

## THE FORMATION OF YOUNG ATHLETES' SPECIALIZATION ON THE EXAMPLE OF RHYTHMIC GYMNASTICS GROUP EXERCISES

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**Annotation.** *Purpose:* to substantiate the approach to the formation of specializations gymnasts in the initial stages and preliminary basic training. On this basis, to develop the technology selection, orientation and training of athletes in rhythmic gymnastics group exercises. *Material:* an expert survey of 46 coaches and judges of Ukraine calisthenics different skills training for gymnasts to group exercise. The study involved 50 athletes who are at the initial stages and preliminary basic training. *Results:* the necessity of forming specialization. Presented educational technology selection, orientation and training gymnasts in group calisthenics exercises. Investigated the components and benefits of the proposed technology. Systematized criteria for selecting gymnasts to group exercise. *Conclusions:* experimentally proven technology selection, orientation and training of athletes in the group exercise. The main results of the study have been practically implemented in the training process of training young athletes.

**Keywords:** formation, specialization, selection, orientation, group exercises, calisthenics.

### Introduction

Modern development of calisthenics' group exercises is characterized by constant perfection of competition compositions at the account of increasing of complexity, interaction and tricks [1]. Every motion task in group exercise is solved by team collectively and elements are much more difficult by character of motion actions than in individual exercises [2, 3].

Complexity of motion actions' structure requires from female gymnasts accuracy of space and power parameters of motion, quickness of response to moving object, attention and thinking [4, 5, 6]. For achievement of high competition results teams have to demonstrate perfect technique of motion interactions, connected with overthrows, throws, passes of objects one to another, coordinated synchronous or asynchronous work, ability to fulfill exercises with single amplitude in one temp and rhythm [7, 8, 9].

Numerous victories of teams from Russia, Italy, Byelorussia during recent three Olympic cycles (2004–2012) witness about efficient system of many years training of group exercises [10]. The existing system of female gymnasts' training in Ukraine does not reflect processes of their specialization's formation in group exercises. In programs of ChJSS [11] and curriculums it is absent that, in its turn, reflects in non-compliance of requirements of this kind of Olympic sports with female gymnasts', participating in group exercises, training in the process of many years' perfection. In spite of this fact, group exercises take 50% of all competition programs, and competitions of junior female gymnasts in Ukraine admit participation in them, starting from 2<sup>nd</sup> junior sport degree.

In Ukraine calisthenics group exercises' training of sportswomen is carried out directly before competitions; there is no their targeted orientation in many years process. The main reason is in absence of grounded approach to formation of specialization "group exercise" in many years process of training; also there is no system of selection, orientation and training of female gymnasts that all condition urgency of our research.

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### Purpose, tasks of the work, material and methods

*The purpose of the research* is to give grounds for approach to formation of gymnasts' specialization "group exercises" on stages of initial and preliminary basic training and, on this base, to develop technology of selection, orientation and training of sportswomen in group exercises.

*The methods of the research:* analysis of scientific-methodic and special literature, official documents, questioning, pedagogic observation, analysis of video-records, pedagogic testing and experiment, methods of mathematical statistics.

### Results of the research

In the fulfilled analysis of scientific-methodic and special literature we considered specificities of competition functioning in complex-coordinated kinds of sports and calisthenics [12, 13]; formation of specialization in structure of sportsmen's many-years training [14, 15, 16]; organization of selection and orientation of training as a component of effective control on different stages of many-years' perfection [17, 18, 19, 20, 21]; training of female gymnasts in group exercises [22, 23, 24]. It permitted to determine insufficiency of this problem's studying, concerning specialization at initial stags of training and creation of holistic system of training, selection and orientation of female gymnasts in group exercises. Gymnasts' training of group exercises is not regarded in scientific literature; modern trends in sports' development, scopes of work, required for achievement of technically complex elements are not considered, criteria of selection and orientation of female gymnasts' training in this kind of competitions are absent.

