

VALUE OF THE INDIVIDUAL COMPONENTS SUBJECT TRAINING GYMNASTS ACCORDING TO THE SURVEY OF COACHES WITH DIFFERENT SKILLS

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Annotation. *Purpose:* assess the significance of the individual components subject training gymnasts according to the survey of coaches with different skills. *Material:* two groups of coaches with different qualifications ($n = 40$). The first group of coaches -, experience from 1 to 10 years ($n = 20$); the second group - work experience from 11 to 25 years ($n = 20$). Gymnasts preliminary stage of basic training. Coaches are asked to answer 15 questions. *Results:* the content of questioning coaches gymnastics shows the relevance of the basic problems of technical training of young gymnasts (throwing and catching objects). The most difficult exercises in the training and improvement are throws and catches the ball (coefficient of concordance $W = 0,814$). The necessity of the development and use of new techniques for analyzing sports equipment exercises with the ball, learning and improving them. *Conclusions:* basic technical training and preparedness of gymnasts to perform exercises with objects represent a problem that is solved enough in theory and practice gymnastics.

Keywords: gymnastics, coaches, athletes, profile, subject training, basic exercises.

Introduction

Calisthenics is an Olympic discipline. Sport achievements of female gymnast are connected by specialists [1, 4, 6-10, 13, 14, 15] with their basic technical fitness. Alongside with it basic technical training and fitness are insufficiently solved problem in theory and methodic of sport kinds of gymnastics [2, 5, 9, 11, 17-20], including calisthenics [1, 4, 8, 12, 15, 16]. First of all we mean basic trainings with objects, fulfillment of bio-mechanically rational throws and catches of objects in compositions of female gymnasts. As per questioning of different qualification coaches the most technical mistakes, made by female gymnasts in fulfillment of throws and catches of objects, belong to exercises with ball, then – with ribbon, batons, skipping rope, hoop. Evaluation of objects' throws and catches as well as analysis of female gymnasts' moving in space, adequate to movement of object, is realized in conditions of training process and competitions, mainly, visually. Results of bio-mechanical analysis of sport technique of objects' throws and catches, detail study of phase structure of calisthenics exercises, analysis of reasons of mistakes as well as information about practical experience of coaches have not been elucidated sufficiently in scientific-methodic literature on calisthenics.

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Purpose, tasks of the work, material and methods

The purpose of the research is to evaluate some components of female gymnasts' trainings with objects by data of questioning of different qualification coaches.

The methods of the research are: analysis and generalization of scientific-methodic literature data and practical experience of coaches, pedagogic questioning of coaches, method of experts' evaluation, mathematical statistic.

Questioning was conducted among calisthenics coaches for studying of their practical experience in training and improvement of objects' manipulation techniques at stage of preliminary basic training of female gymnasts. Coaches were offered to answer 15 questions, briefly presented below:

1. Since what age it is effective to start training of manipulations with ball in calisthenics?
2. How much time shall be paid to training of ball's throws and catches at stage of preliminary basic training?
3. Mark in decreasing order basic elements for improvement of ball manipulation techniques in calisthenics.
4. How much times a week it is necessary to practice exercises with ball for improvement of sport technique?
5. Mark means (preparatory exercises), which you use for improvement of ball's manipulation techniques?
6. Mark in decreasing order from what subject it is necessary to start trainings with objects?
7. What do you think will it be quicker and more efficient to train female gymnast in group?
8. Mark in decreasing order what object is the easiest for training and improvement of sport technique?
9. Mark, what the most difficult ball throws and catches you introduce to female gymnasts of 9-10 years old age for their training and in competition programs?
10. Mark in decreasing order with what object technical mistakes in throws and catches are made?
11. What the most frequent ball catches you introduce in program for female gymnasts of 9-10 years old age?
12. What methodic techniques do you use for your gymnast to throw ball higher?
13. What technical mistakes are the most often with ball throws and catches?
14. Evaluate in points first basic combination of exercises with ball of highly qualified female gymnasts (ball throw in jump "Kazakh" – catching and roll on two arms and back with rhythmic steps.

