

METHODOLOGY FOR DEVELOPING ADAPTIVE AWARENESS IN YOUNG GYMNASTS

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Abstract: This article discusses the issues of improving the methodology for developing flexibility in 7–8-year-old gymnasts. During the study, a system of stretching and bending exercises was developed, taking into account the physiological characteristics of young athletes. Dynamic and static exercises were used in the training, and the load was distributed within physiological norms. The results showed a significant increase in joint mobility and muscle elasticity. The methodology is recommended as an effective factor in improving the physical fitness of young gymnasts.

Keywords: flexibility, artistic gymnastics, 7–8-year-old gymnasts, physical training, stretching exercises, joint mobility, muscle elasticity, pedagogical methodology, movement coordination, physiological development.

ENTRANCE

Physical education and sports, the issues of improving the movement activity of the human body, increasing its functional capabilities, and developing movement qualities have always been at the center of scientific research. In particular, the uniqueness of this process in gymnastics stems from the need to form the athlete's technical, physical, and psychological preparation in a holistic system. Gymnastics requires a high level of flexibility, agility, strength, balance, coordinated movement, and emotional stability from the human body. Therefore, the development of flexibility is of particular scientific and practical importance, especially for 7-8-year-old athletes at the initial training stage.

At the initial preparatory stage, the training process is the foundation that determines the athlete's subsequent results. One of the important methodological issues during this period is the correct selection of gymnastic exercises, the distribution of the load based on the physiological norm, and the systematic use of exercises that develop flexibility. In the body of 7–8-year-old children, the musculoskeletal system, joints, ligaments, and neuromuscular coordination are in a period of active development. Therefore, it is necessary to improve the exercises aimed at developing flexibility in the training process for athletes of this age on physiological and pedagogical grounds.

Flexibility is one of the main physical qualities that determine the technical skills of an athlete, and serves to perfectly perform gymnastic exercises, expand joint mobility, increase the amplitude of movement and maintain muscle elasticity. Studies show that the level of flexibility is directly related to the speed with which gymnasts master technically complex exercises. Therefore, choosing the right methodological approach at the initial stage creates the foundation for subsequent sporting achievements.

The methodology for developing flexibility in gymnastics is determined by several factors: the content and structure of the training, the volume and duration of the exercises, the amplitude of the movement, the ratio of load and rest, as well as taking into account individual characteristics.

However, in practice, a number of problems are observed in combining these factors. In particular, the level of preparation of the athlete is not fully formed as a result of loads that are not fully compatible with the growth process of the body of young athletes, the wrong selection of exercises, and the lack of special complexes aimed at developing flexibility. Therefore, improving the methodology for developing flexibility on a scientific basis is an urgent pedagogical issue.

According to the analysis of scientific sources (LP Matveev, VN Platonov, GS Tumanyan, OJ Dadabaev, RD Khalmukhamedov, Sh.A. Mirzakulov, etc.), it is emphasized that in the process of forming physical qualities, including flexibility, in young athletes, it is necessary to take into account the specific features of the physiology of the younger period. In their opinion, at the age of 7–8 years, the elasticity of the body and joint mobility are at the stage of the highest dynamic development, and this process can be effectively controlled through proper pedagogical guidance. Thus, the training organized during this period becomes the basis for the child's further sports training, coordination capabilities and technical skills.

Today, new methodological approaches are being developed to increase the effectiveness of training in sports schools, specialized gymnastics centers, and physical education institutions. However, most of them are focused on general physical training and do not sufficiently take into account the age-specific characteristics of developing the quality of flexibility. Therefore, there is a need to develop a new methodological system in this area that is scientifically based and can be applied in practice.

The scientific novelty of this study is that it is aimed at developing a step-by-step methodology for developing flexibility in 7-8-year-old gymnasts, thereby increasing the effectiveness of the training process, and improving the pedagogical monitoring and control system. At the same time, the methodology developed on the basis of experience aims to prove that it has a positive effect on the coordination of movements, muscle elasticity, joint mobility, and general physical fitness of young athletes.

The practical significance of the study is that it allows for the inclusion of exercise complexes that develop flexibility in training programs for gymnasts in the initial training group, planning the intensity of training within the physiological norm, and monitoring the dynamics of individual development of students. This, in turn, serves to effectively organize the educational and training process in sports schools and improve the methodological skills of trainers and teachers.

