

Programming fitness-program for senior pupils to do physical exercises independently

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Fitness-program is characterized by the set of the specially selected physical exercises aimed at the complex or selective impact on the body or some parts of the body depending on the morpho-functional human capacity. Introduced general structure of the fitness-program may be corrected depending on the targets of the training, physical state and senior pupils' motivation. Some fitness-programs containing muscle-strengthening exercises were introduced to solve the problems of the correction of the body. The muscle-strengthening exercises for increasing the body weight, circumference of the parts of the body (shoulders, chest, pelvis, thighs), improving the rates of muscle tonus were recommended for the girls having asthenic body build. The senior pupils having hypersthenic body build did exercises to decrease the body weight and circumference of the parts of the body (shoulders, breast, pelvis, thighs), fatty component. The physical exercises for a normosthenic body build were aimed at amelioration of muscle tonus, decreasing the rate of the increase of body weight and circumference of pelvis.

Keywords: fitness-programs, senior pupils, programming, physical exercises, correction of body build.

Introduction. Promotion of the pupils' health is an important task of the modern education. In the National Doctrine of the development of physical culture and sport physical culture is regarded as the most important factor of healthy lifestyle, disease prevention and organization of leisure-time. Regular exercises help to improve physical, mental and social health, to increase duration of life and active longevity [2; 3; 7; 8; 10; 16]. School physical culture is an indispensable component of the pupils' education which helps to form an all-round developed person and provides his/her healthy and safe vital activity.

A good few of research devoted to the improvement of the content of the pupils' physical education [3; 5; 6; 12] and personal training [1; 13] have been held for the last years. The scientists point out that the physical exercises corresponding to the individual peculiarities and not any physical exercises have an optimal health-improving effect [7; 18]. That's why to increase the efficiency of physical exercises it's necessary to use new directions and technologies based on the morpho-functional peculiarities of youth and which can realize their motivation as much as possible.

One of such new directions of planning exercises is fitness which influences on the correction of body build, body weight, promotes the harmonization of physical development and improvement of the functional body state effectively.

Conducted analysis of literature [2; 3; 4] indicates that the use of fitness in educational organizations will considerably increase the efficiency of the pupils' physical education. A great choice of the means of fitness enables the teachers of physical culture to take into account the physical capabilities of the pupils' body, their wishes and interests. However, the methods for making fitness-programs for senior pupils to do exercises independently were not the subject of a separate scientific research.

The aim of the research is the theoretical study of programming fitness-programs for the senior pupils to do physical exercises independently.

The experimental base of the research were Lutsk educational institutions № 11, 14, 19. 568 girls of the 10th and 11th forms took part in the experiment. To solve the tasks the following methods were used: the analysis of the psychoeducational

literature, pedagogical observation, testing, questioning, pedagogical experiment, methods of mathematical statistics.

The results of the research. Discussion. The results of the analysis of the medical and statistical records of Safety and Health Department of Volyn Regional State Administration testify that there has been a tendency of deterioration of the pupils' health state for the last ten years. So the number of children in the special medical group has increased from 5 up to 34%, and in the preparatory group from 8 up to 39% for the last years. Such a result can be explained not only by the deterioration of the pupils' health but by the increase of the demands for the medical checkup in the educational institutions. The pathology of musculo-skeletal system takes the first place in the structure of the common sickness rate of the pupils (fig.1). The diseases of the organ of vision takes the second place and the endocrine pathology takes the third place.

