THE PROGRAM OF SECTIONAL CLASSES FOR HIGH SCHOOL GIRLS BASED ON MENTAL FITNESS

Dubynska O. Ya.

INTRODUCTION

The analysis of scientific and methodical literature 1 2 3 4 5 6 7 8 shows that the motor activity of high school students tends to decrease. Intensification of educational activities of schoolchildren, types of activities in which motor activity is limited are closely related to hypokinesia, which has been developing recently.

In this regard, it is necessary to more widely use all the possibilities of the school physical culture program to ensure the maximum development of motor skills, health promotion and popularization of a healthy lifestyle

¹ Благій О. Л., Чернявський М. В. Інноваційні підходи до організації фізичного виховання школярів. *Олімпійський спорт і спорт для всіх* : тези доп.

² Ващук Л. Алгоритм побудови індивідуальних фітнес-програм для самостійних занять старшокласниць. Фізичне виховання, спорт і культура

здоров'я у сучасному суспільстві. 2016. № 2. С. 20–25.

ÎX Міжнар. наук. конгр. Київ, 2005. 546. с.

¹³ Возний А. П. Тілесність людини як феномен розвитку фізичної культури. Філософія науки: традиції та інновації : науковий журнал. МОН України, Сумський держ. пед. ун-т ім. А. С. Макаренка ; редкол.: Н. В. Кочубей, В. А. Косяк, €. О. Лебідь та ін.. Суми : СумДПУ ім. А. С. Макаренка, 2014. № 2 (10), С. 113–122.

⁴ Глоба Г.В. Науково-методичні шляхи оптимізації рухової активності оздоровчого спрямування у дітей та підлітків :зб. наук. праць V Міжнар. наук.

конф. Вінниця. С. 48-52.

⁵ Дубинська О.Я., Петренко Н.В. Сучасні-фітнес технології у фізичному вихованні учнівської і студентської молоді: проектування, розробка, специфічні особливості : монографія. Суми : Вид-во СумДПУ імені А. С. Макаренка. 2016. 566 с.

⁶ Круцевич Т. Ю. Раціональна рухова активність як фактор підвищення розумової працездатності школярів. *Спортивний вісник Придніпров'я*. 2014.

Ѻ 2. C. 73–76.

 7 Михно Л. С. Фізичне виховання молодших школярів на основі застосування засобів йога-аеробіки : автореф. дис. ... канд. наук з фіз. виховання та спорту : 24.00.02 / Нац. ун-т фіз. виховання і спорту України. Київ, 2017. 23 с.

⁸ Інноваційні технології у фізичному вихованні школярів : навч. посіб. для студ. вищ.навч.закл. / Н.В. Москаленко, В.І. Степанова, О.О. Власюк,

О.В. Шиян. Дніпропетровськ : Інновація. 2011. 238 с.

among students. A special place in the system of school education is occupied by high school age, because at this age the personal development of the student, the construction of a life plan, and the setting of goals for future personal and professional self-realization take place ^{9 10 11}.

The period of students before serious exams is characterized by great emotional stress. The results of such overstrain are drowsiness, confusion, nervous breakdowns, which only complicate a difficult period of life. Currently, the number of anxious students, characterized by increased anxiety, uncertainty, and emotional instability, has increased ¹². In order to correct the physical and psycho-emotional state of schoolchildren, physical activity is necessary, which will have a positive effect on both physical and mental relaxation of students.

Some scientists have developed methods for improving the physical fitness of high school girls and increasing their level of motor activity by means of recreational gymnastics (U. Shevtsiv, 2009; V. Krendeleva, 2015); to correct the body weight of older girls based on the use of health fitness tools (I. Pavlenko, 2016). The author's method of building individual fitness programs for high school girls in the process of independent physical exercises deserves attention (L. Vashchuk, 2016). The work of T. Sinytsia (2019) deserves special attention, in which the correction of the physical condition of women of the first mature age by means of health aerobics and mental fitness was considered.

Thus, a detailed analysis of the scientific and methodological literature showed the need to develop a program of sectional classes based on the use of mental fitness tools, aimed at improving the physical fitness and psychoemotional state of high school girls.

1. Modern health technologies in the system of physical education of high school girls

Modern trends in the world health movement are accompanied by the emergence of new terms and concepts of this socio-cultural phenomenon. One of these concepts is "fitness", which has become widespread in recent

¹⁰ Кренделєва В. У. Вплив оздоровчого фітнесу на рівень фізичної підготовленості учнів старших класів. *Молодий вчений*. 2015. № 3(2). С. 175–178.

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⁹ Дубинська О.Я., Петренко Н.В. Сучасні-фітнес технології у фізичному вихованні учнівської і студентської молоді: проектування, розробка, специфічні особливості : монографія. Суми : Вид-во СумДПУ імені А. С. Макаренка. 2016. 566 с.

¹¹ Міжнародний досвід організації оздоровчо-рекреаційної діяльності школярів у вільний час / Т. Ю. Круцевич, О. В. Андрєєва, О. Л. Благій, Т. В. Блистів. *Молодий вчений*. 2019. № 4.1(68.1). С. 152–156.

¹² Іваній І.В., Сергієнко В.М. Психологія фізичного виховання та спорту : навчально-методичний посібник. Суми : ФОП. Цьома С.П. 2016. 204 с.

years, appearing in the names of clubs, health programs, etc. At the same time, it has various interpretations and uses, which leads to terminological and methodological confusion.

According to the definition of E.T. Hawley and B. Franks, the concept of "fitness" means striving for optimal quality of life and includes a social, mental, physical and spiritual component¹³.

Translated from English, "fitness" is compliance, which includes various types of sports exercises, as well as other means for improving health, strengthening body systems and correcting the figure. That is, in general, "fitness" can be defined as a system of health-oriented physical exercises, coordinated with the individual state of a person's psychophysical sphere, his motivational determination and personal interest ¹⁴.

Fitness programs, as a form of motor activity specially organized as part of group or individual classes, can have both a health and conditioning direction (reducing the risk of developing diseases, achieving and maintaining an appropriate level of physical condition), and pursuing goals related to development abilities to solve motor and sports problems at a sufficiently high level ¹⁵.

In turn, fitness programs based on one type of motor activity can be divided into programs based on:

- types of aerobic motor activity;
- types of power-oriented motor activity;
- types of motor activity in water;
- complex fitness programs;
- mental fitness programs.

