



ORIGINAL ARTICLES. PHYSICAL EDUCATION

Use of a step-platform in the preparation of female students, going in for sports aerobics, to fulfill elements of static and dynamic strength

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Abstract

Aim: to determine the effectiveness of using a step-platform to improve the technique of performing elements with the manifestation of static and dynamic strength of female students engaged in sports aerobics.

Material and methods. The study involved 20 female students of Kharkov higher educational institutions, who were engaged in sports aerobics in sports improvement groups. Research methods. The questionnaire was carried out among aerobics coaches in order to reveal their attitude to the use of a step-platform in the process of studying and improving the technique of elements of dynamic and static strength. The pedagogical experiment was carried out in 2 stages and lasted for 6 months from October 2019 to March 2020. At the first stage, the existing level of development of the physical abilities of the subjects was revealed, in particular, flexibility (bending forward from a sitting position), power abilities (flexion, extension of the arms in a lying position, hanging on bent arms, lifting the body in a sitting position in 1 min.), Speed (run 60 m), agility (shuttle run 4x9 m), endurance (run 1000 m) and techniques for performing basic elements of dynamic and static force, which were taken as control ones. The assessment of each of the control elements was carried out on a 10 point scale. The athlete received the highest score for the impeccable performance of the element, for each gross error she lost 3 points, the average 2, and the small 1 point, loss of balance and fall during the execution of the element did not give the subjects a single point.

Results. A significant increase in flexibility, strength and endurance, as well as marks for the technique of performing elements of dynamic and static strength, was revealed. Significant relationships were revealed between the scores for the STRADDLE LATERAL PUSH UP and HINGE PUSH UP technique and the indicators of flexion and extension of the arms in the supine position and weight on bent arms. Significant correlations were also revealed between the scores by STRADDLE SUPPORT 1/1 TURN and LIFTED STATIC WENSON SUPPORT and the indicators of forward bending of the trunk and lifting of the trunk to the sitting position in 1 min.

Conclusions. Provided sets of exercises using a step platform. The exercises are aimed at developing physical qualities for performing elements with the manifestation of dynamic and static strength. The exercises are also aimed at learning and improving the technique of these elements in various conditions. Their effectiveness in physical and technical preparation of girl students for the fulfillment of elements with the manifestation of dynamic and static strength in sports aerobics has been experimentally proved.

Keywords: aerobics, endurance, flexibility, development, strength, step platform, female students, improvement.



Анотація

Кравчук Т.М., Голенкова Ю.В., Сластина О.О., Комар А.В., Серых А.К. Застосування степ-платформи в підготовці студенток, що займаються спортивною аеробікою, до виконання елементів з проявом статичної й динамічної сили

Мета: визначити ефективність використання степ-платформи для удосконалення техніки виконання елементів з проявом статичної й динамічної сили студенток, що займаються спортивною аеробікою.

Матеріал і методи. В дослідженні взяли участь 20 студенток харківських закладів вищої освіти, що займалися спортивною аеробікою у групах спортивного вдосконалення. Методи дослідження. Анкетування проводилося серед тренерів з аеробіки з метою виявлення їхнього відношення до використання степ-платформи в процесі вивчення та удосконалення техніки елементів динамічної й статичної сили. Педагогічний експеримент проводився в 2 етапи і тривав протягом 6 місяців з жовтня 2019 року по березень 2020 року. На першому етапі було виявлено наявний рівень розвитку фізичних здібностей досліджуваних, зокрема гнучкості (нахил вперед з положення сидячи), силових здібностей (згинання розгинання рук в упорі лежачи, вис на зігнутих руках, піднімання тулуба в сід за 1 хв.), швидкості (біг 60 м), швидкості (човниковий біг 4x9 м), витривалості (біг 1000 м) та техніки виконання базових елементів динамічної і статичної сили, які були взяті за контрольні. Оцінювання кожного з контрольних елементів проводилося за 10 бальною шкалою. Вищий бал спортсменка отримувала за бездоганне виконання елемента, за кожну грубу помилку втрачала 3 бали, середню 2, а маленьку 1 бал, втрата рівноваги та падіння під час виконання елемента не давали досліджуваним жодного балу

