

**ESTABLISHMENT OF THE CORRELATION DEPENDENCE OF
MASTERING BASIC EXERCISES IN SPORTS ACROBATICS ON THE USE
OF INDIVIDUAL SPECIAL PREPARATORY EXERCISES BY YOUNG
ACROBATS 6-7 YEARS OLD**

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Purpose: to determine the correlation relationship between the basic exercises of the initial training of young acrobats and special preparatory exercises used to master them.

Material and Methods: the research was carried out on the basis of the complex children's sports school No. 6, Slobodsky district of Kharkov. 14 children 6-7 years old took part in the study, they were engaged in sports acrobatics in sports and health-improving groups, for whose participation parental consent was obtained. At the beginning of the study, after introductory sessions, control testing of the basic exercises "swallow", "forward roll", "wheel", "birch" "crab position", development of motor qualities, necessary for the fulfillment of the specified basic exercises, and repeated testing was carried out, the assessment of which was carried out on a 10-point scale. After that, a correlation analysis of the dependence of basic acrobatic exercises on special preparatory exercises that were used to perform them was carried out.

Results: in the process of using complexes of special preparatory exercises, the quality of basic exercises performance was increased due to the use of special preparatory exercises in the "swallow" exercise ($t=3,94$; $p<0,001$), "forward roll"

($t=2,90$; $p<0,05$), "wheel" ($t=2,12$; $p<0,05$), "birch" ($t=2,67$; $p<0,05$), "crab position" ($t=2,59$; $p<0,05$).

Conclusions: as a result of the research, a correlation has been established between basic acrobatic exercises and individual special preparatory exercises used during their training.

Keywords: basic acrobatic exercises, young acrobats, correlation.

Introduction

At the stage of initial training in the learning process, the main thing is the assimilation of the simplest elements of acrobatics, which are further improved, more complex elements are mastered, combined into competitive compositions [12, 13, 14].

At the same time, a young athlete has a versatile technical base, which contributes to mastering a wide range of various motor actions [1, 7, 9]. This approach is the basis for further technical improvement. This provision also applies to the subsequent basic stages of long-term training, however, it is especially necessary to take it into account during the initial training period [3, 4, 8, 10].

When mastering the basic elements of sports acrobatics, it is important to combine in one training lesson, both individual acrobatic exercises and special preparatory exercises for their formation [11]. There are several approaches to the construction of training sessions: in one lesson to solve the problems of mastering a separate basic exercise of a sports acrobat; in one lesson, master two basic exercises that are similar in structure of movements (for example, "birch" and "crab position"), in which special preparatory exercises are recommended, for example, "crab position from support on the shoulders"); in one lesson, sequentially assimilate at first less complex basic exercises with their gradual complication with special exercises [5, 6, 14].

Therefore, when planning training sessions, it is very important to take into account the influence of individual physical exercises for the formation of the basic elements of sports acrobatics in young athletes 6-7 years old.

Purpose of the study is to determine the correlation relationship between basic exercises of initial training of young acrobats and special preparatory exercises used for their assimilation.

Material and Methods of research

The research was carried out in 2 stages. At the first stage, the complex effect of special preparatory exercises on individual basic exercises in sports acrobatics was determined. On the second, a correlation was established between basic acrobatic exercises and special preparatory exercises that contribute to the assimilation of the technique of their implementation.

Results of the research

The results of the research carried out at the first stage are presented in Table 1.

The assessment of the performance of the exercises was carried out on a 10-point scale with a decrease: minor errors – 0,1 points, significant errors – 0,2-0,3 points, gross errors – 0,5 points, falling – 1,0 points [11].

All static individual elements must be observed for 2 seconds. For each second observed when performing an individual stage element, 0,3 points are deducted. If an individual element is fixed for less than 1 second, its assessment is removed.

The results obtained testify to the effectiveness of the developed and implemented methodology of using various special preparatory exercises for mastering the basic elements of sports acrobatics at the initial stage of training.

It should be noted about the unequal influence of the sets of exercises used. So, in general, the use of the experimental methodology for the use of special exercises significantly influenced the simpler exercises: the performance of the "swallow" improved by 1,3 points ($t=3,94$; $p<0,001$), the "forward roll" - by 0,9 points ($t=2,90$; $p<0,05$), "birches" - by 0,8 points ($t=2,67$; $p<0,05$), "crab position" - by 0,8 points ($t=2,59$; $p <0.05$). In turn, the performance of the most difficult exercise, the "wheel", was less influenced ($t=2,12$; $p>0,005$) by special preparatory exercises, which requires their further application. Along with this, it is important to determine the effectiveness of exercises that affect the performance of basic elements, which will allow the use of those that, in their structure of movements and the dynamics of their

implementation, most correspond to the basic right. This especially concerns the most complex in terms of dynamic structure of movements, which, first of all, concerns the basic exercise at the initial stage of preparation - the "wheel".

