time does not cause the additional expenditure of energy 500 kcal/week [10]. Others, the insufficient physical activity define as the energy expenditure associated with physical activity less than 10 % of total 24-hour energy expenditure [18]. According to recommendations of FAO / WHO / UNU in 2004, the minimum physical effort is specified with the PAL factor (Physical Activity Level) not less than 1,4 [16].

The development of methods and techniques for measuring physical activity is a priority in the field of physical education studies [19]. The precise measurement allows to accurately estimate health benefits of undertaking regular physical activity and to build appropriate programs promoting healthy lifestyle.

The basis of the overall structure of physical culture is physical education whose primary purpose is to raise the physical fitness to a higher level, stimulate physical development and to shape attitudes related to personal concern for the physical condition, physical fitness, beauty and health [3]. In view of the fact that the physical education mainly refers to children and adolescents, the role of a teacher in this field seems to be considerable. According to the authors, particularly important is the attitude of a physical education teacher – in his proceedings should not appear contradictions between what he orders and what he represents. His personality often plays a considerable role in raising awareness of his pupils about the benefits of regular physical activity, thus having an influence on their interest in movement.

Materials and methods of the study. Research material consisted of 77 randomly selected teachers of Bialskie gymnasium and high schools. Respondents were divided into two groups. The first one were physical education teachers (n = 39), of whom 26 respondents were women and 13 men. The second group consisted of 38 teachers involved in subjects other than physical education. Three–quarters of this group were women (n = 29) and 23 % were men (n = 9). Both, the physical education teachers and teachers of other subjects had similar somatic parameters within the sex. However, it should be noted that men in the group of physical education teachers only minimally had the average results of weight–growth parameters in the range of normal body build (24,6 ± 2,2 kg/m^2). The average value of BMI rate in the group of teachers of other subjects was 26,0 ± 2,9 kg/m^2 indicating the access weight among men (tab. 1).

Table 1

Characteristics of Studied Groups of Teachers

Variables	**Groups of teachers**			
	Group of Physical **Education Teachers**		**Group of Other Teachers**	
	Women (n=26)	**Men (n=13)**	**Women (n=29)**	**Men (n=9)**
Body mass (kg)	61,8±6,9	77,6±11,8	60,1±7,9	82,3±9,5
Body height (cm)	163±5,6	177,2±5,6	166,2±4,5	177,7±5,4
BMI (kg/m^2)	22,8±2,7*	24,6±2,2*	21,7±2,6*	26,0±2,9**

* proper body mass (18,5–24,9 kg/m^2).

** excess weight (25,0–29,9 kg/m^2).

The body mass index (BMI), used for this purpose, is the result of the dependency between body mass expressed in kilogr-ams and body height expressed in meters squared. The higher value of the BMI indicator, the greater body mass. The values of this ratio below 18,5 indicate the underweight, the range 18,5–24,9 is the normal weight, 25,0–29,9 is overweight, while the BMI above 30.0 indicates obesity [17]. Due to the small number of teachers qualified as obese, calculations include three ranges that specify body build i.e. underweight, normal body build and overweight.

Weight-growth parameters calculated in the form of BMI indicator showed a similar structure in both studied groups of teachers. More than 70 % of respondents had normal body build. Similar percentages were also observed in individual groups: 76,9 % among physical education teachers and 71,1 % among teachers of other subjects. On average, every fourth teacher was overweight. Comparing groups surveyed, a greater percentage of respondents had the BMI indicator at the level of 25,0 kg/m2 than teachers of other subjects (26,3 %). In the group of PE teachers, the overweight teachers constituted 20,5 % of all respondents. Taking into account the sex of respondents, it was stated that the highest percentage of overweight respondents were men who taught other subjects than physical education (77,8 %). It seemed striking that more overweight women were among PE teachers (15,4 %) (5,1 % more than among women teaching other subjects) (fig.1.).

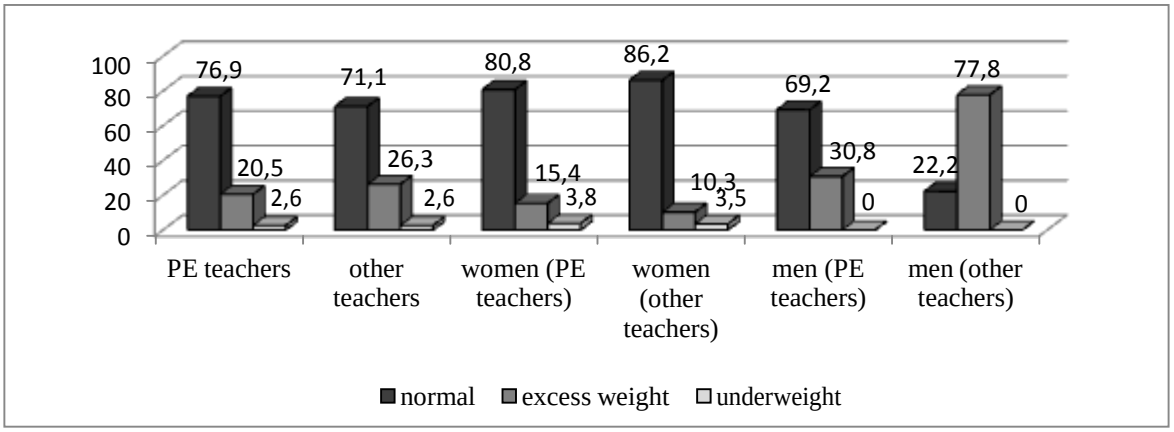

Fig. 1. *Weight*-growth *Parameters of Physical Education Teachers and Teachers of Other Subjects Specifying the Sex of Respondents*

There was applied a method of diagnostic survey using an IPAQ questionnaire (International Physical Activity Questionnaire) – short version, last 7 days, which is especially recommended in the assessment of the level of physical activity of the whole population [6]. This questionnaire is regarded as one of the most widely used survey tools to monitor physical activity.

In the questionnaire are collected information about the amount of time spent on the intensive and moderate exercise as well as on walking, considering all areas of human life. Taken into account are only activities lasting at least 10 minutes and performed in a continuous manner. The physical activity was defined, according to the IPAQ methodology, as a heavy effort that forces to increased respiration and to rapid heartbeat such as aerobics, fast cycling, lifting heavy loads, digging the earth. Moderate physical activity amounts to activities that require the average effort with slightly increased respiration and slightly accelerated heart rate.

A total energy expenditure was calculated on the basis of multiplying the frequency and duration of physical activity by the corresponding intensity expressed in units of MET. A metabolic equivalent of 1 MET corresponds to O_2 consumption at rest and amounts to 3,5 ml O_2/kg of body weight per minute [4].

A question on the self-esteem of physical activity level found its place in specifications. Respondents had a choice of three answers: a high level of physical activity, a satisfactory level of physical activity and physical activity at an unsatisfactory level.

The obtained results were analyzed statistically using Statistica program. There was used a location measure in the form of the arithmetic mean and the measure of variability using the standard deviation. As some analyzed variables did not meet assumptions of parametric test application due to the lack of normal distribution and the lack of equality of variance, the U Mann–Whitney test was used. Differentiations were defined as statistically significant at $p < 0.05$.

Discussion and the results of the study. The analysis of the value of MET – min/week indicator within the overall physical activity showed higher average values in the group of physical education teachers. This ratio reached 4344,1 MET – min/week comparing to 3936,8 MET – min/week of teachers of other subjects. The highest differentiations were found within the moderate nature of physical efforts. It was significantly

higher (p = 0,047) between physical education teachers (1057,4 MET – min/week) and teachers of other subjects (580,0 1057,4 MET – min/week). A group of physical culture specialists had higher values of MET –min/week (without any evidence of significant differences) in the field of activity of intensive nature (1491,21272,6 MET – min/week) in relation to teachers of other subjects (1272,6 MET – min/week). However, pedagogues of other subjects showed higher activity in walking which in their case reached 2084,2 MET – min/week comparing to 1795,5 MET – min/week of physical education teachers (tab. 2, fig. 2).

Table 2

Physical Activity of Groups of Surveyed Teachers (the U Mann-Whitney Test)

Type of Physical Activity	PE Teachers		Other Teachers		U Test Value	Precise, p
	Rank Sum	N	Rank Sum	N		
Intensive	1563,0	39	1440,0	38	0,427	0,665
Moderate	1790,0	39	1313,0	38	1,921	0,047*
Walking	1316,0	39	1581,0	38	–1,013	0,306
Total activity	1565,0	39	1438,0	38	0,448	0,653

* level of essentiality p<0,05.

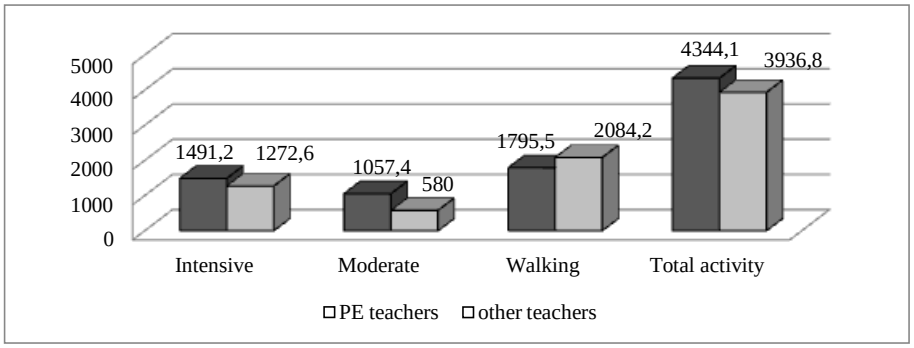

Fig. 2. *Average Physical activity of Groups Surveyed Including the Type of Activity (MET-min/week)*

Studying physical activity of particular groups of teachers with sex taken into account, slightly higher activity was demonstrated by female teachers of other subjects than of physical education ones. The average activity in this group reached 4029,0 MET – min/week comparing to 3951,5 MET – min/week of the group of physical education teachers. The greatest significant differentiation (p=0,049) in favour of female teachers of other subjects appeared in walking which was respectively: 2282,1 MET – min/week and 1729,9 MET – min/week of female physical education teachers. In areas of intensive and moderate physical efforts, female PE teachers reached higher values. However, differentiations were not substantial and did not have signs of statistically significant differences (tab. 3, fig. 3).

Table 3

Physical Activity of Groups of Female Teachers (U Mann–Whitney Test)

Type of Physical Activity	PE Teachers		Other Teachers		U Test Value	Precise p
	Rank Sum	N	Rank Sum	N		
Intensive	774,5	26	795,5	29	0,278	0,780
Moderate	778,5	26	761,5	29	0,851	0,394
Walking	637,5	26	902,5	29	–1,926	0,049*
Total activity	703,5	26	838,0	29	–0,413	0,679

* level of essentiality p<0,05.

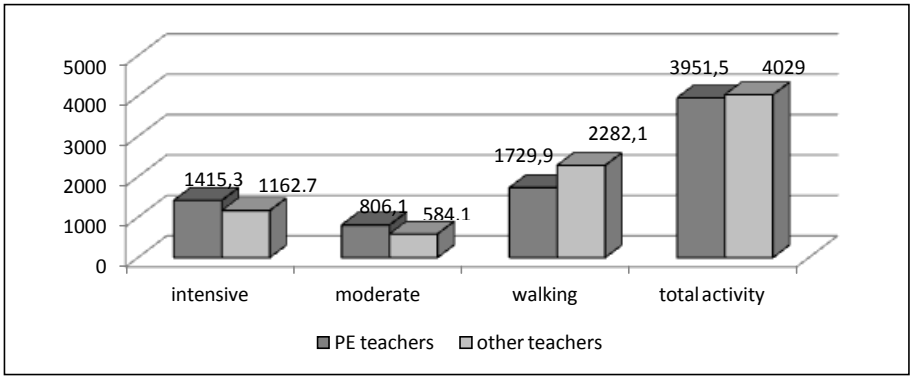

Fig. 3. *Moderate Physical Activity of Women From the Groups of Teachers Considering the Type of Physical Activity (MET–min/week)*

A different situation occurred between two groups of male teachers. In a significant way (p=0,039), physical education teachers presented higher activeness. The average activity in this group was 5129,7 MET–min/week, comparing to 3639,8 MET–min/week of teachers who teach other subjects. In the area of moderate activity, physical education male teachers also showed higher values of essential features (p=0,031) obtaining an average at the level of 1560,0 MET – min/week, comparing to 566,6 MET-min/week of teachers who teach other subjects. A similar dependency was found within the walking (p=0,046), where the activity of PE teachers was 1926,6 MET-min/week, comparing to 1446,5 MET-min/week of teachers of other subjects. The activity of intensive nature in both groups had very similar levels (tab. 4, fig. 4).

Table 4

Physical Activity of Men From Groups of Teachers Surveyed (U Mann–Whitney Test)

Type of Physical Activity	PE teachers		Other teachers		U test Value	Precise p
	Rank Sum	N	rank sum	N		
Intensive	149,5	13	103,5	9	1,124	0,321
Moderate	173,5	13	79,5	9	2,234	0,031*
Walking	160,5	13	92,5	9	1,831	0,046*
Total activity	169,5	13	83,5	9	1,983	0,039*

* level of essentiality p<0,05.

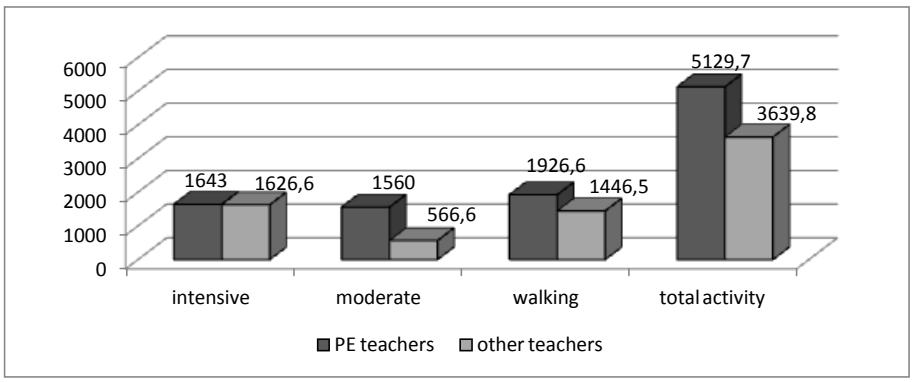

Fig. 4. *Average Physical Activity of Men From Groups of Teachers Surveyed Considering the Type of Activity (MET-min/week)*

Specifying the structure of physical activity, it was shown that 47,6 % of teachers of other subjects than physical education had high physical activity. The group of physical education teachers constituted 25,6 %. In the area of moderate activity, a higher percentage of respondents were pedagogues teaching physical education (59,0 %), whereas a percentage of teachers of other subjects constituted 36,8 % of respondents. Respondents with insufficient physical activity in both groups constituted a similar percentage – respectively, 15,4 % of physical education teachers and 15,8 % of teachers of other subjects. Worth noting is the fact that among women–teachers of other subjects, a group of respondents of high activity was proportionately greater (44,8 %) than a group of physical education teachers (19,2 %). These last mentioned in 65,4 % were characterised with activity known as sufficient, comparing to 44,9 % of ladies from the group of teachers of other subjects. Among men, every third pedagogue (33,3 %) teaching other subjects than physical education had the insufficient level of physical activity. In the group of physical education teachers, the percentage of individuals with the insufficient level of physical activity reached only 15,4 %. Most of respondents in this group met the requirements for the insufficient level of physical activeness (46,1 %), whereas the high level applied to 38,5 % of PE teachers surveyed. In the group of pedagogues teaching other subjects, the percentage of the physical active at the highest level was 55,6 %, while those presenting the physical activeness at the sufficient level 11,1 % (fig. 5).

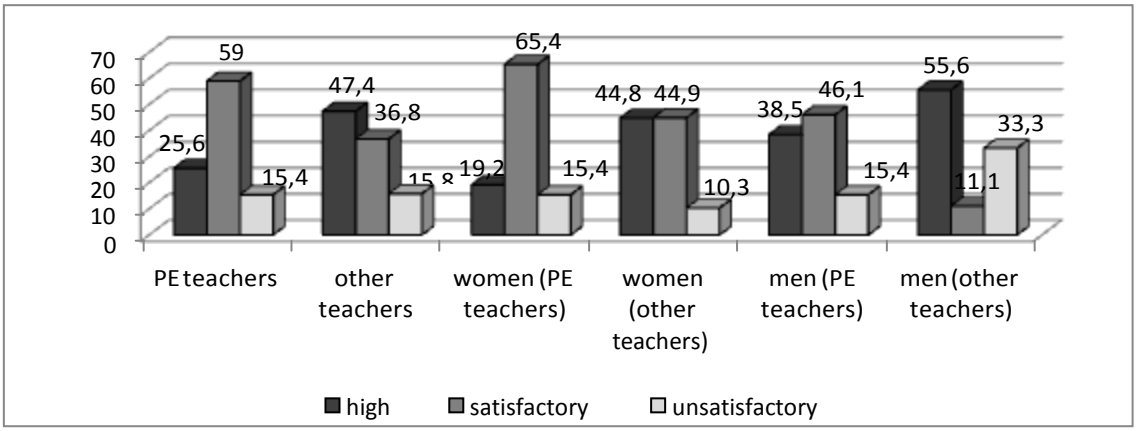

Fig. 5. *The Level of Physical Activity of PE Teachers and Teachers of Other Subjects Specifying the Sex of the Surveyed*

The study of self-assessment of the level of teachers' physical activity showed that 94,9 % of physical education teachers defined their physical activeness as satisfactory, the remaining 5,1 % defined it as high. In the group of physical education teachers, 100 % of women teaching physical education considered their level of physical activity as satisfactory, while among men this percentage was 84,6 %. The remaining respondents defined their activeness as high. Among pedagogues teaching other subjects than physical education, the group of respondents defining their physical activity as high constituted 13,2%, as satisfactory 63,2 %, whereas as unsatisfactory 23,6 %. Taking into account the sex of teachers, it was stated that the highest percentage of men defined their level of physical activity as satisfactory (44,4 %), 33,4 % as unsatisfactory and 22,2 % as high. The majority of female teachers of other subjects than physical education defined their physical activity at the satisfactory level (68,9 %). Only 10,3 % of women in this group defined their activity as high, while 20,8 % are dissatisfied with their levels (fig. 6).

Regular physical activity is regarded as an effective means of promoting physical and mental health [9]. A positive correlation has been proven between physical activity and mood improvement, better self–perception and higher self–esteem [15]. Physical activity also decreases depression and anxiety [11].

A confirmation of the validity of physical activity is undoubtedly the fact of placing it in the National Health Program (1996–2005) in the first place among eighteen operational aims of the writing to increase the physical activity of the whole population [13].

According to the report from 2009 about the health of Polish people and their physical activity in comparison to the European Union countries, we still are not a population intensively and systematically participating in recreational physical activity. The physical activity of Polish people is considered very low and unsatisfactory. This phenomenon is even more disturbing due to the fact that its level is a positive measure of health [7].

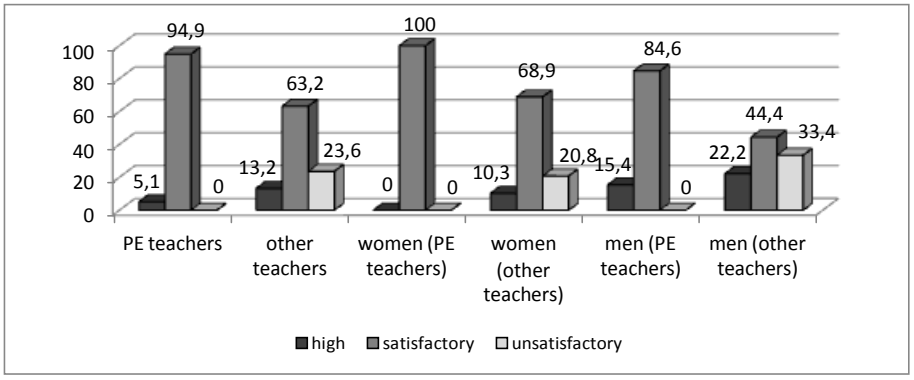

Fig. 6. *Self-esteem of Physical Activity Level of PE Teachers and Teachers of Other Subjects Considering the Sex of Respondents*

In the literature there are many publications related to the physical activity of various socio-professional groups. Unfortunately, most of them only refers to the activity undertaken in leisure time. Additionally, problematic seems to be a comparison of research results conducted with various research tools.

The authors of this paper used a short version of the International Physical Activity Questionnaire (IPAQ), particularly recommended to assess the level of physical activity of a large population [6]. Piątkowska [14] emphasizes that it shows physical activity as the overall picture and not just as the participation in sports and recreational activities like many other studies carried out in Poland.

The results presented in this report show significant differences in the level of total physical activity among physical education teachers and teachers of other subjects. The percentage of highly active teachers ranged from 19 % in the case of women teaching physical education to 55 % in the group of teachers of other subjects. Comparing the above data with those obtained in 2009, in which the research material also consisted of respondents associated with bialska education, a decline appeared in the percentage of the most active from 40 to 31 % [2].

The analysis of the literature shows that the level of physical activity decreases with the age [7]. This process begins in the early years of schooling. In addition, regardless of the age category, women have lower physical activity than men. Meanwhile, the highest percentage of respondents who do not meet the criteria of sufficient level is reported within a group of men (fig. 5).

It would seem that specialists in the field of physical culture should have a proportionately higher physical activity than teachers of other subjects. However MET-min/week values show only 4 % difference. In this case, it somehow contradicts the statement that physical activeness associated with professional work plays a dominant role [2].

The authors of report joined to the questionnaire survey a question on self–esteem of physical activity level. A comparative analysis of the facts of made self–esteem showed significant discrepancies. The vast majority of physical education teachers (95 %) were satisfied with their level of physical activity. Meanwhile, according to the IPAQ criteria for a sufficient level, only 59 % of them complied with the standards. Similar proportions were observed in the case of teachers of other subjects – self-esteem at satisfactory level was higher than that of the facts by more than 26 % (fig. 5, fig. 6). It was worrying that over 15 % of respondents from both groups did not meet the criteria for an acceptable level of physical activity. These results indicate a need to raise public awareness of the positive values of active recreation and to implement programs promoting healthy lifestyle. It should be remembered that the correct estimation of the level of physical activity, the identification of its conditioning factors as well as causes of diversification are not just important but absolutely essential [14].

Conclusions. The analysis of the physical activity declared by respondents helped to formulate the following conclusions:

1. The highest percentage of the group surveyed consisted of people having a sufficient level of physical activity and almost one in seven respondents did not have a sufficient activity.

2. Statistically significant differences in the size of the index MET–min/week between physical education teachers and teachers of other subjects were found in the area of moderate physical activity.

3. Taking gender as a criterion of division of group surveyed, it was showed that in women's group significant differences were found only within the walking, while in men's group statistically significant differences did not only appear in the area of intense activity.

4. The level of physical activity of teachers surveyed based on the criteria defined in accordance with the IPAQ methodology was not adequate with the self–esteem of respondents.

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FORMING A HEALTHY STUDENT LIFESTYLE AS A PART OF HEALTH CULTURE

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Abstract

Health culture is a particular aspect of human culture which reflects the level of people's knowledge concerning their vital activities, people's attitude to their own health. The outspoken tendency towards students' health deterioration observed for the last few years has been caused to a great extent by lack of conscious attitude to one's own health, as well as lack of understanding its significance for one's own good and future life. It is possible to solve this problem only by changing people's lifestyle, giving priority to health-preserving objectives. ***The goal of the research*** is to determine the factors of healthy lifestyle and to substantiate the necessity of raising the level of students' health culture. ***Results of the research.*** The essence and significance of health culture have been exposed**.** The necessity of adhering to a healthy lifestyle as the manifestation of people's health culture has been defined. The factors that influence the formation of students' healthy lifestyle have been studied. The role of education and extra-curricular activities in the formation of students' health culture has been specified. ***Conclusions.*** There is a problem connected with students' non-adherence to a healthy lifestyle. Nowadays the rate of students' physical activity in Ukraine is rather low. The number of persons who are instructed in special medical groups due to their poor health condition is growing. Educational institutions whose task is to form a system of values oriented on keeping to a healthy lifestyle play a considerable role in raising students' physical activity. New approaches are necessary to form students' appreciative attitude to their own health, healthy lifestyle and forming health culture.

Key words: health culture, healthy lifestyle, health factors, motion activity, harmful habits, health self- rating.

Сергій Цимбалюк. Формування здорового способу життя студентів як складової культури здоров'я. Культура здоров'я – це окремий аспект загальнолюдської культури, що відображає рівень освіченості людей у сфері їх життєдіяльності, ставлення індивідів до власного здоров'я. Виражена тенденція до погіршення стану здоров'я студентської молоді впродовж останніх років значною мірою зумовлена відсутністю свідомого ставлення до власного здоров'я, розуміння його значення для себе та свого майбутнього. Розв'язати назрілу проблему можливо, лише змінивши спосіб життя, виділивши в пріоритеті здоров'язберігальні орієнтири. ***Мета дослідження*** – визначення чинників здорового способу життя та обґрунтування необхідності підвищення рівня культури здоров'я студентів. ***Результати роботи.*** Розкрито сутність і значення культури здоров'я. Визначено необхідність дотримання здорового способу життя як прояву культури здоров'я населення. Досліджено чинники впливу на формування здорового способу життя студентів. Визначено роль освіти та позааудиторних занять у формуванні культури здоров'я студентів. ***Висновки.*** Існує проблема недотримання студентами здорового способу життя. Рівень фізичної активності студентської молоді в України на сьогодні є досить низьким. Зростає кількість осіб, які за станом здоров'я перебувають у спеціальній медичній групі. Значну роль у підвищенні фізичної активності студентів відіграють навчальні заклади, завдання яких – формування системи цінностей, орієнтованих на ведення здорового способу життя. Потрібні нові підходи до формування ціннісного ставлення студентів до власного здоров'я, здорового способу життя та формування культури здоров'я.

Ключові слова: культура здоров'я, здоровий спосіб життя, чинники здоров'я, рухова активність, шкідливі звички, самооцінка здоров'я.