Fitness programs based on the use of types of aerobic motor activity have become the most popular. Such programs are divided into two groups: programs without the use and with the use of equipment. Programs without the use of equipment include varieties of dance aerobics¹⁶.

¹³ Хоули Э., Френкс Б. Руководство инструктора оздоровительного фитнеса. Олимпийская литература. Киев. 2004. 376 с.

¹⁵ Krutsevych T. Yu. (2018). Teoriia i metodyka fizychnoho vykhovannia, T. Yu. Krutsevych (red.), (ss. 415–423). K.: Natsionalnyi universytet fizychnoho vykhovannia i sportu Ukrainy, vyd-vo "Olimp. 1-ra", T. 2. Metodyka fizychnoho vykhovannia riznykh hrup naselennia. 368 s.

¹⁴ Теорія і методика фізичного виховання. Загальні основи теорії і методики фізичного виховання / за ред. Т.Ю. Круцевич. Т. 2. Київ : Олімпійська. С. 137–139.

¹⁶ Krutsevych T. Yu. (2018). Teoriia i metodyka fizychnoho vykhovannia, T. Yu. Krutsevych (red.), (ss. 415–423). K.: Natsionalnyi universytet fizychnoho vykhovannia i sportu Ukrainy, vyd-vo «Olimp. l-ra», T. 2. Metodyka fizychnoho vykhovannia riznykh hrup naselennia. 368 s.

Nowadays, one of the most popular types of motor activity using equipment aimed at the development of aerobic endurance is step aerobics, which is becoming more and more widespread in sports clubs of the country. These are dance classes using a special platform that allows you to set the desired height. The rapid development of new classes of aerobics, known as fitball training, is a typical example of the rational use of modern achievements of scientific and technical progress in fitness programs. Fitball aerobics programs are unique in their effect on the body and arouse great interest in children. Exercises on balls have a health-improving effect, which is confirmed, according to E.G. Saikinoi (2004), the experience of specialized, correctional and rehabilitation medical centers in Europe ¹⁷.

Recently, types of aerobics, which allow you to acquire some combat skills, are gaining more and more popularity. Among the most popular types of such aerobics are: tai-bo, capoeira, farthing class, karate aerobics, kendo 18.

Aquafitness is one of the fitness programs that are based on types of motor activity in water. In the works of scientists ¹⁹, the concept of aqua aerobics is found, which is a type of mass physical culture, the most universal means of influencing the body in order to increase the level of its physical condition. It uses a wide range of adaptation exercises, the effectiveness of which increases due to the influence of specific conditions for conducting classes. Exercises in water have a stimulating effect, as they take place in an aquatic environment that reduces mental stress, are characterized by a positive effect on joints, ligaments, and muscles, unlike performing similar tasks on land.

Mental fitness is based on the idea of inseparable unity of body and mind (Body & Mind) – Eastern and European practices. Eastern practices include yoga and its varieties: Chinese wushu gymnastics, gypsy, Tao and other health gymnastics. Among the European systems in fitness, the systems of J. Pilates, M. Feldenkrais, and M. Alexander are the most popular²⁰.

 17 Сайкина Е. Г. Фитбол-аэробика. Теория и практика физической культуры. 2004. № 7. С. 43–46.

¹⁸ Krutsevych T. Yu. (2018). Teoriia i metodyka fizychnoho vykhovannia, T. Yu. Krutsevych (red.), (ss. 415–423). K.: Natsionalnyi universytet fizychnoho vykhovannia i sportu Ukrainy, vyd-vo «Olimp. l-ra», – T. 2. Metodyka fizychnoho vykhovannia riznykh hrup naselennia. 368 s.

¹⁹ Дубинська О.Я., Петренко Н.В. Сучасні-фітнес технології у фізичному вихованні учнівської і студентської молоді: проектування, розробка, специфічні особливості : монографія. Суми : Вид-во СумДПУ імені А. С. Макаренка. 2016. 566 с.

²⁰ Krutsevych T. Yu. (2018). Teoriia i metodyka fizychnoho vykhovannia, T. Yu. Krutsevych (red.), (ss. 415–423). K.: Natsionalnyi universytet fizychnoho vykhovannia i sportu Ukrainy, vyd-vo «Olimp. l-ra», T. 2. Metodyka fizychnoho vykhovannia riznykh hrup naselennia. 368 s.

The Pilates system, invented by gymnast Joseph Pilates more than 80 years ago, includes a series of exercises that target mainly the abdominal muscles, especially their deep layer. In the Pilates method, special importance is attached to concentration and proper breathing. The system is a program of comprehensive rehabilitation of the body, spirit and mind. It is more than a series of movements and can be adapted to individual needs²¹.

The principle of health-oriented physical education is specified in recreation and health and fitness technologies, which are currently intensively developing. The technology should be understood as an algorithmized sequence of operations that guarantees the planned end result with nominal quality and optimal costs. Recreational health and fitness technologies are specified in recreational and fitness programs²².

One of the directions of the modern concept of physical education is to achieve more significant results of motor readiness based on the implementation of fundamentally new approaches, means, technologies, where the main component is complex and troublesome work that contributes to the effective formation of schoolchildren's competent attitude towards themselves, their body, and also contributes to the formation of a motivational sphere, awareness of the need to strengthen health, lead a healthy lifestyle, and improve physical fitness²³ ²⁴.

When drawing up health-oriented programs, the general regularities of learning motor actions and the development of physical qualities, the peculiarities of the methodology of physical education of the children's contingent are taken into account.

The implementation of various physical culture and health-improving tasks became the reason for the development and creation of new types of motor activity²⁵. Fitness programs are a practical manifestation of physical culture and health technologies in physical education. They are built in such

²¹ Остин Денис. Пилатес для вас. Пер. с англ. И. В. Гродель. Мн. : ООО «Попудри», 2004. 320 с. : ил. (серия «Здоровье в любом возрасте».)

²³ Круцевич Т. Ю. Раціональна рухова активність як фактор підвищення розумової працездатності школярів. *Спортивний вісник Придніпров'я*. 2014. № 2. С. 73–76.

2017. 23 с.
²⁵ Круцевич Т. Ю. Раціональна рухова активність як фактор підвищення розумової працездатності школярів. Спортивний вісник Придніпров'я. 2014. № 2. С. 73–76.

