THE USE OF INDIVIDUAL FITNESS PROGRAMS ACCORDING TO THE BODY TYPES OF HIGH SCHOOL GIRLS AS MEANS OF INCREASING PHYSICAL ACTIVITY

Lyudmila Vashchuk¹, Nina Dedeluk², Elena Tomashchuk³, Olga Roda⁴, Zhanna Mudryk⁵

¹ Ph. D. in Pedagogical Sciences. Lesya Ukrainka Eastern European National University, Lutsk, Ukraine, Vaschuk.Liuda@eenu.edu.ua
² Ph. D. in Physical Education and Sports, Associate Professor in the Department of Theory of Physical Education, Fitness and Recreation, Lesya Ukrainka Eastern European National University, Lutsk, Ukraine, Dedeluk.Nina@eenu.edu.ua
³ Ph. D. in Pedagogical Sciences, Associate Professor in the Department of Theory of Physical Education, Fitness and Recreation, Lesya Ukrainka Eastern European National University, Lutsk, Ukraine, olena.tomashchuk@eenu.edu.ua
⁴ Ph. D. in Physical Education and Sports. Lesya Ukrainka Eastern European National University, Lutsk, Ukraine, Olya.roda@mail.ru
⁵ Ph. D. in Physical Education and Sports, Associate Professor in the Department of Sports and Tourist Work, Lesya Ukrainka Eastern European National University, Lutsk, Ukraine

Abstract

The actuality of the problem is caused by the necessity of the use of fitness as means of increasing physical activity at the educational institutions. The introduction of the newest pedagogical technologies is known to enable us to solve different problems of the individual oriented study, formation of the individual educational aspect. The methods of the research of the revelation of initial psychoemotional and morphofunctional state of the high school girls were questioning, testing, medical investigation. The results of the research. Fitness programs based on the creative kinds of gymnastics considering the age, health state, the level of the physical development and motivational interests of high school girls. To solve the tasks of the correction of constitution, increase or decrease of some body parts fitness programs aimed at weight lifting were offered. During the pedagogical experiment the quantity of the respondents with a high level of physical activity increased by 54,7 %. The level of physical preparation (P < 0,001) improved according to their endurance, strength, flexibility, agility. Conclusions. The improvement of the theoretical explanation and experimental testing of the methods of making individual fitness programs for high school girls considering their morphofunctional peculiarities, motivation and the high school girls’ body types in the process of doing physical exercises independently as a constituent part of health protection competence was emphasized. The importance of the received results defining the aspects of the development of the scientific approaches according to the chosen course in the future should be noted.

Key words: fitness programs, physical activity, high school girls, body types.

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что внедрение новейших педагогических технологий дает возможность решить различные проблемы личностно-ориентированного обучения, формирования индивидуальной образовательной перспективы. Методы исследования – выявления начальных психомоторного и морфофункционального состояний старшеклассниц (анкетирование, тестирование, медицинское обследование). Результаты исследования. Учитывая возраст, состояние здоровья, уровень физического развития, мотивационные интересы девушек старшего школьного возраста, применяли фитнес-программы, основанные на оздоровительных видах гимнастики. Для решения задач коррекции телосложения, уменьшения или увеличения массы и окружностей частей тела нами предлагаются фитнес-программы силового направления. За время педагогического эксперимента количество респондентов с высоким уровнем физической активности возросло на 54,7 %. Также в учащихся достоверно (Р < 0,001) повысился уровень физической подготовленности по выносливости, силе, гибкости, ловкости. Выводы. Принимая во внимание тот факт, что в исследовании акцентируется на совершенствовании теоретического обоснования и экспериментальной проверки эффективности методики построения индивидуальных фитнес-программ старшеклассниц с учетом морфофункциональных особенностей, мотивации и типа телосложения старшеклассниц в процессе самостоятельных занятий физическими упражнениями как составной части здоровьесберегающей компетентности, отмечаем важность полученных результатов, которые определяют направление развития научного подхода по избранному направлению в будущем.

Ключевые слова: фитнес-программы, физическая активность, старшеклассницы, типы телосложения.

Introduction. An important task of modern education is health improvement of pupils. The National doctrine of development of physical culture and sport physical culture is considered as the most important factor in a healthy lifestyle, disease prevention, the organization of leisure. Systematic physical exercise help to improve physical, mental and social health, increase life expectancy and active longevity [1; 9; 14].

Physical education at schools is an essential component of educational system of pupils, which contributes to a fully developed person and ensure its healthy and safe activity. Comprising various forms of physical activity, fitness contents the needs of different social and age groups in health activities through a variety of fitness programs, their availability and emotion. The research results gave reason to conclude that the fitness based on a fitness program the characteristic feature of which is a set of specially selected exercises at a comprehensive or selective effect on body systems or body parts depending on morphological human capabilities [2; 3; 4; 10; 13].

The aim of the research is theoretical substantiation and experimental verification of effective methods aimed at constructing individual fitness programs for high school student in the process of self-studying physical activity as a means of physical activity increasing.

Objectives of the Study:
1) to analyze the problem of studying fitness at secondary schools;
2) to determine the indicators of motor activity and physical condition of high school girl students as a prerequisite for implementing fitness of methods;
3) to substantiate the content and structure fitness programs for self-study high school as a way of increasing physical activity.

Methods: early detection of emotional and functional state of high school girls students(questionnaires, tests, medical examinations).

Research Results. Discussion. Despite the age, health, level of physical development, motivational interests of high school girls, fitness programs were used based on improving kinds of gymnastics [11].

To solve the tasks of the body correction, reduction or increase in weight and body parts we proposed fitness programs of forceful direction. Performing strength training exercises involved the use of various movements (bench presses, traction dilution) not only with weights (barbells, dumbbells, barbells), but also on special simulators and the own weight.