15. Evaluate in points the second basic combination of ball exercise fulfilled by highly qualified female gymnasts (ball throw in jump, touching in ring – catching and roll on two arms and back with rhythmic steps).

Results of calisthenics coaches' questioning were used as objective facts and practical bench marks for evaluation of kinematic structure of technique of ball throws and catches, for evaluation of sensor-motor coordination, with preparation and conducting of pedagogic experiment.

Material of the research: we formed two groups of coaches of different qualification (n=40). The first group of coaches included those with practical experience from 1 to 10 years; the second group – coaches with practical experience from 11 to 25 years. It should be noted that that is coaches had to range the offered variants of an answer to a question, the answers were classified by certain ranges in decreasing order, where "one" denoted the most important element of technical structural groups, technique of different throws and methods of catching in process of training; also it denoted the most significant mistake in throws or catching of ball during competitions, the most significant technique of different throws and catches in trainings and so on. If it was necessary to choose one answer from several, the answer «Yes» was marked as "1" and "No" – as "0".

With it, for every of offered questions we calculated concordance coefficient (W) and determined its statistical significance that facilitated agreement of experts' opinions [3].

Results of the researches

In respondents' opinion during trainings, for training of ball throws and catches the most effective time is 35 minutes (see fig).

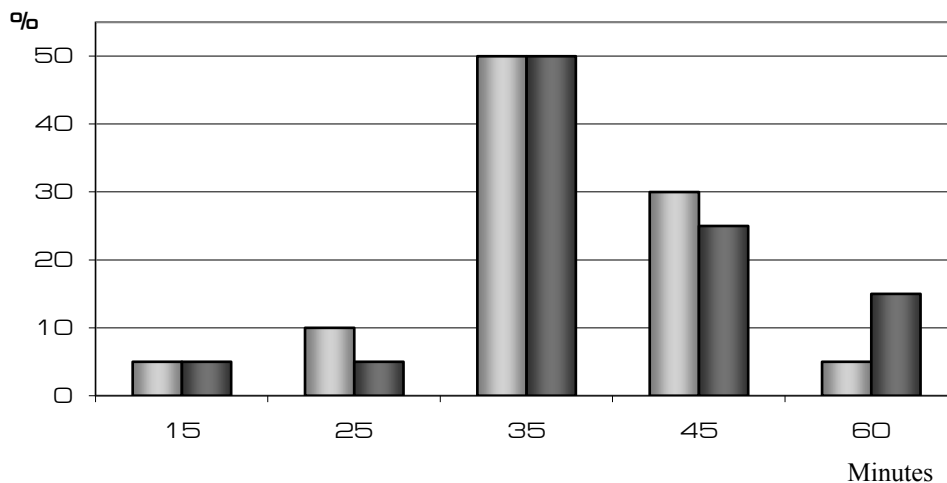


Fig.1. Respondents' opinion about quantity of time, required for training of ball throws and catches, (n = 40):

- - coaches with experience from 1 to 10 years;
- - coaches with experience from 10 to 25 years.

Coaches with experience from 1 to 10 years think that 35 minutes is the most effective time for training of ball throws and catches. Coaches with experience from 10 to 25 years also think that 35 minutes is the most effective time for training of ball throws and catches. Having analyzed results of both groups of respondents we can say that there are differences in variants of answers that witness about different approach to this question, but the most important is that both groups have common opinion about 35 minutes time. In table 1 we presented comparison of both respondents' groups concerning significance of training of female gymnasts in separate structural groups of ball exercises. We showed) in both groups of respondents) turn-by-turn character of ball exercises' trainings.