Результати. Виявлено вірогідне зростання гнучкості, сили і витривалості, а також оцінок за техніку виконання елементів динамічної і статичної сили. Виявлені достовірні взаємозв'язки між оцінками за техніку виконання straddle lateral push up і hinge push up та показниками згинання розгинання рук в упорі лежачи й вису на зігнутих руках. виявлено також достовірні взаємозв'язки між оцінками за straddle support 1/1 turn і lifted static wenson support та показниками нахил тулуба вперед і піднімання тулуба в сід за 1 хв.

Висновки. Надано комплекси вправ з використанням степ-платформи. Вправи спрямовані на розвиток фізичних здібностей для виконання елементів з проявом динамічної і статичної сили. Вправи також спрямовані на вивчення і удосконалення техніки цих елементів у різних умовах. Експериментально доведена їх ефективність у фізичній і технічній підготовці студенток до виконання елементів з проявом динамічної і статичної сили в спортивній аеробіці.

Ключові слова: аеробіка, витривалість, гнучкість, розвиток, сила, степ-платформа, студентки, удосконалення

Аннотация

Кравчук Т.Н., Голенкова Ю.В., Сластина Е.А., Комар А.В., Серых А.К. Применение степ-платформы в подготовке студенток, занимающихся спортивной аэробикой, к выполнению элементов с проявлением статической и динамической силы

Цель: определить эффективность использования степ-платформы для совершенствования техники выполнения элементов с проявлением статической и динамической силы студенток, занимающихся спортивной аэробикой.

Материал и методы. В исследовании приняли участие 20 студенток харьковских высших учебных заведений, занимавшихся спортивной аэробикой в группах спортивного совершенствования. Методы исследования. Анкетирование проводилось среди тренеров по аэробике с целью выявления их отношения к использованию степ-платформы в процессе изучения и совершенствования техники элементов динамической и статической силы. Педагогический эксперимент проводился в 2 этапа и длился в течение 6 месяцев с октября 2019 по март 2020 года. На первом этапе было выявлено имеющийся уровень развития физических способностей испытуемых, в частности гибкости (наклон вперед из положения сидя), силовых способностей (сгибание разгибание рук в упоре лежа, вис на согнутых руках, поднимание туловища в сед за 1 мин.), Быстроты (бег 60 м), ловкости (челночный бег 4x9 м), выносливости (бег 1000 м) и техники выполнения базовых элементов динамической и статической силы, которые были взяты за контрольные. Оценка каждого из контрольных элементов проводилось по 10 балльной шкале. Высший балл спортсменка получала за безупречное выполнение элемента, за каждую грубую ошибку теряла 3 балла, среднюю 2, а маленькую 1 балл, потеря равновесия и падение во время выполнения элемента не давали испытуемым ни одного балла.

Результаты. Выявлено достоверное увеличение гибкости, силы и выносливости, а также оценок за технику исполнения элементов динамической и статической силы. Выявлены достоверные взаимосвязи между оценками за технику выполнения straddle lateral push up и hinge push up и показателями «сгибание разгибание рук в упоре лежа» и «вис на согнутых руках». Выявлено также достоверные взаимосвязи между оценками по straddle support 1/1 turn и lifted static wenson support и показателями наклон туловища вперед и поднимание туловища в сед за 1 мин.

Выводы. Предоставлены комплексы упражнений с использованием степ-платформы. Упражнения направлены на развитие физических качеств для выполнения элементов с проявлением динамической и статической силы. Упражнения также направлены на изучение и совершенствование техники этих элементов в различных условиях. Экспериментально доказана их эффективность в физической и технической подготовке студенток к выполнению элементов с проявлением динамической и статической силы в спортивной аэробике.