Сергей Цимбалюк. Формирование здорового образа жизни студентов как составляющей культуры здоровья. Культура здоровья – это отдельный аспект общечеловеческой культуры, который отражает уровень образованности людей в сфере их жизнедеятельности, отношение к собственному здоровью. Выраженная тенденция к ухудшению состояния здоровья студенческой молодежи в последние годы в значительной степени обусловлена отсутствием сознательного отношения к собственному здоровью, понимания его значения для себя и своего будущего. Решить назревшую проблему можно, лишь изменив образ жизни, выделив в приоритете здоровьесберегательные ориентиры. ***Цель исследования*** – определение факторов здорового образа жизни и обоснование необходимости повышения уровня культуры здоровья студентов. ***Результаты работы.*** Раскрыты сущность и значение культуры здоровья. Определяется необходимость соблюдения здорового образа жизни как проявления культуры здоровья населения. Исследованы факторы влияния на формирование здорового образа жизни студентов. Определяется роль образования и внеаудиторных занятий в формировании культуры здоровья студентов. ***Выводы.*** Существует проблема несоблюдения студентами здорового образа жизни. Уровень физической активности студенческой молодежи в Украине на сегодня является достаточно низким. Увеличивается количество лиц, которые по состоянию здоровья входят в специальную медицинскую группу. Важную роль в повышении физической активности студентов играют учебные заведения, задачей которых является формирование системы ценностей, ориентированных на ведение здорового образа жизни. Необхо-

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димы новые подходы к формированию ценностного отношения студентов к собственному здоровью, здорового образа жизни и формирование культуры здоровья.

Ключевые слова: культура здоровья, здоровый образ жизни, факторы здоровья, двигательная активность, вредные привычки, самооценка здоровья.

Introduction. Modernization of higher school, intensification of instruction activities and transition from conventional process of instruction to innovation technologies considerably increase the requirements to students' health [2, p. 84]. The period of studying at higher school is a period of socialization of a young person, who accumulates knowledge and skills, life experience forming at the same time their interests and values, corresponding norms and patterns of behaviour [3, p. 11]. Taking this into account, one of the priority tasks of the higher school is the formation of a totality of spiritual values, knowledge, skills and practices directed at creating health-favourable conditions that can be united in a certain type of culture – «health culture» [12, p. 129].

Literature Sources Analysis shows that a lot of scientists give their attention to the definition of the notion of health culture and the classification of factors influencing its formation in their research works. In particular, approaches to the health phenomenon definition [1; 3; 7], conditions of forming a healthy lifestyle [2; 9; 10; 11; 15], health-forming factors and health diagnostics [2; 5; 6; 12; 13; 14] are investigated. However, a low rate of physical activity and deterioration of students' health cause the necessity of monitoring healthy lifestyle factors and searching the ways of raising the level of people's health culture.

The aim of the Research is to determine the factors of healthy lifestyle and to substantiate the necessity of raising the level of students' health culture.

The Material and Methods Used for the Research are as follows: analysis and comparison of the results of students' physical activity scientific investigations; analysis of the statistics data as to the dynamics of the number of students engaged in various kinds of physical activity and those who belong to a special medical group due to their health problems; summing up the data of scientific literature and program-normative documents, pedagogical observations for the substantiation of the ways of solving the problem of the research.

Results of the Research. Discussion. The formation of students' health culture is an important factor in their successful mastering the chosen speciality as only a healthy person is able to study successfully, to be resistant to both physical and psychical stress-provoking factors, to possess high working capacity and mental maturity [12, p. 130]. Health culture is determined by a certain stereotype of mentality, behaviour and activities which contributes to preserving and strengthening human health and determines a careful attitude to other people's health [5, p. 89].

Living a healthy life is one of the manifestations of high level of human health culture which means caring about health as the greatest value. Numerous investigations have led to the conclusion that the most powerful factors of healthy lifestyle are full value sound nutrition, a daily time-table, eradication of harmful habits, optimal physical activity, sexual connection culture, lessening the impact of depression, psycho-emotional stability, rational schedule of work and rest etc. The level of knowledge, interest and motivation to physical exercise and sport is also of a remarkable importance. The above lifestyle factors require priority attention and are common for all groups of students which is proved by other investigations [3].

Regulated physical activity is a weighty factor influencing the state of human health. Insufficient physical activity causes considerable deterioration of somatic, vegetative and social functions. Such a state is called hypodynamia. According to our calculations based on the official statistics data about 10,5 % of the Ukrainian population aged 16 and more are engaged in various kinds of health and fitness work, but only about 3 % (2,7 % in 2013 and 2,3 % in 2015) regularly go in for sport (table 1).

Table 1

Indicators of Physical Activity of the Ukrainian Population*

Indicators	2010	2011	2012	2013	2014	2015
Number of residents, *ths. people*	45598,2	45453,3	45372,7	45245,9	42759,7	42590,9
Number of people indulging in sport, *ths. people*	1166,4	1223,2	1218,8	1229,8	1011,2	978,2
Number of people, engaged in all kinds of health and fitness work, *ths. people*	4740,4	4733,7	4644,6	4883,6	4356,3	4388,9
Percentage of people indulging in sport, *%*	2,6	2,7	2,7	2,7	2,4	2,3
Percentage of people engaged in all kinds of health and fitness work, *%*	10,4	10,4	10,2	10,8	10,2	10,3

Source: [4, p. 12].

A positive tendency towards the increase in physical activity among students should be noted. In particular, the percentage of young people who studied at the institutions of higher learning and were involved in various kinds of health and fitness work in the period from 2010 to 2015 was gradually rising from 24,1 % to 31,9 % from the total amount of students. The students of higher educational establishments of I–II levels of accreditation were more physically active, and the percentage of those involved in health and fitness work among them increased from 57,9 % in 2010 to 83,1 % in 2015. The young people studying at higher educational establishments of III-IV levels of accreditation did not spare enough attention to physical exercise, and the percentage of those physically active was considerably smaller – 18,4 % in 2010 and 23,3 % in 2015 (table 2).

Table 2

Indicators of Physical Activity Among Students of Higher Education in Ukraine, %

Indicators	2010	2011	2012	2013	2014	2015
The share of university students, engaged in all kinds of health and fitness work, *including:*	24,1	25,8	25,9	30,5	32,0	31,9
I and II levels of accreditation	57,9	61,4	61,7	69,3	79,8	83,1
III and IV accreditation	18,4	19,3	19,1	23,1	23,7	23,3
The share of university students on special medical groups, including:	5,0	5,0	5,3	5,2	6,2	7,5
I and II levels of accreditation	12,8	13,3	13,4	14,2	20,0	23,8
III and IV accreditation	3,6	3,5	3,7	3,5	3,8	4,8

Source: [4, c. 12].

Nevertheless, not all the students give due attention to motion activity. Each forth second-year student and almost each third fourth-year student consider their physical activity to be very low. Though the students of the fourth course have fewer Physical Education classes in their time-table, there is a greater number of persons among them who take sports in specialized sports clubs [3, p. 13]. Only 40–50 % of students are involved in mass sport work**.** During the period from 2010 to 2015 the number of students engaged in different kinds of health and fitness work remained almost at the same level, but after 2013 an insignificant tendency towards decrease was observed. The fact that the level of students' motion activity at higher educational establishments of III–IV levels of accreditation is by one third lower than that at higher educational establishments of I–II levels of accreditation draws attention (fig.1).

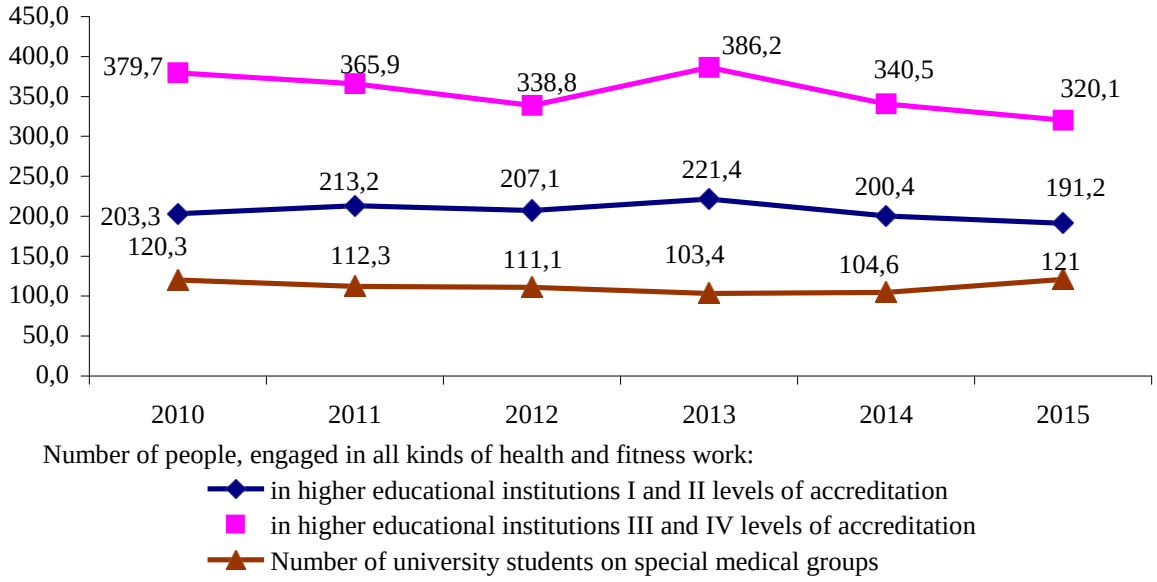

Fig. 1. *Physical Activity of Students in Higher Education in Ukraine Compiled on the basis of: [4, p. 12].*

A significant amount of students have medical exemption from basic Physical Education classes (a special medical group (SMG) including persons that have to be instructed according to a special program because of health problems). In accordance with the statistics data the growth of the number of students instructed in SMG was noticed in 2015 when their percentage increased to 23,7 % from among those involved in sport and fitness work (28,6 % – SMG students at higher schools of I–II levels of accreditation and 20,7 % – at higher schools of III–IV levels of accreditation).

To the leading group of factors which have negative impact on health belong harmful habits (smoking, alcohol consumption and drugs). According to the data presented by the State Statistics Agency of Ukraine about 20 % of the population have a harmful habit of smoking.

The results of some research works [3, p. 13] show that every fifth young man and every tenth young girl have harmful habits. The indices of smoking among young people aged from 18 to 29 on grounds of gender testify that about 40 % of men from the above age group have this harmful habit. As far as women are concerned, this index is much smaller (table 3).

Table 3

Indicators of Smoking People by Age and Sex

Years	Number of People Aged 12 and Over who Reported that Smoke, *thn*			Percentage of the Total Population Aged 12 Years and Older to the Appropriate Group		
	all	men aged 18–29 years	women aged 18–29 years	All	Men Aged 18–29 Years	Women Aged 18–29 Years
2010	8706,4	1783,9	355,2	22,4	45,8	9,6
2011	8595,1	1839,4	312,4	22,3	46,9	8,5
2012	8354,9	1587,2	265,2	21,8	42,6	7,3
2013	8104,3	1517	326,1	21,3	40,2	8,9
2014	7253,7	1268	208,9	20,9	38,4	6,8
2015	6205,7	1113,7	159,8	18,4	34	5,5
2016	6479,6	1127,8	153,4	19,3	37,8	5,5

Source: [8, p. 113].

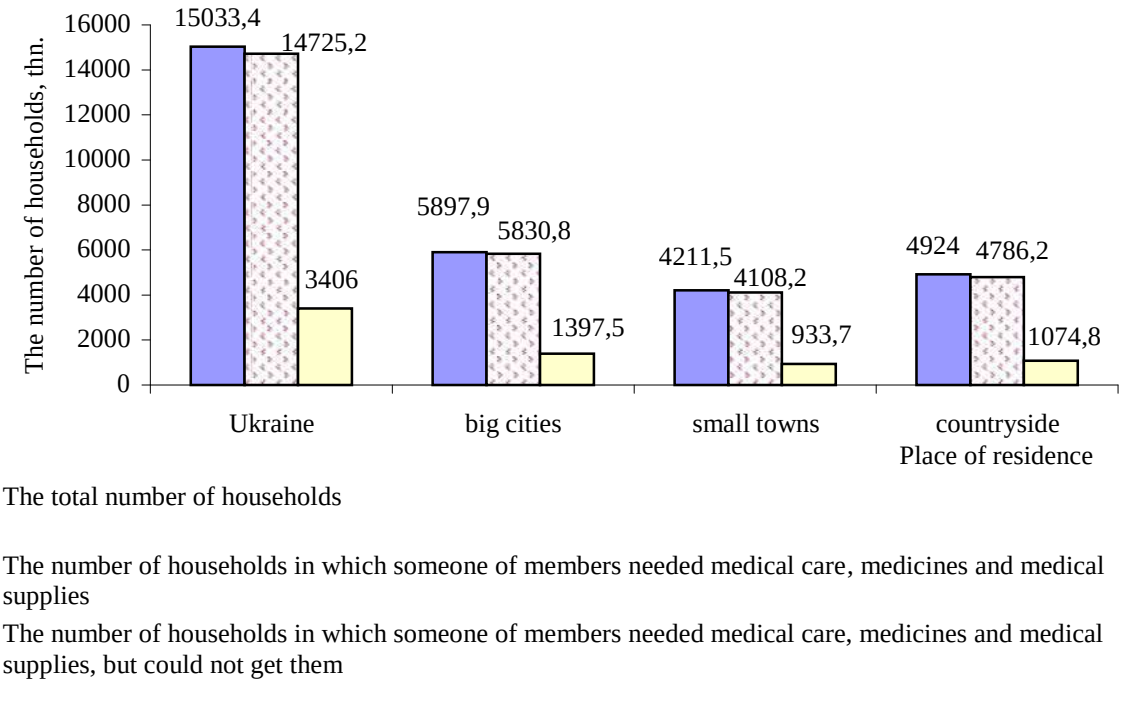

Fig. 2. *Level of Accessibility of Healthcare Services in Ukraine in 2016 [8]*

It should be noted that according to the information from the table a positive tendency towards the decrease of the number of those who smoke from 8706,4 thousand people (22,4 %) in 2010 to 6479,6 thousand people (19,3 %) in 2016. Among the young people aged from 18 to 29 the number of persons who admitted having the harmful habit during the period of conducting research also decreased – men by 17,5 % and women by 42,7 %.

A health-preserving behavior is developed by a person by taking into consideration a number of factors. Positive changes were caused by a number of reasons, and namely, by increased interest of young people in their own health and popularization of healthy lifestyle. At the same time, economic factors also played a significant part. As one can see from table 1, the percentage of smokers considerably decreased after economic crisis of 2012–2014, which resulted both in rising the prices on tobacco, and reduction of real income of the population.

An important health factor is medical activity and accessibility to medical service. The system of market relations which is being gradually formed in our country, problems in the sphere of healthcare induce to systematic monitoring and analyzing its indices, considering trends. In 2016 about 96 % of households in Ukraine needed medical aid and medicines, but nearly 23 % of them were not able to receive this for a number of reasons (fig. 2).

It should be noted that official statistics indices do not reflect the real state of the problem as they are influenced by a number of objective and subjective factors. Thus, in particular, the index of population sickness rate, which is formed by patients' appointments at the doctor's, is influenced by a possible wish of a person to consult the doctor, the qualification of medical staff, logistics support, reporting at local and state levels [3].

The quality of medical aid is considered to be the main reason for using medical services on a fee-paying basis by more than a half (54,9 %) of respondents. Vital necessity and a complicated situation urged 48,8 % of respondents turn to fee-for-service medicine.

Human health depends to a great extent on the people's well-being. Valeological outlook, however, does not always take the first place in comparison with things and other material goods. Exact dependence of the population health condition on the income received cannot be traced by means of statistics accounts data as it was the persons belonging to the households with the lowest level of per capita total income, who gave the highest rate of their state of health. On the one hand, such a tendency can be explained by subjectivity of the given results – persons with low income have no possibility to receive access to innovative technologies in medicine and healthcare, thus their requirements to their own health can be somewhat lowered (table 5).

Table 5

Self-rating of the Population Health Condition Depending on the Income

All Households Including Those with Average in Equivalent General Incomes to a Month, UAH	**Population, thn. people**	**Good**	**Normal**	**Bad**
	38841,9	**49,1**	**40,5**	**10,4**
to 480,0	4,7	61,5	33,2	5,3
480,1 – 840,0	170,9	77,7	19,9	2,4
840,1 – 1200,0	842,1	57	37,4	5,6
1200,1 – 1560,0	2580,1	51,2	37,7	11,1
1560,1 – 1920,0	5375,9	50,8	38,1	11,1
1920,1 – 2280,0	6291,2	45,5	41,9	12,6
2280,1 – 2640,0	6295,6	49,2	40,3	10,5
2640,1 – 3000,0	4797,7	50,4	39,5	10,1
3000,1 – 3360,0	3692,4	44,6	43,9	11,5
3360,1 – 3720,0	2771,6	44,8	44,5	10,7
over 3720,0	6019,7	52,2	40	7,8

Compiled on the basis of: [8, p. 76].

At the same time, piling up expensive and fashionable things has become the aim of life for many people, thus causing psychological dependence on material goods. For the sake of this they neglect their physical and spiritual perfecting, harmonious personality development, thus damaging their health.

Physical passiveness is characteristic of the majority of young people (84–86 %), and elderly persons (95–97 %). Ukraine considerably yields to the corresponding average indices in Europe, where almost every second person is involved in physical training and sports activity [1, p. 20]. The population health condition

determined by the results of self-rating is rather low with reference to the EU countries which is the consequence of insufficient motion activity of people in Ukraine and a low level of health culture on the whole (table 6).

Table 6

Distribution of the Population of Ukraine and the EU Countries According to Health Condition Self-rating Within the Period of 2015–2016, %

Country	The Share of People Aged 18 and Older who Rated Their Health As			The Share of People Aged 16 and Over with Chronic Diseases or Health Problems
	good	normal	bad	
EU [1]	66,3	23,9	9,8	34,2
Sweden	79,2	16,8	4	34,4
Greece	73,5	16	10,5	23,6
Romania	69,2	22,1	8,7	20,1
Austria	69,1	21,8	9,1	34,8
France	67	25	7,9	37,5
Germany	63,5	27,9	8,5	42,5
Czech Republic	60,9	27,9	11,2	34,2
Poland	57	28,5	14,5	35,8
Hungary	55,7	28,3	16	39,4
Latvia	45,5	38	16,5	41,2
Lithuania	42,1	40	17,9	34,7
Ukraine [2]	**42,4**	**45,1**	**12,5**	**43,5**

Compiled on the basis of: [8, p.76].

The primary role in preserving and forming human health belongs nevertheless to people themselves, their lifestyle, values, attitudes, degree of harmonization of their inner world and relationships with their surroundings.

In our opinion, it is impossible to raise the rate of physical activity and to stop the tendency towards people's health deterioration without changing the way of people's life. Sharing the opinion of some researchers we can state that health as a factor is quite manageable, it can and must be managed. A healthy lifestyle is an effective means of forming and preserving human health. The attitude of an individual to their own health, physical abilities and capabilities is an integral result of upbringing and self-upbringing, that is why the formation of a healthy lifestyle is considered by scientists as a component of educational process.

Nowadays we can see the problem connected with students' non-observing a healthy lifestyle. Taking this into account, one of the priority tasks of higher school is preserving, strengthening and forming the health of students. The leading place in the life of higher school should be taken by harmonious development of material and spiritual conditions, possibilities and aspects of formation and popularization of healthy lifestyle among students, implementation of special programs of its cultivation, preservation and reproduction of health [3].

The use of the full potential of extra-curricular work with students is also of great importance. More specifically, the results of sociological studies show that different kinds of health gymnastics (shaping – 20 %, fitness – 19 %, aerobics – 19 %), non-conventional methods (martial arts – 15 %, yoga – 22 %), exercises in water (aqua aerobics – 17 %, swimming – 28 %) enjoy popularity among students [9, p. 181]. Spending spare time by students should be regarded not only as the preparation for their basic professional classes but also as a possibility of improving their physical development.

Conclusions. 1. It has been determined that health culture is a particular aspect of human culture which reflects the level of people's knowledge concerning their vital activities, people's attitude to their own health. The formation of students' health culture is an important factor in their successful mastering the chosen profession as only a healthy person is able to study successfully, to possess high working capacity and mental maturity. Health culture is realized through a special kind of human activity – a healthy lifestyle. 2. Physical activity is one of the major factors of healthy lifestyle. At present the level of students' motion activity in Ukraine is rather low. The number of persons who are included in special medical groups because of health problems is growing. 3. A significant role in raising physical activity of students is played by educational institutions whose task is to form a system of values oriented on keeping to a healthy lifestyle. 4. New approaches to forming students' appreciative attitude to their own health, healthy lifestyle and forming

health culture are necessary. It is important to strengthen the significance of extra-curricular work with students and spending their free time trying to improve health and raise the rate of physical activity.

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PSYCHOPHYSIOLOGICAL CHARACTERISTICS OF THE TEMPERAMENT OF FOREIGN STUDENTS

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Abstract

Personality it's a special ability, which individual gain in the process of continuous relations. From one side – human find consistency at their actions, emotions, thoughts. That is, they have certain personality traits. On the other side – there are no people that are completely alike. That's why, question of differences between individuals until this day stays actual. ***The goal of the research.*** The aim of this research was sent to the study of the possibilities to use methods of Eysenck for the diagnostics of personality traits and types of foreign students of second course of the Ivano–Frankivsk National Medical University. ***Methods of research.*** The study involved 94 unofficial students of the 2 course, boys and girls ages from 19 to 29. Psychodiagnostic survey was held for the use of the (Eisenck Personality Questionnaire (EPQ). The test was carried out on computers for programming software, that was roughened for use by Globovim O. M. (Oleksii Hliebov, American University of Integrative Sciences, School of Medicine, St. Maarten). The results were summarized in the SPSS (Statistical Package of the Social Science) program complex. ***Research results.*** According to the study, foreign students of 2nd year with pronounced traits of extraversion (54 %) and emotional stability, better taking time to adapt to new environmental conditions and the learning process. ***Conclusions.*** Determining the type of personality makes it possible to better understand the individual characteristics of the student, his behavior, activities, makes better use of its positive features.

Key words: type of personality, Eysenck test, foreign students, temperament.

Яна Ушко, Олексій Глєбов, Ірина Дубковецька, Тетяна Глєбова. Психофізіологічні особливості темпер**аменту іноземних студентів.** Особистість – це особлива якість, яку індивід набуває в процесі безперервних взаємин. З одного боку, людина виявляє постійність у своїх вчинках, емоціях, думках. Тобто вона має певні риси особистості. З іншого – не існує цілком схожих один на одного людей. Тому питання відмінностей між індивідами й по сей день залишається актуальним. ***Мета дослідження*** – вивчення можливостей використання методики Айзенка для діагностики рис особистості та типів у іноземних студентів другого курсу Івано-Франківського національного медичного університету. ***Методи дослідження.*** У дослідженні взяло участь 94 іноземні студенти другого курсу, чоловіки та жінки віком від 19 до 29 років. Психодіагностичне обстеження проведено за допомогою опитувальника Айзенка (Eysenck Personality Questionnaire, EPQ). Тестування здійснювали на комп'ютерах із використанням програмного забезпечення, яке розроблено безпосередньо для дослідження О. М. Глєбовим (Oleksii Hliebov, American University of Integrative Sciences, School of Medicine, St. Marten). Обробку результатів проводили в програмному комплексі SPSS (Statistical Package of the Social Science). ***Результати дослідження.*** За результатами дослідження, іноземні студенти другого курсу мають виражені риси екстраверсії (54 %) та емоційної стабільності, що дає змогу краще проходити період адаптації до нових умов середовища й процесу навчання. ***Висновки.*** Визначення типу особистості уможливлює краще розуміння індивідуальних властивостей студента, його поведінки, напряму діяльності, дає змогу більш ефективно задіяти його позитивні риси.

Ключові слова: типи особистості, тест Айзенка, іноземні студенти, темперамент.

Яна Ушко, Алексей Глебов, Ирина Дубковецкая, Татьяна Глебова. Психофизиологические особенност**и темперамента иностранных студентов.** Личность – это особое качество, которое индивид приобретает в процессе непрерывных взаимоотношений. С одной стороны, человек проявляет постоянство в своих поступках, эмоциях, мыслях. То есть он имеет определенные черты личности. С другой – не существует полностью похожих друг на друга людей. Поэтому вопрос различий между индивидами и по сегодня остается актуальным. ***Цель исследования*** – изучение возможностей использования методики Айзенка для диагностики черт личности и типов в иностранных студентов второго курса Ивано-Франковского национального медицинского университета. ***Методы исследования.*** В исследовании приняло участие 94 иностранных студентов второго курса, мужчины и женщины в возрасте от 19 до 29 лет. Психодиагностическое обследование проводили при помощи опросника Айзенка (Eysenck Personality Questionnaire, EPQ). Тестирование проводилось на компьютерах с использованием программного обеспечения, которое было разработано непосредственно для исследования

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А. Н. Глебовым (Oleksii Hliebov, American University of Integrative Sciences, School of Medicine, St. Marten). Обработку результатов проводили в программном комплексе SPSS (Statistical Package of the Social Science). ***Результаты исследования.*** По результатам исследования, иностранные студенты второго курса имеют выраженные черты экстраверсии (54 %) и эмоциональной стабильности, что позволяет лучше проходить период адаптации к новым условиям среды и процесса обучения. ***Выводы.*** Определение типа личности дает возможность лучшего понимания индивидуальных свойств студента, его поведения, направления деятельности, позволяет более эффективно задействовать его положительные черты.

Ключевые слова: типы личности, тест Айзенка, иностранные студенты, темперамент.

Iintroduction. Understanding the moral and psychological essence of nature of the personality plays an important role in the educational and work organization of different types of rehabilitation to improve quality of human life. Self, achieving goals, understanding their professional orientation, its place in the world helps to better fulfill themselves in life. To do this, everyone have to understand of himself as a person [4; 6].

Personality it's a special ability, which individual gain in the process of continuous relations. From one side – human find consistency at their actions, emotions, thoughts. That is, they have certain personality traits. On the other side – there are no people that are completely alike. That's why, question of differences between individuals until this day stays actual [2; 3; 5].

The undisputed contribution to the measurement of the main features that form the core of personality, was made Eysenck H. In his conceptual and empirical approaches to solving this problem, he tried to show how the structure of personality traits affect the behavioral responses of the individual. So, Eysenck underlines in specificity two most important parameters: introverts-extroverts and stable-neurotism. Within time, he underlines the third parameter, which is called psychoticism – super–ego. Eysenck was confident that for explanation of more action reactions of the human being there should be only defined three traits. He underlines, that traits of individual and types conditioned, at first by heredity. But, he does not exclude also influence of the situation and environment around them [1; 2].

