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**FEATURES OF ATHLETICISM APPLICATION
IN HEALTH-RELATED PHYSICAL EDUCATION
LESSONS FOR HIGH SCHOOL STUDENTS****Alla SOLOVEY , Olga RYMAR***Lviv State University of Physical Culture, Lviv, Ukraine***ОСОБЛИВОСТІ ЗАСТОСУВАННЯ ЗАСОБІВ АТЛЕТИЗМУ В ФІЗКУЛЬТУРОНО-ОЗДОРОВЧИХ ЗАНЯТТЯХ ЗІ СТУДЕНТАМИ ВИЩИХ НАВЧАЛЬНИХ ЗАКЛАДІВ.** Алла СОЛОВЕЙ, Ольга РИМАР. *Львівський державний університет фізичної культури, Львів, Україна*

Анотація. Найгострішою проблемою, що стоїть сьогодні перед вищою школою, є серйозне погіршення стану здоров'я студентської молоді. Тому актуальною є проблема пошуку нових підходів до організації навчального процесу з фізичного виховання студентів, спрямованих на зміцнення та збереження здоров'я. Мета дослідження: оптимізація навчального процесу з фізичного виховання студентів вищих навчальних закладів. Вивчити вплив методики занять із переважним застосуванням засобів атлетизму на рівень фізичної підготовленості, стан здоров'я та фізичний стан студентів першого курсу ВНЗ III–IV рівнів акредитації. Установлено, що застосування авторської методики занять силового спрямування у фізичному вихованні студентів сприяло більш вираженим ($p < 0,05$) позитивним змінам фізичного стану та стану їхнього здоров'я порівняно з заняттями за чинною програмою фізичного виховання (загальна фізична підготовка та спортивні ігри).

Ключові слова: студенти, атлетизм, підготовленість, здоров'я.

Statement of the problem. Public health reflects past and present welfare of the state. It can be confirmed that the future of the country depends on the health of its young people. Scientists suggest that almost 90 % of children, pupils and students have health deviations, more than 50 % – poor physical fitness. About 70 % of the adult population is characterized by low and lower than average levels of physical health: at the age 16–19 – 61 %, 20–30 – 67.2 %, 30–39 – 66 %, 40–49 – 81.5 %, 50–59 – 80 %, 60 and older – 98.1 % [7].

Some features of modern living conditions, the rapid development of technological progress, modernization of education and work environment, rapid growth of information volume, ecological problems in environment, advantage of bad habits as opposed to a healthy lifestyle – every of these factors badly affects the physical health of students. The flexibility of functional systems of a healthy young person contributes to its rapid adaptation to various environmental effects. At the same time some minor variations in health of adolescents during the period of puberty and hormonal changes lead to the fact that their body can not adequately respond to workload. In case of students' further studying at universities, this trend is much more complicated due to the increased cognitive loadings. The lack of physical activity leads to functional disorders which eventually develop into chronic diseases. The most acute problem facing today before high school is a serious worsening of students' health. This is particularly true for first-year students due to their lack of experience in adapting to the new socio-economic and psycho-educational status of the student. The primary goal of physical education in higher education institutions is to maintain health and physical fitness of students. The combination of these factors determines the level of physical fitness and performance, which in turn, are important indicators of working capacity of students [7].

The search for new forms of educational process in physical education has been one of the important tasks of teaching staff because physical education in high school, for the majority of students, is the only way to increase physical activity and is important in promoting and maintaining health of the younger generation. Hence, there is the problem of finding the means and methods to optimize the process of physical education for students.

Analysis of recent library resources. It is known that the most popular sports among youth aged 18–24 is the sport games and athletics power kinds of sports. Athleticism is a sport that promotes health, prevention of diseases and the development of physical qualities of an individual. In many countries the sport is part of the essential part of the physical education curriculum for youth [1, 2].

Rational combination of weight training with other types of motor activity allows to achieve a high level of physical qualities and mould moral and strong will [1, 2, 3].

The necessity of selection of athletic exercises to be implemented in physical education experiences for youth of college-age results in favorable period of power qualities development and possibility to dose, control and direct loadings [3, 4, 5, 6].