Ключевые слова: аэробика, выносливость, гибкость, развитие, сила, степ-платформа, студентки, совершенствование



Introduction

Different types of aerobics today are firmly established in the system of the most effective means of physical education for students of higher education institutions of Ukraine [1, 2, 3]. Health aerobics are mostly used, but full-fledged inclusion of female students in the educational process of sports aerobics is not an exception [7, 8, 9]. During their studies, the girls become members of the national teams of universities in sports aerobics and often win in various competitions and tournaments both regional and national level, and international [4, 5, 6].

For successful performances in sports aerobics, athletes must master a large number of exercises that require serious physical and technical training. Various aspects of improving the effectiveness of the development of physical abilities of athletes who specialize in sports aerobics were considered in [10, 11, 12]. The main directions and models of improving the process of technical training of athletes [13, 14, 15, 16, 17] and improving sportsmanship in sports aerobics [16] were also studied.

There are a number of studies on the methods of planning, organizing and conducting training in sports aerobics, in particular, considered the methodological features of the training system of highly qualified athletes in this sport [19, 20, 21, 22], the composition of teams in sports aerobics based on psychophysiological indicators [23, 24]. The results of our previous research on improving various aspects of training students specializing in aerobics have led us to study the effectiveness of the use of the step platform in teaching and improving the technique of studying certain elements of this sport. The effectiveness of the use of the step platform in the development of physical abilities of female students engaged in aerobics has been proven in [25, 26, 27]. With this in mind, we believe that the step

platform can be effectively used in training and improving the elements of static and dynamic strength groups in sports aerobics.

Aim: to determine the effectiveness of the use of the step platform to improve the technique of performing elements with the manifestation of static and dynamic strength of students engaged in sports aerobics.

Material and methods

Participants

The study involved 20 students of Kharkiv institutions of higher education (Kharkiv National Pedagogical University named after GS Skovoroda, Kharkiv Institute of Trade and Economics KNTEU (KHTEI)), engaged in sports aerobics in groups of sports improvement. For the experiment, they formed a control (n = 10) and the experimental (n = 10) group. At the time of the experiment, the subjects were 17 to 20. All subjects agreed to participate in the experiment.

Analysis of the errors made by the subjects in the performance of control elements suggested that they are associated with a low level of physical fitness of female students. This assumption was confirmed by correlation analysis, which allowed to determine the level of the relationship between indicators of physical fitness and assessments for the technique of performing the studied elements of static and dynamic force. Thus, strong correlations were found between the assessments for the technique of performing straddle lateral push up and hinge push up and the indicators of squeezing and hanging on bent arms and the average between the assessments for straddle support 1/1 turn and lifted static wenson support and the indicators of torso forward and lifting the torso to the side for 1 minute (Table 1).

Table 1

Relationship between indicators of physical fitness and estimates for the elements of dynamic and static strength at the beginning of the experiment

Indicators of physical preparedness	Items	Straddle lateral push up	Hinge push up	Straddle support 1/1 turn	Lifted static
	Lean forward from a sitting position, sm	-0.16	-0.02	0.64	0.75
	Flexion of the arm extension in the supine position, the number of times	0.79	0.77	0.21	-0.06
	He hung on bent arms, s	0.74	0.67	0.19	-0.17
	Lifting the torso to the side for 1 minute, several times	0.22	0.27	0.66	0.60
	Running 60 m, s	0.38	-0.05	-0.31	-0.60
	Shuttle run 4x9, s	0.44	0.22	-0.48	-0.61
	Running 1000m, min.	-0.39	0.06	0.07	0.31



A survey of coaches (a total of 14 people) showed that 71.4% of them use the step platform to develop certain physical abilities of their athletes, while in order to learn and improve the technique of performing elements of different complexity groups, this device is used by only 28.6%.

Study and analysis of literature

The study and analysis of the literature helped to determine the place and importance of special equipment of the step platform in the fitness industry and in the process of physical education of female students engaged in aerobics.

Questionnaire

The survey was conducted among aerobics trainers in order to identify their attitude to the use of the step platform in the process of studying and improving the technique of elements of dynamic and static force.