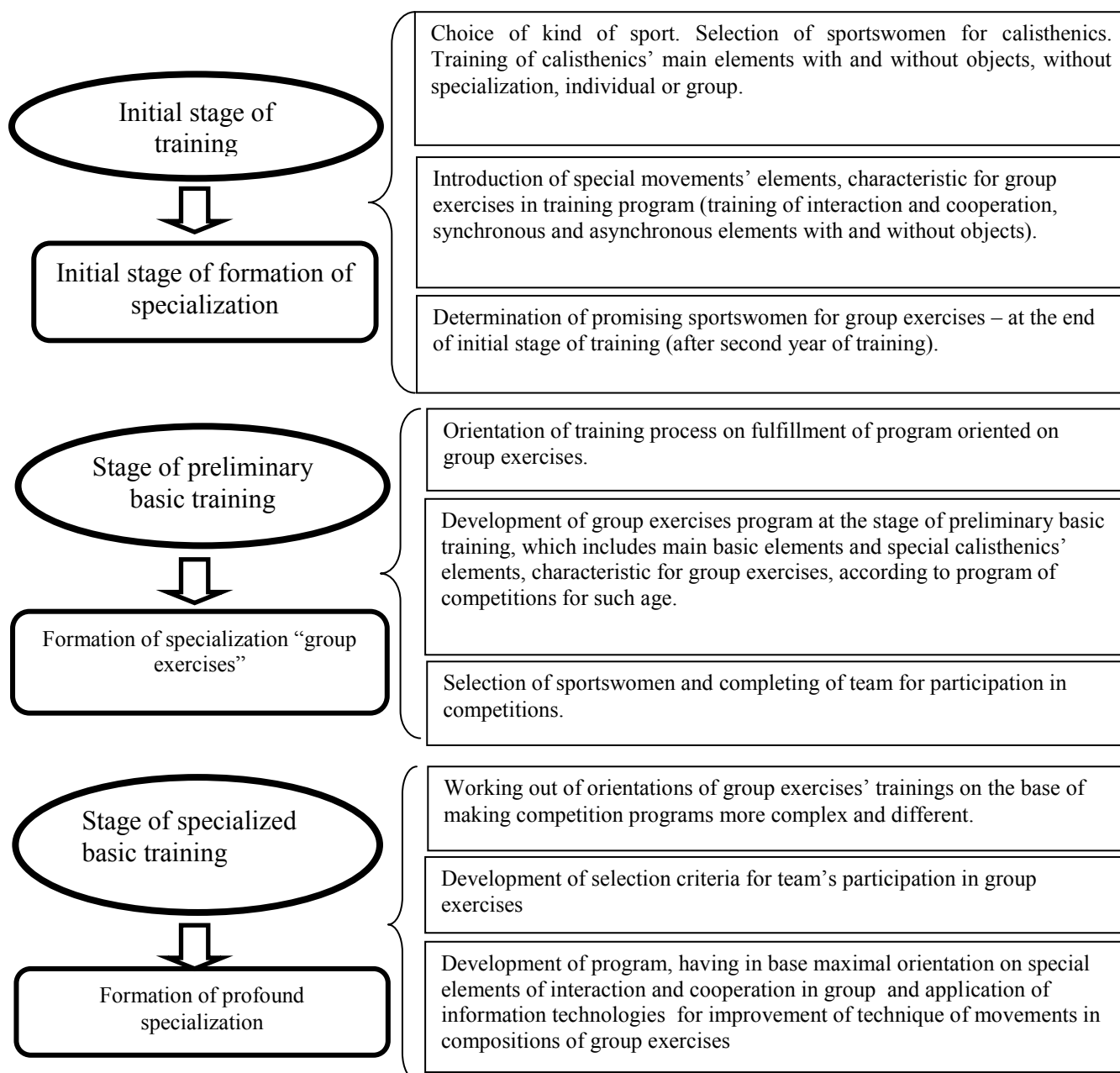
Analysis of curriculums on calisthenics in sport schools showed that they completely do not contain methodic instructions on evaluation and control of female gymnasts' fitness indicators, oriented on group exercises. Training of

teams in group exercises is carried out during several months before starts. System of sport selection and orientation, its elements are not connected with specificities of female gymnasts' training on different stages in practice. It does not permit to timely carry out determination of promising sportswomen, to determine their specialization, considering individual features and tasks of training process.