Our research is devoted to the study of individual characteristics, namely, diagnosis of temperaments of foreign students of Medical University. Their stay in another country for training associated with certain difficulties and manifestations of adaptation. Emotions and motivation in the profession of «doctor» is an important and relevant aspect. Because they characterize the personality and influence the behavior and activity of future specialist. That is why, the problem of the diagnosis of temperament in the profession of «doctor» is important and relevant. This is reflected in a professional activity, teamwork, making decisions, create suitable psychological climate with the patients [2; 4; 6].

The goal of the research. The aim of this research was sent to the study of the possibilities to use methods of Eysenck for the diagnostics of traits of specialty types in foreign students of second course of the Ivano-Frankivsk National Medical University.

Materials and methods of the study. The study involved 94 foreign students of the 2 course, boys and girls ages from 19 to 29. Psychodiagnostic survey was held for the use of the Eysenck Personality Questionnaire (EPQ), that have 60 questions. In addition, questionnaire include a scale for the sincerity for detection of individual susceptibility to the falsification of responses to show themselves in better attractive way.

The test was carried out on computers for programming software, that was roughened for use by Globovim O. M. (Oleksii Hliebov, American University of Integrative Sciences, School of Medicine, St. Marten). The results were summarized in the SPSS (Statistical Package of the Social Science) program complex.

Results of the study. Discussion. Received results were seen first by scale of sincerity. This scale diagnose individual predisposition to give socially desirable answers. So if this figure exceeded 6 points, one could argue that the respondent was not sincere in answering the test questions.

According to this scale it can be argued that 68 % of foreign students are not inclined to give socially desirable answers and we can trust them. For 22 % test showed typical situational sincerity. 10 % of students do not tend to sincere respond to the questionnaire. In the future, these students were excluded from the study, their responses were not included.

Eysenck distinguishes two types: introversion-extraversion and neuroticism–stability. These two measurements of individual are orthogonal, that they are not statistically independent of each other. Accordingly, all the people can be divided into 4 groups: combination of high and low scores in the range of one type with high and low estimate of the range of the second type. Each type includes certain characteristics that describe personality traits [1; 2].

For instance, scale of extroverts–introverts letting to have characteristic of individual-psychological orientation. For instance, extroverts make more pauses during work to talk, drink coffee than introverts.

Introverts prefer theoretical and scientific activities, while extroverts prefer to work with people. Excitement increases the effectiveness of their actions, unlike introverts, it prevents them.

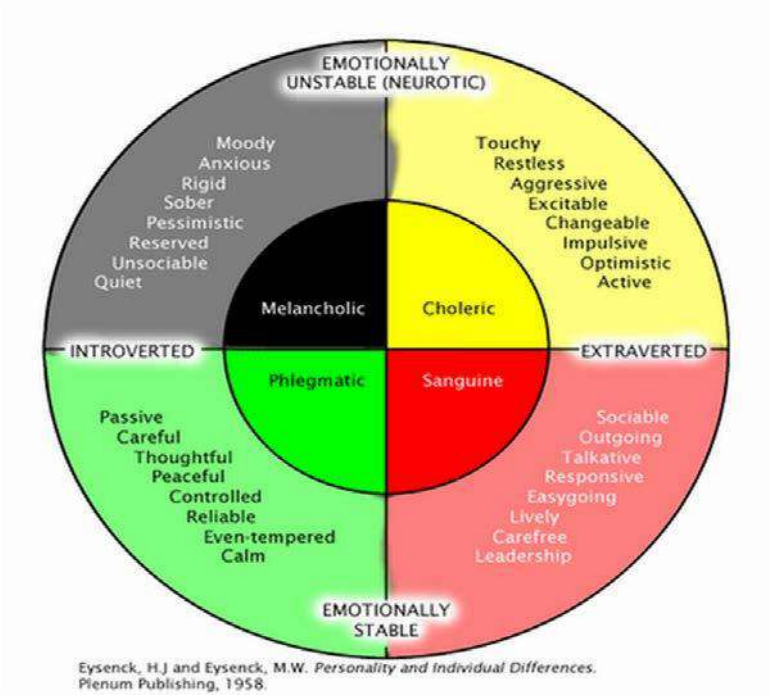
In the University introverts achieve greater success. These include more students who leave studies because of mental health reasons. Students who drop out because of failure are often extroverts.

Also, introverts are working better in the morning; and extroverts – work better in the second half of the day, and are able to make decisions quickly.

Both types have ranges of normal distribution of extreme points. That is why each type has a wide range of differences graph.1. Eysenck stays, that most people are arranged closer to the middle point of whole spectrum.

So, people at the same time are introverts and emotionally stable (green area) can adhere to normal behavior like to be caring and attentive. And, otherwise introversion in combination with neuroticism (gray area) manifested anxiety, pessimism and isolation.

People who extroverts and emotionally stable (red zone) have different communication skills, diligence and trust. Conversely, in combination of extraversion with neuroticism (yellow area) appears with aggressiveness, impulsivity and irritability.



Graph. 1. *«Circle» Eysenck. Four Types Show the Special Characteristics of the Nervous System*

The results of our study 90 % of foreign students of 2 nd year are extroverted, and only 10 % – introverts. Different degrees of emotional instability detected in 43 % of the students.

An interesting aspect of the theory of Eysenck is an attempt to explain the neurophysiological basis for each of these traits.

Introversion – extroversion he connects with the level of cortical activation, as confirmed by electroencephalographic studies. Proved that introverts overly excitable and sensitive to stimulation, so they try to avoid situations that affect them too. Extroverts, rather sensitive to stimulation, because they are constantly looking for different situations to maintain their activity.

Differences in stability – neuroticism Eysenck connects with a force of reaction of autonomous nervous system. Immediately he connects with this aspect of the limbic system, which affects motivation and emotional behavior of person in different situations. People with high level of neuroticism quickly react to unusual stimuli. They cause them anxiety, and excitement. The reaction persists for a long time, even after the disappearance of stimuli.

Neurophysiological theory of Eysenck closely related to the theory of psychopathology. For example: a person with high level of neuroticism and introversion high risk of pathological states of anxiety and phobias. A person with high extraversion and neuroticism exposed to the risk of psychopathic disorders. They can be antisocial people.

The next phase of the study, based on the derived characteristics, we investigated how students were divided over the types of Higher Nervous Activity and compared that with their academic performance.

According to the survey 54 % of students have expressed traits of extraversion and emotional stability. They are – sanguine.

36 % of students – extroverts with emotional instability. They are – choleric.

7 % – phlegmatic. Combine the introversion and emotional stability.

3 % – melancholic.

Choleric and sanguine have in common – impulsivity. They are quick, take the initiative, quickly establishing contacts. But they work in fits, quickly lose interest if something fails, do not pay attention to details.

Phlegmatic and melancholic restrained balanced. They better plan their work and more accurately perform it.

We also have found that student success is not dependent on the type of temperament. The results were not credible (P>0,05).

Conclusions and prospects for future research. It is interesting that after ranking first module showed that the group of students having an «A» and «B» (on a scale ECTS) consists mostly sanguine and melancholic. In our opinion, this fact needs further research aimed at studying individual differences in adaptation. Because adaptation of students to the specific activities of the university requires the formation of such traits as self-discipline, responsibility, independence. To overcome the difficulties that affect the learning, it is important to be in the zone of optimal functioning. This zone has a certain level of excitement and motivation, and depends on the type of higher nervous activity [5; 7].

Therefore, the definition of personality type makes it possible to better understand the properties of the individual student, his/her behavior, activities, makes better use of its positive features.

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THE CAUSES AND THE PREVENTION OF TRAUMATISM IN SCHOOL CHILDREN IN PHYSICAL EDUCATION AND SPORTS CLASSES

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Abstract

Traumatism of schoolchildren in physical education and sports, according to questioned teachers, has assorted reasons. The main ones are: violation of discipline by students, failure to observe safety rules, inept insurance and self-insurance, unsatisfactory technical condition of sports equipment and places for physical culture and sports. The most traumatic means of physical education teachers consider team sports games (soccer, handball, basketball), during which it is possible to injure hands and feet with hard drops on the ground or collisions with rivals, blowing the ball into the face or body. Long-term pedagogical experience in school and analysis of publications of specialists studying the problems of injuries in children and young people make it possible to assert that in connection with a significant number of injuries in schools in different countries, it is necessary to improve its prevention and improve the safety of students' life and health in teaching and educational The process, in particular, in physical education classes and sports sections of schools. It is necessary to improve the effectiveness of training future physical education teachers in higher education institutions on the prevention of injuries in classes and sports sections, where various means of physical training and sports are used, to be able to monitor the technical condition of physical culture equipment and equipment, sports objects for physical education and sports, to teach students The methods of insurance of children and youth in classes and non–class sports.

Key words: traumatism, prevention, pupils, school, lesson, physical education, sport.

Едуард Вільчковський, Володимир Пасічник. Причини травматизму школярів та його профілактик**а на заняттях із фізичної культури й спорту.** У статті розкрито актуальну проблему виявлення причин травматизму серед школярів та його профілактику на уроках фізичного виховання й спортивних секціях. Проаналізовано види, характер, причини випадків травматизму в дітей та учнівської молоді під час занять фізкультурою й спортом. Установлено найбільш травмонебезпечні засоби фізичної культури, а також основні причини, які можуть спричиняти виникнення травм у школярів: порушення дисципліни, недотримання правил безпеки, невдале страхування учнів під час виконання складних для них вправ, незадовільний технічний стан спортивних приладів та міст занять фізкультурою й спортом та ін.

Ключові слова: травматизм, профілактика, учні, школа, урок, фізичне виховання, спорт.

Эдуард Вильчковский, Владимир Пасичник. Причины травматизма школьников и его профилактика **на занятиях физкультурой и спортом.** Травматизм школьников на занятиях физкультурой и спортом, по мнению анкетированных учителей, имеет различные причины. К основным из них относятся нарушения дисциплины учащимися, несоблюдение правил безопасности, неумелая страховка и самостраховка, неудовлетворительное техническое состояние спортивних снарядов и мест занятий физкультурой и спортом. Наиболее травмоопасными средствами учителя физического воспитания считают командные спортивные игры (футбол, гандбол, баскетбол), во время которых возможно травмирование рук и ног при жестких падениях на площадку, столкновениях с соперниками, ударах мяча в лицо или туловище. Многолетний педагогический опит работы в школе и анализ публикаций специалистов, изучающих проблемы травматизма у детей и молодежи, позволяют утверждать, что в святи со значительным количеством случав травматизма в школах различных стран следует улучшить его профилактику и совершентствовать методику безопасности жизни и здоровья учащихся в учебно-воспитательном процессе, в частности на уроках физического воспитания и спортивних секциях. Необходимо повысить эффективность подготовки будущих учителей физического воспитания в высших учебных заведениях по вопросам профилактики травматизма на уроках и спортивных секциях, где используются различные средства физической культуры и спорта, уметь контролировать техническое состояние физкультурного оборудования и инвентаря, спортивных обьектов для занятий физкультурой и спортом, учить студентов приемам страховки детей и молодежи на уроках и внекласных занятиях спортом.

Ключевые слова: травматизм, профилактика, учащиеся, школа, урок, физическое воспитание, спорт.

Introduction. One of the most important teacher's tasks of physical education is a regular care for the safety of student's health and their lives during the lessons and extracurricular activities in physical culture

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and sport. It should be noted that almost all secondary schools around the world by the number of injuries among students take the first place in physical training. Children's and young people traumatism in schools, at home, during sports training and competition, physical recreation in recent years greatly increased.

For example, according to the Ministry of Education in Poland annually 115–140 thousand students are injuries in school, including heavy degree 1000–1500, which require long–term hospitalization or are cause of disability and around 70–120 deaths. Much of the injured children are in grades 1–6 (szkołapodstawowa). According to statistics the injury pupils are divided: over 30 % in gyms, 20 % playgrounds, 21 % – in the corridors and stairs schools near 29 % – on lessons in other subjects (chemistry, labor, biology), excursions and other places [10].

In this age period (6–13 years) children have greater mobility, they have the advantage of excitation over inhibition (not curb their emotions), low concentration, lack of motor experience, the propensity to gaming or intense physical effort despite the fatigue, inability against 'objectively assess the risk during exercise or participate in games, rapid mood changes, finding new (interesting) experience for themselves and others.

Researches, which were conducted on determining the causes of injuries of students in physical education classes and after-school classes in physical culture and sports have found that most injuries occur in students during moving and team sports (football, handball, basketball) –53,8 % ; 36,6 % – with exercises in gymnastics (for devices) and acrobatics, 3,8 % – exercises in athletics; 5,8 % – in the implementation of other means of physical training (swimming, skiing, skating) and hiking. [8]

There is also a tendency to more injuries among boys than girls in all classes of secondary schools. In adolescence from 10 to 14 years old boys are three times more accidents than girls of this age. There is also increasing number of injuries among students 11–15 years than in junior and senior classes, of which 28% require medical care [5; 9].

The goal of the research is to identify the causes of injuries of pupils at lessons of physical education and sports clubs, and develop recommendations for its prevention.

Discussion and the results of the study. We know that injuries students in physical education can take place in the gym, on the court or stadium, hiking, swimming pool, that is, where they held lessons or classes of sports sections. Unfortunately the consequences are serious injuries for all children's and young people lives and even lead to their disability.

The sources of various injuries are different and they can be a combination of several reasons. Therefore, need a comprehensive and professional analysis of each case, which will make them more effectiveprevention [1].

Considering the limited scope of this publication is difficult to analyze in detail the causes of injuries during using different ways of physical culture and sports by teachers in the educational and extra–curricular sports and mass work with children and pupils. Let's consider the most common causes of injuries of students, in our view, in different organizational forms of physical education:

– Uncoordinated way the arrival of students on physical education classes and return them to the locker room.

– Lack of clear organization of lessons, sectional studies of physical culture and sports.

– Failure preparation of athletic equipment, inventory and necessary facilities for physical education and sports, unconformity of clothes and footwear for this type of study.

– unsystematic checking of athletic equipment and inventory due to their safety for students. The conducted survey of teachers of physical education at postgraduate courses found that 30,8 % of respondents believe that it is one of the major reasons that affect the possibility of injury of students (failure surface playgrounds, running tracks –covering them by asphalt or grass, insufficient area of gyms, lack of additional space for hiding gymnastic equipment and inventory to release space for games, not properly equipped place for landing after jumps and so on).

– the lack of «warm-up» (performance of general exercises in the preparatory part of lesson) or bad their selection, especially in the after–school sectional lessons.

– wrong division of students into subgroups during lessons (main part) or lack of distribution at all.

– placement of students too close to heaters (in the hall) or other traumatic things (especially during sports games and mobile).

– a bad way to carry athletic equipment and inventory.

– indiscipline of students during the lessons or extracurricular physical education and sport.

– incomprehensible way to exercise for students because of a bad explanation by teacher. Therefore, they do it by intuition and it can lead to injury.

– reluctance to do offered exercises if students do not have the proper motivation and they are under strict pressure of teachers, it can lead to injuries.

– Excessive or too low temperature, humidity during class on the playground or in the hall.

– Lack of insurance or inept when performing difficult or dangerous exercises for students.

– Insufficient aware with safety rules by students and self–insurance in the classroom, in which the various means of physical culture and sports (gymnastics, athletics, sports, swimming, winter sports, etc.).

– Fear of students during performing complex or unfamiliar exercise. Some lose his coordination and concentration at the moment, not objectively view the situation on the proper execution of motor acts.

– Unsatisfactory state of health and physical fitness of students (especially those relating to preparatory medical group).

– The absence or irregularity of medical control of health and physical development of students.

– Unhygienic manner of pupils' private life. Inadequate and irregular meals, limited time for sleep and rest, overloading with work at home, a negative psychological climate in the family.

– Senior pupils may be regular smokers, take drugs and alcohol and suffer from mental health problems such as aggression, regular stress, depression, difficulty with logical thinking, poor psycho–physical endurance, etc. The above–mentioned shortcomings can affect directly or indirectly the safety of pupils during physical education classes. Taking into consideration the own teaching experience and analysis of publications of native and foreign authors, the recommendations may be singled out to prevent pupils from being injured during physical education classes and extracurricular sporting activities.

It is extremely difficult for a teacher to predict all the cases related to injuries. However, we should influence pupils' behavior, and guarantee them safe motor activity and psychophysical development. Janusz Korczak, who is a famous Polish educator, says: «Kids, just like adults, want to be healthy and strong, but they do not know how to do it, if they are not told and helped. There is just no need to make them afraid and prohibit a lot» [4].

Injury prevention foresees its obligatory probability while students perform several types of exercise that are recommended by physical training program for each class. The most predictable exercises are the ones where there is no direct contact of a student with a competitor such as gymnastics, acrobatics, athletics, volleyball, swimming, ski training. While performing these exercises, the psycho–physical fitness of a pupil is of particular importance which makes it possible to perform the proposed exercises more accurately and greatly reduces the risk of injuries.

It is difficult for a teacher to predict injuries that can occur when pupils participate in dynamic mobile games and team sports such as football, handball, basketball, which are often held on the playground.

The use of a variety of physical education and sports means during various forms of pupils' physical education require the use of specific methods of injury prevention. However, there are general requirements for all classes of physical education or sections, regardless of their type.

The clear, methodically competent organization of physical education classes and extracurricular sporting activities is the most effective factor for injury prevention of children and youth. Therefore, a teacher has to determine the content of each organizational form of pupils' physical education, dosage of proposed remedies, the methods of pupils' organization in the major part of a class, the number of sports equipment needed for optimal motor density of classes. All this relates to operational planning, that is the thorough preparation for conducting of each physical education class or section.

The responsibility of the teacher for the safety of students starts from the beginning of these classes to students' exit from the locker room after the conducted lesson. It is necessary to calculate the transition of students from the classroom to the locker room because there might be another group of students that has a previous class there. They should know how to behave and comply with hygiene requirements in the locker room. There is a need to make pupils come for a lesson in time , and correspondingly to the next lesson.

While formulating the tasks for the lesson, a teacher should remind students about safety rules while performing proposed exercises (in athletics, gymnastics, ski training, swimming, etc), if it is necessary. The warming–up, that is a set of general exercises, must be held in the preparatory part of the class to get pupils' organisms ready for the exercises that are characterized by more complex coordination and physical exercise movements. According to their proportionment and complexity, these exercises should correspond to the anatomical and physiological characteristics and physical fitness of each age group of pupils (their gender should be taken into consideration as well).

Preventive education, as a mandatory activity of a teacher, is aimed at preventing injuries among pupils and it should cover not only the sphere of didactics, but also the entire system of pupils' physical

education. What needs to be done in the course of every class is to make students submit to discipline and realize the possible hazards that may happen when the rules of behavior are violated, the requirements and regulations of instructions are not complied. The students should be informed about the usage of sporting equipment, the rules of sporting games, etc.

It is necessary to form pupils' skills for safe behavior and objective self–assessment of risk while performing various exercises, winter sports (skating, skiing); control their impulsiveness and emotions; establish positive communicative relationship with their peers (according to their age, psycho–physical fitness, traits of character).

Teachers need to be familiar with the social structure of each class and the level of pupils' physical fitness It is necessary to distribute the pupils into subgroups properly in order to perform the proposed exercises and also to use the individual approach in the educational process of physical education.

Questioning of physical education teachers allowed us to obtain the following information: 36, 2 % of respondents note that in the course of classes there are multiple cases of pupils' aggression, especially during sporting games. Player's anger, that may be uncontrolled, and which sometimes manifests itself in the shot, punch or kick of an opponent, can lead to injury. Therefore, in such cases, the teacher should react to such brutal manifestations, rage, rudeness, the use of unauthorized techniques, etc; and apply appropriate disciplinary measures to educate pupils' respect to their opponents.

Injuries quite often occur while sporting games are performed in the secondary and senior school, especially when racing championship between teams of school classes is organized. In this case, the pupils try to gain victory at any price and it considerably increases the risk of injury. Moreover, the rules of the different aspects of a sporting game are not well-known to all the pupils. The certain sticking to these rules prevents some players from being aggressive and restrains misunderstanding between them. Impartial refereeing also helps to meet «clean game» requirements [3].

Teachers should pay constant attention to the technical condition of sports equipment, which is used in the course of physical education classes and extracurricular sporting activities. Teachers should immediately remove the damage d sporting equipment and prevent pupils from using it.

Athletics: kernel disks, spears, starting blocks, athletics barriers, high jump risers, the state of the race tracks, the place of landing after the jumps.

Sports Games: football and handball gates, basketball shields and rings, studs for the volleyball nets, conditions of the playgrounds.

Gymnastics: gymnastic equipment (bars, cross–beam, balance beam, rings, transom, pommel horse, gymnastic bridge, climbing rope), mats, gymnastic benches and ladder, wall gymnastics and others.

Winter equipment: skis, sticks, skates, shoes.

Locker rooms and showers: bench seats, wardrobe, shower (tap water submission), water drain.

Some teachers in the gym and on the court set their own equipment (training simulators) for physical training. In particular, the «obstacle course» gymnastic equipment (for climbing, broad jump, the development of certain motor skills, etc.), risers with rings for throwing objects at the target and others. Therefore, we must strictly adhere to safety rules when performing exercises on this equipment. It worth paying students' attention to the state of the sports fields surface, race tracks, preparing the city for the high and broad jump taking a long run (runway, landing pit). If necessary, remove promptly fixed flaws.

The results of the questionnaires, to the teachers of physical training, on this subject states that only 12 % of them, those with the teaching experience up to 5 years, regularly check the technical condition of athletic equipment; 12,1 % – accordingly, up to 10 years of experience of working in school and 28% of teachers, who have teaching experience over 20 years [6].

There is also a danger while teaching students new exercises that can, in case of improper execution, lead to injuries (jumping, throwing, gymnastics and acrobatic exercises, downhill skiing, some elements of sports games and so on.).Therefore, students must get acquainted with the methods of self–insurance and focus their attention on the proper execution of the basic movement elements. For example, in the broad jump taking a long run softly on bent legs; while performing forward somersaults in acrobatics – press chin to the chest and make circular back; while sinking from the slope – bend the knees slightly, hands drop down, keep the stick parallel to the surface of the snow and others.

Teacher should have the appropriate knowledge and skills to provide first aid to students in case of injury, and give them the necessary knowledge on these issues in case they are injured during separate recreational physical training and sports outside the school.

In secondary schools of certain countries, special subjects, concerning the safety of pupils in education institutions, in everyday life and in case of possible emergencies in their region or country, are introduced. For example, in Poland the main direction in the education of students regarding their safety involves the following aspects: the integrated lessons, where the teacher informs the children the basic knowledge of the security in their daily lives, are delivered in elementary school (grades 1–3). In middle school (grades 4–6), educational program regarding the students' safety is considered while teaching different subjects: chemistry, geography, biology, labor training, physical education, depending on the lesson's topics, associated with the healthcare and prevention students' injury. In the gymnasiums, these questions are considered within the course – «Civil Defense».

Besides schools, the issues related to the safety of children and youths are considered by various social organizations (sports, travel, harcerski etc.). Educational activities are arming students with competence in making optimal decisions in case of emergencies that threaten their lives and health [7].

In the USA safety education for children and youths has the following areas:

1. Creating of a social environment that supports the safety and reduces the risk of pupils injury.
2. Ensuring appropriate conditions for safe physical environment in school and on its territory.
3. Conducting educational programs among students in order to maintain health (valueology) and their security.
4. Ensuring the safety of students during physical training and sports lessons and other forms of motor activity in school.
5. Providing students with the necessary knowledge on safety through systematic consultations with doctors, psychologists and social workers.
6. Setting up clear rules for student behavior in the case of emergency, as well as assisting all staff members in school (students, teachers, maintenance staff), if it is necessary in such cases.
7. Integration of school activity, parents and local authorities (region, city) for the prevention of injuries and violence among students.
8. Training staff members in school regarding the issues of safety and injury prevention among students [2].

Conclusions. Questionnaire, conducted to the teachers of physical training by academics from different countries, indicate that the cases of students injuries during the classes and after-school classes of physical education and sports have a broad palette. To the main reasons they include: misconduct of pupils, breaking safety rules, improper insurance and self-insurance during the exercise, poor technical condition of sports equipment and places for physical education and sports.

Teachers consider that the most dangerous means of physical education are team sports games (football, handball and basketball), during which there is a possibility to damage the upper and lower limbs when falling or clashes between the rivals, by the ball hit in the face or body etc.

Private long–term study of this problem and generalization of experts research concerning children and youths injuries, enables to presume that due to the large number of the injury accidents in schools of different countries, there is a necessity to improve the means of its prevention and ameliorate the methods of students life safety and healthcare in the process of educational activities, in particular, during the lessons of physical education and in sports sections. It is required to improve the training of future teachers of physical education in higher education institutions regarding the injury precaution during the classes and in sports clubs, where a great variety of means in the sphere of physical culture and sports are applied. It is essential for the students to obtain skills that help to predict all possible school injuries and teaching the techniques of self-insurance during training, extracurricular and independent recreational physical activities.

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IMPROVING OF STUDENTS' MOTOR ACTIVITY AS A MOTIVATIONAL ORIENTATION TOWARDS A HEALTHY LIFESTYLE

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Abstract

An individual's physical activity is the result of human biological needs which are formed due to the interaction with the environment. But the problem itself does not acknowledge the nature of the individual's activity because it may be solved with the help of different things or methods. The satisfying feature is defined when an individual starts to act. Consequently the research has been conducted among the students of the Chernivtsi National University. The aim of the research was to learn about the motivation for the improvement of recreational activities. As a result of the research it turned out how youth usually spend their free time after studying, why students want to train, which factors encourage them to use recreational activities, what reasons hinder them in their efforts to do the chosen recreationally curative activities and what effect they want to have on such trainings. Moreover, it was found that the majority of students want to do recreational activities although they have some obstacles to train systematically. Furthermore it was ascertained that the preference is given to the free time activities which do not require special equipment and significant costs. According to the results of the sociological research, we've discovered the actual motives that encourage students to the recreationally curative activities. It is worth saying a physical activity is the priority among different factors which have an influence on a young person's health and efficiency. The analyzed data gives reasons to affirm that on the one hand students' free time depends on demographical changes, social and cultural environment and on the other hand it is linked to the system of the orientation of their values, needs and interests.

Key words: students, leisure time, desire, priorities, motivation.