Procedure

The pedagogical experiment was conducted in 2 stages and lasted for 6 months from October 2019 to March 2020. At the first stage, the existing level of development of physical abilities of the subjects was revealed, in particular flexibility (leaning forward from a sitting position), strength abilities (flexion, extension of arms in the supine position, hanging on bent arms, lifting the torso to the side in 1 minute), speed (60 m), agility (shuttle run 4x9 m), endurance (running 1000 m) and techniques of basic elements of dynamic and static force, which were taken as controls.


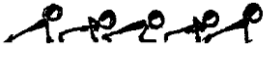
Testing

The technology of testing physical abilities is presented in [28].



Evaluation of each of the control elements was performed on a 10-point scale. The athlete received the highest score for impeccable performance of the element, for each gross error lost 3 points, medium 2, and small 1 point, loss of balance and fall during the performance of the element did not give the subjects any points (Table 2).

Table 2

Evaluation of control elements of dynamic and static force

Item's name	Control elements of dynamic force	
	Execution technique	Errors (discounts)
Straddle lateral push up 	Starting position - focus lying legs apart. 1. Bend your arms to a right angle between your shoulders and forearms. 2. The shoulders and the center of gravity of the body are moved to the side in the lateral direction, the elbow is placed sideways on the floor. 3. Shoulders return in the opposite direction to the middle. 4. Starting position.	- bent knees - (-1 point); - correction or adjustment of hand position - (-1 point); - incorrect position of the torso, waist, pelvis and tense abdominal muscles - (-3 points); - incorrect position of the upper body, neck, shoulders and head relative to the spine - (-3 points); - during the element the amplitude of the form is not preserved (- 3 points); - the element does not have an exact starting and ending position - (-3 points); - fall during the execution of the element (-10 points)
Hinge push up 	Starting position - focus lying down. 1. Bend the elbows along the torso to a right angle between the shoulders and forearms. 2. The center of gravity of the body goes down and moves back, elbows are placed on the floor in the direction of the feet. 3. The center of gravity of the body returns in the opposite direction to the middle. 4. Starting position.	
	Control elements of static force	
Item's name	Execution technique	Errors (discounts)



Straddle support 1/1 turn 360°	Starting position. - sitting legs apart, focusing on the arms in front, lift the straight legs and pelvis (pull off the floor as high as possible), fix this position, make a 360 ° turn by crossing your arms (up to 4 steps), fix the final position.	<ul style="list-style-type: none"> - bent knees - (-1 point); - not stretched feet - (-1 point); - small fluctuations of the torso during the element (-2 points); - incorrect position of the torso, waist, pelvis and tense abdominal muscles - (-3 points); - incorrect position of the upper body, neck, shoulders and head relative to the spine - (-3 points); - during the element the amplitude of the form is not preserved (- 3 points); - the element does not have an exact starting and ending position - (-3 points); - the element is not fixed for a certain time - (-10 points); - loss of balance with a fall - (-10 points).
	Starting position. - The emphasis of one leg rests on the upper part of the triceps on the same side. The leg behind is raised above the floor. Both legs should be straight, parallel to the floor and back. The position is fixed for 2 seconds	
Lifted static wenson support		
		

Intervention program

Exercises were selected using a step platform, aimed at learning and improving the technique of performing elements of dynamic and static force. All selected exercises were divided into:

- 1) exercises on the step platform for the development of physical abilities necessary for the quality of dynamic and static strength exercises in aerobics;
- 2) execution of the elements studied in the simplified conditions by means of use of a step platform;
- 3) execution of elements in the conditions complicated by application of a step platform.

Exercises were used in the preparatory and main part of each lesson. Training was conducted 4 times a week for 2 hours. The subjects of the control group continued to engage in the traditional method of training.

Analysis of the structure of individual elements of static and dynamic force that athletes must perform in their competitive programs in sports aerobics allowed us to select exercises aimed at developing special physical abilities necessary for their study and improvement. Exercises are presented in table 3.