Having reviewed the publications on the topic of athleticism and strength training, especially in university scientific and methodical scientific collections, we can conclude that all these activities are diverse and largely relate to aspects of sports exercises with weights. In modern practice there is no scientifically based sports and recreation programs focused on the power training for students of higher education, institutions which led to the choice of the research topic.

The aim of the research is to optimize the process of physical education of university students by means of athleticism.

To achieve the goal we set the following tasks:

1. To clear up the matter of the problem of physical education teaching with the use of athleticism in higher education institutions.
2. To work out a method of health-related fitness classes focused on endurance of students.
3. To investigate the influence of the power training methods focused on the physical health, physical condition, and level of physical fitness of students.

Methods and research arrangement. To achieve the objectives, the following research methods were applied: analysis of library resources, pedagogical experiment, the method of express evaluation of physical condition by T.Yu. Krutsevych and physical health by G.L. Apanasenko, motor tests, dynamometry, and methods of mathematical statistics.

The study was being conducted during the 2012–2013 years and was organized in three stages according to the set objectives. At the first stage of the study theoretical materials regarding the research topic were collected and analyzed. On the basis of library resources analysis the method of exercises with the use of athletics for the students of the basic academic department has been developed. At the second phase of the study pedagogical experiment which lasted 6 months was conducted. The experiment involved first-year students of the Department of Wood Processing Technology, specialty "technologist" of National Forestry University of Ukraine, whose state of health allowed them to be enrolled in basic training department. The contingent consisted of 12 students (boys) of the control group and 12 students of experimental one. The experimental group was formed of students who have expressed an interest and willingness to be engaged in strength training. Students of the experimental group trained according to the suggested program twice a week for 90 minutes according to the lesson schedule. Students in the control group attended classes of physical education according to the schedule containing a general physical training and sport games.

At the beginning and end of the teaching experiment we conducted investigation of physical health and physical condition of the experimental group students, as well as physical fitness of students in the control and experimental groups using dynamometry and motor tests. We defined the following parameters: race 60 m (sec), long jump (cm), pulling up on the bar, bending of arms in the recumbency, keeping the angle on the uneven bars (sec), the slope in the sitting position (cm), weight power (kg), the strength of the right hand (kg), and the strength of the left hand (kg). At the third phase of the study the results of the research and the practical recommendations were given.

Results. We have developed the method of exercises with the use of athletics for the students of the basic academic department. Based on the analysis of the literature and study of recent research on issues of fitness exercises, the main tenets of the program were defined and strictly observed in the preparation of the lesson content:

- adequacy of the loadings according to the individual characteristics of students;
- combination of strength training and exercises designed to develop general endurance ;
- creation of optimal conditions for stimulation of the cardiovascular and respiratory systems at loading intensity 40-50 % of maximum oxygen consumption (at heart rate to 140–155 beats per minute);
- value of loadings when performing weight training between 20 and 70% of the individual

maximum, a combination of exercises designed to develop strength endurance and maximal strength (by repeated efforts);

- use of low-intensity exercises that increase heart rate by 20–30% from the initial level at the preparatory stage;
- gradual increase of loadings by increasing number of exercises and then by gradually increasing of the intensity of exercises;
- reduction of workout loadings during the pre-examination period.

The curriculum was developed for the 6 month period (44 workouts) and was divided into two phases: preparatory (6 workouts) and basic (38 workouts) ones. The task of the preparatory stage was to teach the exercises technique using weight resistance equipment, and exercises with weights, to teach techniques of self-control and safety, to motivate the students to physical activity. The task of the main stage was to improve physical condition and level of physical fitness of students through the use of weight training focused on strengthening the muscles in combination with aerobic exercises aimed at improving the functioning of the cardiovascular and respiratory systems. Each lesson combined strength training and aerobic exercise on cardio trainers. The workouts included breathing exercises, muscle relaxation exercises and exercises to stretch muscles.

Analysis of the study results showed that there were no significant differences between the performance of motor tests and dynamometry in the control and experimental groups at the beginning of the experiment. This suggests that the students' level of physical fitness in both groups were equivalent at the beginning of the experiment.

