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THE ESTIMATION OF THE CIRCUIT TRAINING INFLUENCE ON THE LEVEL OF THE MOTOR TRAINING OF THE 10-12 YEARS OLD FREESTYLE WRESTLERS

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Abstract: *it were analyzed the testing results of motor skills of freestyle wrestlers in the annual dynamics, being prepared in the circuit training (experimental group) and traditional (control group). It was established the veridical improvement of the wrestlers general and special physical training indices in the experimental group, which cannot be attested to the individuals in the second group. These results confirm the effectiveness of circuit training in multilateral physical training of freestyle wrestlers at the initial stage of sports training.*

Keywords: *wrestling, 10-12 years old freestyle wrestlers, training in circuit, general and special physical training, motor qualities, academic achievement*

Actuality: the rival knock down and his fixing to the ground on the shoulder blades is the essence of success in wrestling. But how does the freestyle wrestler achieve that goal? Fighters' path to success is hard and difficult, so the opportunity to achieve high sports performances is not for everyone. [4] The valuable sports performance is always an achievement of human potential in the broadest sense of this word [6], its preparing begins since childhood.

At the initial stage of the sporting preparation it must be ensured the progressive development of motor skills, using the most effective methods and means of training [2], should be put a basis for future achievements, to ensure the body multilateral physical development, to enrich the athlete with different skills and motor abilities, to form the sports mastery bases [6,7]. They offer to the freestyle wrestler the perspective, but also the opportunity to learn successfully the techniques and special tactics in confrontation with the opponent, he gradually reaching the capacity to create its own fighting style, unmistakable and unrepeatable.

Even if in the first year of initial training, wrestlers do only take part in instructive competitions, its general physical training is carried through the requirements and rules of competitions, so it is necessary that each of them should know the necessity of its forces preservation during competitions, but also know the possibilities that can be achieved through this goal. A the meeting with a strong opponent he must have a certain fatigue strength[4],but effective general physical training may create him an advantage who has paid a special attention to this department of professional training, being aware of the necessity of continuous improvement of his physical condition. Therefore by implementing circuit training in the preparation of the 10-12 years old wrestlers we intend to provide the level increase of the body general physical training as a basis for achieving the perspective goals.

The aim of work: the estimation of the annual dynamics of the wrestler's physical training level of 10-12 years old wrestlers under the influence of circuit training.

Research organization. Experimental researches were conducted in the Republican High Boarding School in Sports Profile from Chisinau, on a sample of 24 students about 10-12 years old freestyle wrestlers. The selected students attended lessons, but also two daily workouts, each lasting 90 minutes. The trainings were held in the gym or open air, depending on the purpose of each one and outside weather conditions. Wrestlers from the control group (n = 12) participated in trainings organized according to the educational program in preparing freestyle wrestlers (2013/2014) and the experimental group (n = 12) – in the circuit training, generally respecting -the structure and ratio between the athletes training forms, provided for the first year of initial training in freestyle wrestling. September-October months have served as an adjustment period of students in physical efforts, but the proper pedagogical experiment has been conducted during November month (immediately after the autumn holidays) – May (-May, 22) for 26 weeks.

In order to determine the influence of circuit

training on the level of physical training of freestyle wrestlers, we performed the testing of their motor skills at the beginning of the school year (initial testing) and at the end (final testing).

The results of motor qualities testing in the annual dynamics.

60m running. It is known that the age of 10-11 years old is a sensitive period in speed development [60], therefore this information was fully used to create stages, where the speed is developed in circuit training process, but to educate this quality in stages there have been implemented and used various methods and effective means in this regard.

In the initial testing we have not found a true distinction between the indices of wrestlers from both groups (P>0.05), the group average values representing for the control group and the experimental one 9,93±0,17 and 9,97±0,20 sec, being very close, but the difference between them - mathematically-statistically insignificant (t=0,1; P<0,05) (Figure 1).