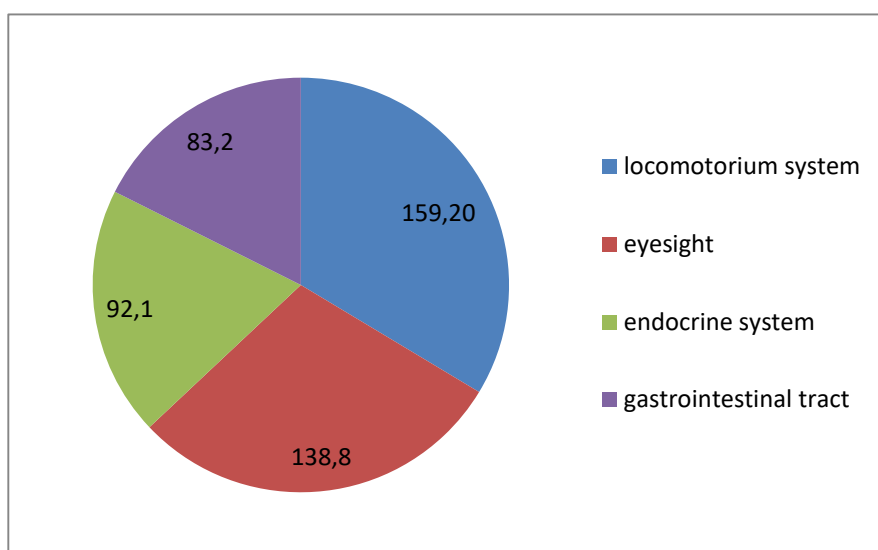


Fig. 1. General statistics of sickness among school children

The results of the research let us state that the pupils have the factors of the tension of the cardiovascular system. The average quantity of Stange's test is 32–35 seconds. The duration definition of expiration breathholding testified the decrease of the results according to Stange's test by 42–47%. According to the average statistical standards the girls' number of vital capacity of lungs corresponds to the age

standards. The analysis of the results indicated that 43% of the pupils have low and lower than the mean value of VCL.

In the scientific works [9; 11; 14;15; 17] it is stated that the main reason of health deterioration and decrease of functional rates of the girls' body is low motor activity. To prove these data the level of motor activity was determined by means of International Physical Activity Questionnaire (IPAQ).

The results testify that only 2,59% of the respondents have a high level of motor activity (fig. 2). The overwhelming majority of the girls have middle (57,76%) or low (39,66%) levels of motor activity.

The scientific research [7] has established that only the high level of motor activity which includes organized physical exercises and hard sport and active games have a training effect. Such a level of motor activity is insufficient and it doesn't provide the necessary functioning of the body and the development of the pupils' physicality to the full.

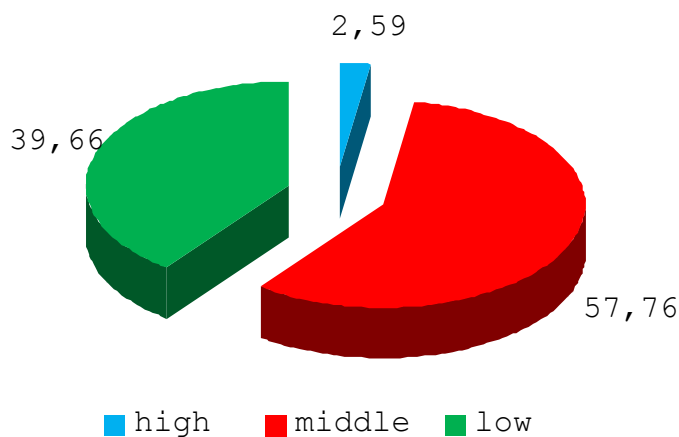


Fig. 2. The level of physical activity of the girls of the secondary school age, %

According to the results of the research it was established that the level of the senior pupils' interest in physical culture isn't high. Only 44–48% of the respondents show a middle or higher than middle level of interest in physical culture. 8–12% of the girls don't show interest in physical exercises or they have negative attitude to it. At the same time motivation evoking senior pupils to do exercises is as follows: to be healthy – 43%, to have a fine figure – 28%, to achieve high sport results – 8%, the

need to move – 10%. The girls prefer fitness (the first rank place) among other priority kinds of motor activity. The respondents point out gymnastics, too. Cyclical kinds of sport and alternative health systems don't play the main role in motivation.

Thus, the girls' great interest in fitness is an objective premise for creating and introduction of fitness-programs to the educational process of physical education for senior pupils.

The research results let us state that fitness-program is a basis for exercises which is characterized by the set of specially selected physical exercises aimed at the complex or selective effect on the body system or some parts of the body depending on the morpho-functional human capabilities. It's necessary to determine the kind of motor activity or combination, intensity, duration of the exercises, the number of exercises per week, the rate of increase of exercises during a week or month in this program.