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²² Krutsevych T. Yu. (2018). Teoriia i metodyka fizychnoho vykhovannia, T. Yu. Krutsevych (red.), (ss. 415–423). K.: Natsionalnyi universytet fizychnoho vykhovannia i sportu Ukrainy, vyd-vo «Olimp. 1-ra», T. 2. Metodyka fizychnoho vykhovannia riznykh hrup naselennia. 368 s.

^{№ 2.} С. 73—76.

²⁴ Михно Л. С. Фізичне виховання молодших школярів на основі застосування засобів йога-аеробіки : автореф. дис. ... канд. наук з фіз. виховання та спорту : 24.00.02. Нац. ун-т фіз. виховання і спорту України. Київ, 2017. 23 с.

a way to satisfy psychological needs, relieve fatigue, contribute to the improvement of the cardiovascular system, the development of physical qualities, and improve the psycho-emotional state of schoolchildren.

In recent times, universal fitness programs have appeared (O. Ya. Kibalnyk, 2007; O. Andreeva, 2014; O. Khurtenko, 2018), which are aimed at certain groups of the population, including children. Such fitness programs are attractive due to their accessibility, load variability, emotionality, and the ability to change the content of classes depending on the interests and readiness of those who practice.

The authors of health fitness programs aimed at the development of motor skills (N. Moskalenko, 2014; O. Andreeva, 2014; L. Vashchuk, 2016) claim that the main components are strengthening health, promoting the normal development of motor and coordination skills, education willpower, learning vital motor skills and skills, acquiring the necessary knowledge in the field of physical culture and sports, promoting the comprehensive and harmonious development of the individual, fostering a conscious need to do physical exercises, increasing work capacity.

Today, there are three types of fitness training programs. The first involves the use of aerobic exercises, which are performed continuously for 10-30 minutes with an intensity of 60-70% of BMD. It is believed that the most effective aerobic exercises of low or moderate intensity, i.e. such loads, in the performance of which 2/3 of the muscles are involved.

Otherwise, the programs provide for the use of strength and speed-strength exercises, with the intensity of the load up to 80-85% of the maximum, and the work intervals are from 15 s to 3 min and alternate with rest periods of the same duration. Such classes are conducted using the circular method 26 27 28 .

Individual scientists have developed original methods for improving the physical fitness of high school girls and increasing their level of motor activity by means of recreational gymnastics (U. Shevtsiv, 2019; V. Krendeleva, 2015); to correct the body weight of older girls based on the use of health fitness tools (I. Pavlenko, 2016). The author's method of building individual fitness programs for high school girls in the process of independent physical exercises deserves attention (L. Vashchuk, 2016).

²⁷ Курносик С.К. Колове тренування. Досвід використання. *Фізична культура в школі*. № 2, 2001. С. 14–17.

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²⁶ Вейдер С. Суперфитнес. Лучшие программы мира. Феникс. 2006. 288 с.

²⁸ Шамардина Г.Н., Долбишева Н.Г. Теоретико-практический материал курса «физическое здоровье» в системе старшей школы. *Современный олимпийский спорт для всех*: VII Междунар. науч. конгр.: материалы конф. Мосва. 2003. Т. 3. С. 54–56.

The research of O. V. Mudrievska (2008) testifies to the effectiveness of the use of hatha yoga tools to optimize the physical education of female students in order to improve functional indicators and proved the positive impact on their psychophysical condition. According to the author, a characteristic feature of yoga-aerobics is a global approach to neuromuscular fitness. Global because it trains the body as a whole to be strong, calm, flexible and self-confident ²⁹.

The work of T. Sinytsia (2019) deserves special attention, in which the correction of the physical condition of women of the first mature age by means of health aerobics and mental fitness was considered. But her research did not pay attention to the development and substantiation of individual programs of mental fitness classes with different goals, which would take into account load parameters depending on the level of physical condition and priority motives of high school girls. Scientific studies³⁰ ³¹ have confirmed the positive impact of Pilates classes on the level of health, functional state, and physical fitness.

In the work of O. V. Andreeva (2015), a program of recreational and health activities was developed with the aim of satisfying the leisure needs of various population groups, increasing the amount of motor activity and qualitatively filling their free time, but in her work, no appropriate methods were proposed for students high school, which would have a positive effect on their physical and psycho-emotional state.

Worthy of attention are the works related to highlighting the main trends and directions of the international experience of schoolchildren's recreational activities. In this context, the scientific study of T. Yu. Krutsevich (2019) is interesting, in which domestic and foreign literary sources on the problems of organizing health and recreational activities of students in extracurricular educational institutions are analyzed and summarized.

So, after analyzing the scientific and methodical literature on the issue outlined above, we came to the conclusion that the development of a

²⁹ Hanna Tolchieva. Orhanizatsiia trenuvalnykh zaniat khatkha-yohoiu zi studentamy vyshchykh navchalnykh zakladiv u protsesi pozaaudytornoi roboty. Pedahohichni tekhnolohii navchannia fizychnoi kultury. *Fizychne vykhovannia, sport i kultura zdorovia u suchasnomu suspilstvi*: zbirnyk naukovykh prats... № 4 (20), 2012.

³⁰ Благій О. Л., Чернявський М. В. Інноваційні підходи до організації фізичного виховання школярів. *Олімпійський спорт і спорт для всіх*: тези доп. ІХ Міжнар. наук. конгр. Київ, 2005. С. 546.

³¹ Глоба Г.В. Науково-методичні шляхи оптимізації рухової активності оздоровчого спрямування у дітей та підлітків : Зб. наук. праць V Міжнар. наук. конф. Вінниця. С. 48–52.

program of sectional classes to improve physical fitness and psychoemotional state based on the use of mental fitness is an urgent issue.

2. Psychological features of girls of senior school age

The period of life in high school is one of the most difficult and responsible, because a high school student must not only decide on the choice of higher education, but also the question of what profession to study. In addition, for 2 years before entering the secondary school, the student is under constant mental stress – most of his free time is spent preparing for the secondary school. The influence of the educational environment, the educational load, the perception and processing of a large amount of information in conditions of a shortage of time, innovative forms and methods of teaching, high density of classes and a large number of types of educational activities increase the requirements for the management of processes occurring in the central nervous system and accompanied by pronounced psycho-emotional stress.