Table 3

Exercises using a step platform for the development of physical abilities necessary for the quality of the elements of dynamic and static force in aerobics

Exercise	Number of repetitions	Note
Exercises aimed at physical training to perform elements of dynamic strength		
Keeping the position of the bar: - with support on the forearms (forearms are on the step platform); - with support on the palms of the hands on the platform; - with support on the forearms and one leg (alternately), the free leg is raised up (the forearms are on the step platform); - with support on the palms of the hands on the platform and one leg, (alternately) the free leg is raised up. - with the support of one arm (alternately) on the platform, the other arm is extended forward.	Keep 60 s Keep 60 s Keep 30 s each leg Keep 30 s each hand	Make sure that the head, torso and legs are in line in the position of the bar. Do not bend your legs. When lifting the legs, shoulders and pelvis should be in the same plane The arm is straight at shoulder level.
Alternate lifting of legs back in position of a lath: - with support on the forearms (forearms are on the step platform); - with support on the palms of the hands on the platform Alternate lifting of bent legs to the chest in the position of the bar: - with support on the forearms	10 times with each foot	Make sure that the head, torso and legs are in line in the position of the bar. Do not bend your legs.



(forearms are on the step platform); - with support on the palms of the hands on the platform Flexion of the arm extension in the supine position: - with support of hands on a step platform - with support of feet on a step platform		
Alternate lifting of legs back in position of a lath: - with support on the forearms (forearms are on the step platform); - with support on the palms of the hands on the platform Alternate lifting of bent legs to the chest in the position of the bar: - with support on the forearms (forearms are on the step platform); - with support on the palms of the hands on the platform Flexion of the arm extension in the supine position: - with support of hands on a step platform - - with support of feet on a step platform	10-12 times with each foot	Follow the correct position of the bar, try to touch the knees to the chest.
Push up sitting with his back to the step platform (with his hands resting on the step platform): - with bent legs; - with straight legs	16-20 times 8-10 times	The head, torso and legs form one line.
Push up rest sitting with his back to the step platform (with his hands resting on the step platform): - with bent legs; - with straight legs	15-20 times 10-15 times	Keep the right posture. When bending the arms, the elbows are pulled back.
Exercises aimed at physical preparation for the performance of elements of static force		
Lean forward: - standing on a step platform; - from the starting position sitting on a platform with support on straight legs; - from the starting position sitting on the floor, straight legs on the step platform; - from the starting position standing on the right, left foot on the platform, sock on himself (then change the position of the feet).	10-12 times 12-14 times 10-12 times 12-16 times with each foot	Do not bend your knees, try to touch the floor with your hands. Tilt to touch the platform. The supporting leg can be bent.
- From the starting position sitting on the edge of the step platform, with the support of his hands behind: - lifting the legs alternately and at the same time to the position of a right angle (parallel to the floor); - also to the position of 45 degrees; - the same but hold each position for up to 8 seconds - the same but take the leg (s) with your hands behind the foot and lift it vertically, hold for up to 10 s	10-12 times 8-10 times 6-8 times 8-10 times	Monitor the correct posture. Knees do not bend, feet are stretched. Do not deviate back during the exercises.
Protrusion forward right, left on the step platform (then change the position of the legs): - elastic movements to increase mobility in the hip joints; - fixing the position with the maximum amplitude.	16-20 times 10-12 times 10-12 times with each foot 8-10 times with each foot	Monitor the correct posture. Knees do not bend, feet are stretched. Do not deviate back during the exercises. Lean on the foot that remains on the floor minimally.
Protrusion forward right with support on the step platform, left on the floor (then change the position of the legs): - elastic movements to increase mobility in the hip joints; - fixing the position with the maximum amplitude.	30-50 times 60 s	Follow the correct posture. The shoulders and pelvis are in the same plane
Protrusion forward right, left on the step platform (then change the position of the legs): - elastic movements to increase mobility in the hip joints; - fixing the position with the maximum amplitude.	30-50 times 60 s	Follow the correct posture. The shoulders and pelvis are in the same plane
Execution of twines with the support of hands on one or two step platforms; The same, but when performing the	Fix each position	Follow the correct posture.



twine, the foot is placed on the step platform. The same, but the twine is made between two step platforms, on which the legs are placed.

up to 60 s

The shoulders and pelvis are in the same plane.
Do not bend your knees.