The variety of fitness-programs is specified by the desire to satisfy different sport and health needs of different population groups. According to the aim fitness-programs are divided into: recreational-hedonistic, remedial-correction, rehabilitation-recovering, sport oriented, health conditioned. Taking into consideration the complex influence of fitness-programs on human body, they are classified according to their functional effect: the development of tenacity, flexibility, strength, coordination abilities, improvement of the psychoregulatory functions.

Fitness-programs are also grouped according to the types of motor activity (aerobics, swimming, health running); a combination of several types of motor activity (aerobics and body-building; health swimming and running; aerobics and stretching); a combination of motor activity and different factors of healthy lifestyle (aerobics and training; body-building and massage). The exercises based on one type of motor activity are divided into the programs of aerobic, strength, health-improving gymnastics, motor activity in water, recreational motor activity, psychoemotional regulations.

Considering the fact that different sport kits and equipment are used for doing fitness, fitness-programs can be classified according to the technical equipment:

without kits, equipment, with kits, weight, using special kits, special gym apparatus, combined.

According to motivation body state and functional capabilities of the girls of senior classes (chapter 2) and considering the demands of the modern program of physical education in the 10–11s forms all the group and individual (personal) fitness-programs are health-conditioned and provide the decrease of the risk of diseases, achievement of a definite level of bodily condition, improvement of the pupils' psychoemotional state.

The variety of fitness-programs doesn't mean their arbitrariness. The use of different kinds of motor activity should correspond to the main principles of physical education.

The following fundamental components are defined in the structure of modern fitness-programs: warm-up, aerobic component, cardiorespiratory component, strength component, the component of flexibility, final component. This general structure of fitness-program can be corrected depending on the aim of the exercises, health and senior pupils' motivational interest.

Fitness-programs based on the health improved kind of gymnastics should be used considering the age, health, senior pupils' motivational interest. While creating the methods of individual fitness-programs for independent exercises we offer the division into 8 targeted components or blocks:

- preparatory (preparation of the body for exercises);
- aerobic (development of cardiovascular and respiratory systems);
- dance-choreographic (realization of aesthetic motives, development of coordination abilities);
- correctional (body correction and muscle-strengthening exercises);
- preventive (prevention of diseases);
- assistance (development of agility, flexibility, vestibular apparatus);
- free (development of music rhythmical abilities);
- relaxing (relaxing after exercises, relieving fatigue).

Four main components are determined in fitness-program. They are conditions and type of exercises; the number of exercises per week; the intensity and duration of every exercise; the expected result considering the motivational valuable guidelines.

Strength fitness is offered to solve the tasks of body correction, decrease or increase of body weight and circumference of some parts of the body. Doing strength exercises included different motions (press, pull, extensions) not only with weight (barbells, kettlebells, dumbbells) but using special sport apparatus. The set of physical exercises is made for the development of the main muscle groups considering the “problem” body parts (glutes, thighs, abdomen). During the exercises the optimal sequence of strength exercises is as follows: abdominal muscles, muscles of thighs, ankles; pectoral muscles, muscles of back and arms. Breathing and static exercises, where the main is fixed or stationary condition, are included in the list of the recommended exercises.

To increase the muscle bulk and to develop strength some sets of 6-8 reps with weights of 60-70% of maximum allowed are used. The rate is middle, time of pushing up is 4 sec, down – 2 sec. While developing strength endurance the time of the main phase of the move doubles, the number of repetitions is from 12 to 18, the rate is middle. The weight is chosen to heave up 2 final reps.

The scientific research [7; 10] proved that one of the most distinctive characteristics of the human physical development is body build. The deviation of the parameters of the body build from the optimal one has a negative effect on both physical and mental state of youth [6]. That’s why programming fitness-programs the body build type (asthenic, hypersthenic, normosthenic) is taken into consideration. According to the results of the research it was discovered that 22% of senior pupils have asthenic body build, 19% – hypersthenic and 59% – normosthenic.

The girls having asthenic body build are lean, above average stature, have narrow shoulders, thin limbs, underweight body. They are recommended strength exercises to increase body weight, circumference of the parts of the body (shoulders, chest, pelvis, thighs) and to improve muscular tonus. Senior pupils having hypersthenic body build are heavysset and overweight, have average stature, bulky

shoulders, short limbs. That's why their exercises are aimed at the decrease of body weight, circumference of the parts of the body (shoulders, breast, abdomen, pelvis, thighs), of fat component. The representatives of the normosthenic body build have a relatively proportional stature. That's why the aim of their exercises is to improve muscular tonus, to decrease the body weight increase and circumference of pelvis.