According to Brychuk M.S., Diedukh M.O. (2019), society's requirements for the level of education are increasing every year. As a result, the modern schoolboy is prone to the action of a complex of neurotic factors. In most cases, this is an uncontrolled flow of audiovisual information, additional classes in various subjects, numerous exams, and a reduction in time spent outdoors. All this can lead to disorders in the health of schoolchildren, provoke the occurrence of disorders of the nervous system, headaches and lead to a general deterioration of well-being. With heavy workloads, schoolchildren experience a worsening of their mood, while the student is unable to fully perceive all types of educational activities, his efficiency, work capacity and activity decrease, while the process of perceiving the material will be disturbed 32.

In recent years, there are more and more high school students with disorders of psycho-emotional development, which include emotional instability, aggressiveness, anxiety, the presence of fears, which leads to difficulties in relationships with others. According to D. A. Vendina (2013), one of the ways to increase resistance to stress at school is physical education. Because a teenager's physical health and mental state are mutually dependent. The feeling of one's physical health and one's physical capabilities, physical well-being contribute to a constant feeling of comfort. It is known that the soul and body respond together to any event. Mental

³² Бричук М.С., Дєдух М.О. Гендерні особливості психологічного типу учнівської молоді в контексті диференційованого фізичного виховання. *Вісник Прикарпатського університету. Серія: Фізична культура.* 2019. № 31. С. 20–25.

tension causes muscle tone and, conversely, muscle tension leads to an emotional surge³³.

From the research of O.Ya Dubynska (2017), it can be said that a healthy lifestyle has a positive effect on the quality of future self-realization of schoolchildren, improving the effectiveness of educational and professional activities, therefore increasing the level of physical fitness of students is an important medical and social problem³⁴.

Also, in the process of training, a person learns to regulate his actions on the basis of visual, tactile, musculo-motor and vestibular sensations and perceive, he develops motor memory, thinking, will and the ability to self-regulate mental states. Almost all intellectual processes are involved in self-control and self-regulation of motor actions. This is due, first of all, to the fact that physical exercises pose many different problems to a person (planning, control, choosing a strategy), and, therefore, encourage a person to gain experience in solving them³⁵.

We can come to the conclusion that high school age is characterized by many crises. One of the main and most important is the formation of such a neoplasm as the bodily "I". The authors of the method of self-reflection of bodily potential³⁶ claim that the concept of "body" is not only a natural (natural) body with its functions, but also as a "living form", as its subjective reality (social, cultural body).

At an older age, schoolchildren face many problems related to the inability to understand their body, to distinguish feelings and signals sent by the body, that is, to "communicate" with their body³⁷. In high school, the formation of social relationships is in full swing, the appearance of new acquaintances, the smallest failures are very acutely experienced and perceived as defeats. These defeats and failures occur in the absence of the skills and abilities to properly understand, deal with the formation and development of the body, because in high school it is the indicators of

³³ Начинская С.В. Основы спортивной статистики. К. : Высшая школа. Главное издательство. 1987. 189 с.

³⁵ Бричук М.С., Дєдух М.О. Гендерні особливості психологічного типу учнівської молоді в контексті диференційованого фізичного виховання. Вісник Прикарпатського університету. Серія: Фізична культура. 2019. № 31. С. 20–25.

³⁴ Дубинська О.Я., Петренко Н.В. Сучасні-фітнес технології у фізичному вихованні учнівської і студентської молоді: проектування, розробка, специфічні особливості : монографія. Суми : Вид-во СумДПУ імені А. С. Макаренка. 2016. 566 с.

³⁶ Ложкин Г.В., Рождественский А.Ю. Феномен телесности в я-структуре старшеклассников и содержание их жизненных проэктов. Психологический журнал. 2004. Т. 25, No 2. С. 27–33.

³⁷ Василенко Я. О. Обгрунтування та характеристика програми розвитку феноменів — "Я" тілесного у підлітковому віці. Актуальні проблеми психології. 2015. Т. 7, Вип. 38. С. 93-104.

appearance and physiological indicators that play a key role in the process of socialization. The need for development and understanding of the importance of physicality is caused by the fact that high school students are undergoing a process of socialization, gaining a certain position among their peers, forming the most important life motives, a person that provides the very possibility of social existence.

At the same time, the perception of the bodily "I" is not only important in the formation of social relations, because it affects the harmonious mental development of the schoolboy. It is known that psychological well-being means the coherence of mental processes and functions, the harmony of the personality, a sense of integrity, and internal balance. During the perception of the corporeal "I" by high school students, the development of certain qualities of the bodily experience takes place: reduction of stereotyped thinking, increase of indicators of differentiation, breadth and depth of bodily potential, readiness for use in real life situations. The development of bodily "I" phenomena is aimed at obtaining abilities and skills that help solve personal problems and contribute to the formation of communicative qualities.

At the same time, physicality is a meaningful component of a person, which provides the very possibility of social existence. Therefore, the phenomenon is the fact that physicality itself exerts an important influence on the structure of physical culture and ensures its existence and development. From the point of view of the physicality phenomenon, physical culture is a set of realized biological, psychological, social and spiritual factors in the development of the human organism. It acts as the main means of increasing the social activity of an individual, affects the development of culture as a whole ³⁸.

Therefore, for the development of physical potential, health and recreational loads of various nature are often used in practice. In modern psychology, many methods of self-regulation have been developed: relaxation training, autogenic training, desensitization, reactive relaxation, yoga, meditation, methods of changing the direction of consciousness^{39 40}. In

³⁸ Возний А. П. Тілесність людини як феномен розвитку фізичної культури. Філософія науки: традиції та інновації : науковий журнал. МОН України, Сумський держ. пед. ун-т ім. А. С. Макаренка ; редкол.: Н. В. Кочубей, В. А. Косяк, Є. О. Лебідь та ін.. Суми : СумДПУ ім. А. С. Макаренка, 2014. № 2 (10). С. 113–122.

³⁹ Пічурін В.В. Розвиток продуктивності уяви у студентів в процесі психофізичної підготовки. Науковий часопис Національного педагогічного університету імені М. П. Драгоманова. Серія 15 : Науково-педагогічні проблеми фізичної культури (фізична культура і спорт) : зб. наук. праць. Київ : Вид-во НПУ імені М. П. Драгоманова, 2019. Вип. 3К (110). С. 430-433.