In the final testing the boys movement speed has been improved in both groups, but in different ways: in the control group the difference between the results of initial and final testing is not mathematically-statistically significant (t=0,16; P<0,05). However, the group average result is weaker than that registered in the experimental group (t=2.19; P<0,05). Thus the experimental group has improved its indices both in dynamics of annual training cycle (t=2,63; P<0,05) and compared to the control group, which indicates that the coach has given a special attention to the speed quality education during the circuit training.

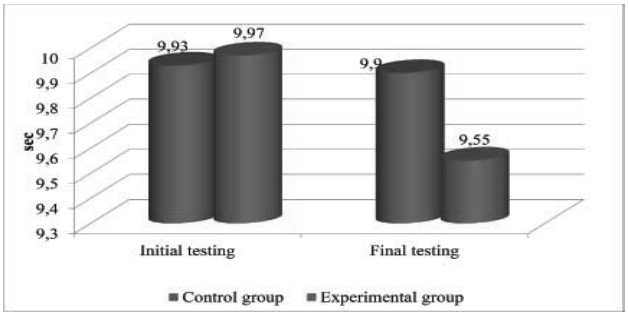


Fig. 1. Annual dynamics of the freestyle wrestlers testing results in "60m Running", sec

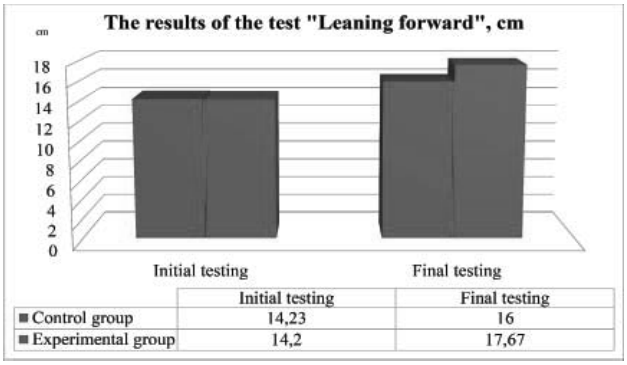
According to bibliographic data [7], if the sensitive period for the development of a certain motor quality of the child is missed, then it cannot be developed at the highest level, this deficiency is being felt throughout their lives.

1000m Running is a test whereby the body's ability is evaluated to perform physical efforts of moderate intensity, for a long time without showing signs of fatigue. The adaptation of the body to effort occurs through maximum involvement of the cardiovascular and respiratory systems, ensuring the employability of the body during the exercise. Muscle activity can have a total duration from tens of minutes to several hours. The global strength plays an important role in optimizing the life and is an important component of physical health.

At the beginning of the experiment, the boys from the experimental group manifested a higher aerobic strength versus those from the control group (t=2.12; P<0,05), and this direction was preserved also in the final testing, even if the difference was insignificant in terms of mathematical-statistical data (t=0,96; P>0,05). The wrestlers from the experimental group ran 1000m in 3,59 ± 0,14 sec, while those from the control group in 3,84 ± 0,23 sec, which is 6,96% more. Instead, athletes from the control group showed a greater progress of results in dynamics of annual training cycle. Starting from the fact that the intensive development of the general strength can stop the increasing of speed qualities, in the experimental group coach did not insist on developing the general strength, reflecting methodically an absolutely right approach of developing sensory periods of motor qualities.

Standing Long jump. In initial testing, the average value of group registered in the control group constituted 186,60±15,20 cm, while in the experimental 190,50±10,41 cm, the difference being mathematically -statistically insignificant (t=0.21; P<0,05). In the final testing, a significant increase of results compared to initial data, has been asserted only in the experimental group, the group average value reaching 212,50±12,11 cm, which expresses the improvement of athletes performances in the dynamics of annual training cycle with 11,55% (t=2,24, P<0.05). Meanwhile, in the control group the results annual appreciation was only 5%. The obtained results reflect the improvement of wrestlers expansion engaged in circuit training, and the directed use in stages of physical exercises developing this quality.