At the end of the experiment motor performance tests and dynamometry in the control and experimental groups were higher than before the experiment. Positive results can be explained by the natural growth of characteristics and the influence of systematic physical activity. After the experiment the comparative analysis of motor testing and dynamometry of the students in control and experimental groups showed that significant differences between the results in 60 m race didn't occur. This is natural, since the speed characteristics are conservative enough and at this age their development is limited [4].

However, the analysis of other tests indices showed that the results of the students of the experimental group were significantly higher than the students in the control group: the slope in the sitting position ($t - 2.81$ at $p < 0.05$), keeping the angle on the bars ($t - 2, 851$ at $p < 0.05$), pulling up on the bar ($t - 2,82$ at $p < 0.05$), long jump ($t - 2.817$ at $p < 0.05$), bending and extension of arms in the recumbency ($t - 2.832$ at $p < 0.05$), weight power ($t - 2.345$ at $p < 0.05$), the strength of the right hand ($t - 2.123$ at $p < 0.05$), the strength of the left hand ($t - 2.14$ at $p < 0.05$) (Fig. 1).

To study the influence of the developed technique of workouts on students' health and physical condition at the beginning and end of the experiment the investigation of physical health level and physical fitness of the students in the experimental group was conducted. The health level determination was conducted by G.L. Apanasenko's method, determination of physical condition – by the method of T.Yu. Krutsevych.

The results showed that the suggested method of exercises using athleticism had positive impact on the health of the students under study (Fig. 2). Positive changes in health were observed in both groups. Significant changes in terms of health can be explained by the growth of power characteristics during the training process and consequently the power indices were improved, as well as the Ruffier test index. This proves the positive impact of training on the cardiovascular system of the students.

The health level of the students under the study was significantly ($t - 2.592$ at $p < 0.5$) improved after the experiment, as evidenced by the methods of mathematical statistics.

Mathematical analysis of comparing the physical condition suggests that the given technique of workouts positively influenced the level of the physical condition of the students under the study, as it significantly ($t - 2.363$ at $p < 0.5$) improved (Fig. 3). The results showed that due to the workouts all participants of the experiment improved their fitness level. Before the experiment ten participants' fitness level was below average, one has an average level and one participant has a low level. After training according to the suggested program eight participants of the experiment ob-

served average physical fitness and four - below the average. Low level of physical fitness was not found. The research results suggest that the poor indices of the physical fitness of the students under the study were due to insufficient physical activity. Their growth has allowed achieving positive changes.

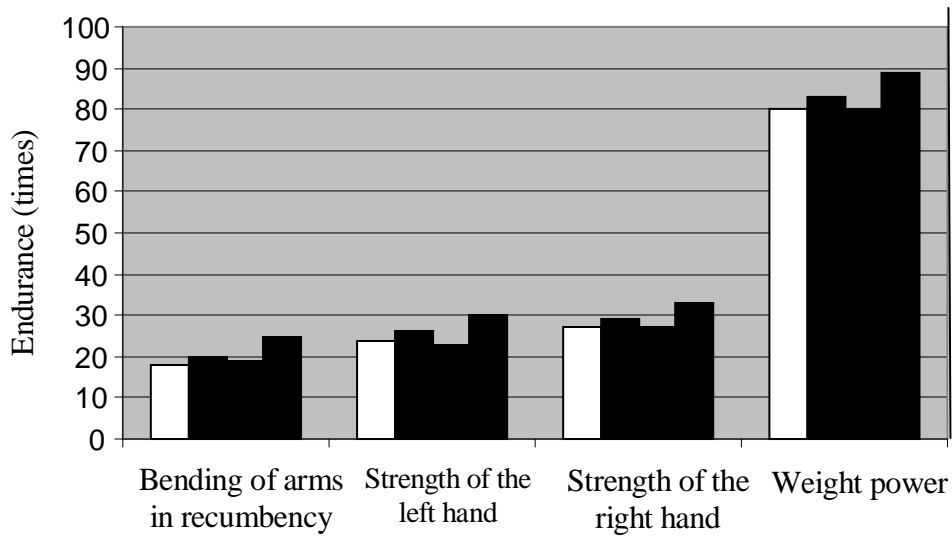


Fig. 1. Indicators of physical preparedness:

- – the control group before the experiment;
- – the control group after the experiment;
- ▤ – the experimental group before the experiment;
- ▥ – the experimental group after the experiment.