⁴⁰ Ложкин Г.В. Психосемантический анализ структуры представлений спортсменов о теле (телесности). Наука в олимп. спорте. 2005. С. 41-46.

the context of such development programs for the development of regulatory components of activity, attention is paid to the creation of a stable representation of the bodily "I".

One example of physical activity that can be used to perceive the "I" of the body is mental fitness. From the research of scientists 41 42 43, a distinctive feature of the mental fitness complex is the concentration of attention on the interaction of the physical and the spiritual when performing exercises. Doing mental fitness affects not only the indicators of the body's physical fitness, but also the psycho-emotional state, the achievement of inner harmony, and good health.

3. Development of a program of sectional classes for high school girls based on mental fitness and its effectiveness

In recent years, there has been a trend of deterioration in the health of high school girls. Stress, a sedentary lifestyle have a great impact on the child's body. Unsatisfactory organization of the physical education process at school leads both to irregular attendance at physical education classes and to a decrease in motivation for sports and physical education classes.

The analysis of the factors that determine the occurrence of various pathological conditions in students shows the shortcomings of physical education in school and extracurricular forms of work, which affect the state of health and physical fitness of high school students 44 45 46.

Considering the above, we have developed a program of sectional classes that has an impact on the physical fitness and psycho-emotional state of high

⁴¹ Синиця Т.О. Ментальний фітнес як один із сучасних напрямів оздоровчої фізичної культури. *Актуальні проблеми фізичного виховання різних верств населення*: зб. наук. пр. Харків: ХДАФК, 2018. С. 227–233.

⁴² Синиця Т.О. Регуляція емоційного стану жінок засобами ментального фітнесу. *Проблеми активізації рекреаційно-оздоровчої діяльності населення* : матеріали X Всеукр. наук.-практ. конф. з міжнар. участю. Львів : ЛДУФК, 2016. С. 229–232.

⁴³ Krutsevych T. Yu. (2018). Teoriia i metodyka fizychnoho vykhovannia, T. Yu. Krutsevych (red.), (ss. 415–423). K.: Natsionalnyi universytet fizychnoho vykhovannia i sportu Ukrainy, vyd-vo «Olimp. I-ra», T. 2. Metodyka fizychnoho vykhovannia riznykh hrup naselennia. 368 s.

⁴⁴ Глоба Г.В. Науково-методичні шляхи оптимізації рухової активності оздоровчого спрямування у дітей та підлітків : зб. наук. праць V Міжнар. наук. конф. Вінниця. С. 48-52.

⁴⁵ Міжнародний досвід організації оздоровчо-рекреаційної діяльності школярів у вільний час / Т. Ю. Круцевич, О. В. Андрєєва, О. Л. Благій, Т. В. Блистів. *Молодий вчений*. 2019. № 4.1(68.1). С. 152–156.

⁴⁶ Шамардина Г.Н., Долбишева Н.Г. Теоретико-практический материал курса «физическое здоровье» в системе старшей школы. *Современный олимпийский спорт для всех : VII Междунар. науч. конгр.* : материалы конф. Мосва. 2003. Т. 3. С. 54–56.

school girls based on the use of mental fitness tools, taking into account the physical fitness of high school girls. During the analysis of literary sources⁴⁷ 48 49, it was proven that many high school girls are interested in modern directions of health-improving physical culture, which help not only to improve physical fitness and appearance, but also to be in harmony with themselves and the environment.

In accordance with the motivation, state of health and functional capabilities of high school girls, as well as taking into account the requirements of the modern physical education program of grades 10–11, the development of the author's program was carried out with a health-conditioning orientation, which provided for the reduction of the risk of developing diseases, and also included mental, physical and spiritual components aimed at improving the psycho-emotional state and physical fitness of high school girls. The developed program was based on the directions of mental fitness.

Mental fitness is considered to be health practices and various methods of physical culture, which can unite such foundations as: spirit, soul and body. The name mental fitness is also found as programs (Mind & Body) "Smart Body". They are classified as "soft fitness", they gained popularity in the 21st century. Such Mind & Body programs help in improving mental and physical health, relieving stress, and getting rid of many diseases. Mental fitness is one of the safest forms of exercise that includes relaxation exercises, stretching exercises, as well as balance and breathing. There are no other exercises that would have such a "soft" effect on the body while simultaneously strengthening it ⁵⁰.

The directions of mental fitness include stretching, Pilates programs, and others that apply the principles of eastern health systems.

We offered a program of sectional classes for high school girls, aimed at the harmonious development of physical qualities, through the use of mental fitness tools (stretching, Pilates, yoga), and aimed at improving the psychoemotional state of high school girls, to achieve harmony between physical, mental and spiritual components.

⁴⁸ Кренделєва В. У. Вплив оздоровчого фітнесу на рівень фізичної підготовленості учнів старших класів. *Молодий вчений*. 2015. № 3(2). С. 175–178.

⁴⁹ Шевців У.С. Технологія запровадження програм оздоровчого фітнесу та шейпінгу на уроках фізкультури для старшокласниць. Львів. 20 с.

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⁴⁷ Павленко І. О. Застосування засобів оздоровчого фітнесу для корекції ваги дівчат старшого шкільного віку. *Слобожанський науково-спортивний вісник*. 2016. № 6. С. 69–73.

⁵⁰ Синиця Т.О. Ментальний фітнес як один із сучасних напрямів оздоровчої фізичної культури. *Актуальні проблеми фізичного виховання різних верств населення*: зб. наук. пр. Харків: ХДАФК, 2018. С. 227–233.

The program we offered consisted of three parts: preparatory, main and final. The structure of classes in the proposed program included dosage of physical activity. In addition, it ensured the possibility of comprehensive use of directions and means of mental fitness in the process of physical culture and health classes.

When developing the program, it was assumed that the methods of health training and physical education, a complete list of methodical principles in the dosage of physical activity for high school girls would be followed.

It should be noted that an important place in the construction of the program is taking into account the specific impact of physical exercises on the body, its purpose is to develop flexibility, strengthen muscles and improve the psycho-emotional state of high school girls.