Leaning forward. Initial testing of boys from experimental and control group (Figure 2) shows that between the group average values there is not a true difference, P>0,05, which reflects the homogeneity of the chosen samples regarding the body suppleness level.



	Initial testing	Final testing
Control group	14,23	16
Experimental group	14,2	17,67

Fig. 2. Annual dynamics of the wrestlers testing results in "Leaning forward", cm sample

In the final testing is registered the results increase, compared with the initial data. In the control group the boys' group averages values have increased from 14,23±0,87cm to 16,00±0,42 cm (t=2,57; P<0,05), while those in the experimental group – from 14,20±0,88cm to 17,67±0,31cm (t=4,75; P<0,01), which shows a truthful increase of results in both groups, but with a prevalence of experimental group performance, where the final testing values have been improved with 24,44% towards the initial data, and 10% towards the average values of the control group (t=3,15; P<0,01). It demonstrates, in our view, that circuit training ensures a more efficient development of the body suppleness, compared with the traditional method, which is one of the qualities that reflect the elasticity of the ligaments and muscle tendons, joints' mobility, which are necessary for participants in freestyle wrestling on carpet, especially when there is necessary to maintain uncomfortable the positions, etc.

Lifting the trunk for 30 sec. Initial testing has not revealed the true differences between the indices of both groups (t=0,50; P>0,05), the average group values accounted for the control group 29,94±0,31 repetitions and experimental group 29,54±0,74 repetitions. But if we compare these results with the data of final evaluation in unsporting students from 4th grade [3], which is an average of 21 to 22 tows, then we find that fighters of that age have more advanced indices, which exceed by 41% the unsporting student achievements. These results show that sports training has a strong influence on the raising organism, influencing growth and development of trunk muscles, strength and its endurance.

Fighters' final test results on this sample are better than the original, with a positive annual growth. In boys from the control group the results have improved insignificantly, by only 0,2%, while in the experimental group - by 6,67% at t = 3,45 and P <0,01, demonstrating that certain athletes from the experimental group responded in the best way to exercise used at stations, also they have ensured the development of the strength, speed and special resistance, their preparedness motor qualities being higher, compared with that of their peers in the control group.

In this context it should be mentioned that the results of the tests have progressed most rapidly in people who initially had the lowest level of motor preparedness, which confirms once again the idea that exercise dosed correctly, according to the physiological needs of the body and aimed at developing motor skills poorly developed, provides substantially the increasing of physical training in students-athletes.

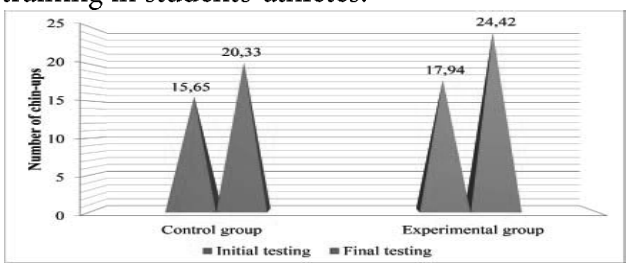


Fig. 3. The annual growth rate of fighters to testing sample results "Fixed bar chin-ups" number of repetitions

Chin-ups at the fixed bar. From Figure 3 we see that the average number of chin-ups done by the control group of fighters constituted 15,65±1,91, while that value in the experimental group was 17,94±1,73, differences were insignificant from the mathematical and statistical point of view (t=0.89; P>0,05).

At the final testing of athletes both groups improved their results by reaching the values of 20,33±2,11 repetitions in the control group and 24,42±2,43 repetitions in the experimental one, statistical mathematics significance threshold t = 2 83; P <0.05 - the control group and t=3,41;

P<0,01 – the experimental group. In the final testing, maximal numbers were 25-35 chin-ups, as demonstrated by 17% of control group boys and 67% of the experimental group athletes.