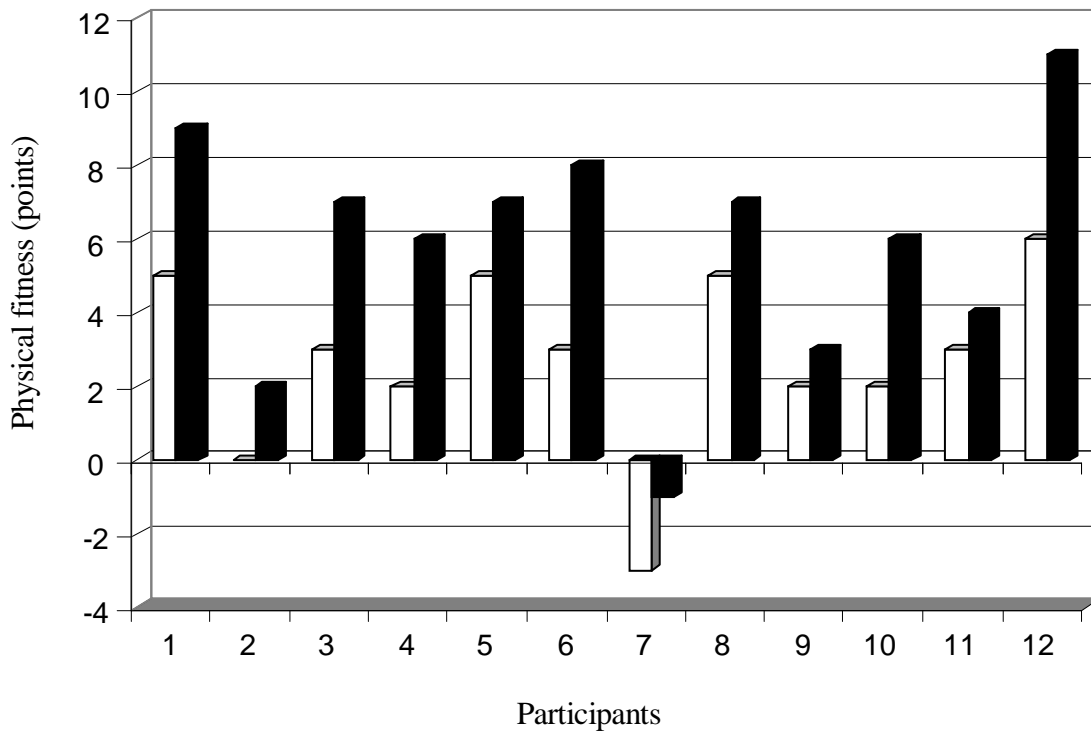


Fig . 2. Health indicators in the experimental group participants before and after the experiment:

- – before the experiment;