The methods of programming fitness-programs for senior pupils to do exercises independently consisted of the actions:

- detection of the initial psychoemotional and morpho-functional state of the pupils (questionnaire, testing, medical examination);
- selection of the strategy of exercises (the aim and main tasks);
- setting the aim of the fitness-program (recreational, rehabilitation, sports, health-improving);
- defining the content, type, means and methods of the exercises;
- defining the rational volume of motor activity, characteristics and rate of physical exercises;
- selection of the adequate methods of pedagogical control and evaluation of the results;
- correction of fitness-program according to the results.

These methods were realized during the academic year. They included phased increase of some independent fitness exercises. The methods were realized through three phases.

During the first phase (drawing, 5 weeks) the girls studied the techniques of doing physical exercises. They were aimed at gradual increase of strength capabilities, cardiovascular and respiratory systems of the girls' body. The exercises were directed to arouse the pupils' interest in motor activity, to create optimistic mood.

In the second phase (basic, 24 weeks) regular fitness exercises were done according to the fitness-program. The main tasks of the phase were the development of physical skills, increase of host defenses and body resistance to the unfavorable environmental factors.

The third phase (supportive, 9 weeks) included regular fitness exercises, sticking to the achieved result of the organism functioning, detailed instructions.

The pedagogical experiment was held to check the efficiency of the individual fitness-programs in Lutsk educational institution №11.

The experimental group of the girls who studied according to the fitness-program was formed at the beginning of 2015/2016. The aim of such exercises was the realization of the fitness potential to build the pupils' health, to arouse their interest and motivation in motor activity. The efficiency of the recommendations was defined comparing the initial and final rates of the level of motor activity, physical state and senior pupils' interest in physical culture.

During the pedagogical experiment the number of respondents having a high level of motor activity increased by 68,4%. After the experiment there were not girls having low level of motor activity, at the same time in the beginning of the experiment there were 74,4% of such girls.

The results of the pedagogical experiment let us state that the level of their physical fitness improved ($P < 0,001$) for certain. Endurance and strength increased most of all. Evidently, regular aerobic exercises influenced on the girls' body fully.

After the experiment the girls' motivation changed greatly. The respondents' interest in physical exercises increased. After the pedagogical experiment the pupils mainly had high or above the middle interest in motor activity (in the beginning of the experiment it was middle or below middle).

The rates of the pulse and heart rhythm of the systolic and diastolic of blood pressure didn't change ($P > 0,05$) during the pedagogical experiment for certain. It is explained by their instability and variability. At the same time according to the Stange-Hench test, VCL the results of the girls improved ($P < 0,05 - 0,001$) after the pedagogical experiment for sure. The content of fitness exercises explains the increase of the pupils' functional capabilities.

Thus, the pedagogical experiment shows high efficiency of the offered methods of programming individual fitness-programs for senior pupils to do

exercises independently which are the basis for their widespread adoption in the work of educational institutions.

Conclusions. The realization of fitness among senior pupils is based on the rates of their physical state, motivation to do exercises, level of their motor activity. The fitness-program is characterized by the set of specially selected physical exercises aimed at the complex or selective influence on the body systems or some parts of the body depending on the morpho-functional human capabilities. Fitness-programs are grouped according to the aim, types of motor activity, effect on human body. The testing of these methods of fitness in practice showed their effectiveness proved by the increase of the pupils' interest in physical education, improvement of the level of physical fitness and cardiovascular and respiratory systems.

Literature

1. Белікова Н.О. З досвіду використання інтерактивних методів навчання у професійній підготовці майбутніх фахівців з фізичного виховання та спорту // Сучасні інформаційні технології та інноваційні методики навчання в підготовці фахівців: методологія, теорія, досвід, проблеми // Зб. наук. пр. – Випуск 37. – Київ-Вінниця: ТОВ фірма «Планер», 2014. – С. 348-353.