Table 1

Influence of special preparatory exercises for mastering basic exercises in sports acrobatics at the stage of initial training, $x \pm m$; $n_1 = n_2 = 14$

Exercise	At the beginning	Special preparatory exercises	At the end	t	p
«Swallow»	4,8±0,22	- standing facing the gymnastic rack, swinging legs; - maintaining balance, standing on one leg against the gymnastic wall; - balance, independently hold from 3-4 s to 10-12 s; - balance with closed eyes.	6,1±0,24	3,94	<0,001
«Forward roll»	4,2±0,20	- rolls forward and backward in a tuck, lying on the back; - sitting in a group, roll back and forth, pushing off with hands at the head; - in support in the squatting position, bending the arms and tilting the head until the back of the head touches the floor.	5,1±0,23	2,90	<0,05
«Wheel»	3,6±0,22	- squats, jumps, stretches during warm-up; - handstand against the wall; - side stand; - 360° turns; - jumping from foot to foot in a stance "triangle".	4,3±0,24	2,12	>0,05
«Birches»	4,0±0,20	- head tilts to the sides, forward, backward; - flexion and extension of the arms in support lying on the floor; - maximum forward bends of the trunk; - squats to the parallel position of the thighs relative to the floor; - flexion of the legs at the knee joints, lying on the back.	4,8±0,22	2,67	<0,05
«Crab position»	4,2±0,21	- crab position from support on the shoulders; - "reverse bar"; - entrance to the crab position from the gymnastic bench; - semi crab position; - entrance to the crab position with support along the wall	5,0±0,28	2,59	<0,05

In this connection, we carried out a correlation analysis of the effectiveness of the use of special exercises, which were used during initial training to master the basic elements of sports acrobatics.

As evidenced by the results obtained, the most effective exercise is the exercise of maintaining balance, standing on one leg for a long time (up to 10-12 s) and maintaining balance with closed eyes on one leg ($r=0,60$) as the most appropriate in terms of the structure of movements of the exercise "swallow" (Table 2).

Table 2

Matrix of correlation dependence of special preparatory exercises and the implementation of the basic acrobatic exercise "swallow"

№ i/o	Exercises	Correlation coefficient
1	Standing facing the gymnastics rack, swinging legs	0,42
2	Maintaining balance, standing on one leg against the gymnastic wall	0,56
3	Maintaining balance on one leg from 3-4 s to 10-12 s	0,64
4	Balance on two legs with closed eyes	0,48
5	Balance on one leg with closed eyes	0,60

At the same time, these special exercises are the most difficult to perform, so they should be used after applying other, less difficult (swinging legs, standing facing the gymnastic rack maintaining balance, standing on one leg to the gymnastic rack performing balance on two legs with closed eyes).

The exercises used for mastering the "forward roll" are effective, since the correlation is at the level of the average ($r=0,50-0,60$): rolling forward and backward in a group, lying on the back is an integral part of the specified basic exercise on the initial stage ($r=60$) (Table 3).

Table 3

Matrix of correlation dependence of special preparatory exercises and the implementation of the basic acrobatic exercise "forward roll"

№ i/o	Exercises	Correlation coefficient
1	Roll forward and backward in a tuck, lying on your back	0,60
2	Roll back and forth, sitting in a tuck, pushing off with hands at the head	0,58
3	In the support in the squat position, bending the arms and tilting the head until the back of the head touches the floor	0,50

The first can be used an exercise associated with fixing the initial position in support from a squat, bending the arms and tilting the head until the back of the head touches the floor, and then rolls forward and backward.

The most important and most difficult to perform is the basic exercise "wheel", which requires the manifestation of the dynamics of movements with a change in the positions of body parts in space. Therefore, the most significant elements are those that allow fixing the handstand against the wall ($r=0,60$) (Table 4).

Table 4

Matrix of correlation of special preparatory exercises and the implementation of the basic acrobatic exercise "wheel"

№ i/o	Exercises	Correlation coefficient
1	Squats, jumps, stretches during warm-up	0,41
2	Handstand against the wall	0,61
3	Side stand	0,60
4	360° turns	0,58
5	Jumping from foot to foot in a stance "triangle"	0,56

In turn, an exercise associated with spatial orientation with the participation of the vestibular analyzer with a change in the position of the athlete's body is important.