Table 1

Significance of calisthenics technical structural groups in ball exercises, (n = 40)

Technical elements	Ranging of answers			
	group1, experience from 1 to 10 years		group2, experience from 11 to 25 years	
	Mean range	Standard deviation	Mean range	Standard deviation
	$(W=0,782; p<0,05)$		$(W=0,814; p<0,05)$	
Throws, overthrows	8.25	1.07	7.0	0.85
Push offs	7.45	0.76	7.25	0.79
Catches	7.90	1.02	8.30	1.22
Passes	1.65	0.88	3.15	1.35
Rolls	4.55	0.76	5.40	1.05
Over-rolls	5.15	1.46	4.95	0.94
Mills	4.65	1.63	4.53	1.76
Turnings	2.2	0.83	1.40	0.60
“Eights”	3.2	1.85	2.13	1.07

In opinion of first group's respondents coaches start trainings with such structural components: passes, turnings, eights, mills, rolls, over-rolls; further both groups of respondents have the same opinion: training of push offs, throws, overthrows and catching of ball ($W=0.782; p<0.05$). It should be noted that among questioned with experience up to 10 years the most important component is considered to be passes 60% (n=12), turnings – 15% (n=3), eights– 25% (n=5).

Opinion of the second group is as follows: training shall be started from application of the following elements: turnings, eights, passes, rolls – further their answers are the same as in other group ($W=0.814; p<0.05$). With it, in order of priority more experienced coaches put at first place turnings– 65% (n=13), eights– 20% (n=4) and passes– 15% (n=3).

Respondents' opinion concerning training time every week for improvement of ball manipulation's technique is presented in fig.2.

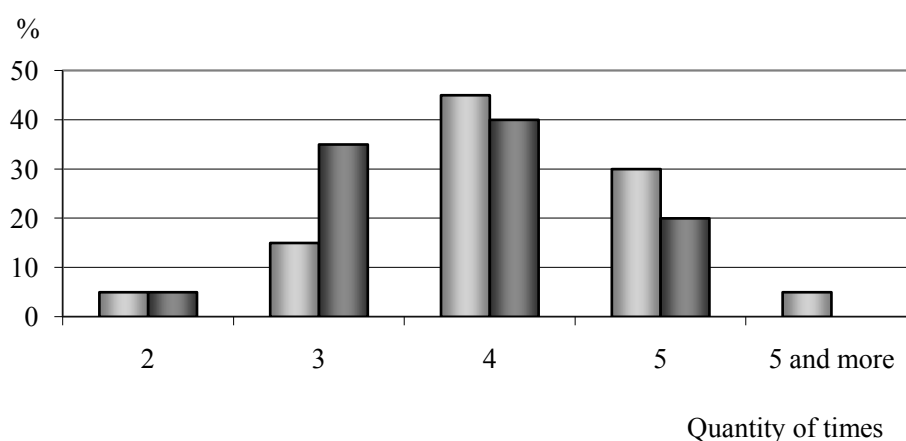


Fig.2 Respondents' opinion concerning training time every week for improvement of ball manipulation's technique (n=40):

- - coaches with experience from 1 to 10 years;
- - coaches with experience from 10 to 25 years.

Most of coaches with experience from 1 to 10 years prefer to improve ball manipulation's techniques four and more times a week in order to achieve "sense" of ball. Coaches with practical experience from 11 to 25 years pay

attention to these exercises from 3 to 4 times a week. In their opinion such conditions more facilitate sport techniques of female gymnasts.

On the base of analysis of objects' significance in calisthenics, with which the most of mistakes are made, we received the following results (see table 2).

Table 2

The most frequent mistakes with fulfillment of throws and catches of different objects in calisthenics, (n = 40)

Objects	Ranging of answers			
	group1, experience from 1 to 10 years		group2, experience from 11 to 25 years	
	Mean range	Standard deviation	Mean range	Standard deviation
	<i>(W=0.569; p<0.05)</i>		<i>(W=0.719; p<0.05)</i>	
Skipping rope	3.38	0.94	4.17	0.52
Hoop	4.65	0.93	4.58	0.94
Ball	1.40	0.89	1.30	0.73
Batons	3.08	0.79	2.55	0.76
Ribbon	2.50	1.15	2.40	0.75

Respondents' opinions are a little bit different however both groups agreed in answers that mistakes with balls are most frequent in throws and catches. The first group of respondents thinks that by complexity objects can be ranged as follows: ball, ribbon, skipping rope, batons, hoop ($W=0.569; p<0.05$). The second group of experienced coaches offers a little different order: ball, ribbon, batons, skipping rope, hoop ($W=0.719; p<0.05$). Respondents of both groups agreed in answers that ball and ribbon are the most difficult objects in calisthenics and mistakes are often made in ball manipulation's techniques; then opinions become different. May be it is conditioned by the fact that experience of work influences on process of training. It should be noted that by complexity ball was put on the first place by 60 % (n=12) of respondents with working experience up to 10 years and by 75% (n=15) – of more experienced coaches.