Table 1
Structural and logical scheme of the program of sectional classes
for high school girls based on mental fitness

Goal: improvement of physical fitness and psycho-emotional state

Task: development of physical qualities of high school girls, reduction of the risk of developing diseases, improvement of the latent possibility of realization of physicality, improvement of emotional state							
Periods							
Preparatory period		Main period		Supporting period			
		Improvement and		Mainta	Maintaining the achieved		
A .d 4.4	1	development of physical		level in the psycho-			
Adaptation of the boo		qualities, improvement		emotional state and			
to physical exertion		of the psycho-emotional		increasing physical fitness,			
		state		high school girls			
Means: exercises using special equipment (isotonic ring, rubber band,							
Fitball, gymstick and arch)							
Methods:							
uniform		repeated	alternating		interval		
The result: an increase in the level of physical fitness and an improvement in the psycho-emotional state of high school girls							

In this regard, when planning recreational activities, one should take into account the alternation of the orientation of the influence of loads. In order to solve the research problems, the program of sectional classes provided not only a complex effect on improving the level of physical fitness of high school girls, but also allowed them to be in harmony with themselves.

The program we developed, depending on the periods, provided for three stages of implementation (preparatory, main and supporting), recommended

by T. Yu. Krutsevich⁵¹. The tasks of the preparatory period were to increase the capabilities of the main functional systems, increase the level of general physical fitness, and teach the technique of performing exercises.

The transition to a new stage was accompanied by a change in the number and sequence of performed exercises, the direction of their interaction, the duration of individual blocks of classes, the intensity and volume of the load.

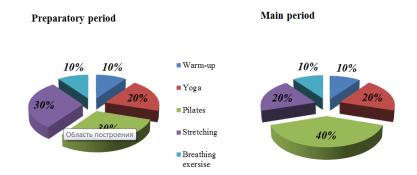


Fig. 1. The ratio of means of the program of sectional classes depending on the periods of training

Figure 3.1. the ratio of training means depending on the periods is shown. The structure of one lesson according to the program developed by us consisted of three generally accepted parts: preparatory, main and final. In the preparatory period, which lasted 6 weeks, in the preparatory part of the class, we used 10% of the time for warm-up, which included general development exercises and exercises for stretching muscles with a small amplitude of movements. In the main part, 20% of our time was spent on various yoga poses, another 30% of time was allocated to Pilates exercises, and 20% of the total time was spent on stretching exercises. Yoga involved performing exercises aimed at achieving a harmonious unity of spirit, body and mind. Pilates strength exercises were performed using special equipment (isotonic ring, rubber band, Fitball, gymstick and arch). Stretching included a variety of exercises to improve flexibility, involving tension and relaxation of various muscles and ligaments. The final part contained exercises to restore breathing function. In the main period of training, we increased the amount of time spent on muscle strengthening (Pilates exercises) by reducing stretching exercises.

⁵¹ Теорія і методика фізичного виховання. Загальні основи теорії і методики фізичного виховання / за ред. Т.Ю. Круцевич. Т. 2. Київ : Олімпійська. С. 137–139.

of school age before and after the experiment, $x \pm s_x$							
Test	Gr.	n.	Before the experiment	P	After the experiment	Growth in (%)	P
Body tilt forward	С	28	7,42 + 0,85	> 0.05	8,18 + 4,45	11,49	< 0.001
	Е	27	7,6+0,89	>0,05	13, 60 + 4,76	44,11	< 0,001
Running 60 m	С	28	10,89 + 1,09	. 0.2	11,07 + 0,62	1,63	< 0.01
	Е	27	10,68 + 1,1	> 0,2	10,28+0,4	3,75	< 0,01
Bending and	C	28	8,26 + 0,97	> 0,1	8,48 + 3,14	2,59	< 0,05
extending the arms	Е	27	8,09 + 0,97		11,26 + 4,75	28,15	
Jump in length	С	28	140,89 + 7,5		141,37 + 7,47	0,34	. 0.01
from the place	Е	27	142,2 + 7,25	> 0,2	161,9 + 7,75	12,16	< 0,01
Running 1500 m	С	28	9,28 + 0,56	. 0.2	9,08 + 0,58	- 2,16	. 0.05
	Е	27	9,25 + 0,59	> 0,2	8,44 + 0,55	8,76	< 0,05
Sitting up	С	28	23,3 + 2,77	> 0,2	25,15 + 4,22	7,36	< 0,001
in 1 minute	Е	27	23,47 + 2,52		30,91 + 6,21	24,06	
Shuttle race 4x9 m	С	28	11,86 + 0,69	. 0.1	11,95 + 0,65	- 0,75	. 0 005
	Е	27	12,06 + 0,63	> 0,1	11,46 + 0,78	4,975	< 0,005

The assessment of the physical fitness of high school girls in relation to state regulatory standards showed that at the beginning of the pedagogical experiment, most schoolgirls in both the control and experimental groups had physical fitness indicators below the average level.

In order to determine the impact of the developed program of sectional classes on the physical fitness of high school girls, we conducted a repeated study of the level of development of physical qualities. During the pedagogical experiment, there were statistically significant changes (p<0.05) in the indicators of physical fitness in the experimental group.

As can be seen from the table. 3.2, the results in the forward body tilt test in group E of girls are 13.60 + 4.76 cm, which is 44.11% higher than at the initial stage of research; in group C of girls -8.18 + 4.45 cm, which is 11.49% higher than the weekend. The positive dynamics in group E of girls, compared to group C, indicates the probability of a difference (p < 0.001).

After the implementation of the sectional training program, we obtained the following results in the "60 m run" test. The indicators show that the speed improvement in the C group is only 1.63%, in the E group -3.75%, and the values are equal to 11.07 + 0.62 s in the A g0roup of girls, 10.28 + 0.4 s in group E of girls, the results in group E are probably (p < 0.01) higher,

compared to group C of girls. The results of strength testing "Flexion and extension of arms in supine support" are: in group C-8.48+3.14 times, in group E-11.26+4.75 times. The increase in strength indicators in group C is 2.59%. While in group E of girls, the strength index increased by 28.15%.

In order to more effectively develop strength qualities in our proposed program, we followed the basic principles of training: gradual increase in load, rational alternation of work and rest, orientation of classes, uniformity of load on all muscle groups, selection of optimal loads, which, in our opinion, caused appropriate improvement of strength indicators according to the results of the "flexion and extension of the arms in a supine position" test. So, as a result of the experiment, probable changes in strength indicators were recorded in group E of girls (p < 0.05), compared to group C of girls. After the conducted pedagogical experiment, we observed the dynamics of improvement of speed and strength qualities according to the "standing long jump" test. In group A of girls, the increase after the experiment is 0.34%, in group E = 12.16%.