The fulfilled analysis of the strongest in the world and in Ukraine teams in group exercises permitted to determine peculiarities, components, correlations of structural elements, which influence to the largest extent on competition results in group exercises. At present, for group exercises it is characteristic increasing of scope of work with an object and body that is connected with significant quantity of time required for improvement, mastering of elements of interaction and cooperation. The mentioned motion actions are complexly coordinated combination of movements of different body links with different objects. Their fulfillment under musical accompaniment requires from sportswomen not only significant physical fitness but also sufficient level of special motion skills, ability to demonstrate elements vividly and artistically [8, 9]. Technically correct movements, formed at initial stages, which will be continuously develop and improved at next stages, ensure increasing of sportsmanship [17]. Even the least deviation from them result in significant quantity of mistakes, which, then, will be transferred to more difficult elements [5]. That is why formation of specialization in group exercises shall be organized at initial stages of many-years perfection, starting from groups of preliminary training.

We understood formation of specialization as process of development of discipline "group exercises in calisthenics" that differs by certain solution of specialization tasks. Main property of specialization "group exercises" is fulfillment of calisthenics competition program in team as separate independent element, in which gymnasts' training is concentrated on fulfillment of mutual actions in good coordination and cooperation, synchronous and asynchronous character of gymnasts' work with objects; all these is achieved by commonality of interests, motivation, coordination of team's members and etc.

Specialization "group exercises" in calisthenics is characterized by sequence of actions, which principally differ from individual training but it is built on base of calisthenics' school and does not come out of its content. In the base of approach to formation of junior female gymnasts' specialization there is theoretical knowledge and practical experience of calisthenics and adjoining disciplines. Its elements, which combine process of specialization's formation and create prospects of many-years gymnasts' improvement are regularities of age and starting of specialization as well as indicators of sport orientation and selection, considering natural sportswomen's bents to fulfillment of group exercises, means and methods of sport training, criteria and components of special fitness (see fig.1). Considering the fact that specialization is formed with consideration of wholeness of processes of selection, orientation and direct training of female gymnasts, we applied systemic approach, which permitted regarding of all components of specialization's formation as combination of interacting elements, which form holistic system. Formation of specialization also includes interconnected components, in which tasks are solved stage-by-stage during many years training; conditions further training of female gymnasts and put forward special requirements to selection and further orientation of training process. All system of sport training of group exercises is built as many years and continuous process with interconnected elements and components, which subordinate to the task of achievement of maximal sport result and their interaction permits to create system, which would be naturally connected both with stages of many years training and with levels of selection and orientation.



*Fig.1. Structural diagram of formation of specialization "group exercises" in calisthenics*

Realizing the purpose of the research we provided ground for technology of selection, orientation and training of reserve in calisthenics. It is regarded as arranged combination of actions, operations and procedures, which ensure achievement of predicted result, presented in the form of diagram (see fig.2).