Further specifying of factors, conditioning making mistakes, permitted to determine that respondents' opinions become differ (see table 4). Coaches of the first group think that order of significance of ball throws and catches' mistakes at competitions is as follows: low amplitude of throw, catching by both hands, sportswoman does not manage to catch ball, not fixed position of ball throw, too long waiting for object, psychological instability of a sportswoman ($W=0.708; p<0.05$). Variants of second group coaches' answers were: too long waiting for object, low amplitude of throw, catching by both hands, sportswoman does not manage to catch ball, not fixed position of ball throw, psychological instability of a sportswoman, ($W=0.799; p<0.05$). It should be noted that in spite of certain discrepancies of opinions both groups of respondents put on last place psychological instability of sportswomen. It proves one more the fact that psychological training of female gymnasts is on low level and requires reviewing of coaches' position concerning this problem (see table 3).

Table 3

Significance of mistakes made with ball throws and catches at competitions (n = 40)

Mistakes made with ball throws and catches	Ranging of answers			
	group1, experience from 1 to 10 years		group2, experience from 11 to 25 years	
	Mean range	Standard deviation	Mean range	Standard deviation
	<i>(W=0.708; p<0.05)</i>		<i>(W=0.799; p<0.05)</i>	
Low amplitude of throw	1.55	0.51	1.90	0.64
Not fixed position of ball throw	1.70	0.80	3.55	1.23
Catching by both hands	4.10	1.29	3.75	0.72
Sportswoman does not manage to catch ball	3.75	0.79	5.25	0.72
Too long waiting for object	4.35	1.35	1.25	0.44
Psychological instability of a sportswoman	5.55	0.81	5.30	0.73

We also determined different opinion of respondents in respect to influence of objects' throws and catches on female gymnasts' competition results (see fig.3).

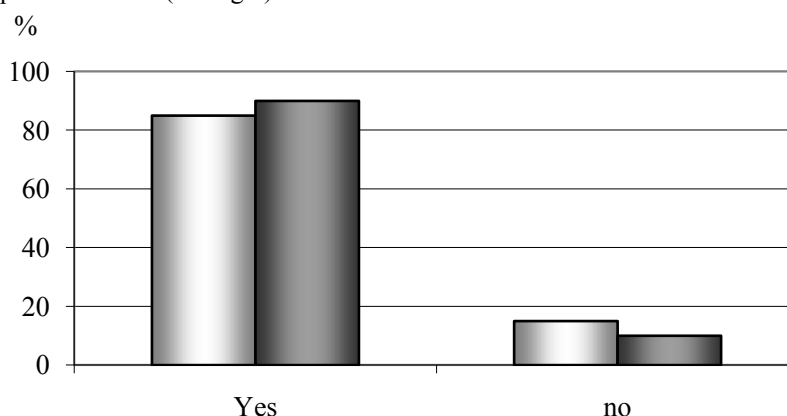


Fig. 3 Influence of objects' throws and catches on female gymnasts' competition results, (n = 40):

- - coaches with experience from 1 to 10 years;
- - coaches with experience from 10 to 25 years.