These results express the athletes' tendency to develop and continuously improve the qualities of force, shooting down enemy critically needed in perspective of participation in competitions. But it is worth stressing that excessive concern with the static force exercise can prevent normal growth and development of the body, stop increasing waist body, so at 10-12 years age it should be developed the dynamic and explosive force.

Training of general motricity is inextricably linked to ***specific motric training***. Quality of speed in all its forms constitutes a basic component of all motric acts. Speed is a born motric quality, being influenced by a number of physiological, biochemical and mentally factors, and for the freestyle wrestling the reaction speed, speed of execution and speed of repetition determines to a large extent the ability of the fighter to execute actions of attack, defence and counterattack, and different technical and tactical combinations in a short time [1].

Pirouettes, repetitions for 30 seconds. By initial testing, fighters from both groups were performing in 30 sec almost the same number of pirouettes, they accounted for 7,54±0,50 pirouettes in control group and 8,07±0,35 – for the experimental one (t=0,87; P>0,05). In the final testing at the control group was not registered a significant increase in the number of repetitions compared to initial testing, the annual increase was only 6.1%, and the mathematical-statistical significance threshold t=1,18; P>0,05. The final results in the experimental group improved by 10,5% compared with the initial, the main difference between the initial and final testing being truthful in statistical terms at the significance threshold, t=2,18; P<0,05. The facts exposed, in our opinion, are proof of the idea that circuit training, implemented in the experimental group helps to improve speed repetition pivots, which is important for the training of future performance fighters.

Back overthrows, repetitions for 30 seconds. At the initial testing (Figure 4) fighters in the control group had an average of 9,34±0,51 overthrows, and the experimental group – 10,00±0,23, the differences between them are insignificant in terms of mathematical-statistical (t=1,18; P>0,05). At the final testing the boys of the control group executed in average 11,08±0,83 rolls, which is 18,6% more than the initial test (t=2,68; P<0,05), while those in experimental group 13,64±0,46 rolls, those results being better than the original by 33,33%, the difference being statistically accurate t=4,85; P <0,001. These results show that the dynamics of the annual cycle of training the muscles of the trunk, the neuro-muscular device in fighters from both groups have developed significantly, the most spectacular improvement in the rate of continuous roll repetition being specific to the boys in the experimental group, the final results of which exceed not just the mean initial group values but also the final testing of the control group (t=2,69; P<0,05).

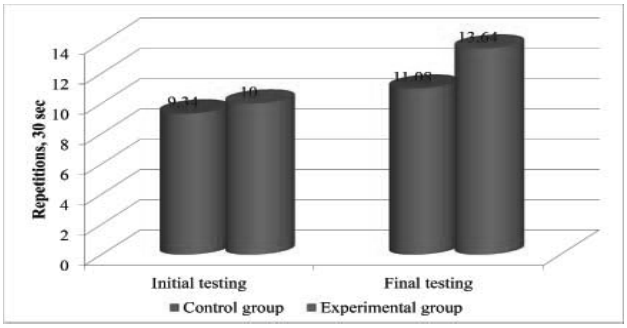


Fig.4. The annual dynamics of the test results "Back overthrows, repetitions for 30 seconds"

Jumping the rope, repetitions 30 sec. Analysis of the results of both groups show that the annual growth rate in the control group fighters have not determined a substantial increase in performance in this respect, the mean difference between the opening and closing being insignificant (t=0,5; P>0,05). Meanwhile, athletes from the experimental group showed better results, improving indicators from 46,47±3,18 sec at the initial testing, and up to 57,33±2,28 sec in the final, by 23,37%, the difference between this data being truthful to the mathematical-statistical significance threshold of t=4,45; P<0,01. At the end of university year athletes in the experimental group showed results that exceeded with 18,40% the average values of the control group (t=2,94; P<0,05), which shows the importance of training in physical training circuit at freestyle fighters at the initial stage of sports specialization.