2. Белікова Н.О. Оздоровлення студентів спеціальної медичної групи засобами аеробних фітнес-програм // Фізичне виховання, спорт і культура здоров'я у сучасному суспільстві : зб. наук. пр. Східноєвроп. нац. ун-ту ім. Лесі Українки / уклад. А.В. Цьось, С.П. Козіброцький. – Луцьк: Східноєвроп. нац. ун-т ім. Лесі Українки, 2015. – № 1 (29). – С. 31-35.

3. Булатова М.М. Сучасні фізкультурно-оздоровчі технології у фізичному вихованні / М.М. Булатова, Ю.А. Усачов // Теорія і методика фізичного виховання; за ред. Т.Ю. Круцевич. – К.: Олімп. л-ра, 2008. – С. 320-354.

4. Ващук Л.М. Алгоритм побудови індивідуальних фітнес-програм для самостійних занять старшокласниць // Фізичне виховання, спорт і культура здоров'я у сучасному суспільстві: зб. наук. пр. Східноєвроп. нац. ун-ту ім. Лесі Українки. – Луцьк: Східноєвроп. нац. ун-т ім. Лесі Українки, 2016. – № 2 (34). – С. 20-25.

5. Горащук В.П. Теоретичні і методологічні засади формування культури здоров'я школярів : автореф. дис. на здобуття наук. ступеня доктора пед. наук: 13.00.01 «Загальна педагогіка та історія педагогіки» / В.П. Горащук; Харківський національний педагогічний університет ім. Г.С. Сковороди. – Х., 2004. – 40 с.

6. Дубогай О. Зміст та результативність шкільної інноваційної діяльності в системі здоров'язберігаючих технологій / О. Дубогай, М. Євтушок // Фізичне виховання, спорт і культура здоров'я у сучасному суспільстві: зб. наук. пр. – Луцьк: РВВ «Вежа» Волин. нац. ун-ту ім. Лесі Українки, 2008. – Т. 1. – С. 36–40.

7. Иващенко Л.Я. Программирование занятий оздоровительным фитнесом / Иващенко Л.Я., Благий А.Л., Усачев Ю.А. – К.: Науковий світ, 2008. – 198 с.

8. Индика С.Я. Особливості показників якості життя у хворих після інфаркту міокарда під впливом програми фізичної реабілітації в домашніх умовах / С.Я. Индика, Н.О. Белікова // Фізичне виховання, спорт і культура здоров'я у сучасному суспільстві: зб. наук. пр. Східноєвроп. нац. ун-ту ім. Лесі Українки. – Луцьк: Східноєвроп. нац. ун-т ім. Лесі Українки, 2014. – № 3 (27). – С. 83-87.

9. Индика С.Я. Обізнаність хворих після інфаркту міокарда про роль фізичної активності у вторинній профілактиці та чинники, що її визначають / С.Я. Индика, А.В. Ягенський // Педагогіка, психологія та медико-біологічні проблеми фізичного виховання і спорту – Харків, 2010. – №4. – С. 52–55.

10. Круцевич Т.Ю. Рекреація у фізичній культурі різних груп населення / Т.Ю. Круцевич, Г.В. Безверхня. – К.: Олімпійська л-ра, 2010. – 248 с.

11. Пантік В.В. Фізичні навантаження та відпочинок як фактори впливу на фізичний розвиток студентської молоді / В.В. Пантік, Н.Я. Захожа // Молодіжний науковий вісник: Фізичне виховання і спорт: зб. наук. пр. / М-во освіти і науки України, Волин. нац. ун-т імені Лесі Українки. – Луцьк, 2010. – С. 36-40.

12. Рода О.Б. Тенденції наукових досліджень спортсменок в аспекті статевих особливостей / О.Б. Рода, І.І. Маріонда // Фізичне виховання, спорт і культура здоров'я у сучасному суспільстві : зб. наук. пр. Волин. нац. ун-ту ім. Лесі Українки. – Луцьк, 2012. – № 4 (20). – С. 473–477.

13. Цьось А.В. Диференційований підхід у процесі професійної підготовки вчителя фізичної культури : автореф. дис. на здобуття наук. ступеня канд. пед. наук: 13.00.01 / А.В. Цьось; Укр. держ. пед. ун-т ім. М.П. Драгоманова. – К., 1994. – 16 с.