Physical exercises were formed to develop major muscle groups with regard to «problem» areas of the body (buttocks, thighs, abdomen). For high school girls students asthenic body structure, which is inherent thinness, above average height, narrow shoulders, thin limb, deficiency of body weight, activities of different power orientation we recommended to increase body weight, circumference of the body (shoulders, chest, pelvis, femur) to improve performance muscle tone. High school girls students of the hypersthenic body structure preferably have a massive body, medium height, heavy shoulders, shortened limbs overweight. Therefore, physical exercises were aimed at weight loss, reducing the circles of the body and fat component. Girls of the normostenic body type have a relatively proportionate body structure. Due to the factors physical activity is aimed at improving muscle tone, decreasing growth rates of body weight and reducing the circumference of the pelvis.
During the classes the optimal sequence of strength exercises was as follows: abdominal muscles; femoris, tibia; pectoral muscles, back muscles and hands. The list of recommended exercises also includes breathing exercises and exercises for the maintenance of static postures, where special attention is paid to proper posture. Training fitness program for women includes a series of exercises which are repeated every other day. 1–2 muscle groups are worked out at one training, such as: day 1 is chest muscles and triceps; day 2 is leg muscles (quadriceps and biceps thigh); day 3 is deltoid muscles of the arms and abdominal muscles; day 4 is back muscles and biceps hands. In research [5; 6; 7; 8] it is proved that one of the most characteristic features of physical development of a person is the body structure. Deviation of the body structure of the optimal values negatively affects the physical and mental status of youth. Therefore, when designing fitness programs of the body structure types (asthenia, hypersthenic, normostenic) were taken into account. The research has found that 22 % of high school student have asthenic body structure, 19 % have hypersthenic and 59 % have normostenic.

For girl with asthenic body structure, for which thinness, above average height, narrow shoulders, thin limb deficiency of body weight are characterized, strength exercises orientation are recommended to increase body weight, circumference of the body (shoulders, chest, pelvis, femur) to improve performance muscle tone. Fitness program for women of this group is aimed at strengthening of the tone major muscle groups. Appropriate exercises are recommended. Despite the peculiarities of the physical condition of girls belonging to different groups, we accordingly developed a dosing of strength loads.

### Table 1
**Dosage Loads for Girls of Different Body Structure**

<table>
<thead>
<tr>
<th>Physique</th>
<th>The Dimension of the Burden (Maximum Repetitions)</th>
<th>Number of Approaches, Times</th>
<th>The Duration of Rest Between Series, min</th>
<th>Temp of Acting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asthenic</td>
<td>8–12</td>
<td>5–6</td>
<td>1,5–3,0</td>
<td>slow, medium</td>
</tr>
<tr>
<td>Hypersthenic</td>
<td>15–25</td>
<td>3–4</td>
<td>0,63–1,0</td>
<td>fast</td>
</tr>
<tr>
<td>Normostenic</td>
<td>8–12</td>
<td>4–5</td>
<td>1,0–2,0</td>
<td>average</td>
</tr>
</tbody>
</table>

To increase the muscle strength of the first group of girls we offer to perform 5–6 exercise approaches. Each exercise is repeated 8–12 times, duration of rest between series 1,5–3,0 min. Exercises are performed at a slow pace and average (mode increase muscle mass). Methods to develop strength for members of the second group are slightly different: the number of approaches reduced to 3,4 times, and the number of repetitions increased to 15–25 times. Exercises are recommended to perform at a rapid pace with the duration of breaks between sets 40–60 sec (fat reduction mode). Girls of the third group should perform exercises in 4–5 approaches with burdens of 8–12 times the size and duration of rest 1,0–2,0 min. Rate of doing is average.

In scientific studies it is indicated that the main reason for reducing the health and functional parameters girls body is lack of physical activity. To confirm these data, it was determined the level of motor activity girls according to questionnaire. International International Physical Activity Questionnaire (IPAQ) [12; 15; 16].

Molding pedagogical experiment showed the high efficiency offered by fitness programs (table 2). The girls have high experimental group (57,3 %) or moderate (42,7 %) level of physical activity. In the control group, high motor activity – 12,5 % of respondents.

### Table 2
**The Level of Motor Girls Activity of Experimental and Control Groups After the Teaching Experiment, %**

<table>
<thead>
<tr>
<th>The Level of Motor Activity</th>
<th>Group of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Experimental</td>
</tr>
<tr>
<td>High</td>
<td>57,3</td>
</tr>
<tr>
<td>Average</td>
<td>42,7</td>
</tr>
<tr>
<td>Low</td>
<td>–</td>
</tr>
</tbody>
</table>

Test results of physical activity of IPAQ methodology showed a significant increase in the number of movements of students experimental group.
During pedagogical experiment of respondents with a high level of physical activity increased by 54.7%. After the experiment women with low physical activity were not find, and at baseline they were 69.2%.

**Conclusions and Perspectives for Further Research.** In the research the main focus was on improving the theoretical and experimental study to test the effectiveness of individual methods of constructing high school fitness programs based on morphological features, body type and motivate high school student for independent exercises as a part of competence that preserves health, it is necessary to note constructing high school fitness programs based on morphological features, body type and motivate high school student for independent exercises as a part of competence that preserves health, it is necessary to note the importance of the received results which determine the direction of scientific approaches for the selected direction in the future.

So the pedagogical experiment shows the high efficiency of the method of formation of individual fitness programs for self-study of high school student, which is the basis for their widespread implementation in the practice of secondary schools. The issue of building fitness programs for persons with disabilities requires further investigation.

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