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The Technique of Fitball Aerobics in Physical Culture Classes for Female Students

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The article sheds some light upon the technique of using fitball, a type of health-improving aerobics. The technique of fitball aerobics in classes touches upon physical education of the first and the second year female students.

Development and implementation of the technique includes three stages. The first stage is the organization, methodological approaches, the second – the introduction into the educational process of students, the third is the method testing in a pedagogical experiment.

The experimental material confirms that the methodology of fitball aerobics is effective for the development of motor characteristics, aims at the harmonious development of individual students, helps to improve overall fitness and is aimed at the preservation of health. In addition, the results suggest a fundamentally new approach to organizing and conducting of physical training in higher educational institutions. The technique of fitball is an alternative to the traditional means of physical education used in the classroom for physical education in higher educational institutions that do not satisfy the needs of female students.

Exercises developed by the author, the use of a line method when performing exercises in the main classes according to musical accompaniment, allows to create a positive emotional background on lessons and a motivation to continue this type of exercises after graduation from the university.

Keywords: female students, aerobics, fitball aerobics, methodology, physical exercise, fitness, pedagogical experiment.

Introduction

In recent years, works of many Russian authors are devoted to the health issues of young people (Agajanian, 2000; Ananiev, 2000; Apanasenko, 2002; Kazin, 2000; Kuraev, 2001, 2003; Moskovchenko, 2000, 2002, 2005; Shchedrina, 2003, etc.).

Some authors believe that the reduction of the main indicators of physical development of young college-age children points at the general tendency to the deterioration of physical health.

Already in school-age 30-35% of children have chronic illnesses (Serdyuk, Palgov, 2000). Then this weakened group of graduates enters the college, where there is no selection of health indicators (Zuev, 1996). Other authors believe that the cause of ill health is the poor youth's interest in traditional physical training in those programs that are taught in universities (Vishnevsky, 1996; Gilev 1995, 2002; Galeev, 1997; Tsyba, 2000, etc.).

As a result a contradiction has emerged, the contradiction between the need for physical

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activity and lack of innovations meeting interests of female students. A good way to eliminate the contradiction is the use in teaching various aerobics programs, which are based on: the basic aerobics, dance and power aerobics. These fascinating and useful class recreational physical activities can improve emotional background, the density and efficiency of the learning process. In addition, leading experts in the field of theory and methodology of physical education (Kryuchek, 2001; Lisitskaya, 2002; Lyubimov, 1997; Seluyanov, 2000, and others) believe that practicing rhythmic gymnastics (health-improving aerobics) are an ideal form of exercise for the students of 1 – 3 courses.

Aerobics – is a system of gymnastics, dance and other activities carried out by the music or the standard mass-production-line method (Lisitskaya, 2002). There are many types of recreational aerobics, each solves its tasks (develop flexibility, coordination, strength, endurance, etc.). For classes with students, there is a need to develop a methodology for improving aerobic classes, which could solve several tasks in a complex, given the different physical fitness involved. Different systems in the aerobics can effectively develop endurance, flexibility, strength and coordination. Variety, constant updating of logically aligned, evidence-based programs, a high emotional background of classes through the musical accompaniment, allows this type of fitness training to keep a high rating for over two decades among other health systems.

In modern aerobics a new trend has emerged – fitball aerobics (exercises with a large ball).

According to G. A. Zaitseva (2007) fitball has become widely used in health training, since it can perform exercises for strength and coordination, to correct posture and use a system of stretching. All this allows to increase the intensity of training and individually vary the load.

Fitball aerobics is a new kind of exercises using special inflatable plastic balls of various sizes, which reach the diameter of 55 – 65 cm to 1 meter. With the help of a specially developed technique, you can adjust the shape, develop motor coordination and flexibility, correct posture, strengthen the cardiovascular and respiratory systems. Fitball aerobics can be practiced at any age from children to adults. The classes run a variety of exercises (mainly power and stretching). The peculiarity of this type of aerobics is that, without changing the size of the fitball, physical activity can be varied by changing only the starting position.

Using fitball with female students in the classroom can greatly enhance interest in lessons and their effectiveness. However, it should be noted that at the moment there is no evidence-based methodology for fitball aerobics. The dosage and selection of the load is determined by each teacher intuitively, so that was the basis for the development of the technique.

The purpose of the study is to develop a technique in fitball aerobics for girls of 17-20 years old, providing increased physical training of the students.

Conditions and the Organization of the Experiment

The first and the second year students of the core medical group at the age of 17-20 took part in the experiment. Classes were held at the sports center of Siberian Federal University. The first year of the study revealed the level of physical fitness of students at four control tests. Running at a distance of 2000m on time (seconds). Flexion-extension of arms, hands on the gym bench (many times), long jump from their seats (see). From the position of lying on her back, hands behind head, lift the trunk (times / min.). According to the results of control tests all girls were divided into two groups: the control one and the experimental

(10 in each group) to test the effectiveness of the developed technique.