Максим Ячнюк, Ірина Ячнюк, Юрій Ячнюк. Підвищення рухової активності студентів як мотиваційна спрямованість до здорового способу життя. Рухова діяльність людини випливає з її біологічних потреб, що формуються під час взаємодії з навколишнім середовищем. Але сама по собі проблема не визнає характеру діяльності суб'єкта, тому що може бути задоволена різними предметами та засобами, а предмет задоволення визначається тоді, коли людина починає діяти. Для вивчення мотивації до підвищення занять рекреаційною діяльністю проведено анкетування студентської молоді Чернівецького національного університету імені Юрія Федьковича. За допомогою проведеного анкетування встановлено, як саме молодь зазвичай проводить свій вільний від навчання час, із якою метою студенти хотіли би займатися, виявлені фактори, які спонукають їх до рекреаційної діяльності, причини, які заважають їм займатись обраними видами рекреаційно-оздоровчих занять та який ефект бажають вони отримати від подібного роду занять. Виявлено, що більшість студентської молоді бажає займатися рекреаційною діяльністю, але в них існують певні перепони для систематичних занять. Також установлено, що перевага надається тим видам діяльності у вільний час, які не потребують спеціального обладнання та значних витрат. За результатами соціологічного дослідження нами виявлено актуальні мотиви, які загалом спонукають студентську молодь до оздоровчо-рекреаційних занять. Потрібно зазначити, що в складній системі чинників, які впливають на стан здоров'я й працездатність молодої людини, пріоритетне значення має рухова активність. Проаналізовані дані дають підстави стверджувати, що проведення вільного часу студентами, з одного боку, залежить від демографічних чинників, соціально-культурного середовища, з іншого – пов'язаний із системою їхніх ціннісних орієнтації, потреб та інтересів.

Ключові слова: студенти, дозвілля, бажання, пріоритети, мотивація.

Максим Ячнюк, Ирина Ячнюк, Юрий Ячнюк. Повышение двигательной активности студентов как мотивационная направленность к здоровому образу жизни. Двигательная деятельность человека является его биологической потребностью, формирующейся при взаимодействии с окружающей средой. Но сама по себе проблема не признает характера деятельности субъекта, так как может быть удовлетворена различными предметами и средствами, а предмет удовлетворения определяется тогда, когда человек начинает действовать. С целью изучения мотивации к повышению занятий рекреационной деятельностью проводится анкетирование студенческой молодежи Черновицкого национального университета имени Юрия Федьковича. С помощью проведенного анкетирования установлено, как молодежь обычно проводит свое свободное от учебы время, с какой целью студенты хотели бы заниматься, выявлены факторы, побуждающие их к рекреационной деятельности, причины, которые мешают им заниматься выбранным видом рекреационно-оздоровительных занятий и какой эффект хотят они получить от подобного рода занятий. Выявлено, что подавляющее большинство студенческой

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молодежи желает заниматься рекреационной деятельностью, но у них существуют определенные препятствия для систематических занятий. Также установлено, что предпочтение предоставляется тем видам деятельности в свободное время, которые не требуют специального оборудования и значительных затрат. По результатам социологического исследования нами выявлены актуальные мотивы, которые в целом побуждают студенческую молодежь к оздоровительно-рекреационным занятиям. Следует отметить, что в сложной системе факторов, влияющих на состояние здоровья и работоспособность молодого человека, приоритетное значение имеет двигательная активность. Проанализированные данные дают основания утверждать, что проведение свободного времени студентами, с одной стороны, зависит от демографических факторов, социально-культурной среды, с другой – связан с системой их ценностных ориентации, потребностей и интересов.

Ключевые слова: студенты, досуг, желания, приоритеты, мотивация.

Introduction. An individual's motives are corresponding dreams, inducement, needs, thoughts or desire, interests that initiate the appropriate behavior. The characteristic feature of the motivational priorities is their purposefulness. If an individual wants to make an action purposeful, he needs to realize what he wants and needs. If we want to learn more about students' motivation in the sphere of recreation and tourism and the ways of its formation, it is necessary to establish the current priority inducement. This inducement is managed by youth in their desires and actions in the process of their learning and extracurricular activities [2; 3].

The results of the research show that current students' motivation is sufficiently low. From our standpoint it is connected with social factors that predominate in different correlation in modern society and to some extent characterize the conditions of upbringing in a family, youth life and their circle of friends etc.

In our mind the significant factor, which will promote the immediate and effective elaboration of the improvement in students active lifestyle, should be based upon the sphere of the modern people's priority interests, motives and needs. They can be realized in a wide spectrum of recreational activities which are constantly updated with different elements of physical activities with the usage of modern technologies [5; 6].

Materials and methods of the study. Sociological and pedagogical methods, system analysis and mathematical statistics were used in the research.

Discussion and the results of the study. We have conducted a survey among the students of the Yurii Fedkovych National University. The purpose of the survey was to explore the motivation to recreational activities and active tourism. 330 students took part in the survey (147 boys and 183 girls).

The survey gave us a possibility to find out how the youth usually spend their free time, time after studying, why students want to train, which factors encourage them to use recreational activities, what reasons hinder them in their efforts to do the chosen recreationally curative activities and what effect they want to have on such trainings. Moreover, it was found that the majority of students (48,5 %) are only partly satisfied with the organization of the recreational curative activities in the higher institution, third of the students (30,3 %) are satisfied with such activities although 21,2 % are not satisfied with the activities at all. According to the respondents points of view it is connected with different reasons. Here are the main reasons:

- imperfect facilities for the conducting of recreational activities;
- the total absence of taking into account the interests of students in different types of physical activity which is promoted in higher educational institutions in the Academic out of time;
- the authoritarian approach in planning students recreational activities
- the episodic nature of recreational activities;
- the lack of specialists in recreational activities that possess innovative technologies and their organization;
- insufficient systematic educational activities among students;
- the lack of the consideration of factors that affect the amount of students' free time and form its structure;
- commercialization of recreational activities, inaccessibility of trainings among different categories of students;

After the analysis of the students relations to recreationally curative activities, it was found out that the vast majority of girls (70,5 %) and exactly half of boys occasionally participate in recreational activities, 12,0 % of girls and 18,4 % of boys are not involved, almost a third of girls (30,6 %) and half the size of boys (17,5 %) participate in recreational activities.

The received data has given us the possibility to discover that the vast majority of students, who want to be engaged in recreational activities, have certain obstacles to regular exercises. According to our point of view, these obstacles are caused by the inadequate recreational culture of students. Students have a lack of knowledge, skills and self-rationalization abilities, the absence of free time rationalization and poor health among the majority of students [4].

In our opinion, it was quite important to investigate the structure of the students' choice of recreationally curative activities. The results, which were received after the survey, show that gender features influence on the organization of the free time sufficiently.

The vast majority of students (80,3 %) think that their health gets better after the recreationally curative activities; 49,1 % think that these activities influence the improvement of their mood and health. 41,5 % of respondents noticed the improvement in their physical performance as the effect of recreational and health activities, and exactly a quarter of students (24,8 %) believe that such exercises are effective for normalizing their body weight. One of five students (20,0 %) sees benefit in recreational and fitness classes for improvement of their mental activities, and 14,2 % – increase self-esteem with the help of these activities. Very few respondents (1,5 %) noted that the effectiveness of recreationally curative activities becomes apparent in other things.

The received data shows that the preference is given to those types of free time activities, which do not require special equipment or significant costs.

As stated in the work [1], the way the students spend their free time, on the one hand, depends on demographic factors of social environment and on the other – it is associated with the system of values, needs and interests.

In general, it is advisable to use the analysis of motivational systems, in order to get a complete understanding of factors that promote student involvement in recreationally curative activities in their free time.

According to the sociological survey, we have discovered the real motives, which generally encourage students to do recreationally curative activities. It should be mentioned that physical activities have priority functions that influence an individual health and efficiency in a complex system of factors. The recent researches in our country indicate a certain connection between the physical activity and health. It is established that the curative motives dominate in the hierarchy of recreationally curative activities among girls, as well as boys (to improve health - girls 70.5%, boys 73,3 %) (figure 1).

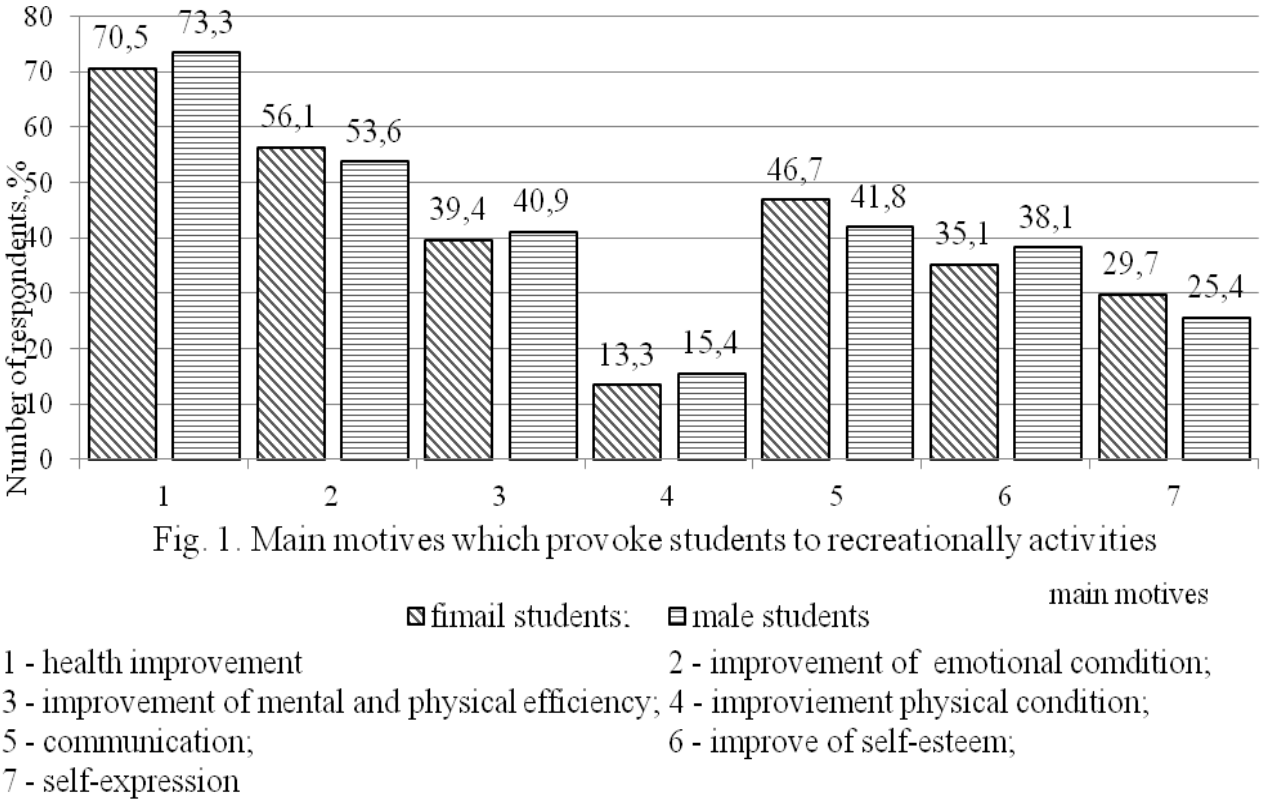

Fig. 1. Main motives which provoke students to recreationally activities

As for other motives, girls' and boys' answers were distributed almost on the same sequence, but with a different ratio of respondents elections: the improvement of the psycho – emotional condition, communication, the improvement of mental and physical performance, the improvement of self-esteem, self-expression, the improvement of physical fitness.

In the process of the study, the interests which encourage students to train were noticed and the desire of the health and psycho – emotional condition improvement. The sufficient number of students are sure that

they have reached a certain level of expression and have sufficient physical fitness. During the survey it was reported about the reasons that prevent students from engaging in recreationally curative activities.

Overall, the most significant reasons, which were emphasized among girls and boys, were lack of time, 59,7 % and 50,9 % accordingly, the large workload 52,5 % and 40,3 %, the absence of recreationally curative groups that were emphasized among 16,9 of girls and 24,5 % boys. The lack of funds to pay for employment is an essential obstacle for 15,4 % of girls and 13,6 % boys. Also it was interesting to find out that girls and boys do not have the relevant knowledge for recreational and health activities and do not have friends with whom they can attend these classes. Quite a small number of students indicated such reasons as lack of support from their families, lack of comfortable sportswear and willingness to train. In our view, this means that girls and boys do not have compelling reasons that would prevent them from being engaged in recreationally curative activities outside the classroom.

The in-depth analysis of indicators showed only our assumption that students are not fully aware of the importance of educational work in terms of efficient use of their free time.

The respondents' answers have allowed us to identify the most wanted forms of trainings which were chosen by students for the recreationally curative activities. The responses showed that most students chose group works (62,3 % girls, 68,0 % of boys). The received results demonstrate that companies, communications with friends, sharing experiences are very important for youth. Respondents gave the clear understanding of the priority of group works, not the individual types of work, which will allow us to take into account this fact while organizing and planning outdoor activities. Almost the same number of respondents among girls and boys chose individual and independent activities.

There are many places where you can be engaged in recreationally curative activities. According to the research, the majority of respondents would like to be engaged in recreationally curative activities in nature (52,5 % girls, 51,0 % boys) and in fitness centers (51,4 % girls, 47,6 % boys) (Figure. 2). This confirms the trends available in the special literature [1] about the tendency of choosing the place for the employment. According to the respondents, training outdoors has a higher health effects. It is more diverse and interesting. It also improves psycho-emotional state due to the combined impact of exercise and environmental factors.

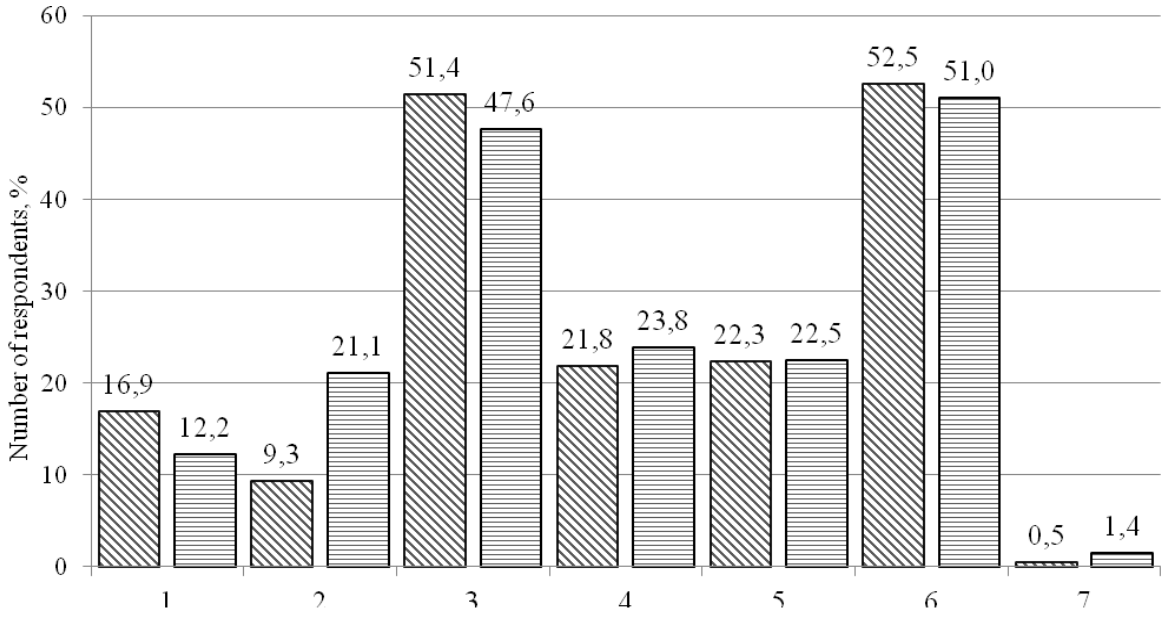

Fig. 2. Places preferred by students for their recreation activity:

femail students: male students

1 - independently at home;
2 - at the place of residence;
3 - in fitness center;
4 - in the higher educational esteblishment;
5 - ain places of public rest;
6 - out of the doors;
7 - other places

This is due to the fact that college students spend a lot of time in dormitories and this fact explains their choice of preferring to have recreational activities outdoors.

Free time plays an important role in the young people's lives. This is – one of the main means of forming the individuality of a young person. Free time directly affects the educational spheres, it helps to create the most favorable place for the processes of recreation and reproduction that remove intensive physical, intellectual, mental stress [2].

Student's free time is limited by lots of factors: age, gender, traditions, material possibilities, free time activities, health condition. The ability to change the roles within the free time and to switch from one activity to another improves its significance in a young person's life. The ability to be flexible of every individual is influenced by the family experience, school, society and work experiences [1].

The results of the survey clearly demonstrate that the structure of the interests among girls and boys in their free time is different. Exploring the free time activities, which are preferred by college students, it was found out that most of all girls like to walk (61,7 %), watch videos and television programs (53,6 %), read books (49,7 %), listen music (48,1 %), visit relatives (47,5 %). The main free time activities among boys are trainings (46,3 %), walking and watching video programs (42,9 %), helping parents in the household (41,5 %), computer games (38,1 %).

There are contradictory trends in students free time activities: some activities have a positive focus and lead to the cultural enrichment, others – contain negative potential, cause impoverishment and are monotonous.

In most respondents' answers, among boys as well as among girls, passive types of activities were listed (watching TV chosen by 53,6% of girls, 42,9 % of boys, reading literature, periodicals – 49,7 % of girls, 19,0 % of boys, computer games, social networking communication – 20,8 % of girls, 38,1 % of boys, etc.). Nowadays, there is a radical increase in attracting young people to the Internet. Today this kind of activity is probably the most popular type of a free time activity. There is a «real shortage of live communication», most students prefer to live with virtual communication. Students think that virtual communication can solve problems that are not solved in a real society. During the passive holiday there are a few elements that provide sufficient and necessary levels of physical and mental recovery, especially with the recreationally curative orientation.

Students were not limited to one kind of hobby in their responses, and could choose from several options(the evidence is the total percentage - more than 100. Despite the great variety of activities in the spare time, the involvement of students is very low, and for most students the set of activities in their free time is very limited. It is noted that the actual free time among many students is spent with habitual actions that do not require conscious effort.

Conclusions and prospects for further research. All things considered, the formation of new understanding of free time activities and their social value among students require the quality content. The effective solution to this problem depends on many factors, material resources and recreational areas in higher educational institutions, formations of the individuals' recreational needs and interests, skills of planning and organizing their free time, the ability to choose the most effective forms of recreational activities individually, opportunities and desire to learn about the culture of leisure time.

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УДК 37.037

MOVEMENT-RELATED ACTIVITY OF PATIENTS WITH RHEUMATOID ARTHRITIS IN PHYSICAL REHABILITATION

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Abstract

The article explains the main issues of health and social problems of rheumatoid arthritis. It was established that the urgency of rheumatoid arthritis is caused by progressive disease, severity of the musculoskeletal system.

It is noted that there is a high incidence of lesions of working age in which there are early functional abilities decline, loss of professional and social skills, the difficulties of physical and psychological adjustment of patients to violations of motor functions.

There was accent an attention that the disease causes significant morbidity, decreased quality of life and high economic expenses. According to modern standards of rheumatoid arthritis treatment, the treatment goal is achieving state of prolonged remission, in addition is decreasing of pain in joints, improvement of its movement, improvement the general patient's stage, high temperature decreasing.

There were established that carefully chosen exercises, physical activity and other renewable contribute help to stop further progression of the disease, restoring function of the affected joints and improve physical and mental condition of the patient and their quality of life.

There was proved the necessity to develop a theoretical justification and comprehensive rehabilitation program for early treatment of rheumatoid arthritis, which is aimed to improve the efficiency of rehabilitation, improve ability to work, physical stage and life quality.

Key words: rheumatoid arthritis, physical rehabilitation, physical activity.

Анжела Ногас, Андрій Карпінський. Рухова активність у фізичній реабілітації хворих на ревматоїдний артрит. У статті висвітлено основні питання медичної та соціальної проблем ревматоїдного артриту. Установлено, що актуальність ревматоїдного артриту зумовлена прогресуючим перебігом захворювання, тяжкістю ураження опорно-рухового апарату.

Відзначено, що спостерігається висока частота ураження осіб працездатного віку, у яких рано виникають зниження функціональних здібностей, утрата професійних і соціальних навичок, труднощі фізичного та психологічного пристосування до порушень рухових функцій.

Акцентовано увагу на тому, що захворювання призводить до значної інвалідизації, зниження якості життя та великих економічних витрат. Згідно із сучасними стандартами лікування ревматоїдного артриту, безпосередньою метою терапії є досягнення стану тривалої ремісії, а також зменшення болю в суглобах, поліпшення їх рухливості, покращення загального стану хворого.

Наведено дані про успішне застосування фізичних вправ у процесі відновного лікування хворих на ревматоїдний артрит. Установлено, що ретельно підібрані фізичні вправи, рухова активність й інші відновлювальні засоби сприяють призупиненню подальшого прогресування захворювання, відновленню функцій уражених суглобів, покращенню фізичного та психічного стану хворого і якості їхнього життя.

Доведена необхідність у розробки й теоретичного обгрунтування комплексної реабілітаційної програми на ранніх стадіях лікування хворих на ревматоїдний артрит, яка буде спрямована на підвищення ефективності відновного лікування, покращення працездатності, фізичного стану та якості їхнього життя.

Ключові слова: ревматоїдний артрит, фізична реабілітація, рухова активність.

Анжела Ногас, Андрей Карпинский. Двигательная активность в физической реабилитации больных ревматоидным артритом. В статье освещаются основне вопросы по медицинской и социальной проблеме ревматоидного артрита. Установлено, что актуальность ревматоидного артрита обусловлена прогрессирующим течением заболевания, тяжестью поражения опорно-двигательного аппарата.

Отмечается высокая частота поражения лиц трудоспособного возраста, у которых рано возникает снижение функциональных способностей, потеря профессиональных и социальных навыков, трудности физического и психологического приспособления к нарушениям двигательных функций.

Акцентируется внимание на то, что заболевание приводит к значительной инвалидизации, снижению качества жизни и больших экономических затрат. Согласно современным стандартам лечения ревматоидного артрита, непосредственной целью терапии является достижение есостояния длительной ремиссии, а также уменьшение боли в суставах, улучшение их подвижности, общего состояния больного.

Приводятся данные об успешном применении физических упражнений в процессе восстановительного лечения больных ревматоидным артритом. Установлено, что тщательно подобранные физические упражнения, двигательная активность и другие восстановительные средства способствуют приостановлению дальнейшего прогрессирования заболевания, восстановлению функций пораженных суставов, улучшению физического и психического состояния больного и качества ею жизни.

Доказана необходимость в разработке и теоретическом обосновании комплексной реабилитационной программы на ранних стадиях лечения больных ревматоидным артритом, которая будет направлена на повышение эффективности восстановительного лечения, улучшение работоспособности, физического состояния и качества их жизни.

Ключевые слова: ревматоидный артрит, физическая реабилитация, двигательная активность.

Introduction. Rheumatoid arthritis is considered as one of the most widely-spreaded pathologies and the most significant medical and socioeconomic problems of modern society in all the world. Rheumatoid arthritis actuality is conditioned by progressing illness course and wound degree of musculoskeletal system. Especially, high frequency wounding of working age people, who early feel reduction of functional capacities, professional and social skills loss, difficulties of physical and psychological adaptation of patients to malfunction of movement function. This is lead to big invalidization, life quantity decreasing and big economic expenses [4; 5].

Modern methods of complex therapy allow to achieve stable and expressed remission, but at the same time, articulate syndrome has progressive chronical character. In that way rehabilitation measures, directed on saving of functional abilities of wounded joints, pathological process stabilization and improvement of patient's life quality have a big practical meaning [8; 12].

In spite of constant searching of effective medical therapy and rehabilitation of patients with rheumatoid arthritis for many years, today this problem is far from resolving and need searching of new methods for improvement of its effectivity.

Rheumatoid arthritis is characterized by joints deformation, its movement restriction and contracture development (immobilization).

Age peak of disease fall on 50 th (for women at the average – 41 years, for men – 45 years). Women are suffering from rheumatoid arthritis more often in 2–4 times, at the average relation of women and men is 3:1. There is counted beside 118 thousand patients with rheumatoid arthritis in Ukraine, amongst them about 54 thousand is working age persons, who is being under clinic control [11].

50 % of patients have a limited movement diapason in the joints already at the first visiting to a doctor [16]. 60–90 % of patients lose work ability and are needing constant modern medical treatment, do rehabilitation, obligated hospitalization in case of exacerbation, often difficult orthopedic surgicalinterference through 20 years from the start of disease.

The mortality level amongst patients with rheumatoid arthritis at least in two times higher than in general population. This characteristic becoming worse with every year [20].

According to modern ideas, near with medical therapy there is an important role of physical rehabilitation in the system of health renewal patients with rheumatoid arthritis.Carefully chosen physical exercises, treatment massage, physiotherapy, ergotherapy, orthosis and educational programs for patients is

favourto stopping further progression of the disease, renewal of wound joint's function, improvement of physical and psychological state of patients and their life quality [10].

Medical help organization and rehabilitation of patients with rheumatoid arthritis on early stadium is very vital task.When necessity of early medical therapy is confirmedby multiple research and is supported by international clinic recommendations, the question about effectiveness of starting early rehabilitation against rheumatoid arthritis is opened yet, in spite on predictable high rehabilitation potential on this stage of disease [18]. Also, there isn'tdetermined optimal time constraints about starting rehabilitation, using non-medical methods

of treatment (exercise therapy, massage, physiotherapy, ergotherapy,orthosis) and studying patients with rheumatoid arthritis in educational programs [7].

According to modern standards of rheumatoid arthritis treatment, the treatment goal is achieving state of prolonged remission, in addition is decreasing of pain in joints, improvement of its movement, improvement the general patient's stage, high temperature decreasing [19].

For today in the world literature there is no almost any research about effectiveness of non-medical methods and complex rehabilitation programs on early treatment stadium of patients with rheumatoid arthritis. Moreover, there isn't developed standard valuing algorithms of rehabilitation methods, don't determined optimal terms of its using start and its duration. Thus, there is necessary further research about effectiveness of early rehabilitation treatment starting and its influence on further course and consequences of disease.

The goal of the research. To study and prove physical exercise specialty in process of physical rehabilitation of patients with rheumatoid arthritis.

Research methods. Analysis and synthesis of scientific-methodical and special literature, generalization and systematization the research results.

Results of the study. There were achieved big results in rheumatoid arthritis treatment during the last years. Many patients have decreasing of disease activity for help of using the based modern antirheumatic medicine (70 % «answers» according to criteria of American College of Rheumatology) and in whole to improve the disease forecast [4; 6].

However, long-term treatment by medicine is connected with risk of toxic effects development or decreasing of its effectiveness in process of long-term using. All this prove the necessity to develop new approach to resolving of this problem with using methods, which don't have such defects and can intensify effectiveness of main treatment [9].