14. Цьось А.В. Закономірності розвитку фізичної культури / Фізичне виховання, спорт і культура здоров'я у сучасному суспільстві: зб. наук. пр. Волин. нац. ун-ту ім. Лесі Українки. – Луцьк: Волин. нац. ун-т ім. Лесі Українки, 2009. – № 3 (7). – С.19-23.

15. Цьось А. Рухова активність у мотиваційно-ціннісних орієнтаціях студентів / А. Цьось, А. Шевчук, О. Касарда // Фізичне виховання, спорт і культура здоров'я у сучасному суспільстві: зб. наук. пр. Східноєвроп. нац. ун-ту ім. Лесі Українки. – Луцьк, 2014. – № 4 (28). – С. 83–87.

16. Andrijchuk Olga. General lifestyle characteristics of students who practice sports // Journal of Physical Education and Sport. – 2016. – Vol 16. – Issue 2. – pp. 699–702.

17. Bergier B. Factors determining physical activity of Ukrainian students / B. Bergier, A. Tsos, J. Bergier // Annals of Agricultural and Environmental Medicine. – 2014. – Vol. 21, Nr. 3. – S. 613–616.

18. Moshynsky V., Mykhaylova N., Grygus I. Podwyższony poziom zdrowia przez stosowanie się do zdrowego stylu życia // Journal of Health Sciences. 2013; 3 (10): 123-132.

1. Bielikova N.O. Z dosvidu vykorystannia interaktyvnykh metodiv navchannia u profesiinii pidhotovtsi maibutnikh fakhivtsiv z fizychnoho vykhovannia ta sportu // Suchasni informatsiini tekhnolohii ta innovatsiini metodyky navchannia v pidhotovtsi

fakhivtsiv: metodolohiia, teoriia, dosvid, problemy // Zb. nauk. pr. – Vypusk 37. – Kyiv-Vinnytsia: TOV firma «Planer», 2014. – S. 348-353.

2. Bielikova N.O. Ozdorovlennia studentiv spetsialnoi medychnoi hrupy zasobamy aerobnykh fitnes-prohram // Fizychno vykhovannia, sport i kultura zdorovia u suchasnomu suspilstvi : zb. nauk. pr. Skhidnoievrop. nats. un-tu im. Lesi Ukrainky / uklad. A.V. Tsos, S.P. Kozibrotskyi. – Lutsk: Skhidnoievrop. nats. un-t im. Lesi Ukrainky, 2015. – № 1 (29). – S. 31-35.

3. Bulatova M.M. Suchasni fizkulturno-ozdorovchi tekhnolohii u fizychnomu vykhovanni / M.M. Bulatova, Yu.A. Usachov // Teoriia i metodyka fizychnoho vykhovannia; za red. T.Iu. Krutsevych. – K.: Olimp. 1-ra, 2008. – S. 320-354.

4. Vashchuk L.M. Alhorytm pobudovy individualnykh fitnes-prohram dlia samostiinykh zaniat starshoklasnyts // Fizychno vykhovannia, sport i kultura zdorovia u suchasnomu suspilstvi: zb. nauk. pr. Skhidnoievrop. nats. un-tu im. Lesi Ukrainky. – Lutsk: Skhidnoievrop. nats. un-t im. Lesi Ukrainky, 2016. – № 2 (34). – S. 20-25.

5. Horashchuk V.P. Teoretychni i metodolohichni zasady formuvannia kultury zdorovia shkoliariv : avtoref. dys. na zdobuttia nauk. stupenia doktora ped. nauk: 13.00.01 «Zahalna pedahohika ta istoriia pedahohiky» / V.P. Horashchuk; Kharkivskiy natsionalnyi pedahohichnyi universytet im. H.S. Skovorody. – Kh., 2004. – 40 s.

6. Dubohai O. Zmist ta rezultatyvnist shkilnoi innovatsiinoi diialnosti v systemi zdoroviazberihaiuchy tekhnolohii / O. Dubohai, M. Yevtushok // Fizychno vykhovannia, sport i kultura zdorovia u suchasnomu suspilstvi: zb. nauk. pr. – Lutsk: RVV “Vezha” Volyn. nats. un-tu im. Lesi Ukrainky, 2008. – T. 1. – S. 36–40.