Preparations for the development of the technique and its implementation included three phases:

The first phase – the stage of organization, when scientifically-methodical and specialist literature was studied and analyzed. On the basis of medical examination we formed group of girls who had no contraindications for doing aerobics, fitball.

The second phase – was devoted to developing methods of aerobics on the fitball with students. We worked on the selection of specialized exercises.

The third phase – involved a pedagogical experiment to test the effectiveness of the developed technique. Statistical data processing of the pedagogical experiment was carried out.

Statistical analysis of the experimental data was determined by method of N. A. Plohinsky, the coefficient of reliability according to the common formula of the Student.

Results and Discussion

The method of aerobic exercise using a fitball.

Based on the fact that health-improving aerobics is a synthesis of general developmental exercises, jumps, leaps, jumps followed by a dance portion of the style and performed with a musical accompaniment, we hypothesized:

- that if we determine the amount of exercise and its intensity correctly, and pick up music and develop a set of specialized exercises, we can not only improve physical fitness, but also create incentives for motor activity.

The developed technique was the use of exercises with fitball in the main part and the parterre part of aerobics classes. The total duration of 90 minutes training, aerobic training

component is 45 – 55 minutes. Duration refers to the time, which is located directly in the target heart rate zone and does not include time spent in warm-up exercises and core cooling after them.

The structural scheme of classes had four parts. Time on different parts was distributed as follows. The first part of the preparation (warm-up) was 15 – 20% of the total time of employment. The tasks were part of the preparation: preparing the body to the main work, its adaptation to an increase in body temperature, increased blood flow to the muscles. The use of general developmental exercises, standing on the floor (for the muscles of the neck, shoulders, forearms, back, legs) in order to prepare the muscles and tendons to the main complex exercise. Warm-up consisted of stretching exercises on low and medium amplitude, thus improving mobility in the joints.

The second part – the basic (aerobic) was 50 – 55% of the total time of exercises. The main objectives of the aerobic part were: increasing the functionality of cardio – vascular, respiratory, muscular body systems. The development of general endurance, improve flexibility, joint mobility, speed, jumping, coordination of movements. This part features formation of positive emotions and maintaining interest in activities. The content of the main part of the complexes are aerobics with fitball, which are further modified. The complexes consist of the basic aerobic steps (lifts, lunges, extra, emissions, etc.). The basic steps are performed with the addition of arm movements while holding a fitball.

The third part – the main (power) was 15 – 20% of the total time of exercises. The main objective of this part is the development of self-power capacity and muscular endurance. Exercises are performed standing, sitting, lying on the floor using a fitball.

The fourth – the final part of 10 – 15% of the total time of exercises. The main objective of the final part is the restoration of the body to its original condition. It is intended to complete the work, gradually reducing the load, it includes exercises for stretching, improving flexibility of the muscles. Exercises are performed standing, sitting, lying on the floor.

In order to evaluate the effectiveness of our developed methodology and to judge the level of physical fitness of students, we carried out preliminary tests for the control and experimental groups (Table 1).

Throughout the experiment, sessions were held twice a week for 90 minutes. The classes were held in the form of comprehensive lesson aerobics, where the final part and the warming up part had the same program. However, the contents of power and aerobic blocks in the main part of training in control and experimental groups were significantly different.

In the control group (CG) studies were performed on the program of classical (basic) aerobics. The rate of musical accompaniment to the main part of the activities was about 128-138 beats / min. The students performed complex exercises, mainly composed of the basic step aerobics, which were further modified.

In the parterre part of exercises to the focus was placed on the development of muscle

strength of upper and lower parts of the abdomen, back, chest, arms and legs. The exercises were performed without weights. The final part had the development of flexibility through the exercise of static nature, for the major muscle groups.

In the experimental group (EG) studies were carried out according to our method of using the fitball. The structure of the classes consisted of four parts of our method.

The results of the final test at the end of the experiment are shown in the Table 2.

Analyzing the table we can conclude that different types of aerobics classes have a positive effect on the development of motor skills and level of physical fitness. For all the control tests at the end of the pedagogical experiment marked increase in results in the control and experimental groups. However, the experimental group showed significant improvements in group performance in comparison with the control group (Table 3). These statistically significant differences were obtained in control tests, “flexion and extension of arms in front leaning support” and “body lifting”.

The analysis (Table 3) stipulates that in the exercise, “the long jump from the seat”, the students gain the result of the control group was 1.5%, and experimental – 4.3%. The average group result index in the race for 2 km of the control group worsened by 0.8% in the experimental.