An important role plays physical, professional and social rehabilitation of patients with rheumatoid arthritis.

Physical rehabilitation of patients with rheumatoid arthritis provides for using the complex renewal methods: exercise therapy, massage, physiotherapy, ergotherapy, psychotherapy, spa treatment, etc. [12].

The main goal of patient's rehabilitation is removing inflammation process; decreasing the pain, constraint and swollen in joints; rising movement diapason, muscles power; prevention of deformation of joints; coordination and walking improvement; tiredness decreasing and improvement of functional status and life quality [7].

E. L. Nasonov think [5] rehabilitation of patient with rheumatoid arthritis need to start on acute phase of disease and in high activity period of rheumatoid process. Types and capacity of necessary rehabilitation methods are determined by character and stage of disease. At the acute phase is used general care, hygienic-dietary regime, breath exercises, treatment by poses. Further, in subacute and chronic phases there is important to prefer methods, which directed on renewing limited functions and professional skills.

According to recommendations B. Dogy et. al. [13] patients with rheumatoid arthritis need to do isometric exercises 5-10 times for day during 6 seconds at the acute phase of disease. The exercises should not exceed 40 % of the maximum voluntary contraction. It helps to maintain muscle tone without exacerbation and prevention of contractures. At the complex treatment of rheumatoid arthritis significant place belongs therapeutic physical culture. Renewing of movement function and prevention in the affected joint and surrounding tissues, usually abnormal, impossible without the use of exercise.

According to S. MaddaliBongi and A. Del Rosso, [15] gymnastics and kinesiotherapy in patients with rheumatoid arthritis, that are determined to strength ligaments and muscles, increase range of motion in joints, slow pathological reactions and improve general physical state must necessarily be included in the complex restorative treatment.

Leading experts recommend using the physical exercises that increase range of motion, muscle strength and aerobic exercises focus, including the individual capabilities of each patient and providing adequate rest [1].

Expediency of physical exercises that increase muscle strength, due to the fact that muscle weakness is observed in approximately 80 % of patients with rheumatoid arthritis. Also in patients with a limited level of physical activity, which is another factor in disease progression [2].

E. V. Orlova [10] developed two sets of exercises for patients with early rheumatoid arthritis (VDT using simulators and therapeutic exercises for the joints). These complexes have shown high clinical efficiency and regular exercise are recommended for inpatient and outpatient after diagnosis. It is shown that VDT at the gym need to differentiate in patients younger (under 40), with a small duration of disease.

In the literature, thoroughly is describes the using of exercise in rheumatoid arthritis following types: static, passive and active through active resistance.

Static exercises are used in the acute phase of arthritis when the patient is in bed, and their aim is to prevent the development of inactive muscle atrophy. They are often aimed to strength the sciatic muscles and knee extensors. These exercises are required 6–12 times a day.

Passive exercises are prescribed in the acute stage of the disease and their purpose is to maintain range of motion in the affected joint. These exercises are performed using medical instructor of physical training or relatives of the patient. Passive exercises are required to time when will be reached the maximum amplitude of movement on all axes of motion of joints – several times a day.

Active exercises with the help needed in cases where the patient cannot do them by himself. They are a transition to active exercise without assistance. Active exercises prescribed without much help when the range of motion in joints and muscle strength are sufficient. Active exercises prescribed by the resistance when the improved range of motion [1; 3; 9].

Exercises usually are performed without subjects and with subjects: sticks, jump ropes, pins, balls, balls, cones. In addition, are using gymnastic benches and walls.

There are four types of physical activity for patients with rheumatoid arthritis which are able to reduce pain. Their using can significantly simplify the life of the patient with arthritis, improve general tone of body, improve sleeping. Often patients with arthritis avoid any exercises. They are afraid to aggravate the pain or cause a damage. But if you absolutely avoid physical activity, it can lead to complications such as the development of diabetes.

The researchers recommended four types of exercises that are useful for patients with rheumatoid arthritis:

Stretching exercises help improve the joints, muscles and ligaments. Through stretching exercises reduces the risk of injury, improve limb function.

Muscle-strengthening exercises. They are designed to work out the muscles. Strong muscles improve function of the limbs. For patients with rheumatoid arthritis is recommended to perform a set of 8–10 exercises for the major muscle groups of 2 or 3 times a week.

Aerobic exercises help to engage all the major muscles of the body. With regular doing of aerobic complex by patients with rheumatoid arthritis improves the function of heart and lungs.

Exercise «Get know your body». Its doing improves balance, coordination of movements in patients. Elements of tai chi and yoga, which are a set of «Get know your body» help achieve emotional harmony [2; 3; 8].

For today, one of the largest randomized research (RCTs) evaluating the effect of physical training on the course of rheumatoid arthritis, its effectiveness and safety (registration dynamics of disease activity and radiological signs of degradation estimation method Larsen) is Rheumatoid-Arthritis-Patients-In-Training (RAPIT), conducted Z. DeJond et al. at Leiden University Medical Center in January 1998 and continues to this day. According to results RAPIT prolonged high-intensity aerobic exercises with duration more than 24 months reduces the progression of radiographic signs of joint destruction, improve functional status, aerobic capacity [6; 14].

According to research E. J. Hurkmans et. al. [17] patients with rheumatoid arthritis show high interest in the using of methods of renewal treatment and rehabilitation. It should be noted the readiness and integrity of patients (83 %) of the recommendations a doctor and in some cases, apply remedial treatments alone.

Conclusions. Analysis of the literature data and previous clinical research give reason to believe that a violation of physical activity and mobility of patients with rheumatoid arthritis is referred to the main factors limiting normal vital activity and promote progression of the disease. Thereat, a big practical role has a rehabilitation.

Nowadays in Ukraine isn't almost any research of rehabilitation programs on early treatment of rheumatoid arthritis, there is no clear indication as for adequate tools and methods to help in standardizing the amount prescribed rehabilitation measures, there are not defined the optimal time of beginning and duration of its using.

Prospects for further research are extend studying of the effectiveness of early rehabilitation measures, and their impact on the further course and consequences of the disease.

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THE INFLUENCE OF PHYSICAL LOADS OF THE AVERAGE AND SUBMAXIMAL LEVEL ON THE STRUCTURE OF THE NEURONS OF THE SPINNASIC NODE

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Abstract

The purpose of the study is to study the character of the ultrastructural rearrangement of the components of the spinal node under the influence of the physical load of the average aerobic capacity.

The power of physical exercise (running in the treadmill) was 70 % of the maximum oxygen absorption.

The cellular component of the spinal node reacts to the physical load with nonspecific manifestations and depends on the type of neurons. In an experiment on laboratory rats, it was shown that the period of normalization of the constituent components of the spinal node after hypokinesia depends on the number of sessions of physical activity. After five sessions there are changes in the organelle in the light neurons, which ensures the transition of neurons to a new level of functioning. After 10 sessions, the physical load causes an increase in changes in the cytoplasmic structures in the neurons and acquires a generalized character, which is a nonspecific adaptive response to external influences, which leads to the formation of a structural and functional adaptation trace of the cells necessary to enhance energy supply. The increase in the effect of physical activity up to 15 sessions causes structural rearrangement also in dark neurons, which provides high speed and reverse functional changes. Increasing the physical load up to 30 sessions leads to a rearrangement of the glial component, which leads to an improvement in trophic neurons. The formation of a long-term structural traces of adaptation is associated with an early and pronounced response of blood vessels in the spinal nodes.

Key words: spinal nodes, neuron, glyocytes, blood vessels.

Сергій Попель, Богдан Мицкан. Вплив фізичних навантажень середнього й субмаксимального рівн**ів на будову нейронів спинномозкового вузла.** Мета роботи полягала у вивченні характеру ультраструктурної перебудови компонентів спинномозкового вузла під впливом фізичного навантаження середньої аеробної потужності.

Потужність фізичного навантаження (біг у тредмілі) складала 70 % від максимального споживання кисню. Клітинний компонент спинномозкового вузла реагує на фізичне навантаження неспецифічними проявами й залежить від виду нейронів. В експерименті на лабораторних щурах показано, що термін нормалізації сладових компонентів спинномозкового вузла після гіпокінезії залежить від кратності впливу фізичного навантаження. 5-разова дія фізичного навантаження викликає зміни органел у світлих нейронах, що забезпечує перехід нейронів на новий рівень функціонування. 10-разова дія фізичного навантаження викликає підсилення змін цитоплазматичних структур у нейронах і надає їм генералізованого характеру, що є неспецифічною пристосувальною реакцією на зовнішній вплив, яка веде до формування стурктурно-функціонального сліду адаптації, необхідного для посилення енергозабезпечення клітин. Збільшення впливу фізичного навантаження до 15 сеансів викликає структурну перебудову також у темних нейронах, що забезпечує високу швидкість і зворотність функціональних змін. Збільшення фізичного навантаження до 30 сеансів спричиняє перебудову гліального компонента, що забезпечує покращення трофіки нейронів. Формування довготривалого структурного шляху адаптації пов'язане з ранньою й вираженою реакцією кровоносних судин у спинномозкових вузлах.

Ключові слова: спинно-мозковий вузол, нейрон, гліоцит, кровоносні судини.

Сергей Попель, Богдан Мицкан. Влияние физических нагрузок среднего и субмаксимальной уровня на строение нейронов спинномозгового узла. Цель работы заключалась в изучении характера ультраструктурной перестройки компонентов спинномозгового узла под влиянием физической нагрузки средней аэробной мощности. Мощность физической нагрузки (бег в тредмиле) составляла 70% от максимального потребления кислорода. Клеточный компонент спинномозгового узла реагирует на физическую нагрузку неспецифическими проявлениями и зависит от вида нейронов. В эксперименте на лабораторных крысах показано, что срок нормализации составляющих компонентов спинномозгового узла после гипокинезии зависит от кратности воздействия физической нагрузки. 5-ти разовое действие физической нагрузки вызывает изменения органелл в светлых нейронах, обеспечивает переход нейронов на новый уровень функционирования. 10-ти разовое действие физической нагрузки вызывает усиления изменений цитоплазматических структур в нейронах и придает им генерализованный характер, что является неспецифической приспособительной реакцией на внешнее воздействие, ведущей к формированию

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стурктурно функционального следа адаптации необходимого для усиления энергообеспечения клеток. Увеличение влияния физической нагрузки до 15 сеансов вызывает структурную перестройку также в темных нейронах, обеспечивает высокую скорость и возвратность функциональных изменений. Увеличение физической нагрузки до 30 сеансов приводит к перестройке глиального компонента, обеспечивающего улучшение трофики нейронов. Формирование долговременного структурного пути адаптации связано с ранней и выраженной реакцией кровеносных сосудов в спинномозговых узлах.

Ключевые слова: спинно-мозговой узел, нейрон, глиоцит, кровеносные сосуды.

Introduction. In the formation of a structural adaptation trace under conditions of hypokinesia, an important role is played by the morpho-functional rearrangement of individual elements of a simple reflex arc. Existing data suggest a relationship between the rate of recovery of skeletal muscle structure and the rate and completeness of their re-innervation, and the effect of neurotrophic factors on muscle fiber differentiation processes [4; 5; 13].

It is known that physical activity has a high biological activity and is a potent negentropic adaptogenic factor [8; 9]. The question of its influence on muscle tissue has been widely discussed in domestic and foreign literature [6–10]. As for the effect of physical stress on the nervous system, in this area, studies were conducted in a much smaller volume, and their results are scattered and systematized [4; 5; 8; 12]. Meanwhile, the role of the nervous system in the realization of compensatory reactions of the organism within the adaptation syndrome is difficult to overestimate, and if the physiological mechanisms of the adaptive reactions of various parts of the nervous system to physical activity have been studied sufficiently deeply [2; 4; 7; 11], then their morphological aspect is known much less.

The goal of the study was to study the morphofunctional state of the neurons of the spinal cord nodes L2–L5 under physical exertion against the background of previous hypokinesia.

Materials and methods of the study. The work was performed on 250 males of adult white mongrel rats weighing 150–220 grams. To model hypokinesia, rats were kept in cells-pencil boxes measuring 10x5x8 cm for 230 days. Three groups of animals were formed: a control group of animals in which the hypokinesia were modeled and a group of animals in which, after hypokinesia, the physical load was simulated by running in treadmill for 20 min 3 times a day [10]. The rats were taken out of the experiment every 5 days from the fifth to the thirtieth day. Type of lumbar ganglion L_2–L_5 of the corresponding spinal nerves innervating the rectus muscle of the thigh, calf and fluky muscles. The biological material taken was fixed in a Carnoy mixture and poured into paraffin by a standard procedure, then sections with a thickness of 6 μm were made on the microtome. The resulting sections were stained with a purple crooked by the Nissl method.

At the light-optical level, the following characteristics of nerve cells were studied: the area of the neuron profile field, the area of the nucleus, and the nuclear-cytoplasmic ratio. In the study of spinal cord node of neurons, the cells with the morphological features of various functional states were quantified. For statistical processing of the results obtained, the Mann-Whitney test and the Fisher method were used.

Discussion and the results of the study. Based on the data of the scientific literature [5; 15] and the bimodal character of the distribution of the morphometric parameters of the spinal cord node neurons [8; 9], two main groups of neurons were identified: 1) large, light and 2) dark, small. Light neurons have an average linear transverse dimension greater than 30 μm, a low light and electron optical density of the pericarion, and a focal distribution of Nissl's tigeroid substance. Dark neurons are characterized by smaller average metric indices, they have a rounded shape, the cytoplasm of such cells is electronically dense and contains a diffusely distributed substance of Nissl.

The neural population of spinal cord node after a long hypokinesia consists also of two cellular populations. One of them is characterized by the displacement of the tiger substance to the periphery of the cytoplasm and the phenomena of chromatolysis, which is manifested in the increase in the enlightened perinuclear region. The second group of neurons has an enlarged pericellular space, the shape factor changes in them, it indicates the phenomena of deformation of the cell membrane, of varying degrees of severity. Such changes can be characterized as reactive, which have not yet reached the level of typical apoptotic changes [1]. It should be noted that, within the histological sections of the spinal cord node, morphologically altered cells form separate groups beyond which the neurocytes are located. The quantitative counting of neurons of various types with reactive changes has shown that in the first place, and in a larger number, they appear in dark cells. At the end of the hypokinesia period, the proportion of type II neurons with reverse changes significantly decreased to 22,3 ± 1,27 % ($p < 0,05$). Among this group of neurons, the number of deformed, intensely stained cells increases, often with vacuolated cytoplasm and destructively altered subcellular components, does not provide an opportunity for their identification.

The maximum number of reactive cells of the I group reaches a maximum on 230 days from the beginning of the hypokinesia modeling and averages 43,2 ± 2,24 % of the total number of cells. Due to irreversible changes leading to complete destruction of neurons, glial nodules are formed, as a result of neuronophagy and jet migration of satellite gliocytes.

The nuclear-cytoplasmic ratio index in light neurocytes is lower than the control data (0,11 ± 0,002), whereas in darker neurocytes it significantly exceeds the analogous values of the control group (0,20 ± 0,004).

As a result of an experimental study, it was found that the response of the spinal cord node cell component to physical activity after hypokinesia is nonspecific and depends on the type of neurons.

So, five single-acting fisical load causes more changes in the organelles in light neurons. First of all, this concerns the mitochondria: their matrix is enlightened, vacuolized, and the cristae are completely preserved. Such structural changes in the mitochondria are nonspecific and are observed under the influence of a wide variety of altering factors [3; 11; 13]. Therefore, we can think that in our case these changes are a universal adaptive response to external influences, leading to an intensification of energy supply of cells. In many neurons, the nuclei have uneven contours, the number of lysosomes increases, the cisterns of the granular endoplasmic reticulum and the elements of the Golgi complex are hypertrophied. In the neuroplasm of individual neurons, spiral bodies are formed, which are the result of the tightening of the cisterns of the granular endoplasmic reticulum.

The number of free ribosomes is significantly increased, and the rate and recurrence of functional changes are high [5; 7].

However, not all spinal cord node neurons exhibit reactive processes, since cells often occur without pronounced compensatory changes. The performed morphometric analysis showed that the number of such neurons can be up to 45,0 % of the total number of them per 1 m 2 of the cross section of the spinal cord node.

With an increase in the multiplicity of the action of the fisical load up to 10 times, the changes in the cytoplasmic structures in neurons increase and acquire a more generalized character. In bright neurons, the clarity of the structure is lost by deep chromatophilic substances. In the composition of these neurons, lysosomes, autolysosomes, and lipofuscin bodies are determined. Mitochondria of neurons represent a heterogeneous population. Along with the swollen, vacuolized mitochondria with signs of disorientation and degradation of the crista, small and medium mitochondria with few preserved cristae are found.

Such a discrepancy in the structure of mitochondria can occur even within a single neuron. Similar changes can also occur in neurons of intact animals. However, their simultaneous combination with expansion of the granular endoplasmic reticulum, the appearance of small bubbles covered with a membrane membrane, a decrease in the number of ribosomes indicates the development of cellular hypoxia [2; 5; 11].

The wide spectrum of ultrastructural changes in mitochondria with hypokinesia once again confirms the expediency of dividing them into several morpho-functional types, which agrees with the data on the heterogeneity of mitochondria according to the degree of activity of their enzymes [6]. A significant difference in the activity of mitochondrial enzymes may serve as one of the reasons for their high sensitivity to hypoxia [7; 12].

With an increase in the multiplicity of the action of the fisical load up to 15 times, changes appear also in dark neurons. In their cytoplasm, vacuolized mitochondria are detected, hypertrophy of the Golgi complex, expansion of the cisterns of the granular endoplasmic reticulum, which is often accompanied by branching and an increase in their number.

The reaction of the nuclear apparatus to a 20-fold fisical load effect is manifested by the formation of shallow invaginations of the cariolema in individual neurons. With the increase in the multiplicity of the action of physical load, changes in the protein-synthesizing apparatus become more pronounced, especially in light neurons. They appear moderately expanded cisterns of a granular endoplasmic reticulum with a large number of fixed ribosomes. Along with this, the karyomema forms a large number of invaginations, the perinuclear space expands, the nucleoli vacuolize and their number increases.

After 25-fold exposure to fisical load, structures appear in the karyolemi, which are described in the special literature under the generalized name «open pores» [2; 3; 5; 9]. It is possible that this fact reflects the activation of the transmembrane exchange and through such pores the transports of nuclear products to the cytoplasm and, primarily, ribonucleine acid is carried out. Sometimes nuclei with a displaced nucleolus have rounded corpuscles formed as a result of activation of the neuron and judging from the data of the scientific literature, they can be formed upon exposure to the body not only of physical exertion, but also of other chemical and physical factors [4].

After a 30-fold exposure to fisical load in the cytoplasm of spinal cord node neurons, an increased amount of mitochondria with an electronically dense matrix and a large number of cristae, a cistern of a

granular endoplasmic reticulum and a Golgi complex are enlarged in size, and the number of ribosomes is also increased. The latter are located both on membranes of the granular endoplasmic reticulum, and in the form of a polis. All these phenomena can testify to the intensification of synthetic processes aimed at restoring the initial structural and functional organization of the cell [5; 7].

The effect of fisical load after prolonged hypokinesia is manifested by a decrease in the proportion of neurons with destructive changes. The number of light cells with reactive changes decreases on average by 12,7 ± 2,23 % and by 18,8 ± 0,92 % of the total number of cells, the proportion of dark neurons decreases ($p < 0,05$). The value of nuclear-cytoplasmic ratio for neurons of type II does not have any possible differences from the first group of cells, however, the ratio of the area of the nucleus and the cytoplasm of small dark neurons after fisical load was on average 1,2 times lower than that in control animals.

The polymorphism of tinctorial and morphometric characteristics of rat neurons in response to hypokinesia was found to be a consequence of degeneration of a part of nerve endings damaged as a result of local deficiency of trophoblastic factor and growth factor of nervous tissue [8; 9; 13; 14]. The dynamics of changes in the state of nerve cells demonstrates a connection with the stages of hypokinesia and its duration. The decrease in the proportion of destructively altered cells, the increase in the number of cells with reactive changes, and the decrease in the nuclear-cytoplasmic ratio of dark neurons correspond to the activation of reparative processes in the application of fisical load.

The physical load does not immediately lead to the restoration of the ultrastructure of the gliocytes. Reactive changes develop only if the fisical load is repeated multiple times (on the average, with 10–15 times). They are manifested by a local expansion of the gliocyte contact zones with the neuron and the enhancement of intergliocytic connections in the form of mutual invaginations. The ultrastructure of mantle gliocytes indicates the predominance of restorative repair processes in most of them: the nucleus contains 1–2 nucleoli, the electron-optical density of the cytoplasm increases, and the number of pinocytosis vesicles, especially on the side, inverse to the neuron's body increases. Often, they merge into larger vacuoles, within which there are multi-chamber structures.

In the experimental animals, the reaction of the hemocrocirculatory bed was observed in the spinal cord node during the entire experiment. The effect of fisical load after prolonged hypokinesia causes the normalization of the microhematosus wall, which occurs already with five multiple applications. The microrelief and irregularity of the outline of the luminal surface are enriched, and the number of pinocytotic vesicles in the cytoplasm of endotheliocytes increases. The severity of these phenomena increases with the multiplicity of the action of the fisical load. The karyomema forms deep invaginations. Separate nuclei have a uniformly distributed chromatin, there are often 1–2 nucleoli. The folding of the basal and contact surfaces of endotheliocytes intensifies, the structure of intercellular contacts normalizes. The basal membrane of the microhemudosin retains its correct classical structure.

Conclusions.

1. The physical load after prolonged hypokinesia causes a significant morphofunctional rearrangement of the constituent components of the spinal nodes. An earlier reaction is inherent in light neurons. The intensity of ultrastructural changes depends on the multiplicity of the action of physical exertion: at initial doses, they relate mainly to the cytoplasmic structures of neurons; in many cases, they also concern the structure of the nucleus, and reactive changes in gliocytes appear and intensify. An early and clearly expressed response to the effect of physical exertion is observed in the endotheliocytes of microhemosudin.

2. Ultrastructural changes in the spinal node after hypokinesia are inverse, but the term for the normalization of the ultrastructure of all cellular components is directly proportional to the multiplicity of the effect of physical exertion, and is the basis for the formation of a long-term structural adaptation trace.

Prospects for further research in this direction include the study of histo- ultrastructural zminin elements of a simple reflex arc during physical exertion against the background of previous hypokinesia.

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THE ORGANIZATION AND CONTENT OF MUSIC THERAPY CLASSES FOR THE PREVENTION AND TREATMENT OF PSYCHOSOMATIC DISEASES IN CHILDREN FROM SIX TO TEN YEARS OF AGE

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Abstract

The article deals with the organization and content of the music therapy sessions for children 6–10 years of the with psychosomatic diseases. The analysis literature scientists from different countries show that the most rational for music therapy sessions with children of this age a combination of music witch exercise, games and dancing. They actively influence the deprivation of children from diseases related to the negative impact of the environment on their psyche, neurosis, aggression and positively contribute to the psycho–physical development, education aesthetic feeling formation behaviour.

Research scientists and practical experience indicate the need for widespread use of music therapy classes in preschool institutions, schools and medical centres in connection with the spread the 15 years of psychosomatic illnesses and youth.

Key words: music therapy, classes, children, illness, treatment, privation, exercise, games and dance

Анастасія Вільчковська. Організація та зміст занять із музикотерапії, спрямованих на профілактику та лікування психосоматичних захворювань у дітей 6–10 років. У статті розглянуто організацію та зміст занять із музикотерапії для дітей 6–10 років, які мають психосоматичні захворювання. Результати аналізу літератури вчених різних країн свідчать про те, що найбільш раціональним для занять із музикотерапії з дітьми цього віку є поєднання музики з фізичними вправами, іграми й танцями. Вони активно впливають на позбавлення дітей від захворювань, пов'язаних із негативним впливом навколишнього середовища на їхню психіку, неврозів, агресії, а також позитивно сприяють психофізичному розвитку, вихованню естетичних почуттів, формуванню норм поведінки.

Дослідження науковців і практичний досвід свідчать про необхідність широкого застосування занять із музикотерапії в дошкільних закладах, школах, санаторіях та лікувальних центрах у зв'язку з поширенням за останні 15 років психосоматичних захворювань у дітей та учнівської молоді.

Ключові слова: музикотерапія, заняття, діти, хвороби, лікування, профілактика, фізичні вправи, ігри, танці.

Анастасия Вильчковская. Организация и содержание занятий по музыкотерапии, направленных на профилактику и лечение. В статье рассматривается проблематика организации и содержания занятий по музыкотерапии для детей 6–10 лет, имеющих психосоматические заболевания. Результаты анализа литературы учёных разных стран свидетельствует о том, что наиболее рациональным для занятий по музыкотерапии с детьми этого возраста является сочетание музыки с физическими упражнениями, играми и танцами. Они активно влияют на предохранение детей от болезней, связанных с негативным влиянием окружающей среды на психику, помогают в устранении неврозов, агрессии, а также положительно способствуют их психофизическому развитию, воспитанию эстетических чувств, формированию правильных норм поведения.

Исследование ученых и практический опыт свидетельствуют о необходимости широкого применения занятий по музыкотерапии в дошкольных учреждениях, школах, санаториях и лечебных центрах в связи с распространением за последние 15 лет психосоматических заболеваний среди детей и молодежи.

Ключевые слова: музыкотерапия, занятия, дети, физические упражнения, игры, танцы.

Introduction. Health of the nation nowadays considered to be an important indicator of the civilization of the state that largely affects the socio-economic state of society. Health of children and young people is especially important for society, because according to scientists' assessment (Amosov, I. Muravav etc.) approximately 75 % of diseases that have adults are connected with «health foundation» that was built up in childhood and adolescence.

According to medical research of many years only 11 % of students graduate from high school being. Among the most common diseases that have most of students of primary school in European countries are neuroses associated with long stressful situations in family and school, aggression among students, wrong relationships in the class community and others.

Children that experienced the above problems have limitation or lack of adequate reaction to external stimuli and the received information, the possibility of implementing natural mental and physical needs, difficulties in expressing their inner feelings. Each of these limitations makes considerably difficult or even

destroys the child's contact with parents, teachers, children of the same age, nature. This causes different functional disorder, aggression, low self-esteem, deficiencies in logical thinking etc. [6].

These children need special attention and appropriate treatment application which involves solution of this problem on two stages:

1. Diagnosis of factors that cause violation of children's behavior and change (if it is possible) of situation – psychological climate in the family and school.

2. Prevention and treatment that are aimed to ensure conditions for child's self–realization, by increasing physical activity, reducing mental and physical stress, creating a positive emotional mood, liberation and organizing blocked energy, overcoming fear etc.