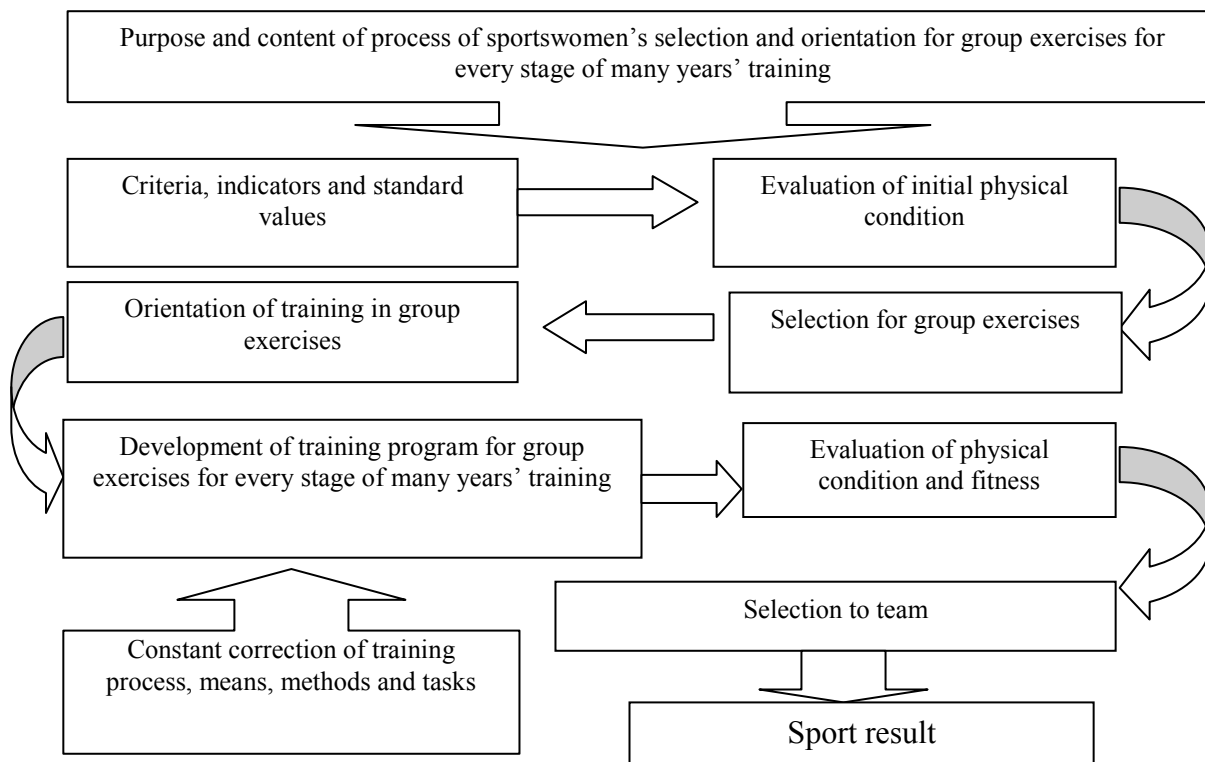


Fig.2. Structural diagram of selection technology, orientation and training of sportswomen for group exercises

Function of technology implies construction selection and orientation of sportswomen's training orientation in group exercises, which ensures the predicted result. The components of technology determine purpose and content of process of sportswomen's selection for group exercises for every stage of many years training; criteria, indicators and standard values; evaluation of out-coming and current state of female gymnasts' fitness; development of training programs for group exercises, selection for group exercises and further orientation of their training.

Leading coaches of Ukraine ( $n = 46$ ,  $W = 0,77$ ) determined eight criteria of selection, which it is necessary to consider at initial stage of training: state of health; anthropometric indicators (length and mass of body, circumference of chest, size of foot); level of physical fitness, motivation; quality of movements' mastering and evaluation of movements' skills; social indicators (parents' and child's attitude and interest to sport); optimal age for starting of trainings. The determined criteria were used during selection to group of initial training and evaluation of children's fitness in first years of training. Also these criteria were used for determination of female gymnasts' contingent, who took part in experiment at stage of initial training.

The researches resulted in development of evaluation scales, which permit to evaluate potentials of junior female gymnasts for further orientation of their training in group exercises. Within informative criteria we also determined control tests for evaluation of children's skills with orientation on group exercises. By results of the conducted questioning ( $n = 46$ ,  $W = 0,77$ ) we included into significant criteria of female gymnasts' fitness for group exercises at initial stage the following: coordination abilities, flexibility (mobility of backbone, ball and shoulder joints), power endurance, quickness and jumping abilities.

We carried out comparative pedagogic experiment from September 2011 to May 2012 on base of SchJSOR in Kiyev, during which we formed two groups of girls of initial training stage (second-third year of training), 10 persons in every of it. Control group (CG) and experimental group (EG) did not have any confident differences ( $p < 0.05$ ). Trainings in control group were conducted as per standard program of ChJSS [12], in experimental group trainings were carried out by developed by us program. As the base we took group method of training of mutual motion elements of interaction and cooperation, synchronous education of choreographic elements, which are required for work in group exercises. As the basis of trainings we took organizational form of training – work in pairs, threes and fours, i.e. in variable couples. Training of children in pairs, threes and fours, i.e. in variable couples in combination with mastering of elements' techniques, which are executed individually, influence positively on expansion of range of gymnasts' motion skills, development of arms' motor qualities, facilitate increasing of technical level. For explanation of tasks we used visualization – vivid imagination of material, reviewing of elements, combinations and interactions on the base of video-materials of elements' fulfillment by leading female gymnasts of the school that facilitated mastering of elements by junior female gymnasts.