Exercises using step platforms, aimed at the development of physical abilities, were to be the basis for quality performance of elements of dynamic and static force, so introduced into the educational process of students specializing in sports aerobics first during the preparatory part of the lesson. Moreover, each exercise aimed at physical preparation for the performance of elements of dynamic force, alternated with an exercise that developed the physical abilities necessary to study and improve the elements of static force. Then, during the main part of the lesson, the step platform was used for training, and then to improve the technique of performing the selected control elements.

Statistical analysis

Methods of mathematical statistics were used to process the results obtained during the study. Thus, for each indicator was determined by the arithmetic mean, standard deviation (S) (standard deviation and estimation of the probability of discrepancies between the parameters of the initial and final results by Student's t-test with the appropriate level of probability (p). abilities of the studied and evaluation for the technique of performing elements of static and dynamic force used correlation analysis by calculating the Pearson correlation coefficient.

As a result of the analysis of the curriculum [29], rules and videos of competitions in sports aerobics, we selected the basic elements of dynamic

and static force, which are most common in student competition programs and are basic for further complication of programs. We chose these elements as controls. Testing of control elements of dynamic and static force in the control and experimental groups at the beginning of the experiment showed the homogeneity of the studied groups and the low quality of the technique of execution of the selected elements.

Results

Measurement of indicators of the level of development of physical abilities of the subjects at the end of the experiment and calculation of the Student's test showed a probable increase of 27.2% flexibility in the girls of the experimental group (forward tilt test). In the control group, the increase in this indicator was 14.3%, but it was unlikely.

The same picture was observed in the statistical processing of indicators of the development of strength abilities (test of bending the extension of the arms in the supine position and lifting the torso to the side). In the experimental group, the increase in these indicators was 26.2% and 14.6%, respectively, and was probable. The growth of the same indicators in the control group was not so intense and was unlikely. Another indicator, the growth of which was probable in the experimental group and amounted to 5.9%, was the endurance index - running 1000 m (Table 4).

Table 4

Indicators of physical fitness of the studied control (n = 10) and experimental group (n = 10) before and after the pedagogical experiment

Indicators of the development of physical abilities	Group	Before the experiment	After the experiment	t	p
Lean forward from a sitting position, sm	CG	9.0±1.03	10.5±0.77	1.2	p>0.05
	EG	9.9±1.19	13.6±0.95	2.4	p<0.05
Flexion extension of the arms in a supine position, the number of times	CG	9.8 ± 1.02	10.8 ± 0.75	1.02	p>0.05
	EG	9.6 ± 1.00	13.0 ± 0.79	2.7	p<0.05
He hung on his bent arms, s	CG	8.7 ± 0.86	9.7 ± 0.99	0.8	p>0.05
	EG	9.7 ± 1.27	11.6 ± 0.80	1.3	p>0.05
Lifting the torso to the side in 1 minute, the number of times	CG	31.5 ± 1.74	34.8 ± 1.12	1.6	p>0.05
	EG	33.4 ± 1.72	39.1 ± 0.76	3.0	p<0.02
Running 60 m, s	CG	10.3 ± 0.19	10.2 ± 0.17	0.3	p>0.05
	EG	10.4 ± 0.15	10.2 ± 0.14	0.8	p>0.05
Shuttle run 4x9, s	CG	11.3 ± 0.21	11.1 ± 0.17	1.0	p>0.05
	EG	11.4 ± 0.19	11.1 ± 0.14	1.3	p>0.05
Running 1000 m, min.	CG	4.51 ± 0.11	4.40 ± 0.09	0.7	p>0.05
	EG	4.61 ± 0.11	4.34 ± 0.03	2.3	p<0.05

Note: CG - control group; EG - experimental group



The obtained results give the right to emphasize the effectiveness of the use of the step platform for the directed development and improvement of physical abilities of female students engaged in aerobics, necessary for the quality of the elements of dynamic and static force.