According to the "1500m run" test, we determined the level of general endurance in girls aged 15–17. Its dynamics differed slightly from other movement qualities: in group E of girls, the result is 8.44 ± 0.55 min., which is 8.76% higher than at the initial stage. As for group A, the endurance indicators of the girls even worsened by 2.16%, compared to the initial testing. Such test results are explained by the fact that endurance, as a physical quality, has a heterochronic nature of development. The dynamics of the development of general endurance in girls has its own character. High rates of growth occur in the period from 14 to 16 years, and then its level increases slowly and may even decrease. The analysis of the results shows a significant difference (p < 0.05) in endurance indicators, in group E of girls, a higher level of endurance than in group C of girls.

Positive changes at the end of our research are characterized by the "sitting up in 1 minute" test: in group C of girls who studied according to the school program at school N_2 15 in the Sumy city and additionally attended sectional classes in various sports, the increase is 7.36%, in group E – 24.06% who studied according to the school program and attended classes according to the proposed program. The obtained results in group E, compared to group C, indicate a probable difference (p < 0.001).

As can be seen from the table. 3.2, the results obtained after conducting experimental research on the "shuttle run 4 x 9 m" test make it possible to state that in the C group of girls, the dexterity indicators worsened by 0.75%, compared to the initial level, on the other hand, the increase in the indicators in the E group is 4,9%, indicate a statistically probable difference between the results during the experiment period (p < 0.005).

The analysis of physical fitness testing of high school girls shows that statistically probable changes occurred in the experimental group of girls under the influence of classes according to the program developed by us. The assessment of the level of physical fitness of high school girls in accordance with state tests and standards showed that at the end of our research, the physical fitness indicators of the experimental group of high school girls corresponded to the average level, while in the control group, no positive changes were recorded.

To check the effectiveness of the developed program of sectional classes to improve physical fitness and psycho-emotional state, according to the method of G.V. Lozhkin⁵², we conducted a study that allowed us to determine the level of self-reflection of bodily potential and the way of life self-determination of high school girls.

The body potential self-reflection questionnaire contained 23 items, the analysis of answers to which made it possible to divide high school students according to three types of representation of the body potential: welcoming, conforming, and personal.

Experimental experiments were carried out in two stages. At the first stage of the experiment, no static-probable difference was found between the control and experimental groups of girls. In total, 25.93% of girls with a welcoming type were recorded. This type refers to schoolchildren as self-confident persons who are completely satisfied with their social status in society, are not inclined to self-regulation and self-analysis. The forecast of the future for these respondents is limited to such prospects – mastering a profession as a means of meeting material needs. The means of maintaining the current state are the goals of the future, which are devoid of reality and any argumentation.

The largest group of respondents was the conformist type (n = 16, or 59.26%). The main qualities attributed to the conformist type are increased anxiety, low self-esteem and pronounced criticism of one's personality, high attention to stereotypes and instructions of the social environment, reduced activity, a tendency to attribute one's own failures to external factors, which makes this type a hostage to social circumstances.

After the analysis, the smallest group consisted of girls with a personal type of self-regulation of bodily potential (n = 4, or 14.81%). A characteristic feature that distinguishes this representation is increased intensity and activity: girls positively perceive their own self, are confident in the achievement of their goal and are ready to correct failures with the help of their capabilities and activity.

 $^{^{52}}$ Ложкин Г.В. Психосемантический анализ структуры представлений спортсменов о теле (телесности). *Наука в олимп. спортве*. 2005. С. 41–46.

The results of the influence of the developed program of sectional classes on the level of self-reflection of the physical potential

of high school girls (n =55)

Groups		мit	al	conformal		personal	
		amount	%	amount	%	amount	%
С	То	9	32,14	13	46,43	6	21,43
	After	8	28,57	13	46,43	7	25
Е	То	7	25,93	16	59,26	4	14,81
E	After	5	18,52	13	48,15	9	33,33

After conducting an experiment related to checking the effectiveness of the author's program based on the application of mental fitness, we determined changes in the number of high school students with different types of representation of physical potential, where positive shifts were noted in the experimental groups under the influence of the proposed experimental factor.

As can be seen from the table. 3.3., among the girls of the experimental group (E, n=27), under the influence of classes according to the proposed program, the number of respondents of the personal type increased by 18.52% due to a decrease in the number of schoolchildren who belong to the congratulatory representation by 10.74% and a decrease by 7.41% of the number of students who have comform representation. Then, as in the control group of girls (C, n=28), who studied according to the school program.

Summarizing the obtained data, it can be stated that under the influence of classes according to the developed program of sectional classes, there have been significant positive changes in the attitude of high school students to their own physical potential. There has been an increase in the number of girls who perceive their own selves more, show confidence in achieving their goals, are ready to overcome failures, due to their capabilities and self-activity. The given results of the experiment testify to the expediency of implementing the author's program in the physical education of high school girls.

For the purpose of a more detailed study of the emotional state of high school girls, we used the WAM technique ("Well-being-activity-mood"). Schoolgirls were given 10 pairs of adjectives, where it is necessary to mark the number that corresponds to their dominant emotional state at the moment.

As can be seen from Table 3.4, the WAM indicators at the beginning of the academic year in the control and experimental groups were almost the same and were at the level of 5.5–6.5 points, from which it can be seen that the condition of the studied subjects after the vacation, who had just come to the class was good.

At the end of the school year, we observed a deterioration in the "well-being" indicator of the control group of schoolgirls by 0.56% (P > 0.05). The activity of students of group K at the beginning of the experiment was within the range of 5.31 ± 0.39 points, and at the end of the experiment a decline in the activity of girls was recorded to 5.23 ± 0.43 , which is 1.69% lower (P > 0.05). The "mood" indicator at the beginning of the experiment was 6.39 ± 0.73 points, at the end of the study the value of the assessment was 6.44 ± 0.69 , which is 0.78% higher (P > 0.05). The indicator of the psychoemotional state of the girls of the experimental group at the beginning of the school year was at the level of 5.38 ± 0.31 points, and at the end of the year – 6.24 ± 0.21 points, which is 12.75% more (P<0.01).