The main and most effective factors to overcome these neurotic states that have children aged 6–10 is music combined with an active motor activity (physical exercises and dancing exercises, outdoor games, dancing).

Disharmony of spiritual life of the child, which is connected with conflicts in the family, personal communication with children of the same age in the field of educational activity at school has negative impact on his or her mental and physical development, and can be the key reason of psychosomatic diseases. Thanks to music therapy there is the ability to eliminate or significantly reduce the negative impact of stress, feelings, aggression and significantly improve the mental health of the child. Music is also one of the effective means that helps to solve problems of relaxation after school activities that experience students of primary school.

The goal of the research is the analysis of organization and content of music therapy lessons, that are aimed to prevent and treat psychosomatic diseases of children aged 6–10.

Discussion and the results of the study. The effect of the influence of music results from its possibilities to cause child's emotions, ideas, thoughts, actions conforming to which there are certain physiological changes in the body. The influence of acoustic waves on subliminal level causes synchronization of physiological processes, integration of all systems of the body, mobilization of personal host defenses. This consolidation causes supercompensation condition which manifests itself in improving state of health, strengthening of psychophysical protection, which is aimed at harmonization of the development of the child [4].

Music combined with motor activity allows to control the mental state of the child and his or her behavior. Almost all children of this age, regardless of their mental development, certain motor reactions appear when they are listening to music. Active movements together with music are a source and energy and emotions regulator of children at the same time, also they free psychophysical stress [5].

Based on many years of research M. Yanishevskym found that emotional reactions to musical stimuli is characterized by increasing motor skills activity of children that affects the cardiovascular system, breathing, muscle tension or relaxation, strengthening of metabolism parameters, etc. [3].

The movement that is stimulated by music becomes more controlled, also intensifies attention, hearing and thinking, changes emotional state of the child. The main musical element that encourages children to move is rhythm. According to the opinion E.Zhaka-Dalcroze – «It's impossible to reproduce musical rhythm without feeling of body rhythm» [2, p. 68]. Thanks to the usage of the human body as a kind of musical instrument a sense of music and motor coordination develops. Rhythm is the base of therapeutic properties of music. In nature, everything is subjected to certain rhythms, including the human body. Scientific studies have shown that when the body functions are violated, they begin to work in a different rhythm. If to set with which music works while they are playing works certain body organ in unison, which has violation of its natural rhythm, it can resume its correct functioning [4].

The impact of music on the human psyche can be described as «psychotropic»: it soothes, relaxes, stimulates, activates, mobilizes. It has significant opportunities to influence the functioning of the whole human body. That is why these properties of music indicate the need for its use in the prevention and treatment of various children's, youths' and adults' diseases [6].

The wide popularity of lessons in music therapy received musical concept of musical–motor upbringing of Western musicians and teachers: Emile Jacques–Dalcroze, Orff Carl, Rudolf Laban, Alfred and Mary Knessiv. The advantage of these systems is their focus on the full development of personality in mental, physical and aesthetic fields. Through the intensification of aesthetic response of children to music while doing motor activity, the rise of creative potential of individuality appears; forming of sense of beautiful and aesthetic; promotion of active lifestyle. Let us consider thesis specificity of musical-motor education of children brought up by the teachers mentioned above.

Émile Jaques–Dalcroze (1865–1950) in the long–term work with children came to the conclusion that there must be an organic relationship between body and music. At the same time he stressed the educational

value of rhythm and its disciplinary effects on the psyche and the body of a child. Elements of rhythmic gymnastics, designed by Émile Jaques–Dalcroze are also used in special pedagogy and rehabilitation at the diagnosis and correction of defects in the physical development and behavior; emotional disorders and neuroses of children and young people.

Carl Orff (1895–1982) believed that preschool and junior school ages are the best to attract a child to music and to form its motor skills. At this time the foundations of comprehensive human development are being laid, especially its psychomotor field. The movement in his system does not have clearly specified forms, but occurs spontaneously during gaming activity and is the improvisation of a child depending on the subject of games and situations that are created in the process of music and movement classes. Motional improvisation has a place in the process of executing dance elements in accordance with the proposed music when performing songs or staging.

C. Orff defines several basic principles that must come true during the music and movement classes: the comprehensive development of the child; the alternation of psychophysical stress and relaxation (rest); creativity and progressively increasing requirements to the execution of the movements. Multifaceted method of C. Orff, as well as the guidelines for its application are used in many countries of the world on the lessons of music and physical culture, in music therapy with children who have problems in behavior and mental illnesses, in children's sanatoria, where the physiotherapeutic procedures are carried out, etc.

Rudolf Laban (1879–1958) is the author of physical expression, which is also called «Modern educational dance». He formulated the following slogan: «every man has within himself something of a dancer, and he has to develop and improve these makings to strengthen his mental health, well-being, and to organize his active leisure. Children (especially preschool and primary school age) often implementing their mental state and mood with movements. So you want to create for them the proper conditions for the expression of their emotional state in motor activities» [1].

The main tools of this physical expression are physical exercise to music, games with elements of dance, which are available for children. Their execution, according to R. Laban, stimulates the child's creativity, positively influencing the development of aesthetic sense, creates movement culture (especially their coordination), harmonizing its actions with the movements of the partners, etc. R. Laban's Method of expressive gymnastics is aimed at the integration of movements, music and rhythm. Means of physical expression (basic movements, gymnastic and dance exercises, folk dances, games, etc.) are accessible and interesting for children, so they can be widely applied in the classrooms of music therapy for this age contingent.

Rhythmic gymnastics of Alfred and Maria Kness was widely implemented in the pre–school institutions and schools during 60–70-s of XX century in various countries of Western Europe, America and Asia. They named their technique of rhythmic gymnastics – Bewegung Rhytmik, it can be translated from German as «movement and rhythm» or «move to the rhythm». It is based on three main elements: movement – rhythm – music. The main place among them is relegated to the rhythm, which is, in their opinion, the basis for the proper use of all phases of movement in time and a specific pace. The authors also emphasize that the aforementioned things are a definite background that promotes interest to the proposed movements for children.

You can assume that the rhythmical gymnastics to the music by A. and M. Kness has a certain resemblance to aerobics. Because it enhances aerobic processes in the body, increases the amount of oxygen consumption. This happens due to the stimulation of the cardiovascular and respiratory activities using circular movements: walking, running, jumping (in place and with moving forward), dancing, etc.

Performance of rhythmic exercises in the same pace and time contributes to the education of discipline, teamwork, better orientation in space and time, initiative, and ability to solve their problems which are associated with stress, manage emotions, improvement of the psycho–physical condition of children. Therefore, the method of A. and M.Kness is used in music therapy with children who have a variety of mental disabilities.

The positive experience of carrying out the music therapy in various countries in the course of which the guidelines by Émile Jaques–Dalcroze, C. Orff, R. Laban, A. and M. Kness were implemented, those of the combination of music and motor skills in the prevention and treatment of psychosomatic diseases of children, show a significant positive impact on the improvement of their health. Despite the fact that the methodical systems of these teachers have some differences, they do not contradict, but rather supplement each other. Important component that combines them is a focus on the harmonious psycho-physical development of the child.

The concept of «psychic resonance», which was developed by a group of Swedish psychologists and passed the practical testing in the treatment of mental illnesses in people of all ages, is, in our opinion, interesting for the music therapy. The basic idea of it is fact that music is a reproduction of the original forms of human mental life through acoustically-harmonious construction. The effect of music is due to its ability

to evoke a certain emotions, thoughts, ideas and actions, in accordance with which the body goes through certain physiological changes [8].

Musical shapes affect the body on physiological and mental levels. Influence on the first level is carried out through the outer side of a piece of music. The six components of the music belong to it: the height of the sound, its flexibility, duration, timbre, tonality and rhythm. The effect on other mental level is due to the internal side of a musical work, which includes its comprehension (melody, harmony, rhythmic momentum), which causes certain ideas and emotions in the audience. The music also affects the central nervous system that leads to changes in neuro–physiological reactions, as evidenced by changes of excitation flow in cortico–thalamic and cortico–limbic circles of the brain [4].

High interest in music therapy in recent years was also associated with developing of a new acoustic technology. In 1989 year in Germany went on sale first CD of medical resonance music composed P. Hyubner. The author explains the phenomenon of resonance by the unity of harmony laws of musical works and functioning of the human body. Resonant music relieves stress, helps to restore biorhythm disturbances, psychophysical performance, etc. [7]. Nowadays, in many countries resonant music therapy is widely used in curing of mental illnesses, nervousness and stress-related emotional disorders including depression.

Lessons on music therapy for 6–10 years old children last within 45 minutes. Structure of the lessons includes following components.

1. Preparatory part (warm-up) aimed at children's psychophysical preparation for further active work. At the beginning of the class children perform walking at a different tempo,jogging, and the next step – combined developing gymnastic exercises from different initial positions (standing, sitting, lying). The number of exercises in complex depends on the age of children and their physical conditioning. For children of 6–7 years old 8–10 exercises are selected and for 8–10 years old children respectively 10–12 exercises., the number of repetitions lies within 10–14 times, taking into consideration the current state of their health.

2. The task of the main part is development of vulnerability and variety of feelings, improvement of children's motor function. For this purpose, exercises of rhythmic gymnastics, dance exercises and dances, outdoor games to music, a variety of moving around the room (walking, jogging) exercises of balance and so on are proposed.

3. The final part is dedicated to relaxation. Children perform breathing exercises (deep breath and full exhale), muscle relaxation (lying on the floor), slow walking. Summing up the lesson includes talking to children about the contents of the class, what they liked and what they would like to perform next time.

The choice of means for music therapy lessons depends on the age characteristics of 6–10 years old children, their health state, disease diagnostics, as well as skills and capabilities for further use of appropriate musical material. The main objective of these lessons is to harmonize psychosomatic processes that occur in the child's body. Therefore, to improve physical and mental health, for children it is useful to participate in a variety of outdoor games, dance and do physical exercises to music.

The musical material is selected taking into account the vulnerability of children to the music that suits their tastes. Music used in music therapy can be diverse: classical, folk, modern, dance, from films. Widespread use may also have echoes of birds, animals, wind noise and forest, sea waves etc. The impact of music takes place simultaneously on the psyche and somatic systems of the child. Calm and quiet music causes pleasure, reduces muscle tension, heart rhythm and respiratory rate. On the contrary, loud and expressive sounds actively influence on stimulation of psychophysical functions of a body. Muscle tension, blood pressure, heart rate and level of adrenaline in blood increased.

Researchers (M. Keryl, M. Yanishevskyy) found that the state of the human body is affected by the frequency of growth and decline of sound waves. The most effective influence on the human brain is frequency in every 20–30 seconds. Research has proved that the flexibility in the sound waves of classical music increases and comes down about every 30 seconds. Classical music is characterized by high variability of acoustic energy flow that improves the functional state of the cerebral cortex of the brain, memory, associative activities. While listening to classical music the human central nervous system resonates by sound waves of music and it improves the functioning of the whole body [7].

We offer a tentative musical repertoire for music therapy classes:

Children's Album – P. Tchaikovsky;
Overture: Storm, Francesco do Rimini – P. Tchaikovsky;
Seasons – P. Tchaikovsky;
Dolls Dance – D. Schostakovich;
Festive Overture – D. Schostakovich;
Cinderella – S. Prokofiev;
Peter and the Wolf – S. Prokofiev;
Children's Album – H. Svirydov;

Nocturne from String Quartet – P. Borodyn;
Children's Album – A. Hachaturyan;
Children's Corner – K. Debyussi;
Carnival of Animals – C. Saint–Saens;
Swan – C. Saint–Saens;
Musical Moments – F. Shubert;
Ave Maria – F. Shubert;
Children's scenes – R. Shuman;
Song without Words – F. Mendelson;
Little Night Serenade – V. A. Motsart;
Hungarian rhapsodies Finals – F. Liszt;
Nocturne in f-dur, Etude in E-dur (extreme parts) – F. Chopin;
Finals of symphonies № 5, 6, 9 – L. van Beethoven;
Bagatelles – L. van Beethoven;
Well-Tempered Clavier – J. S. Bach.

In the program of physical education for primary school pupils are given the means of physical training for children of each class. They correspond to the anatomical and physiological characteristics of children of each age group. Therefore, the teacher who gives training lesson in music therapy may use this program material.

However, it is important to take into consideration the specific of music and movement therapeutic classes. When choosing outdoor games, games of scene nature are preferred because for games with elements of competition (in the form of relay) it is difficult to find functional music. Also, not all basic movements (throwing objects at a distance and in the target, running for speed, jumps in height and length of the takeoff run) suitable for these classes. No restrictions have dance exercises and dancing. On the contrary, it is desirable for children to use them on each lesson for distributing their dance experience. Dance and music for them can be taken from methodological and practical collected volumes «Dance for Children».

While practicing the general development exercises, attention should be payed to children's rational breathing as some of them hold their breath. For example, in the process of lifting the hands up they must take a deep breath and while putting them down or tilting the body forward they should exhale. General developmental exercises with wide amplitude movements should be performed to a triple music meter (such as Waltz) at the rate of 50–100 beats of a metronome per 1 minute. Exercising in such a way children learn to feel the rhythm, cadence, beat, pitch and shape of a musical work.

Different kinds of walking should be performed to a march tune, one should do it at a rate of only 4/4 with the same rhythmic structure for all the voices, it makes walking very vivid. Running is performed to music at a rate of 2/4 and 4/4. Various jumps and bounces on one place and in motion on one or on both legs should be accompanied by music at a rate of 2/4 and 4/4. Low jumping and bouncing is performed to polka music type, and high and broad jumping to gavotte music.

Creating analogies between given above exercises and exact examples how to do those that are familiar to the child have a positive impact on the effectiveness of music therapy sessions. For example, move your hands energetically, like «birds flutter», jump slightly on both legs like «bunnies». We must often use improvised movements. In this case children are more active in the class – their mood gets better and their interest to the given assignments increases. During music therapy sessions it is desirable to use exercises that do not require any special training for children to perform.

It is important to find the appropriate musical accompaniment for each movement in the game. For example, jumping on place or moving forward requires light, cheerful music; slow hand motion requires a quiet one. Before you start playing it is necessary for children to listen to this music in general, for them to understand its contents, to draw their attention to the nature of the piece of music and more vivid means of musical expression, which should be reflected in their movements. For example, «Dear children, listen to the toed Bear's walking (music is slow and in a low register). The bear is waddling and roaring in a low voice».

A significant part of music therapy in the classroom is dancing. It has a positive effect on children's coordination and development of their mental and physical skills. Dancing belongs to the expressive form of movement, which is always interesting for 6–10–year–old children and gives them positive, joyful emotions. Dancing and dance exercises (elements of dance) are selected for these classes, depending on the coordination abilities of children of this age and their interest in a particular dance exercise or dancing in general.

Dancing helps unblock children's body and the psyche, which is typical for reserved people with chronic stress who move in a constrained and not coordinated manner, constantly controlling their movements. They should give the child an opportunity to relax, forget the problems which they are constantly thinking about and to get energy dance movements create.

For free dance improvisation, it is recommended to choose different forms of music. Simple music that motivates children to dance can be used in this case. Very often for the successful implementation of therapeutic objectives it is desirable to choose music where melody clearly defines rhythmic pattern, this makes it possible to increase the expressiveness and dynamic dance moves. They lead to the elimination of existing mental stress and can ease the tensions of the body. Group dances also enable children to learn the basics of choreography and develop their creative abilities.

Recently, during these sessions folk music became used, which inspires children to perform motor improvisation to create different familiar images (birds, animals, etc.). This allows children to get positive emotions and reduce fatigue.

In order to prevent health problems, it is important to pay attention to the children's posture during music therapy lessons. It should be mentioned that even in the younger classes a lot of children have significant posture problems. It is known that if the human spine is in proper position, the internal organs are not compressed and function well. Therefore, during each session teachers must control s children posture (static and dynamic) and if necessary provide them with an appropriate advice.

So, it must be assumed that music combined with the movements aims to supplement or reinforce pharmacological, rehabilitation or postoperative treatment. Music therapy has significant efficacy in improving coordination, orientation in space, it helps to adjust and reduce mental stress and aggressiveness of children. These classes are used not only as therapeutic means, but they also play an important preventive role. In this case, music therapy is used for psychophysical stress reduction, relaxation and general activation of all children's body functions, the creation of a healthy lifestyle.

Conclusions. The results of the analysis of native and foreign literature on music therapy indicate that the integration of music and movements positively affect the treatment of children from diseases connected with a negative impact on their psyche, neurosis, aggression and promotes mental and physical development, education aesthetic senses and formation of positive behavior. It is therefore necessary to apply music therapy more broadly in pre–schools and secondary schools as an effective form of prevention and treatment of diseases connected with psychosomatics.

Music therapy classes, involving the use of exercise, dancing, outdoor games, basic movements are widely used in pre–schools, schools, health centers, medical centers around the world. Such content of music therapy classes makes it possible to increase the impact on the psychophysical development of children, the formation of a correct posture, the reduction of uncertainty in their abilities and aggression. Scientists' research and the practical experience of music therapeutics show their high efficacy in the prevention and treatment of mental illnesses that has increased among children and youth within the past 15 years.

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MORPHOLOGICAL INDICATORS OF SKILLED SINGLE AND PAIR KAYAK AND CANOE ROWERS WHO PARTICIPATE IN EVENTS OF DIFFERENT DISTANCES

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Abstract

In the foreign and native books on rowing it focuses more on investigation of body build, physical and special preparation of sportsmen. These parameters limit the passing time of a competitive distance, so they are used as qualification criteria for specialization and team batching. ***Methods and investigation design.*** Canoeists and rowers on kayaks participate in the research. The characteristics of group are: age– 19–26 years, both male and female, high sport qualification, group sizes 160 rowers of both sexes. The complex investigation includes the anthropometric measuring of total body sizes (length and body weight, chest circumference, absolute surface of the body). ***Conclusions.*** In the research the biggest length is found in Merited Sports Masters (MSM), each of male and female; the smallest – in Sports masters (SM). The similar trend was noted in parameters of body weight, in exception of single-canoe sportsmen. In this case International Masters of Sports (IMS) show the highest values. In kayaks and canoes, in teams of kayaks pairs at a distance of 200 m, the highest length and body weight were recorded in highly qualified athletes (MSM). The only exception is the body weight of female athletes-canoeists, where this figure is higher for IMS ($p>0,05$). Among singles at a distance of 500 m the MSM canoeists and rowers on kayaks have the best values of length and bodyweight, MS rowers have the worst results., the only exception is the maximum body length of ISM ($p>0,05$)/ the female ISM rowers have the highest parameters ($p>0,05$). The similar trend was found for kayak pairs rowers at a distance of 500 m. At a distance of 1000 m the female and male MSM rowers were superior to IMS' and SM" in their classes, for canoe the maximum parameters of length and body weight wee noted at ISM. In teams of kayaks pairs at a distance of 1000m the size parametersof MSM are higher then ISM' and SM' ones.

Володимир Давидов, Володимир Шантарович, Олександр Журавський, Дмитро Пригодич. Морфологічні показники кваліфікованих веслярів на байдарках і каное в одиночках і двійках, які виступають на різних дистанціях. У вітчизняній та зарубіжній літературі з веслування увагу акцентовано на дослідженнях, пов'язаних із вивченням особливостей тілобудови, фізичної та спеціальної підготовленості спортсменів. Оскільки ці показники лімітують проходження змагальної дистанції, то вони використовуються як критерії відбору, визначенні спеціалізації та комплектуванні команд. ***Матеріал і методи дослідження.*** У дослідженні брали участь веслярі на байдарках і каное високої кваліфікації у віці від 19–26 років обох статей. Усього обстежено 160 веслярів обох статей. Комплексне дослідження включало антропометричні вимірювання тотальних розмірів тіла (довжина та маса тіла, окружність грудної клітки, абсолютна поверхність тіла). ***Висновки.*** Згідно з нашими дослідженнями, найбільша довжина тіла в класі човнів-одинаків на байдарках і каное на дистанції 200 метрів відзначена як у чоловіків, так і в жінок спортсменів ЗМС, найменша – у спортсменів МС. Аналогічну тенденцію протежено стосовно показників маси тіла, окрім каное одинака, де найбільший показник був у спортсменів МСМК ($p>0,05$). У веслуванні на байдарках та каное в командних човнах-двійках на дистанції 200 метрів найбільші показники довжини й маси тіла визначено у висококваліфікованих спортсменів ЗМС, окрім маси тіла в спортсменок-каноїсток, де цей показник більший у МСМК ($p>0,05$). В одинаків на дистанції 500 метрів кращі показники довжини та маси тіла мають байдарочники та каноїсти ЗМС, гірші – веслувальники МС, окрім каноїстів-одинаків у довжині тіла, де більший показник тіла зафіксовано у МСМК ($p>0,05$). У жінок, які спеціалізуються на байдарці-одинаку, найвищі дані спостерігаємо у спортсменок МСМК ($p>0,05$). У класі двійки на дистанції 500 метрів простежено аналогічну тенденцію, до веслувальників-одинаків. На дистанції 1000 метрів ЗМС у чоловічій та жіночій байдарці-одиночці також були

більшими МСМК і МС у своїх класах, у каное найбільші показаники довжини та маси тіла зафіксовано в спортсменів МСМК (p>0,05). У командних човнах-двійках на дистанції 1000 метрів байдарочники-таканоїсти ЗМС мають перевагу над спортсменами МСМК і МС.

Ключові слова: веслування, байдарка, каное, тотальні розміри тіла.

Владимир Давыдов, Владимир Шантарович, Александр Журавский, Дмитрий Пригодич. Морфологические показатели квалифицированных гребцов на байдарках и каноэ в одиночках и двойках, выступающих на различных дистанциях. В отечественной и зарубежной литературе по гребле большое внимание уделяется исследованию особенностей телосложения, физической и специальной подготовленности спортсменов. Поскольку эти показатели лимитируют прохождение соревновательной дистанции, то они используются как критерии отбора, определения специализации, комплектования команд. ***Методика и организация исследования.*** В исследовании принимали участие гребцы на байдарках и каноэ высокой квалификации в возрасте 19–26 лет обох полов. Всего обследовано 160 гребцов обох полов. Комплексное иследование включало антропометрические измерения тотальных размеров тела (длина и масса тела, обхват грудной клетки, абсолютная поверхность тела). ***Выводы.*** По нашим исследованиям, наибольшая длина тела в классе лодок-одиночек на байдарках и каноэ на дистанции 200 метров отмечается как у мужчин, так и в женщин-спортсменов ЗМС, наименьшая – у спортсменов МС. Аналогичная тенденция отмечена и в показателях массы тела, за исключением каноэ одиночки, где наибольшие значения наблюдаем у спортсменов МСМК (p>0,05). В гребле на байдарках и каноэ в командных лодках-двойках на дистанции 200 метров наибольшие значения длины и массы тела отмечаются у высококвалифицированных спортсменов ЗМС, за исключением массы тела у спортсменок-каноисток, где этот показатель больше у МСМК (p>0,05). В одиночках на дистанции 500 метров лучшие показатели длины и массы тела имеют байдарочники и каноисты ЗМС, худшие – гребцы МС, за исключение каноистов-одиночек в длине тела, где большая длина тела отмечается у МСМК (p>0,05). У женщин, специализирующихся на байдарке–одиночке, наибольшие показатели наблюдаем у спортсменок МСМК (p>0,05). В классе двоек на дистанции 500 метров отмечается аналогичная тенденция, что и у гребцов в одиночках. На дистанции 1000 метров ЗМС в мужской и женской байдарке–одиночке также превосходили МСМК и МС в своих классах, в каноэ наибольше показатели длины и массы тела отмечаются у спортсменов МСМК (p>0,05). В командных лодках-двойках на дистанции 1000 метров байдарочники и каноисты ЗМС превосходят спортсменов МСМК и МС.

Ключевые слова: гребля, байдарка, каноэ, тотальные размеры тела.

Introduction. Nowadays great attention is paid to the study of body build, physical and professional preparedness of athletes in native and foreign literature. As far as these indicators limit the passage of the competitive distance, they are used as selection criteria, the definition of specialization, and the acquisition of teams.

The sportsmen body building criteria have a significant influence on the formation of the individual rowing style N. V. Zhmarev [1], improving the rowing of A. M. Shvedov [2] and ultimately, the sport result. All this emphasizes the high importance of body building for the representatives of this sport.

Techniques and Organization of Research. The study involved rowers on canoes and kayaks at age of from 19t o 26, of both sexes, and high qualifications. In general 160 oarsmen of both sexes were examined.

Complex examination included anthropometric measurements of total body size (length and body weight, chest circumference, absolute body surface).

In the process of collecting the material of our study, the morphological indices of the strongest oarsmen of the Republic of Belarus were analyzed. They took part in the 28 th, 29 th and 30 th summer Olympic Games in Athens, Beijing and London, as well as in the World Championships in 2015 in Milan (Italy). These data are presented in Tables 1–6. It was revealed that at all distances the winners-kayakers (men and women) and canoeists on the basis of morphological data significantly exceed the winners and finalists. This is especially noted among canoeists and canoeists (men), where the winners of the Beijing Olympics Vadim Makhnev and Roman Petrushenko (kayak-pair) and the brothers Andrew and Alexander Bogdanovichi (canoe-pair), significantly outperform other rivals.

Results of the study. While comparing the indicators of the total body size of the strongest Belarusian athletes in rowing on kayaks and canoes at a distance of 200 m (table 1), it was revealed that the greatest values of body length were noted in Honored Masters of Sports (HMS) on kayaks (192,0±3,8 cm). The smallest was among Masters of Sports on kayaks (MS) – 183,8±4,5 cm. The differences both of canoeists HMS, and of kayakers MS, are significant ($p<0,05$). The greatest body weight was also noted among canoeists on canoes (90,0±2,9 kg). The lowest body weight was found among MS men on kayaks (84,6±3,8 kg), that made a difference in weight of about 5,4 kg. Differences are statistically reliable ($p<0,05$).