■ – after the experiment

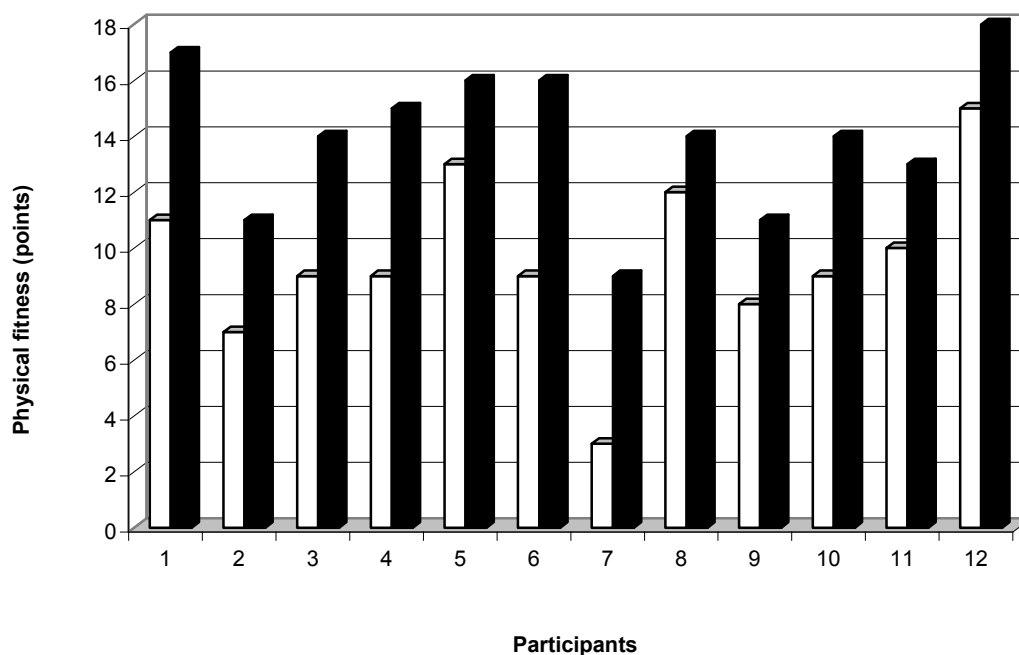


Fig. 3. Indicators of physical condition in the experimental group participants before and after the experiment:

□ – before the experiment;

■ – after the experiment

Conclusions:

1. The studies have confirmed the effectiveness of the suggested methods of fitness lessons focused on endurance which were conducted during six months and its positive impact on the first-year students' level of physical fitness ($p < 0.05$).

2. Physical exercises according to the author's method of using athleticism have had significantly ($p < 0.05$) positive effect on the level of health and physical fitness of the studied experimental group.

3. The given technique of health-related fitness lessons focused on endurance taking into account the individual capacities of students can be recommended for application in physical education lessons at higher educational institutions of Ukraine.

Prospects for further research. To find out the effectiveness of physical education and health-related activities focused on endurance in the learning process for boys of upper grades of secondary schools.

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ОСОБЕННОСТИ ИСПОЛЬЗОВАНИЯ СРЕДСТВ АТЛЕТИЗМА В ФИЗКУЛЬТУРНО-ОЗДОРОВИТЕЛЬНЫХ ЗАНЯТИЯХ СО СТУДЕНТАМИ ВЫСШИХ УЧЕБНЫХ ЗАВЕДЕНИЙ

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Аннотация. Самой острой проблемой, которая стоит сегодня перед высшей школой, является серьезное ухудшение состояния здоровья студентов. Поэтому актуальной является проблема поиска новых подходов к организации процесса физического воспитания студентов, направленных на улучшение состояния здоровья. Цель работы: оптимизация учебного процесса по физическому воспитанию студентов высших учебных заведений.

Изучить влияние методики занятий с доминирующим использованием средств атлетизма на уровень физической подготовленности, состояния здоровья и физического состояния студентов первого курса высших учебных заведений III–IV уровня аккредитации.

Установлено, что применение авторской методики занятий силового направления в физическом воспитании студентов способствовало более выраженным ($p < 0,05$) положительным изменениям физического состояния и состояния их здоровья по сравнению с занятиями по действующей программе физического воспитания (общая физическая подготовка и спортивные игры).

Ключевые слова: студенты, атлетизм, подготовленность, здоровье.

FEATURES OF ATHLETICISM APPLICATION IN HEALTH-RELATED PHYSICAL EDUCATION LESSONS FOR HIGH SCHOOL STUDENTS

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Abstract. The most acute problem facing today's high school is a serious disorder in the students' health. So, the problem of finding new approaches to the educational process in physical education of students to strengthen and preserve their health is the burning question nowadays. The aim of the research is to optimize the learning process in physical education of students in high school. To study the effect of teaching methods with the use of a primary means of athleticism on the physical fitness level, health and fitness of first-year university students of III-IV accreditation levels. It was established that the application of the author's technique of athletics classes focused on endurance in terms of physical education of students contributed to more expressed ($p < 0.05$) positive changes in their fitness health compared to classes according to the current program of physical training (general fitness and sports games).

Key words: students, athleticism, fitness, health.

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