Table 1. The level of Physical Fitness of Students of the Control Group and the Experimental Group Before the Experiment

Test Exercises	Control Group	Experimental Group	Validity		
	X ± m	X ± m	t	t- table	P
Long jump from the seat (sec)	168,7 ± 4,84	168,9 ± 4,86	0,02	2.10	>0.05
Running 2 km (sec.)	629,8 ± 12,22	632,9 ± 16,23	0,05	2.10	>0.05
Flexion and extension of arms (times)	17,9 ± 0,84	17,9 ± 0,98	0,06	2.10	>0.05
Lifting the trunk (times / min.)	36,1 ± 1,14	36,6 ± 0,95	0,33	2.10	>0.05

Table 2. The level of Physical Fitness of Students of the Control Group and the Experimental Group After the Experiment

Test Exercises	Control Group	Experimental Group	Validity		
	X ± m	X ± m	t	t- table	P
Long jump from the seat (see)	171,2 ± 4,65	176,2 ± 3,91	0,87	2.10	>0.05
Running 2 km (sec.)	635,0 ± 11,59	635,8 ± 16,53	0,16	2.10	>0.05
Flexion and extension of arms (times)	19,1 ± 0,90	23,2 ± 1,41	2,93	2.10	<0.05
Lifting the trunk (times / min.)	37,0 ± 1,07	40,2 ± 0,91	2,40	2.10	<0.05

Table 3. The Growth Rates of Physical Fitness of Girls in the Final Stage of the Pedagogical Experiment, the Percentage

Test Exercises	Control Group			Experimental Group		
	Initial	Final	Increase, %	Initial	Final	Increase, %
Long jump from the seat (see)	168,7	171,2	1,5	168,9	176,2	4,3
Running 2 km (sec.)	629,8	635,0	0,8	632,9	635,8	0,5
Flexion and extension of arms (times)	17,9	19,1	6,7	17,9	23,2	29,6
Lifting the trunk (times / min.)	36,1	37,0	2,5	36,6	40,2	10,0

- by 0.5%, indicating that improving aerobic capacity, body, which indirectly characterize the test on the overall endurance, the duration of the experiment and two lessons a week are insufficient.

Conclusion

Based on the literature review of materials we can say that today there are about 200 different health programs in aerobics. Such as step aerobics, fitball, yoga, aqua aerobics, aerobic dance, aerobics and strength types, etc. In these types of aerobic exercise are widely used dumbbells, rubber shock absorbers, expanders of various designs, medical balls (weighing from 0.05 to 5 kg), gym sticks of various weights (Body Bar), etc. For the physical training the specialization for girls "Health-aerobics" was opened in Siberian

Federal University. Commonly used areas are such as dance aerobics, step aerobics, power lines (with dumbbells and body bars, slide aerobics, yoga and aqua – aerobics).

One of aerobic fitness programs – fitball, which was intensively developed in recent years, so methodical provision does not meet the needs of teachers.

The experiment showed that the experimental group significantly increased rates of control tests, designed to develop speed-strength and strength endurance. At the same time the group average figure in the women's 2000m was lower than in the control group. This suggests that different types of aerobics classes have a positive effect on the development of motor characteristics. The resulting increase in the results of other tests, gives grounds to assert that we have

developed methods to use in teaching students of two courses, contributed to more efficient development of physical qualities.

Findings

1. The developed method of fitball classes in aerobics training session provides the structure that contains the conventional division into four parts, adapted to the main content of the pattern and includes 15 exercises and 11 specialized focus – the power part.

2. The implementation of the technique with the use of the adapted content has a positive impact on the level of physical fitness of students. Students in the experimental group had a qualitative change in the indicators characterizing the level of physical fitness, which indicates the effectiveness of the developed technique and the possibility of its use in teaching of physical training for girls aged 17-20 years, of the primary and preparatory groups.

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Методика использования фитбол-аэробики на занятиях физической культуры студенток

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В статье рассматривается методика использования фитбола, одного из видов оздоровительной аэробики. Разработана методика применения фитбол-аэробики на занятиях по физической культуре со студентками первого, второго курсов.

Разработка и внедрение методики предусматривает три этапа. Первый этап – организация, методологические подходы, второй – внедрение в учебный процесс студенток, третий апробация методики в условиях педагогического эксперимента.

Представленные экспериментальные материалы подтверждают, что методика фитбол-аэробики является эффективной для развития двигательных качеств, направлена на гармоничное развитие личности студенток, способствует повышению уровня общей подготовленности и направлена на сохранение здоровья. Кроме того, полученные результаты указывают на принципиально новый подход к организации и проведению занятий по физической культуре в высшем образовательном учреждении. Методика фитбола является альтернативной по отношению к традиционным средствам физического воспитания, используемых на занятиях по физической культуре в высших учебных заведениях, которые не удовлетворяют запросы студенток.

Разработанные автором комплексы упражнений, применение поточного метода при выполнении упражнений в основной части занятия с музыкальным сопровождением, позволяет на занятии создать положительный эмоциональный фон и сформировать мотивацию к продолжению занятий после окончания вуза.

Ключевые слова: студентки, аэробика, аэробика с мячами, методология, физическое упражнение, фитнес, педагогический эксперимент.