Perform basic acrobatics "birch" requires the involvement of the abdominal muscles to bring the legs from a horizontal to a vertical position, so the most effective is the use of specially-preparatory exercises "leg flexion in the knee joints, lying on back» ($r=0,58$) and "raise legs, sitting on a bench" ($r=0,65$) (Table 5).

Table 5

Matrix of correlation dependence of special preparatory exercises and the implementation of the basic acrobatic exercise "birch"

№ i/o	Exercises	Correlation coefficient
1	Head tilts to the sides, forward, backward	0,32
2	Flexion-extension of the arms in support lying on the floor	0,52
3	Maximum forward bends of the trunk	0,48
4	Squats to the parallel position of the thighs relative to the floor	0,49
5	Flexion of the legs in the knee joints, lying on the back	0,58
6	Raising legs while sitting on a bench	0,65

It is also important to maintain the "crab position"; this requires a significant level of strength qualities of the upper extremities, which is facilitated by the use of a special preparatory exercise "flexion-extension of the arms in the lying position" ($r=0,52$).

The exercises, which were used to master the basic element of sports acrobatics "crab position", provide for motor actions for the implementation of the exercise and the content of the posture (its individual components) in a static position (Table 6).

Table 6

Correlation matrix of special preparatory exercises and the implementation of the basic acrobatic exercise "crab position"

№ i/o	Exercises	Correlation coefficient
1	Crab position from support on the shoulders	0,56
2	Reverse bar	0,54
3	Entrance to the crab position from the gymnastic bench;	0,60
4	Semi crab position	0,58
5	Entrance to the crab position with support along the wall	0,64

All special exercises are essential for the formation of individual components of the basic exercise "crab position" with support along the wall ($r=0,64$) and "entrance to the crab position from the gymnastic bench" ($r=0,60$).

Conclusions / Discussion

The assimilation of the basic elements of acrobatics among young athletes requires a certain level of development of motor qualities, ensuring their fulfillment [14]. At the same time, the effectiveness of the use of special preparatory exercises depends on the structure of their movements for the basic exercise [2]. Therefore, it should be borne in mind that the use of special exercises should provide for the opportunity to significantly contribute to the formation of motor qualities aimed at the effectiveness of the structure of basic acrobatic exercises fulfillment.

Our research has made it possible to:

1. To determine the influence of the use of complexes of special preparatory exercises on the quality of the basic acrobatic exercises of young acrobats 6-7 years old, it was possible to increase the score in the exercises "swallow" by 1,3 points ($t=3,94$; $p<0,001$), "forward roll" by 0,9 points ($t = 2,90$; $p<0,05$), "birch" by 0,8 points ($t=2,67$; $p<0,05$), "crab position" by 0,8 score ($t=2,59$; $p<0,05$).

2. The correlation dependence of the fulfillment of basic exercises of initial sports acrobatics and special-preparatory exercises providing the fulfillment of exercises was established: "swallow" has an average level of correlation with

exercises: maintaining balance, standing on one leg, to the gymnastic wall ($r=0,56$), holding balance on one leg from 3-4 s to 10-12 s ($r=0,64$), performing balance on one leg with closed eyes ($r=0,60$) "forward roll" with rolling forward and backward in a group, lying on the back ($r=0,60$); roll back and forth, sitting in a tuck, pushing off with hands at the head ($r=0,58$) in support in the squat position, bending the arms and tilting the head until the back of the head touches the floor ($r=0,50$) "wheel" with a handstand at walls ($r=0,61$), "side stand" ($r=0,60$), 360° turns ($r=0,58$), jumping from foot to foot in a "triangle" stand ($r=0,56$) "birch" with flexion-extension of the arms in the support lying on the floor ($r=0,52$), flexion of the legs in the knee joints, lying on the back ($r=0,58$), raising the legs while sitting on a bench ($r=0,65$) "crab position" with a crab position from the support on the shoulder ($r=0,56$), "reverse plank" ($r=0,54$), entrance to the "crab position" from the gymnastic bench ($r=0,60$), "semi crab position" ($r=0,58$), entrance to the "crab position" with support along the wall ($r=0,64$).

Prospects for further research. The results obtained make it possible to purposefully use separate special preparatory exercises in the construction of training in basic acrobatic exercises for young novice athletes.

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