Significant, statistically significant improvement after the use of the step platform in the training process was observed in the assessments of the technique performed by the experimental group

of elements of dynamic and static force. Thus, the score for the technique of performing straddle lateral push up increased by 16%, hinge push up - by 24.4%, straddle support 1/1 turn - by 28.2% and lifted static wenson support - by 28.4%. All increases in the performance of the control elements in the experimental group are probable. In the control group, these indicators also improved, but they were due to random factors (Table 5).

Table 5

Estimates for the technique of performing elements of dynamic and static force of the studied control (n = 10) and experimental (n = 10) groups before and after the pedagogical experiment

Elements of dynamical and static strength	Group	Before the experiment	After the experiment	t	p
Straddle lateral push up, points	CG	6.5±0.45	7.2±0.31	1.3	p>0.05
	EG	6.8±0.52	8.1±0.25	2.3	p<0.05
Hinge push up, points	CG	6.0 ± 0.44	7.1 ± 0.29	2.1	p>0.05
	EG	5.9 ± 0.62	7.8 ± 0.44	2.5	p<0.05
Straddle support 1/1 turn, points	CG	5.4 ± 0.59	6.4 ± 0.28	1.5	p>0.05
	EG	5.1 ± 0.71	7.1 ± 0.33	2.6	p<0.05
Lifted static wenson support, points	CG	4.4 ± 0.69	6.1 ± 0.48	2.0	p>0.05
	EG	4.8 ± 0.68	6.7 ± 0.50	2.3	p<0.05

Note: CG - control group; EG - experimental group

Discussion

In modern conditions, improving the physical and functional readiness of student youth is possible with fundamentally new approaches, tools and technologies that should meet the individual characteristics of students, promote the most effective realization of their interests, aptitudes and abilities [1, 4, 5]. We agree with the authors [7, 8, 9] that such requirements are met by sports-oriented physical education. Sometimes this form of organization of physical education in higher education institutions allows young people to discover their sports talents, join the national teams of the university and achieve significant success in the chosen sport. Sports aerobics belongs to such sports in which students, despite the age of the beginning of employment, can reach the maximum sports self-realization.

We fully agree with the statements [10, 11, 12, 13] that a solid basis for the effective mastery of the technique of competitive exercises in sports aerobics should be a thorough physical training. The program of training in the technique of performing any elements of sports aerobics should begin with special motor training and development of physical abilities that will promote the mastery of the correct technique of performing these elements [15, 16, 17].

The importance and necessity of the development of certain physical abilities, which should precede the study and contribute to the improvement of the technique of performing elements of sports aerobics, are proved by the correlations revealed in the work. Thus, the correlation analysis between the level of development of physical abilities and assessments of the subjects for the technique of control exercises, showed that without sufficient development of strength and flexibility, the technique of performing elements of dynamic and static force in sports aerobics will be ineffective.

Studying the work on the peculiarities of the development of physical abilities in female students engaged in various types of aerobics [25, 26, 27], we came to the conclusion that the step platform can be an effective means to improve their special physical and motor fitness. And biomechanical analysis of selected for the study and improvement of basic exercises of sports aerobics from the groups of dynamic and static strength, allowed to select such exercises that gave the subjects the greatest load on those muscle groups that are involved in the control exercises.

The structure of the step platform also allowed it to be used effectively to create easier conditions for the study and difficult to improve the technique of performing elements of dynamic and static force.



Conclusions

1. A step platform can be effectively used in the initial training process of female students, for specializing in sports types of aerobics, for the development and improvement of special physical health and technology of visualization of educational elements, static events,

2. It is necessary that the complexes have the right to use step-platforms, they are directed to the development of physical facilities, which are necessary for an efficient display of elements of dynamic and static strength, and to improve the improvement of the technology of cyclical elements.

3. The efficiency of the proponated students has been experimentally brought to the right for the physical and technical training of female students to the performance of elements of dynamic and static strength in sports aerobics.

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Conflict of interest

The authors declare that there is no conflict of interest.

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