Table 4

Dynamics of indicators of the psycho-emotional state of high school girls in the process of a pedagogical experimenty (n=55)

Groups	Control	Experimantal				
Feeling of well-being						
To the experiment	5,31±0,78	5,49±0,31				
After the experiment	5,27±0,84	6,19±0,21				
Growth in%	-0,56	12,75				
P	>0,05	< 0,01				
Activity						
То	5,31±0,39	5,94±0,58				
After	5,23±0,43	5,85±0,62				
Growth in%	-1,69	-1,52				
P	>0,05	<0,01				
Mood						
То	6,39±0,73	6,38±0,26				
After	6,44±0,69	6,97±0,2				
Growth in%	0,78	9,25				
P	>0,05	<0,01				

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In the experimental group, the value of the "activity" score at the beginning of the academic year was 5.94 ± 0.58 points, and at the end of the year it slightly decreased and was 5.85 ± 0.62 points (P < 0.01). The "mood" indicator in group E in September fluctuated within the range of 6.38 ± 0.26 points, at the end of the year there was an increase in the indicator to 6.97 ± 0.2 points, which is 9.25% higher (P < 0, 01).

Analyzing the results of the study, it can be determined that statistically positive changes are observed in the experimental group. Thus, the wellbeing and mood of the girls increased in relation to their activity. We can explain these changes by the fact that at the beginning of the experiment in September, the students started attending school after a long vacation, and the three WAM indicators were almost the same. As fatigue increases, the ratio of these indicators changes due to a decline in girls' activity relative to their mood and well-being. The relative decline in the activity of high school girls can be explained by mental stress during the educational process and in the period of preparation for external examinations. Improvement in mood is determined by emotional satisfaction from the work done during training. We believe that the positive increase in WAM indicators is explained by the impact of the program of sectional classes based on the use of mental fitness. due to which the general physical, mental and emotional conditions improved. In the control group, there were no statistically significant changes in WAM indicators, so we can testify that our program has an effect on improving the well-being and mood of high school girls.

CONCLUSIONS

- 1. The motor activity of high school students tends to decrease. High school students spend all their free time studying in a sitting position, lead a sedentary lifestyle, memorize a large amount of information, and are constantly in a stressful situation. In this regard, it is necessary to more widely use all opportunities to ensure the maximum development of physical activity, health promotion and popularization of a healthy lifestyle among high school students. In order to correct the physical and psycho-emotional state of schoolchildren, physical activity is necessary, which will have a positive effect on both physical and mental relaxation of students.
- 2. We developed a program of sectional classes for high school girls, which includes the process of harmonious development of physical qualities, based on the use of mental fitness tools, and is aimed at correcting the psycho-emotional state of high school girls, to achieve harmony between

physical, mental and spiritual components. The program of sectional classes developed by us on the basis of mental fitness lasted one academic year, included preparatory, main and supporting periods. The structure of one class included preparatory, main and final parts, included mental fitness tools: yoga, Pilates and stretching; provided for differentiation in the dosage of the amount of physical activity.

- 3. High school girls of the experimental group experienced statistically significant (p<0.05) changes in all tests compared to the control group during the school year. Classes according to the proposed program of sectional classes contributed to the improvement of physical fitness indicators in the experimental group by 18%. On the other hand, in the control group, the indicators improved by only 3%.
- 4. Under the influence of classes according to the developed program, the number of high school girls who show confidence in achieving the goal, readiness to overcome failures due to self-activity and their capabilities has increased. It was determined that after the experiment, the well-being and mood of the girls of the experimental group significantly increased in terms of indicators compared to the activity, under the influence of the developed program, the indicators of "well-being" and "mood" increased by 12.75% and 9.25%, respectively. On the other hand, no statistically significant changes were observed in the control group.

ANNOTATION

The period of students before serious exams is characterized by great emotional stress. High school students spend all their free time studying in a sitting position, lead a sedentary lifestyle, memorize a large amount of information, and are constantly in a stressful situation. The results of such overstrain are drowsiness, confusion, nervous breakdowns, which only complicate a difficult period of life. Modern high school students have to face a large number of difficulties and obstacles while preparing for external examinations. Currently, the number of anxious students, characterized by increased anxiety and emotional instability, has increased. In order to improve the physical and psycho-emotional state of schoolchildren, physical activity is necessary, which will have a positive effect on both physical and mental relaxation of students.

Individual scientists have developed original methods for improving the physical fitness of high school girls and increasing their level of motor activity by means of recreational gymnastics (U. Shevtsiv, 2009; V. Krendeleva, 2015); to correct the body weight of older girls based on the use of health fitness tools (I. Pavlenko, 2016). The author's method of building individual fitness programs for high school girls in the process of independent physical exercises deserves attention (L. Vashchuk, 2016). The work of

T. Sinytsia (2019) deserves special attention, in which the correction of the physical condition of women of the first mature age by means of health aerobics and mental fitness was considered.

Thus, a detailed analysis of the scientific and methodological literature showed the need to develop a program of sectional classes based on the use of mental fitness tools, aimed at improving the physical fitness and psychoemotional state of high school girls.

We developed a program of sectional classes for high school girls, which includes the process of harmonious development of physical qualities, based on the use of mental fitness tools, and is aimed at correcting the psychoemotional state of high school girls, to achieve harmony between physical, mental and spiritual components.

The high school girls of the experimental group had statistically significant (p<0.05) changes compared to the control group in all tests during the school year. Classes according to the proposed program of sectional classes contributed to the improvement of physical fitness indicators in the experimental group by 18%. On the other hand, in the control group, the indicators improved by only 3%.

Under the influence of classes according to the developed program, the number of high school girls who show confidence in achieving the goal, readiness to overcome failures due to self-activity and their capabilities has increased. It was determined that after the experiment, the well-being and mood of the girls of the experimental group significantly increased in terms of indicators compared to the activity, under the influence of the developed program, the indicators of "well-being" and "mood" increased by 12.75% and 9.25%, respectively. On the other hand, no statistically significant changes were observed in the control group.

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Information about the authors: Dubynska Oksana Yakivna, orcid.org/0000-0002-4413-4882

Candidate of Sciences in Physical Education and Sports,
Associate Professor of the Department of Theory
and Methods of Physical Culture

Sumy State Pedagogical University named after A.S. Makarenko 87, Romenska str., Sumy, 40002, Ukraine