Table 1

Age and Morphological Indicators of Highly Skilled Belarusian Oarsmen in Canoe Single for Distance of 200 Meters

№	Boat Rate	Participants Category	n	Age, *Years*		Body Length, *cm*		Body Weight, *kg*		Absolute Body Surface, m^2	
				$\overline{X}$	σ	$\overline{X}$	σ	$\overline{X}$	σ	$\overline{X}$	σ
1	K–1 male	HMS	12	22,0	2,7	192,1*	3,82	90,0*	2,94	2,26*	0,24
		MSIC	16	24,7	3,2	187,4	3,54	88,9*	3,54	2,18	0,15
		MS	26	25,5	2,5	183,8*	4,52	84,7*	3,82	2,09*	0,05
2	C–1 male	HMS	6	23,0	4,5	195,1*	2,54	87,1*	2,46	2,22	0,58
		MSIC	12	23,9	2,8	192,7	3,58	87,4	2,74	2,20	0,25
		MS	28	25,1	2,9	184,8*	4,56	82,9*	2,93	2,08	0,32
3	K–1 fem.	HMS	6	24,0	2,5	173,1	2,94	68,1	2,52	1,81	0,35
		MSIC	8	22,0	2,5	171,4	2,81	65,7	3,61	1,77	0,28
		MS	18	22,5	3,5	169,1	2,23	64,1	2,84	1,74	0,45
4	C–1 fem.	HMS	4	24,0	2,5	173,1	2,47	68,0	2,42	1,81	0,52
		MSIC	6	22,0	2,5	171,3	2,55	65,8	2,92	1,77	0,23
		MS	12	23,5	2,8	169,1	2,92	64,1	3,59	1,74	0,36

Note. t – Student's test, * – p<0,05.

Among men in canoe rowing, the body length of HMS, MSIC and MS were on average respectively: 192,0±3,8 cm; 187,3±3,5 cm and 183,8±4,5 cm. Differences are statistically reliable (p<0,05) among HMS and MS.

These indicators were the most informative. In the team boats-pair at the same distance (table 2), a similar tendency is observed, i.e. the most outstanding figures are the Honored Masters of Sports, which do not significantly exceed the Masters of Sports of the International Class and Masters of Sports of the Republic of Belarus. Significant statistical differences (p <0,05) in body weight were noted among men–HMS and MS in kayaks. The difference in these groups was averaged in 3,8 kg. When analyzing the remaining length, weight and absolute body surface of the examined groups of sportsmen, no statistically significant differences were found.

Table 2

Age and Morphological Indicators of Highly Skilled Belarusian Oarsmen in Team Kayaks-pair and Canoes-pair for Distance of 200 Meters

№	Boat rate	Participants Category	n	Age, *years*		Body Length, *cm*		Body Weight, *kg*		Absolute Body Surface, m^2	
				$\overline{X}$	σ	$\overline{X}$	σ	$\overline{X}$	σ	$\overline{X}$	σ
1	K–2 male	HMS	24	22,0	2,7	186,05	3,86	85,08*	3,56	2,13	0,18
		MSIC	26	24,7	3,2	184,81	2,92	81,54	3,85	2,08	0,26
		MS	28	25,5	2,5	184,04	3,62	81,24*	2,94	2,07	0,38
2	C–2 male	HMS	12	23,0	4,5	185,08	4,85	78,53	3,62	2,05	0,24
		MSIC	18	23,9	2,8	181,23	2,92	77,71	2,86	1,99	0,22
		MS	23	25,1	2,9	180,35	3,52	77,28	2,47	1,98	0,18
3	K–2 fem.	HMS	12	22,0	2,5	171,58	3,89	64,54	2,96	1,76	0,25
		MSIC	14	20,0	2,5	170,53	4,07	64,76	3,83	1,75	0,28
		MS	19	21,5	2,5	168,48	2,96	63,92	4,25	1,72	0,27
4	C–2 fem.	HMS	6	23,0	2,5	171,54	2,8	64,53	2,33	1,76	0,38
		MSIC	10	20,0	2,5	170,56	3,48	64,77	3,45	1,75	0,21
		MS	12	21,5	2,5	168,43	2,27	63,92	4,23	1,72	0,28

Note. t – Student's test, * – p<0,05.

In single boats for distance of 500 meters (table 3) the best results also showed HMS, more than MSIC and MS. The body length of oarsmen among HMS, MSIC and MS was on average: 192,0±2,9 cm; 192,7±2,9 cm and 184,0±2,9 cm. Differences of body length among oarsmen-HMS and MS are statistically reliable (p<0,05).

Table 3

Age and Morphological Indicators of Highly Skilled Oarsmen in Kayaks-single and Canoes-single for Distance of 500 Meters

№	Boat Rate	Participants Category	n	Age, *years*		Body Length, *cm*		Body weight, *kg*		Absolute Body Surface, m^2	
				$\overline{X}$	σ	$\overline{X}$	σ	$\overline{X}$	σ	$\overline{X}$	σ
1	K–1 male	HMS	12	22,0	3,5	188,0	4,96	91,1	3,82	2,19	0,21
		MSIC	16	24,7	3,8	186,3	3,52	85,0	3,53	2,11	0,26
		MS	26	24,5	2,5	183,6	3,42	84,2	4,17	2,08	0,34
2	C–1 male	HMS	8	25,0	4,5	192,1*	3,91	95,0	4,85	2,27	0,29
		MSIC	12	25,9	3,8	192,7	4,06	90,7	3,25	2,23	0,25
		MS	18	22,1	4,9	184,0*	3,28	83,1	4,06	2,07	0,28
3	K–1 fem.	HMS	6	24,0	2,5	171,6	3,07	64,6	3,49	1,76	0,24
		MSIC	14	23,0	2,5	170,6	2,84	64,8	3,89	1,75	0,14
		MS	16	24,5	2,5	168,4	2,64	63,9	3,26	1,72	0,44

Note. t – Student's test, * – p<0,05.

The same tendency was found among single rowing and pair rowing for distance of 500 m (table 4). So, canoeists-HMS possessed greater indicators than MSIC and MS. The parameters of the HMS length, weight and absolute surface of the body in canoe rowing, were slightly inferior to MSIC. At the same time, they had a significant difference in body length, which averaged 8 cm in comparison to MS in canoeing. These differences are statistically significant (p <0,05). For the rest of the indicators, there were no significant differences in all the examined groups.

Table 4

Age and Morphological Indicators of Highly Skilled Oarsmen in Team Kayaks-pair and Canoes-pair for Distance of 500 Meters

№	Boat Rate	Participants Category	n	Age, *years*		Body Length, *cm*		Body Weight, *kg*		Absolute Body Surface, m^2	
				$\overline{X}$	σ	$\overline{X}$	σ	$\overline{X}$	σ	$\overline{X}$	σ
1	K–2 male	HMS	12	22,0	3,5	188,0	2,91	91,0	3,85	2,19	0,21
		MSIC	16	24,7	3,8	186,4	2,92	85,1	3,51	2,11	0,26
		MS	26	24,5	2,5	183,7	2,92	84,3	4,18	2,08	0,34
2	C–2 male	HMS	8	25,0	4,5	192,1*	2,92	95,0	4,85	2,27	0,29
		MSIC	12	25,9	3.8	192,7	2,97	90,7	3,22	2,23	0,25
		MS	18	22,1	4.9	184,0*	2,92	83,1	4,03	2,07	0,28
3	K–2 fem.	HMS	6	24,0	2,5	171,5	2,97	64,6	3,46	1,76	0,24
		MSIC	14	23,0	2,5	170,6	2,92	64,8	3,87	1,75	0,14
		MS	16	24,5	2,5	168,5	2,93	63,9	3,83	1,72	0,44

Note. t – Student's test, * – p<0,05

At a distance of 1000 m (table 5), the HMS in male and female kayak-single also outperformed MSIC and MS in their classes. The other picture was observed among the canoeists, where the HMS was insignificant, but inferior in terms of the total size of the MSIC and the MS. The difference in the length, weight and absolute surface parameters of the rowers was 6,8 and 5,8 cm, respectively; 3,8 and 2,6 kg; 0,09 and 0,06 m^2. Therewith, the length and body weight of kayakers-HMS and MS, as well as canoeists are statistically significant (p <0,05). Between women, the differences in length and body weight among HMS and MS were statistically significant (p <0,05).

Table 5

Age and Morphological Indicators of Highly Skilled Oarsmen in Kayaks-single and Canoes-single for Distance of 1000 Meters

№	boat Rate	Participants Category	n	Age, *years*		Body Length, *cm*		Body Weight, *kg*		Absolute Body Surface, m^2	
				$\overline{X}$	σ	$\overline{X}$	σ	$\overline{X}$	σ	$\overline{X}$	σ
1	K–1 male	HMS	12	22,0	3,5	186,0*	3,92	85,0*	3,82	2,13	0,28
		MSIC	16	24,7	3,8	181,8	4,93	79,5	5,44	2,01	0,23
		MS	26	21,5	2,5	180,2*	3,59	79,4*	5,16	1,99	0,18
2	C–1 male	HMS	8	25,0	4,5	175,5*	2,82	77,0	3,94	1,95	0,24
		MSIC	12	25,9	3,8	182,4	2,92	81,2	3,66	2,04	0,26
		MS	18	22,1	4,9	181,7*	4,26	79,6*	4,48	2,01	0,18
3	K–1 fem.	HMS	6	24,0	2,5	173,0*	2,63	68,1	3,91	1,81	0,28
		MSIC	14	23,0	2,1	171,4	4,03	65,7	3,45	1,77	0,29
		MS	16	22,5	2,0	169,0*	4,91	64,0*	3,16	1,74	0,48

Note. t – Student's test, * – p<0,05.

In team boats–pair at a distance of 1000 m (Table 6), HMS also outperformed MSIC and MS. This is especially expressed among HMS in the kayak-pair, where the length, weight and relative surface of the body of HMS differed from MSIC and MS by 4,2 and 5,8 cm, respectively; 3,5 and 3,2 kg; 0,12 and 0,14 cm^2. Therewith, the length and body weight of male kayakers-HMS and MS, as well as of canoeists are statistically significant (p <0,05).

Table 6

Age and Morphological Indicators of Highly Skilled Oarsmen in Team Kayaks-pair and Canoes-pair for Distance of 1000 Meters

№	Boat Rate	Participants Category	n	Age, *years*		Body Length, *cm*		Body Weight, *kg*		Absolute Body Surface, *m*	
				$\overline{X}$	σ	$\overline{X}$	σ	$\overline{X}$	σ	$\overline{X}$	σ
1	K–2 male	HMS	14	23,5	3,2	188,1	2,12	85,0*	2,82	2,13	0,18
		MSIC	18	26,3	2,8	186,4	3,06	79,5	2,32	2,01	0,23
		MS	32	23,8	2,5	183,7	4,53	79,5*	2,91	1,99	0,25
2	C–2 male	HMS	8	28,0	3,5	192,1	3,95	77,7	3,35	1,95	0,24
		MSIC	16	25,5	2.6	192,7*	2,34	81,8	3,69	2,04	0,27
		MS	26	24,9	3.5	184,0	2,74	79,6	4,36	2,01	0,18
3	K–2 fem.	HMS	6	18,0	2,5	171,6	4,93	68,7*	3,64	1,81	0,21
		MSIC	14	20,0	3,2	170,5	3,67	65,7	3,84	1,77	0,18
		MS	16	21,5	3,0	168,4	3,91	64,6*	4,27	1,74	0,26

Note. t – Student's test, * – p<0,05.

Thus, while studying the total body size, a fairly clear pattern of the reliable correlation of these parameters with the athletic result was found. Honored Masters of Sports in almost all indicators of total body size had advantages over Masters of Sports of International Class and Masters of Sports.

Conclusions:

1. The greatest body length in the class of single boats on kayaks and canoes at a distance of 200 meters was noted for both men and women–HMS, the smallest – MS sportsmen. A similar trend was noted in body weight, with the exception of a canoe-single, where the highest values were noted among MSIC athletes (p> 0,05).

2. In rowing on canoes and kayaks at a distance of 200 meters, the largest length and body weight values were recorded among highly qualified athletes HMS, with the exception of the body weight of sportswomen–canoeists, where this figure is higher among MSIC (p> 0,05).

3. In single rowing at a distance of 500 meters, kayakers and canoeists of HMS had better indicators of body length and weight, MS rowers – the worst, except for single canoeists in body length, where the longer body length was marked among MSIC (p> 0,05). Among women specializing in single kayak, the highest rates were noted among MSIC (p> 0,05).

4. In the class of boat-pair at a distance of 500 meters it was marked a similar trend, as among single rowers. So, kayakers and canoeists-HMS had higher rates than MSIC and MS, except for single canoeists in body length, where a larger body length was noted among MSIC (p> 0,05) and a single kayak between women, the highest rates were noted in female MSIC (p> 0,05).

5. At a distance of 1000 meters, the HMS in the men's and women's kayak–single was also superior to the MSIC and the MS in their classes; in the canoe, the MSIC sportsmen (p> 0,05) were the mhighest in length and body weight.

6. In team boats-pair at a distance of 1000 meters, kayakers and canoeists–HMS surpassed the MSIC and MS.

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THE DYNAMICS OF CHANGES IN THE INDICES OF SPECIAL PHYSICAL PREPAREDNESS OF PROFESSIONAL FIELD HOCKEY PLAYERS BY APPLYING THE METHOD OF «ENDOGENOUS-HYPOXIC BREATHING»

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Abstract

In preparing of professional field hockey players we should use the additional tools that would help to improve the abdominal type of breathing. This fact would have the positive impact to the improving of their special physical preparedness. ***The goal of the*** research is to identify the influence of learning and training classes with the use of the method of creating the state of hypercapnic hypoxia on specialized physical preparedness of field hockey players on the stage of the highest possible realization of individual abilities. ***Results of the study.*** 29 field hockey players aged 19–21 took part in the study. The study was conducted for 24 weeks of the first preparatory and competitive periods of yearly macro cycle. During the shaping experiment, the athletes' starting speed increased by 10 and 30 meters in 4,37 and 1,89 %, respectively, and the result of the «shuttle run 180 m» test (in 0,73 %) also improved. In hockey players on the grass of the control group, only the running time by 10 m decreased (in 3,21 %). ***Conclusions.*** It has been established that studies using the «endogenous-hypoxic breathing» technique contribute to a significant increase in the starting speed and special endurance in conditions of providing muscular work at the expense of lactate energy supply processes.

Key words: field hockey, hypoxia, hypercapnia, physical preparedness.

Алла Сулима, Наталія Гаврилова. Динаміка змін показників спеціальної фізичної підготовленості кваліфікованих хокеїстів на траві за допомогою застосування методики ендогенно-гіпоксичного дихання. ***Актуальність.*** У підготовці кваліфікованих хокеїстів на траві варто використовувати додаткові засоби, які б сприяли вдосконаленню черевного типу дихання, що позитивно впливатиме на підвищення рівня їхньої спеціальної фізичної підготовленості. ***Завдання*** – визначення ефективності впливу навчально-тренувальних занять із застосуванням методики ендогенно-гіпоксичного дихання на підвищення рівня спеціальної фізичної підготовленості кваліфікованих хокеїстів на траві. ***Результати.*** У дослідженні взяли участь 29 хокеїстів на траві віком 19–21 рік. Дослідження проводили протягом 24 тижнів у перший підготовчий і змагальний періоди річного макроциклу. За період формувального експерименту в спортсменів зросла стартова швидкість за результатами бігу на 10 і 30 м на 4,37 та 1,89 %, відповідно, а також покращився результат тесту «човниковий біг 180 м» (на 0,73 %). У хокеїстів на траві контрольної групи зменшився лише час бігу на 10 м (на 3,21 %). ***Висновки.*** Установлено, що заняття із застосуванням методики «ендогенно-гіпоксичного дихання сприяють вірогідному підвищенню стартової швидкості та спеціальної витривалості в умовах забезпечення м'язової роботи за рахунок лактатних процесів енергозабезпечення.

Ключові слова: хокей на траві, гіпоксія, гіперкапнія, фізична підготовленість.

Алла Сулима, Наталия Гаврилова. Динамика изменений показателей специальной физической подготовленности квалифицированных хоккеистов на траве путем применения методики эндогенно-гипоксического дыхания. ***Актуальность.*** В подготовке квалифицированных хоккеистов на траве следует применять дополнительные средства, которые бы способствовали совершенствованию брюшного типа дыхания, положительно влияли на повышение уровня их специальной физической подготовленности. ***Задание*** – определение эффективности влияния учебно-тренировочных занятий с применением методики эндогенно-гипоксического дыхания на повышение уровня специальной физической подготовленности квалифицированных хоккеистов на траве. ***Результаты.*** В исследовании приняли участие 29 хоккеистов на траве в возрасте 19–21 год. Исследование проводили в течение 24 недель в первый подготовительный и соревновательный периоды годичного макроцикла. За период формирующего эксперимента у спортсменов повысилась стартовая скорость по результатам бега на 10 и 30 м на 4,37 и 1,89 %, соответственно, а также улучшился результат теста «челночный бег 180 м» (на 0,73%). В хоккеистов на траве контрольной группы уменьшилось только время бега на 10 м (на 3,21 %). ***Выводы.*** Установлено, что занятия с применением методики эндогенно-гипоксического дыхания способствуют достоверному

повышению стартовой скорости и специальной выносливости в условиях обеспечения мышечной работы за счет лактатных процессов энергообеспечения.

Ключевые слова: хоккей на траве, гипоксия, гиперкапния, физическая подготовленность.

Introduction. Long-term sport training of qualified field hockey players is a special-purpose process of physical education, based on using of various physical exercises with a purpose to develop and improve physical qualities and abilities which determine the preparedness of a sportsman to take part in competitions [5; 7]. The fulfillment of physical activity during a game of field hockey players gets complicated by so called «typical» pose – a bent position of a trunk that causes an insignificant tension of muscles of shoulder girdle which increases the hypoxia of physical load [8]. Under such conditions as compensatory phenomenon a front wall of abdomen loosens up partly and this assists to the ventilation of a lower part of lungs through facilitation of work of abdominal prelum and diaphragm muscles which helps to compensate the insufficient ventilation of upper and lower parts of lungs [9]. Therefore it is reasonable to intensify the ventilation of lungs of field hockey players at the expense of activation of abdominal type of respiration through the increase of functional abilities of aforesaid muscles.

The analysis of scientific methodological literature allowed to define that various means are used during the learning and training process of sportsmen for the complete realization of functional reserves of an organism on different stages of a long-term sport training [2; 4; 10]. These methods increase the effect of physical exercises. Thus, some scientists recommend to use special methods during a learning and training process in order to improve the physical preparedness of sportsmen with different specializations. These methods stimulate the state of hypoxia in sportsmen that is not concerned with «hypoxia of physical load [6; 14].

The methods of creating the condition of hypoxia in a sportsman's organism through the stay in hypobaric conditions are widely used. Pressure chambers or stay in the conditions of Srednogorie are used for it [2; 15]. However with the increase of altitude partial pressure of gases in the inhaled air is reduced which leads to the reduction of effectiveness of muscle activity in the conditions of the highland on account of lowered gradient of pressure, influencing negatively the transportation of oxygen to the tissues [3; 15]. Using of such a model of hypoxic training may lead to the negative structural changes in some organs which reveals itself in 25 % of sportsmen as collapses, faints, unequal reaction of arterial vessels [1; 6]. Therefore, the methods of creating the artificial hypoxia in normobaric conditions are safer and not less effective for the increase of level of physical preparedness of sportsmen. Among such methods some authors single out the method of «endogenous-hypoxic breathing» (EHB) with the use of the device «Endogenic-01» which allows to stimulate so called state of the moderate hypoxia and distinct hypercapnia, i.e. hypercapnic hypoxia under constant parameters of oxygen and carbonic acid contents [12].

In spite of the availability of works concerning the use of different additional means for intensification of the effect of physical exercises in a learning and training process of sportsmen with different specializations [4; 6; 10; 11; 14], scientific knowledge about the possibility of using the norm baric hypercapnic hypoxia during learning and training classes of qualified field hockey players. Therefore, having analyzed scientific-methodical literature we foresaw that the using of EHB method during a learning and training process of field hockey players will assist the increase of their specialized physical preparedness level during preparatory and competitive periods of yearly macro cycle.

The goal of the research is to investigate the influence of learning and training classes with the use of the method of «endogenous-hypoxic breathing on the increase of the level of specialized physical preparedness of field hockey players.

For achieving this aim we solved such **tasks:**

– to study the state of the researched topic according to the data of scientific literature;

– to research the influence of learning and training classes with the use of the method of creating the state of hypercapnic hypoxia on specialized physical preparedness of field hockey players on the stage of the highest possible realization of individual abilities.

Materials and methods of the study. The viewing of literature sources; pedagogical observation; pedagogical experiment; pedagogical testing of specialized physical preparedness of qualified field hockey players during preparatory and competitive periods of yearly macro cycle, methods of mathematical statistics.

Applied methods of research allowed to define the indices which describe specialized physical preparedness of field hockey players of high qualification, namely: starting speed (10 meter race and 30 meter

high start race), speed-power qualities (5-time leap on two feet), special endurance in conditions of ensuring the muscle work at the expense of lactate processes of energy-supply (180 meter shuttle race) [7, 13].

Field hockey players aged 19-21 took part in the research. Sport qualifications of sportsmen are candidate masters of sports and masters of sports. Sportsmen were divided into two groups: Control group (CG) which numbered 14 people and a Main group (MG) – 15 people. Training classes were held six times a week. Field hockey players from the CG were training in accordance with a regular learning and training programme [13]. Sportsmen of the MG, as opposed to the CG used at the beginning of the prefatory part the method of artificial creating of moderate hypoxia and distinct hypercapnia in an organism by respiration through the device «Endogenic-01 according to the formed «route map [9]. This method expects stepped adaptation to the norm baric hypercapnic hypoxia through increase of the water amount in the device (from 2 ml to 20 ml), increase of the time of a slowed exhalation (from 8 seconds to 27 seconds), and also the increase of the classes duration (from 2 min to 20 min).

The checkup of sportsmen had four stages: before the shaping experiment and also after 8, 16 and 24 weeks from the beginning. Observable indices were registered in the morning (between 9 and 13 o'clock). For determination of the effectiveness of influence of classes with use of method EHB on specialized physical preparedness of qualified field hockey players we were comparing average arithmetic values of linked samples and we were determining credible distinctions between them by criterion of Student.

Discussion and the results of the study. Results of the research showed that learning and training classes with use of the method EHB and use of the device «Endogenic-01 stimulate positive changes of the indices of specialized physical preparedness. In 8 weeks after the start of shaping experiment no credible changes were revealed among the indices of specialized physical preparedness (table 1).

Researches testified that in 16 weeks after the start of the experiment such indices of specialized physical preparedness as start speed improved among field hockey players according to the results of 10 meters and 30 meters race thereafter by 3,28 % ($p<0,05$) and 1,18 % ($p<0,05$). It is significant that among field hockey players of CG credible improvement of only the test's result of «10m race with a head start is registered. And it appeared to be somewhat lower in percent correlation than the result among sportsmen of the MG. The time of 10m race among field hockey players of MG was reduced to 2,13 % ($p<0,05$).

Table 1

The Influence of Training Classes with the Use of the Method of «Endogenous-Hipoxic Breathing on the Indices of Specialized Physical Preparedness of Field Hockey Players of Control (n=14) and Main (n=15) Groups

Indices		Average values, $\overline{X} \pm S$			
		Before the Shaping Experiment	After 8 Weeks From the Beginning	After 16 Weeks From the Beginning	After 24 Weeks From the Beginning
10m race with a head start, *s*	CG	1,87±0,01	1,86±0,01	1,83±0,01*	1,81±0,02*
	MG	1,83±0,02	1,80±0,02	1,77±0,02*	1,75±0,02*
30m race with a head start, *s*	CG	4,27±0,01	4,24±0,01	4,23±0,02	4,21±0,02
	MG	4,22±0,02	4,20±0,01	4,17±0,01*	4,14±0,01*
180 meter shuttle race, *s*	CG	38,20±0,10	38,17±0,19	38,14±0,19	38,06±0,18
	MG	38,13±0,10	38,09±0,09	37,99±0,08	37,85±0,07*
5-time leap on two feet, *m*	CG	12,12±0,07	12,14±0,06	12,15±0,07	12,16±0,12
	MG	12,09±0,08	12,18±0,10	12,2±0,08	12,23±0,07

Notes: CG – Control group; MG – Main group; * – credible changes relative data-out ($p<0,05$).

During the shaping experiment among qualified field hockey players who were not using the method of «endogenous-hypoxic breathing the increase of the result of a 180 meter shuttle race is observed which is a token of increase of specialized endurance in conditions of ensuring the muscle work at the expense of lactate processes of energy-supply. But the credible changes of this index are not registered.

Influenced by the trainings in which the method of creating the state of norm baric hypercapnic hypoxia in an organism of a sportsman was used, the credible increase of the index of specialized physical preparedness by the test «180 meter shuttle race was registered among field hockey players of the MG after

24 weeks since start of the classes. This test characterizes specialized endurance in conditions of ensuring muscle work at the expense of lactate processes of energy-supply to 0,73 % ($p<0,05$).

It is significant that both in two groups of sportsmen during the period of holding the shaping experiment no reliable changes of explosive power in conditions of fulfillment of dynamic work by test «5 times leap on two feet are revealed.

Conclusions. The analysis of scientific-methodological literature concerning training of qualified sportsmen makes possible to state that it is reasonable to use additional means of training in order to increase the effectiveness of learning and training process. The method of creating the artificial state of the moderate hypoxia and distinct hypercapnia in an organism is the safest and effective.

The results of the researches testified that using of the method of «endogenous-hypoxic breathing with using of the device «Endogenic-01 during learning and training process of the field hockey players assist the improvement of specialized physical preparedness by the following indices: start speed, specialized endurance in conditions of ensuring the muscle work at the expense of lactate processes of energy-supply.

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Рецензії, хроніки та персоналії

Інформація про засідання
Секції з фізичної культури і спорту
Відділення вищої освіти Національної академії
педагогічних наук України

11 квітня 2017 р. на базі Національного педагогічного університету ім. М.П. Драгоманова, м. Київ, відбулося відкрите засідання Секції з фізичної культури і спорту Відділення вищої освіти Національної академії педагогічних наук України із запрошенням Президента Національної академії педагогічних наук України, доктора педагогічних наук, професора Кременя Василя Григоровича, ректора Національного педагогічного університету ім. М.П. Драгоманова, члена-кореспондента НАН України, дійсного члена НАПН України, доктора філософських наук, професора Андрущенка Віктора Петровича та директора департаменту атестації кадрів вищої кваліфікації та ліцензування МОН України, доктора педагогічних наук, професора, професора кафедри ортопедагогіки та реабілітології НПУ імені М.П. Драгоманова Шевцова Андрія Гаррієвича.