At intermediate stage of experiment we fulfilled testing of female gymnasts by 20 tests as per 10-points scale, Results of CG girls improved from  $1.15 \pm 0.16$ , ( $\bar{X} \pm S$ ) to  $1.56 \pm 0.12$  points, ( $p < 0.05$ ), in EG – from  $2.10 \pm 0.14$  to  $2.44 \pm 0.12$  points, ( $p < 0.05$ ). After testing (December 2011) promising female gymnasts were oriented on group

exercises. Formation of summarizing marks was complex, considering informative criteria of children's selection for group exercises at initial stage of training by worked out evaluation scales: 56–69 points – high level, 49–55 – level above middle, 38–48 – middle level, 31–37 – below middle, 21–31 points – low level. Thus, we determined main staff of CG (n = 5) and EG (n = 5), the rest of sportswomen were included in reserve.

At next stage of experiment we carried out formation and training of group exercises without objects and with balls. At the end of experiment analysis of testing results (April 2012) proved increment of indicators by 20 tests in both groups ( $p < 0.05$ ). Testing results of general and physical fitness in EG were confidently better than in CG by most of indicators. Implementation of the offered experimental program of group exercises' trainings permitted improve EG gymnasts' results in average from  $3.20 \pm 0.14$  to  $8.20 \pm 0.12$  points, ( $p < 0.05$ ), indicators of CG gymnasts increased from  $3.35 \pm 0.18$  to  $7.35 \pm 0.11$  points (see fig.3). Also on this stage of experiment indicators of EG gymnast of first team ( $V = 8,35\%$ ), that is one of important indicators of interactions' development. In CG marks for technical fitness also increased, but discrepancy of results was rather high ( $V = 16,91\%$ ). Also effectiveness of technology of selection and orientation of female gymnasts as per out program was proved by increasing of physical fitness's indicators and competition results of teams by program of group exercises without objects and with balls. In the course of competitions for school championship by 3<sup>rd</sup> junior sport degree, EG first team took first place, while CG team – fifth.

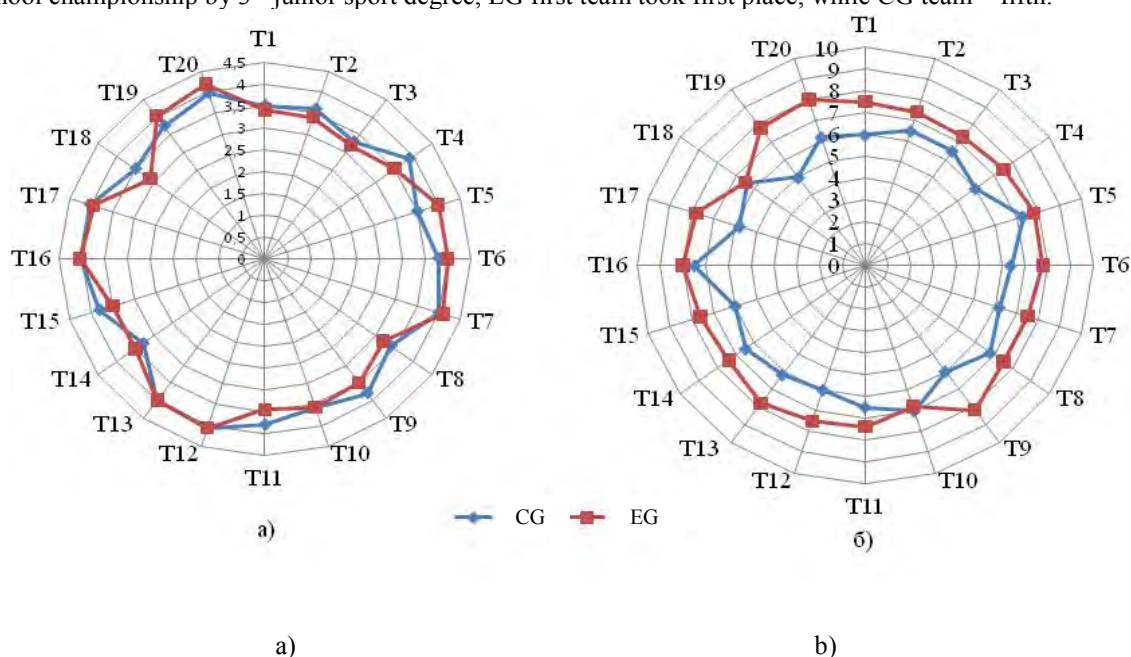


Fig.1. Dynamic of general physical and technical fitness of control and experimental groups' female gymnasts in the course of experiment, points: T1, T2, T6 – flexibility and mobility of joints; T3 – power endurance; T4 – general endurance; T5, T7 – quickness; T8 – speed-power abilities; T9 – stability of vestibular responses; T10 – accuracy; T11 – dynamic balance; T12 – static balance; T13 – quick-motion response; T14 – space orientation; T15 – reconstruction of movements; T16 – explosive power; T17 – coordination of movements; T18 – “sense of object”; T19 – “sense of time”, “sense of rhythm and temp”; T20 – virtuosity;