Extensions of the trunk of lying on face, repetitions for 30 seconds. At the initial testing of the

control group, the fighters executed on average 37,07±2,10 extensions for 30 sec, while those in the experimental group – 39,27±1,41, the differences between these values are insignificant in terms of mathematical and statistical significance threshold (t=0,87; P>0,05).

At the final testing in the experimental group the results have improved by 5.7% to reach an average value of 41,49±2,11 extensions / 30 sec, while those of the control group decreased by 7,0%, reaching average up to 34,50±1,14 extensions for 30 seconds, the results are insignificant in terms of mathematical statistics. However, comparative analysis of final test results from both groups show a better preparation of the neuromuscular unit of the boys in the experimental group in the view of repetition, the difference between them being true by the mathematical and statistical significance threshold t=2,91; P<0.05.

5m Hawser climb, sec. Following the data from Table 5 we see that the average of climbing the 5 m hawser has an average of 10,66±0,45sec for boys in the control group and 10,43±0,29 sec for the experimental group, the difference between these results are insignificant in terms of mathematical -statistic (t=0,42; P>0,05).

The final test results show an improvement in data of both groups. Execution speed in the control group decreased in the yearly dynamics from 10,66±9,63 to ± 0,35 0,45sec up (t=2,94; P<0,05), by 7% and in experimental group - from 10,43±0,29 sec to 8,68±0,22 sec is better than 17% at the initial test (t=4,86, P<0,001). There is a true difference between the final results of the experimental and control group testing in favour of the experimental group (t=2,32; P<0,05), which shows the efficiency of circuit training to improve muscle strength in the shoulder girdle and improving execution speed of the fighters.

The academic evaluation of test results. Figure 5 shows the annual growth chart of evaluation results in freestyle wrestlers. Thus, in the control group during the initial testing athletes were rated with "8,6" and at the end "8,65", which denotes the absence of dramatic changes in the academic evaluation of athletes at the beginning and end of the school year. The results of the experimental group significantly increased the yearly dynamics – from "8,92" – initial testing, up to "9,42" – in the final. The fighters' academic evaluation of the results confirms the improvement of athletes training from the experimental group in the yearly dynamics; this finding is not valid for control group.

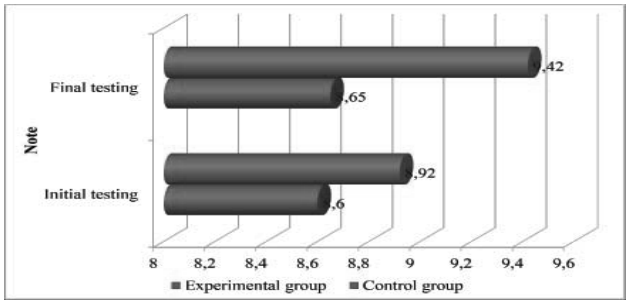


Fig. 5. The annual dynamics of sports performance evaluation results of freestyle wrestlers in the experimental and control groups

Conclusions:

1. The circuit training contributed to the multilateral physical development of freestyle fighters' body more effectively compared to the traditional method. Yearly dynamics have improved the most important motric qualities of the fighter: the strength, strength-speed and special strength, speed, flash, flexibility, which were trained and educated in accordance with sensitive periods to their development, according to the physiological possibilities of each sport.

2. At the fighters from the experimental group, trained by the method in circuit training, it is attested truthful improvement of the special and general body level training in the annual dynamics according to the mathematical and statistical significance threshold of P<0,05 to 0,001, thus being created favourable conditions for expanding their physical training program in perspective and learning more diverse and complicated techniques and processes.

3. The positive annual dynamics of the 10-12 years old fighters' success in the experimental group confirms the effectiveness of the method in circuit training in raising the body's physical preparation.

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