7. Yvashchenko L.Ia. Prohrammyrovanye zaniaty ozdorovytelnym fytnesom / Yvashchenko L.Ia., Blahyi A.L., Usachev Yu.A. – K.: Naukovyi svyt, 2008. – 198 s.

8. Indyka S.Ia. Osoblyvosti pokaznykiv yakosti zhyttia u khvorykh pislia infarktu miokarda pid vplyvom prohramy fizychnoi rehabilitatsii v domashnikh umovakh / S.Ia. Indyka, N.O. Bielikova // Fizychno vykhovannia, sport i kultura zdorovia u suchasnomu suspilstvi: zb. nauk. pr. Skhidnoievrop. nats. un-tu im. Lesi Ukrainky. – Lutsk: Skhidnoievrop. nats. un-t im. Lesi Ukrainky, 2014. – № 3 (27). – S. 83-87.

9. Indyka S.Ia. Obiznanist khvorykh pislia infarktu miokarda pro rol fizychnoi aktyvnosti u vtorynnii profilaktytsi ta chynnyky, shcho yii vyznachaiut / S.Ia. Indyka, A.V. Yahenskyi // Pedahohika, psykhologhiia ta medyko-biolohichni problemy fizychnoho vykhovannia i sportu – Kharkiv, 2010. – №4. – S. 52–55.
10. Krutsevych T.Iu. Rekreatsiia u fizychnii kulturi riznykh hrup naselennia / T.Iu. Krutsevych, H.V. Bezverkhnia. – K.: Olimpiiska 1-ra, 2010. – 248 s.
11. Pantik V.V. Fizychni navantazhennia ta vidpochynok yak faktory vplyvu na fizychnyi rozvytok studentskoi molodi / V.V. Pantik, N.Ia. Zakhosha // Molodizhnyi naukovi visnyk: Fizychno vykhovannia i sport: zb. nauk. pr. / M-vo osvity i nauky Ukrainy, Volyn. nats. un-t imeni Lesi Ukrainky. – Lutsk, 2010. – S. 36-40.
12. Roda O.B. Tendentsii naukovykh doslidzhen sportsmenok v aspekti statevykh osoblyvostei / O.B. Roda, I.I. Marionda // Fizychno vykhovannia, sport i kultura zdorovia u suchasnomu suspilstvi : zb. nauk. pr. Volyn. nats. un-tu im. Lesi Ukrainky. – Lutsk, 2012. – № 4 (20). – S. 473–477.
13. Tsos A.V. Dyferentsiiiovanyi pidkhid u protsesi profesiinoi pidhotovky vchytelia fizychnoi kultury : avtoref. dys. na zdobuttia nauk. stupenia kand. ped. nauk: 13.00.01 / A.V. Tsos; Ukr. derzh. ped. un-t im. M.P. Drahomanova. – K., 1994. – 16 s.
14. Tsos A.V. Zakonomirnosti rozvytku fizychnoi kultury / Fizychno vykhovannia, sport i kultura zdorovia u suchasnomu suspilstvi: zb. nauk. pr. Volyn. nats. un-tu im. Lesi Ukrainky. – Lutsk: Volyn. nats. un-t im. Lesi Ukrainky, 2009. – № 3 (7). – S.19-23.
15. Tsos A. Rukhova aktyvnist u motyvatsiino-tsinnisnykh oriiantatsiiaakh studentiv / A. Tsos, A. Shevchuk, O. Kasarda // Fizychno vykhovannia, sport i kultura zdorovia u suchasnomu suspilstvi: zb. nauk. pr. Skhidnoievrop. nats. un-tu im. Lesi Ukrainky. – Lutsk, 2014. – № 4 (28). – S. 83–87.
16. Andriichuk Olga. General lifestyle characteristics of students who practice sports // Journal of Physical Education and Sport. – 2016. – Vol 16. – Issue 2. – pp. 699–702.

17. Bergier B. Factors determining physical activity of Ukrainian students / B. Bergier, A. Tsos, J. Bergier // *Annals of Agricultural and Environmental Medicine*. – 2014. – Vol. 21, Nr. 3. – S. 613–616.

18. Moshynsky V., Mykhaylova N., Grygus I. Podwyższony poziom zdrowia przez stosowanie się do zdrowego stylu życia // *Journal of Health Sciences*. 2013; 3 (10): 123-132.