Basing on respondents' answers it becomes evident that in sixty – one hundred percents technique of objects' throws and catches influences on competition result. It says that objects' throws and catches technique plays very important role in fulfillment of certain exercises, combinations of exercises, whole compositions in Olympic calisthenics. With it it is necessary to consider that during competitions psychological factor can change technique of throws and especially catching of ball, because catching of object is always more difficult. This factor also depends on female gymnast's qualification and experience, acquired during trainings and in competitions. The question what throws and catches are fulfilled by gymnasts, working by program of second and first junior degrees and who are trained by our respondents, the answer was the following: catches by legs, catches out of range of vision, catches in complex elements; catches with rolls; catches on floor; throws for complexity; throws out of range of vision; throws without arms; risky throws. The answers corresponded to the fact that all participants included in program listed above throws and catches. It is connected with requirements of Rules of competitions, videlicet: female gymnasts shall be skillful in exercises, containing elements of risk. Respondents point that ball throws and catches are bio-mechanically difficult and their fulfillment is connected with great quantity of technical mistakes. Sequence of training process and perfection of ball throws and catches are given in table 4. Coaches of first group think that it is necessary to start training of ball throws and catches in the following order: series of short throws, throws from program, throws and overthrows in pairs, series of long throws, complex throws and catches, risky throws ($W=0.423$; $p<0.05$). Respondents of second group think that training of ball throws and catches shall be started in the following sequence: series of short throws, series of long throws, throws and overthrows in pairs, risky throws, throws from program, complex throws and catches ($W=0.664$; $p<0.05$).

Table 4

Significance of different techniques of ball throes and catches in trainings, (n = 40)

Throws of ball	Ranging of answers			
	group1, experience from 1 to 10 years		group2, experience from 11 to 25 years	
	Mean range	Standard deviation	Mean range	Standard deviation
	$(W=0.423$; $p<0.05$)		$(W=0.664$; $p<0.05$)	
Series of short throws	1.75	0.85	1.35	0.59
Series of long throws	3.02	1.45	1.85	0.59
Throws from program	2.15	1.18	3.75	0.85
Throws of risk	4.22	1.06	3.80	0.89
Complex throws and catches	3.85	0.75	4.25	1.07

Differences in answers witness that working experience of a coach makes certain corrections: young coaches want to train female gymnast to ball throw and catching for as short period as possible, thinking that it would be effective; senior coaches train with the help of didactic order that, in the future, proves correctness of their pedagogic construction of female gymnasts' training.

Conclusions:

1. In theory and methodic of modern Olympic calisthenics there is observed insufficiency of bio-mechanically grounded parameters and indicators, which would characterize sport technique of objects' throws and catches, including ball; there is absence of experimentally verified training programs with objects. Scientific-methodic foundation of basic technical training as the basis of many-years sport perfection of calisthenics sportswomen is not completely elucidated.

2. Questioning of calisthenics coaches (working experience from 1 to 10 years - first group and from 11 to 25 years – second group, n=20) witnesses about urgency of problem of junior female gymnasts' basic technical training, in particular training to objects' throws and catches. The most difficult exercises for perfection are ball throws and catches – concordance coefficients were $W = 0.782$; ($p < 0.05$) and $W = 0.814$; ($p < 0.05$) accordingly. *соответственно*. We have determined demand in working out and application of new methodic of analysis of ball exercises' techniques.

3. For training of ball exercises, perfection of ball throws and catches optimal for one training is period of 35 minutes. First group respondents consider ball exercises the most difficult - 60 % (n=12); in their turn, respondents of second group preferred ball exercises in 75 % of cases (n=15).

4. In opinion of first group respondents training shall be started from the following structural elements: passes, turnings, eights, mills, rolls, over-rolls; further both groups offer to train push offs, throws, overthrows and catches of ball ($W = 0.782$; $p < 0.05$). It should be noted that respondents with working experience from 1 to 10 years consider passes 60% (n=12), turnings– 15% (n=3), eights– 25% (n=5) to be the most important. The second group respondents are of the following opinion: in training there shall be used such elements as turnings, eights, passes, mills, rolls, over-rolls; then, opinions are equal ($W = 0.814$; $p < 0.05$). With it at first place more experienced coaches put turnings– 65% (n=13), eights– 20% (n=4) and passes– 15% (n=3).

5. Most of coaches with working experience from 1 to 10 years prefer to improve technique of ball's manipulation four and more times a week in order to achieve "sense" of ball. Coaches with working experience from 11 to 25 years pay attention to ball exercises from 3 to 4 times a week. In their opinion such conditions facilitate more effectively development of female gymnasts' technical fitness.

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