a) – at the beginning of experiment; b) – at the end of experiment.

It permits to affirm that it is necessary to form specialization “group exercises” at the end of initial stage of many-years' training.

Targeted training of tardy reserve and formation of specialization “group exercises” take place also at stages of preliminary basic training. Improvement of physical skills and formation of coordinated motion skills (interaction and cooperation) are of great importance for successful specialization in group exercises. Increment of physical and technical fitness's indicators permits to estimate potentials for achievement of high sportsmanship in certain kinds of competitions. Indicators of selection and orientation of female gymnasts fro group exercises at stage of preliminary basic training, in opinion of coaches-respondents, are , in order of importance,: state of health, anthropometric parameters, physical fitness, specialized perception, psycho-physiological indicators, ability for mastering of technical elements, competition result, social indicators (n = 46;  $W = 0,70$ ). Also they noted as important components of fitness for group exercises the following characteristics: coordination abilities, choreographic fitness, quickness and endurance, dexterity, virtuosity and flexibility (n = 46,  $W = 0,68$ ).

For foundation of indicators in the course of experiment, in groups of preliminary basic training (in three age groups, 10 persons in each group), during 2009-2012, twice a week we determined: state of health, anthropometric parameters, physical qualities; we evaluated specialized perception; ability for mastering of technical elements, choreographic fitness; psycho-physiological indicators. For three training years female gymnasts showed confidently

better results by all indicators. Increment of pedagogic indicators was observed in all age groups; as example: gymnasts of 9 years old showed mean group indicators of increment of ability for space-time actions for 2 years as follows: from 0.15 to 0.20 points; female gymnasts of 10-11 years old – from 0.98 to 1.17 points; female gymnasts of 12-13 years old – from 2.17 to 2.37 points, ( $p < 0.05$ ). The obtained data witness that motion skills are formed unevenly, in compliance with age periods.

In period of training of female gymnasts for group exercises by norms of 1<sup>st</sup> sport degree we tested technology of selection and orientation of female gymnasts, which permitted to form first team for group exercises with good quality, to win prize places and all these are foundations for statement that the offered approach is effective.

#### Conclusions:

1. We grounded approach to formation of female gymnasts' specialization at stages of initial and preliminary basic training. The elements, which combine process of specialization's formation and which create prospects of many years' perfection, are regularities of age development and starting of specialization, indicators of selection and sport orientation of sportswomen for fulfillment of group exercises, means and methods of sport trainings, components and criteria of special fitness.

2. Specialization "group exercises" is characterized by sequence of actions, which differ from individual training but is built on the base of calisthenics' school and does not come out of its content basis.

3. The developed technology of selection and orientation of calisthenics' group exercises training is characterized by stage character of methods and contains organizational and methodic components, system of tests, program of training of main elements of mutual interactions of female gymnasts in group, programs of selection, criteria and evaluation scales.

4. We systemized criteria of sportswomen's selection for calisthenics' group exercises at initial stages of training: anthropometric parameters, quickness and quality of movements' and technical elements' mastering, level of development of specialized senses ("sense of rhythm", "sense of temp", "sense of time"), physical fitness, state of health, psycho-physiological indicators, social indicators.

5. Indicators of selection and orientation of female gymnasts for group exercises at stage of preliminary basic training are: state of health, anthropometric parameters, physical fitness, specialized senses, psycho-physiological indicators, ability for mastering of technical elements, competition result, social indicators.

6. Results of carried out experiment witness about effectiveness of the offered approach to formation of specialization "group exercises", starting from third year of training.

*The prospects of further researches in this direction will be oriented on development of system of selection, orientation and training of female gymnasts in group exercises at stages of specialized basic training and preparation for higher achievements.*

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