В роботі Секції взяли участь члени секції – ректори спеціалізованих вищих навчальних закладів, провідні вчені галузі фізичної культури і спорту, завідувачі кафедр інституту фізичного виховання та спорту Національного педагогічного університету ім. М.П. Драгоманова: Голова Секції з фізичної культури і спорту Відділення вищої освіти НАПНУ, доктор економічних наук, професор, ректор Національного університету фізичного виховання і спорту України Імас Євгеній Вікторович, заступник Голови Секції, перший проректор з науково-педагогічної роботи Національного університету фізичного виховання і спорту України, доктор наук з фізичного виховання та спорту, професор Дутчак Мирослав Васильович, ректор Харківської державної академії фізичної культури, доктор педагогічних наук, професор Ажиппо Олександр Юрійович, ректор Львівського державного університету фізичної культури, доктор педагогічних наук, професор Приступа Євген Никодимович, ректор Сумського державного педагогічного університету ім. А.С. Макаренка, кандидат педагогічних наук, професор Лянной Юрій Олегович, перший проректор Східноєвропейського національного університету ім. Лесі Українки, доктор наук з фізичного виховання та спорту, професор Цьось Анатолій Васильович, проректор з науково-педагогічної роботи Національного університету фізичного виховання і спорту України, доктор наук з фізичного виховання та спорту, професор Борисова Ольга Володимирівна, директор інституту фізичного виховання та спорту Національного педагогічного університету ім. М.П. Драгоманова, доктор педагогічних наук, професор Тимошенко Олексій Валерійович, директор науково-дослідного інституту Національного університету фізичного виховання і спорту України, доктор наук з фізичного виховання та спорту, професор Кашуба Віталій Олександрович, завідувач кафедри теорії і методики фізичного виховання Національного університету фізичного виховання і спорту України, доктор наук з фізичного виховання та спорту, професор Круцевич Тетяна Юріївна, завідувач кафедри фізичної реабілітації Національного педагогічного університету ім. М. П. Драгоманова, доктор педагогічних наук, професор Сущенко Людмила Петрівна, вчений секретар Секції, завідувач кафедри інноваційних та інформаційних технологій у фізичній культурі і спорті Національного університету фізичного виховання і спорту України, доктор наук з фізичного виховання та спорту, професор Шинкарук Оксана Анатоліївна.

Секцію відкрив Голова Секції з фізичної культури і спорту Відділення вищої освіти НАПНУ, доктор економічних наук, професор, ректор Національного університету фізичного виховання і спорту України Імас Євгеній Вікторович,який зазначив, що Секція плідно працює з грудня 2014 року, розширює коло цілої низки проблем, які потребують вирішення, підкреслив активність членів Секції та їх співпрацю з різними організаційними структурами.

З вітальними словами виступили Президент Національної академії педагогічних наук України, доктор педагогічних наук, професор Кремень Василь Григорович, директор департаменту атестації

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кадрів вищої кваліфікації та ліцензування МОН України, доктор педагогічних наук, професор Шевцов Андрій Гаррієвич та ректор Національного педагогічного університету ім. М.П. Драгоманова, член-кореспондент НАН України, дійсний член НАПН України, доктор філософських наук, професор Андрущенко Віктор Петрович.

Президент НАПНУ, доктор педагогічних наук, професор Кремень В. Г. привітав всіх членів Секції та підкреслив значущість роботи Секції та зазначив, що основною сферою, що забезпечує розвиток людини, визнано освіту. У зв'язку з цим перед Україною постали складні завдання. По-перше, утвердити в суспільстві пріоритетність науки і освіти. Науки – як сфери, що продукує нові знання, і освіти, що олюднює знання, робить їх діяльнісними. По-друге, слід суттєво модернізувати освітню діяльність з тим, щоб вона забезпечувала підготовку людини до життя в XXI столітті, формувала патріота і конкурентоспроможного громадянина, а значить – конкурентоспроможну європейську Україну.

Директор департаменту атестації кадрів вищої кваліфікації та ліцензування МОН України, доктор педагогічних наук, професор Шевцов А.Г. підкреслив значущість питань порядку денного та особливу увагу звернув на питання екології. Зазначив актуальність даного питання у зв'язку з розробкою Концепції нової української школи – документу, який простою мовою пояснює ідеологію змін в освіті, що закладаються в проекті нового базового закону «Про освіту».

Ректор Андрущенко В. П. привітав учасників засідання в стінах університету, ознайомив з історією навчального закладу, зазначив особливу роль спортивної роботи в університеті, сталі традиції студентського спорту та розкрив перспективи співробітництва з Секцією з фізичної культури і спорту відділення вищої освіти НАПНУ.

В ході засідання Секції було заслухано доповідь Голови Секції з фізичної культури і спорту Імаса Є. В. «Концепція сталого розвитку: екологія і спорт», де було зазначено, що модель сталого, стійкого розвитку, як і будь-яка соціальна модель, є системою інтегрованих компонентів, їх суттєвих відносин і зв'язків, що відображають основний зміст процесів збалансованого соціально-економічного та екологічного розвитку. Згідно з визначенням сутності поняття сталий розвиток суспільства, воно спрямоване на задоволення потреб сучасного покоління без шкоди майбутнім генераціям людей. Вихідними умовами сталого розвитку можна визнати забезпечення: економічного розвитку, що підтримується на основі радикально-модифікованої ринкової системи; природно-екологічної стійкості на базі теорії біотичної регуляції навколишнього середовища; тісної міжнародної співпраці та кооперації для досягнення цілей стійкого розвитку; стійкого соціального розвитку на основі принципу справедливості; екологізації суспільної свідомості, що ґрунтується на використанні системи освіти та засобів масової інформації.

Є. Імас підкреслив, що виходячи з цього, модель сталого розвитку формується з таких основних положень: у центрі уваги мають бути люди та їх право на здорове й плідне життя в гармонії з природою; охорона довкілля повинна стати невіддільним компонентом процесу розвитку, що не може розглядатися окремо від іншого; задоволення потреб у розвитку й збереженні навколишнього середовища; розвиток і збереження довкілля має поширюватися не тільки на нинішнє, а й майбутнє покоління; зменшення розриву між життєвим рівнем у різних країнах та подолання бідності належить до найважливіших завдань світової спільноти. Останнім часом активну роль у вирішенні природоохоронних проблем відіграє спортивне співтовариство. У ряді видів спорту результат безпосередньо залежить від природного середовища. З іншого боку, проведення спортивних змагань впливає на навколишнє середовище, причому цей вплив часто має негативний характер. Голова Секції відзначив позитивні тенденції впровадження концепції сталого розвитку у сферу фізичної культури і спорту в Україні, принциповою позицією якого є логічний перехід від екологізації наукових знань до соціально-економічного розвитку суспільства в цілому.

Доктор педагогічних наук, професор, директор інституту фізичного виховання та спорту Національного педагогічного університету ім. М.П. Драгоманова Тимошенко О. В. представив наукову доповідь «Інформатизація професійної підготовки майбутніх фахівців фізичного виховання та спорту».

Проректор з наукової-педагогічної роботи Національного університету фізичного виховання і спорту України доктор наук з фізичного виховання та спорту, професор Борисова О.В. підняла актуальну проблему щодо застосування ефективних критеріїв оцінки наукової діяльності у вищому навчальному закладі на сучасному етапі та внесла пропозиції для їх урахування Міністерством освіти і науки України.

Вчений секретар Секції, доктор наук з фізичного виховання та спорту, професор, завідувач кафедри інноваційних та інформаційних технологій у фізичній культурі і спорті Національного університету фізичного виховання і спорту України, Шинкарук О.А. звітувала про діяльність Секції у 2016 році та окреслила основні завдання на 2017 рік.

Особливу увагу також привернуло питання створення сайту Секції з фізичної культури і спорту Відділення вищої освіти Національної академії педагогічних наук України. Ректор Харківської державної академії фізичної культури, доктор педагогічних наук, професор, Ажиппо О.Ю. та завідуюча Науковим сектором європейського права Науково-дослідного інституту державного будівництва та місцевого самоврядування Національної академії правових наук України, кандидат юридичних наук Саннікова М. В. презентували демо-версію сайту.

Вчений секретар Секції, доктор наук з фізичного виховання та спорту, професор Шинкарук О. А. розповіла про організаційні заходи щодо створення журналу Секції з фізичної культури і спорту Відділення вищої освіти Національної академії педагогічних наук України.

При обговоренні даних питань було прийнято рішення щодо створення консорціуму, членами якого стануть Національна академія педагогічних наук України та сім провідних вищих навчальних закладів (спеціалізованих вишів фізкультурного типу та навчальних закладів – членів Секції з фізичної культури і спорту), який розвиватиме журнал та сайт Секції. Визначено назву журналу – «Sport, Health and Science», видання – два рази на рік, англійською мовою. Роботу сайту закріплено за Харківською державною академією фізичної культури.

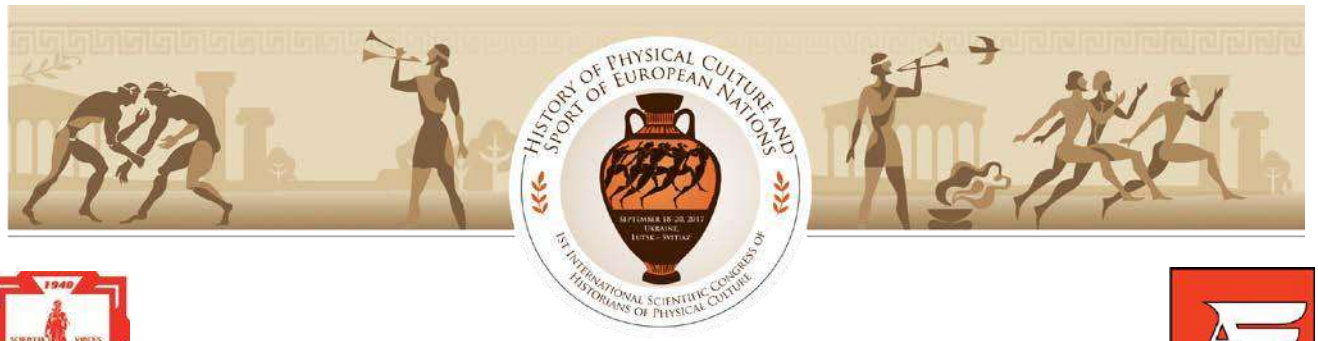
В дискусії взяли участь всі присутні члени секції та викладачі університету.

Також було проведено низку круглих столів членами Секції з фізичної культури і спорту НАПНУ за тематикою:

Круглий стіл 1 був присвячений стану розробки Державного стандарту зі спеціальності 014 Середня освіта (фізична культура), модераторами виступили доктор наук з фізичного виховання та спорту, професор, перший проректор з науково-педагогічної роботи Національного університету фізичного виховання і спорту України Дутчак Мирослав Васильович, доктор педагогічних наук, професор, директор інституту фізичного виховання та спорту Національного педагогічного університету ім. М. П. Драгоманова Тимошенко Олексій Валерійович, доктор педагогічних наук, професор, професор кафедри фізичної реабілітації Національного педагогічного університету ім. М. П. Драгоманова Іванова Любов Іванівна. В засіданні круглого столу брали участь викладачі.

Круглий стіл 2 був присвячений удосконалення навчальної програми з фізичної культури для учнів 5-9 класів, модераторами виступили доктор наук з фізичного виховання та спорту, професор, завідувач кафедри теорії і методики фізичного виховання Національного університету фізичного виховання і спорту України Круцевич Тетяна Юріївна; доктор наук з фізичного виховання та спорту, професор, перший проректор Східноєвропейського національного університету імені Лесі Українки Цьось Анатолій Васильович, кандидат педагогічних наук, доцент кафедри теорії і методики фізичного виховання Інституту фізичного виховання і спорту НПУ ім. М. П. Драгоманова, член робочої групи МОНУ з доопрацювання навчальних програм для учнів 9 класів загальноосвітніх навчальних закладів Тимчик Микола Валерійович. В засіданні круглого столу брали участь викладачі університетів та інститутів; вчителі та методисти.

Вчений секретар Секції,
д. фіз. вих, професор О. А. Шинкарук



Східноєвропейський національний університет імені Лесі Українки
(м. Луцьк, Україна)
Академія імені Яна Длугоша в Ченстохові (Польща)

Шановні пані й панове!

Запрошуємо Вас до участі в

І-МУ МІЖНАРОДНОМУ НАУКОВОМУ КОНГРЕСІ

ІСТОРИКІВ ФІЗИЧНОЇ КУЛЬТУРИ

«ІСТОРІЯ ФІЗИЧНОЇ КУЛЬТУРИ І СПОРТУ НАРОДІВ ЄВРОПИ»,

який відбудеться ***18–20 ВЕРЕСНЯ 2017 РОКУ***

в Східноєвропейському національному університеті імені Лесі Українки та

на базі табору практик «Гарт» (с. Світязь, Шацький р-н., Волинська обл.)

Місія конгресу – активізація наукових досліджень у галузі фізичної культури й спорту, презентація та співпраця європейських наукових шкіл.

Науковий комітет

Анатолій Цьось − доктор наук з фізичного виховання і спорту, професор (Східноєвропейський національний університет імені Лесі Українки) – **голова комітету**;
Елігіуш Малолєпши − доктор габілітований, професор Академії імені Яна Длугоша (Академія імені Яна Длугоша в Ченстохові) – **заступник голови комітету;**
Наталія Бєлікова – доктор педагогічних наук, професор (Східноєвропейський національний університет імені Лесі Українки);
Томаш Юрек – доктор габілітований, професор (факультет фізичної культури в Гожуві-Велико-польському Познанської академії фізичного виховання імені Еугенюша П'ясецького;
Яцек Вонщік – доктор габілітований, професор Академії імені Яна Длугоша (Академія імені Яна Длугоша в Ченстохові);
Вєслав Піліс – доктор габілітований, професор (Академія імені Яна Длугоша в Ченстохові);
Аркадіуш Мажец – доктор габілітований, професор Академії імені Яна Длугоша (Академія імені Яна Длугоша в Ченстохові);
Алла Альошина − доктор наук з фізичного виховання і спорту, професор (Східноєвропейський національний університет імені Лесі Українки);
Ольга Андрійчук – доктор наук з фізичного виховання і спорту, професор (Східноєвропейський національний університет імені Лесі Українки);
Едуард Вільчковський – доктор педагогічних наук, професор, член-кореспондент АПН України (Східноєвропейський національний університет імені Лесі Українки);

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Юрій Лях – доктор біологічних наук, професор (Східноєвропейський національний університет імені Лесі Українки);
Андрій Ягенський – доктор медичних наук, професор (Волинський обласний центр кардіоваскулярної патології та тромболізису).

Організаційний комітет

Олександр Бичук − кандидат наук з фізичного виховання і спорту, доцент (Східноєвропейський національний університет імені Лесі Українки);
Ніна Деделюк − кандидат наук з фізичного виховання і спорту, доцент (Східноєвропейський національний університет імені Лесі Українки);
Ольга Рода − кандидат наук з фізичного виховання і спорту, доцент (Східноєвропейський національний університет імені Лесі Українки);
Тереза Дроздек-Малолєпша – доктор (Академія імені Яна Длугоша в Ченстохові);
Даніель Бакота – доктор (Академія імені Яна Длугоша в Ченстохові);
Аркадіуш Пломінскі – доктор (Академія імені Яна Длугоша в Ченстохові);
Світлана Подубінська – магістр (Східноєвропейський національний університет імені Лесі Українки).

Напрями роботи конгресу:

- ✓ Філософські, політичні та соціально-економічні чинники розвитку фізичної культури й спорту.
- ✓ Становлення й розвиток фізичної культури в Стародавньому світі.
- ✓ Фізична культура й спорт в епоху Середньовіччя.
- ✓ Розвиток фізичної культури й спорту в період Нової історії.
- ✓ Новітня історія та сучасні тенденції розвитку фізичної культури й спорту в країнах Європи.
- ✓ Тенденції розвитку фізичної культури й спорту в Європі XIX–XX ст.
- ✓ Генезис і розвиток сучасного олімпізму.
- ✓ Розвиток активного туризму в Європі.

У програмі конгресу – пленарні та секційні засідання, обговорення доповідей, презентація національних одноборств, конкурс дитячого малюнка, майстер-класи, екскурсії.

Умови участі в конгресі:

До 01 вересня 2017 р. зареєструватися (зразок заявки додано) і подати тези доповідей (українською або польською, англійською, російською мовами) на сайт за адресою http://conferences.eenu.edu.ua або надіслати ці документи на електронну скриньку roda.olha@eenu.edu.ua. Ім'я файла повинно включати прізвище автора та порядковий номер бажаного напряму конференції (*Приклад*: Шевченко_3).

До 07 вересня 2017 р. надіслати статті (англійською мовою).

До 15 вересня 2017 р. перерахувати організаційний внесок у розмірі 1950 грн (100 дол. США для іноземних учасників). Оплата включає харчування й проживання учасників конференції, укладання тез і друк статей.

Робочі мови конгресу – європейські мови.

Видання праць конгресу

Тези наукових доповідей публікуватимуться в електронному збірнику матеріалів, що буде розміщений за адресою: http://conferences.eenu.edu.ua

Робочі мови конгресу – усі європейські мови. Обсяг – 1 сторінка, 2000–2500 друкованих знаків без пробілів. *Текст* набирати в редакторі Microsoft Word for Windows; шрифт тексту – Times New Roman, 12 pt, інтервал – 1. Параметри сторінки: ліве поле – 30 мм, праве – 15 мм, верхнє – 20 мм, нижнє – 20 мм.

Структура: Перший рядок – назва (великими літерами, шрифт – жирний, вирівнювання по центру). Другий рядок – ім'я та прізвище автора (авторів) (шрифт – жирний, вирівнювання по центру). Третій рядок – науковий ступінь, вчене звання, посада, повна назва вищого навчального закладу (наукової установи), у якому працює (навчається) учасник конгресу, електронна адреса (шрифт – курсив,

вирівнювання по ширині сторінки). Далі – текст, вирівняний по ширині сторінки (абзац – 0,75 см), який повинен містити такі *необхідні елементи: вступ, методи дослідження, результати дослідження, висновки*.

Відповідальність за зміст поданих матеріалів несуть автори. Оргкомітет залишає за собою право відхиляти тези, що не відповідають зазначеним вимогам.

Статті будуть опубліковані в журналах «Фізичне виховання, спорт і культура здоров'я у сучасному суспільстві» http://sport.eenu.edu.ua (Україна) та «Prace Naukowe Akademii im. Jana Długosza w Częstochowie Kultura Fizyczna» http://www.wp.ajd.czest.pl/kultura-fizyczna (Польща). ***Вимоги до статей (керівництво для авторів) наведено на сайтах журналів.***

Після рецензування статей повідомлення про прийняття до друку (чи відхилення) будуть надіслані авторові ***лише на електронну адресу.*** За умови позитивної рецензії статті автор здійснює ***оплату й надсилає копію квитанції про оплату*** на e-mail: roda.olha@eenu.edu.ua.

Реквізити для оплати:

Для громадян України:

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Для учасників інших країн. Увага! В Україні працюють такі системи переказів:

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ЗАЯВКА
на участь у І-му Міжнародному науковому конгресі істориків фізичної культури «Історія фізичної культури і спорту народів Європи»

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ІНФОРМАЦІЯ ДЛЯ АВТОРІВ

Наукове видання «Фізичне виховання, спорт і культура здоров'я у сучасному суспільстві» містить такі рубрики:

- Історичні, філософські, правові й кадрові проблеми фізичної культури та спорту.
- Технології навчання фізичної культури.
- Фізична культура, фізичне виховання різних груп населення.
- Лікувальна фізична культура, спортивна медицина й фізична реабілітація.
- Олімпійський і професійний спорт.

Щоб мати можливість подавати рукописи в журнал та перевіряти їх поточний статус, потрібно зареєструватися на сайті (http://sport.eenu.edu.ua).

Для публікації приймаємо раніше не видані наукові праці (у тому числі іншими мовами в тій самій формі), які не надсилалися до розгляду редакціям інших журналів. За точність цитування та наведення в статтях наукових фактів, цифр й інших відомостей відповідальність покладено на авторів.

Подаючи статтю, автор тим самим:

– висловлює згоду на розміщення повного її тексту в мережі Інтернет;

– погоджується з рекомендаціями Всесвітньої асоціації медичних редакторів і стандартів **COPE** (http://publicationethics.org/) відповідно до принципів етики наукових публікацій.

Автори дають згоду на збір й обробку персональних даних із метою їх уключення в базу даних згідно із Законом України № 2297-VI «Про захист персональних даних» від 01.06.2010. Імена та електронні адреси, які вказуються користувачами сайта цього видання, використовуватимуться виключно для виконання внутрішніх технічних завдань; вони не поширюватимуться та не передаватимуться стороннім особам.

Наукові праці рецензують члени редакційної колегії збірника або сторонні незалежні експерти, виходячи з принципу об'єктивності й із позицій вищих міжнародних академічних стандартів якості.

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- стаття повинна мати просту структуру (без поділу на розділи й підрозділи!).

2. ***Структура статті:*** індекс УДК (верхній лівий кут); посередині – назва статті, ім'я та прізвище автора (-ів) великими літерами; e-mail контактного автора; анотації й ключові слова **українською, російською та англійською мовами** (обсяг анотації – 240–250 слів).

У тексті анотації використовують нескладні речення, синтаксичні конструкції, притаманні науковій мові. Тут не повинно бути абревіатур, скорочень, загальних фраз і повторень назви статті. Речення бажано починати словами *розглянуто, установлено, відображено, проаналізовано, проведено, доведено* й т. ін.

Анотація повинна виконувати функцію незалежного від статті джерела інформації та уможливлювати встановлення її основного змісту.

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- ім'я, прізвище автора, назва статті, організація;
- актуальність;
- завдання роботи;
- метод або методологія проведення роботи *(описуються у випадку, якщо вони вирізняються новизною або викликають інтерес із точки зору наукової роботи; в експериментальних працях указують джерела даних та характер їх обробки);*
- результати роботи *(наводяться основні теоретичні й експериментальні результати, виявлені взаємозв'язки та закономірності);*
- висновки *(можуть супроводжуватися рекомендаціями, оцінками, пропозиціями, гіпотезами, описаними в статті);*
- ключові слова: (5–6) *(відображають основний зміст статті, галузь науки, тему, наводяться в називному відмінку). (За ключовими словами здійснюємо пошук статей в електронних базах даних*).

В анотації **англійською мовою** подається така інформація: автор (транслітерація); назва статті (переклад); адресні дані автора (назва установи/закладу, адреса організації, місто, країна); анотація (обсягом 240–250 слів) із дотриманням хронології статті та підзаголовків, як і в анотації українською мовою; ключові слова.

Англомовна анотація має бути написана якісною англійською мовою. Використання комп'ютерного перекладу не допускається.

Автори зарубіжних країн подають анотації російською й англійською мовами.

3. Основний текст статті

Редакційна колегія приймає до друку лише ті наукові статті (науковою вважається стаття, яка містить результат теоретичного або експериментального дослідження й призначена для наукового видання), які **містять такі елементи:**

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• **Вступ** (*постановка проблеми та її зв'язок із важливими науковими чи практичними завданнями, аналіз останніх досліджень, у яких започатковано розв'язання цієї проблеми й на які спирається автор; виокремлення не розв'язаних раніше частин загальної проблеми, які розкриває означена стаття*).

• **Мета дослідження** *(метою повинно бути розв'язання проблеми або отримання знань щодо неї. Мета дослідження орієнтує на його кінцевий результат, завдання формулюють питання, на які потрібно отримати відповідь для реалізації мети дослідження. Для формулювання мети бажано використовувати слова* ***встановити, виявити, розробити, довести*** *та ін.).*

• **Матеріал і методи дослідження** *(указуються кількість, вік, спортивна кваліфікація досліджуваних, умови, тривалість і послідовність проведення експерименту, коротко обґрунтовується вибір методів, які використано в дослідженні).*

• **Результати дослідження. Дискусія**. Виклад основного матеріалу дослідження з повним обґрунтуванням отриманих наукових результатів (*результати досліджень з обов'язковою статистичною обробкою даних потрібно подавати у вигляді таблиць, графіків, діаграм. Дані, які відображаються в таблицях, мають бути суттєвими, повними, достовірними. Заголовок таблиці, назва графіка або діаграми відповідають їхньому змісту. Переказувати словами дані таблиць і графіків неприпустимо. Результати дослідження повинні бути обов'язково проаналізовані. Варто провести паралелі з даними, отриманими іншими вітчизняними й закордонними вченими.*

• **Висновки та перспективи подальших досліджень** у цьому напрямі *(подається коротке формулювання результатів дослідження, осмислення та узагальнення теми. Висновки повинні бути лаконічними, конкретними, обґрунтованими, відповідати меті дослідження та випливати з основного змісту роботи).*

• **Джерела та література** (не більше 20, на кожну позицію має бути посилання в тексті статті; інтернет-посилання в тексті повинні супроводжуватися повними коректними адресами URL), повинні містити достатню кількість **сучасних** (за останні п'ять років) джерел за проблемою дослідження. До списку потрібно включати наукові статті, подані мовою оригіналу з українських та зарубіжних (до 50 %) фахових наукових журналів, у тому числі опубліковані у виданні «Фізичне виховання, спорт і культура здоров'я у сучасному суспільстві». Бібліографічний опис джерел, використаних при підготовці статті, повинен бути оформлений відповідно до ДСТУ 8302:2015: Бібліографічне посилання. Загальні положення та правила складання. Київ, 2016. Оформлення списку літератури слід подавати у квадратних дужках, відокремлюючи одне джерело від іншого крапкою з комою, наприклад [3; 4; 6; 8; 12; 15].

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• Обсяг статті – 8–12 сторінок із таблицями, схемами та малюнками формату А4 в редакторі Word 97-2003, у форматі *.doc. Шрифт – Times New Roman, кегль 14, міжрядковий інтервал – 1,5 (у таблицях – 1), орієнтація сторінки – книжкова, без переносів.

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• Кількість табличного матеріалу та ілюстрацій повинна бути доречною. Цифровий матеріал подається в таблиці, що має порядковий номер, вирівнювання по правому краю (наприклад: *Таблиця 1*) і назву (друкується над таблицею посередині жирним шрифтом, наприклад: **Розподіл студентів за рівнем фізичної активності**). Текст таблиці подається шрифтом Times New Roman, кегль 12, інтервал 1. Формат таблиць – лише книжковий.

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Вимоги до статей, останні випуски журналу, архів номерів, різна інформація – на сайті видання: http://sport.eenu.edu.ua.

Якщо стаття не відповідає вищезазначеним вимогам, наведеним у пунктах 1–4, або її науковий рівень недостатній, то редакційна рада не приймає працю для публікації.

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Для своєчасної інформації просимо Вас обов'язково надсилати авторську довідку (див. нижче).

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