Literature review: Scientific research in the field of sports pedagogy and physical education theory shows that there are specific mechanisms for developing physical qualities, in particular flexibility, in young athletes. Gymnastics, as a direction that requires the greatest coordination complexity, high accuracy and wide amplitude of movement among sports, occupies a special place in the development of flexibility. Therefore, many domestic and foreign scientists have studied the theoretical and practical foundations of the formation of this quality in young gymnasts.

LP Matveev (1991) and VN Platonov (1997) in their works emphasized the need to plan the laws of motor activity, the gradualness of the training process, the volume and intensity of the load in accordance with age characteristics in the development of physical qualities. In their opinion, the age range of 7–8 years is the most favorable physiological period for the formation of flexibility in the child's body, since at this age the joints, muscle fibers and tendons acquire maximum elasticity. The correct selection of exercises and rational distribution of the load during this period determine the quality of future sports training.

GS Tumanyan (2002) identified the main means of developing flexibility in the methodology of teaching gymnastics and proposed their use in three stages of the training process: the

preparatory stage, the main training period, and the final recovery stage. The scientist scientifically substantiated the fact that it is possible to effectively increase joint mobility by adapting the exercise system to age characteristics and coordinating static and dynamic stretching exercises.

local researchers OJ Dadabaev (2019), RD Khalmukhamedov (2020) and Sh.A. Mirzakulov (2022) cover the issues of improving the methodology of teaching gymnastics in Uzbekistan based on national traditions, physiological factors and pedagogical experience. In their opinion, the development of flexibility in the process of training at the initial preparatory stage is effective not only through a system of physical exercises, but also through the formation of students' psychological readiness, motivation and positive attitude towards training. In particular, the individual approach of the teacher, the organization of exercises in a game form and the creation of an atmosphere of mutual competition increase the success of the methodology.

In the studies of RS Kholmurodov and NI Karimov (2017), the effectiveness of methodological methods such as gradually expanding the limits of joint mobility, reducing passive muscle resistance, and combining active and passive stretching exercises in developing the quality of flexibility in 7–8-year-old athletes was experimentally proven. They recommended that 30–40% of the volume in training programs for young athletes be directed to developing flexibility.

Foreign scientists P. Hirtz (2003), R. Bompa (2010) and J. Weineck (2012) proposed a physiological approach to the system of developing flexibility based on the laws of morpho-functional growth of young athletes. In their opinion, since the musculoskeletal system at this age differs in growth rates, the training load should be determined on the basis of an individual differential approach. In particular, it is scientifically proven that excessive use of static stretching exercises can cause muscle fatigue and spasms.

new methodological approaches are being developed to develop flexibility in gymnastics. Studies conducted in the Bukhara, Navoi and Karshi regions (Saidova MA, 2024–2025) have experimentally confirmed the effectiveness of a complex system of exercises aimed at increasing the amplitude of movements, body balance and muscle elasticity of young athletes. In particular, by organizing training in a cyclical manner and planning the ratio of load and rest on a physiological basis, it was possible to increase the level of flexibility by 15–20%.

The analyzed scientific sources show that the problem of developing flexibility in young gymnasts is multifaceted, involving not only physiological and biomechanical, but also psychological and pedagogical approaches. Therefore, research in this area is deepening in methodological areas such as viewing the training process as a complex system, optimizing the interaction between the teacher and the athlete, and selecting exercises on an individual differential basis.

Based on the analysis of the literature, it can be said that currently there is a need to improve the training system aimed at increasing the level of flexibility of 7-8-year-old gymnasts, plan the load and type of exercise on a physiological basis, as well as apply pedagogical factors that enhance training motivation. This scientific approach allows ensuring the principles of continuity, systematicity and individualization in the formation of flexibility in young athletes.

Research methodology: This research methodology is based on sports pedagogy, physical education theory, and the laws of physiological development of young athletes. The main goal of the research is to scientifically improve the process of developing flexibility in 7-8-year-old gymnasts and increase the effectiveness of training.

The object of the study was the training process of 7-8-year-old gymnasts at the initial training stage. The subject was taken as methodological approaches, pedagogical conditions and a system of exercises aimed at developing their flexibility. The main hypothesis of the study is that if training is organized in accordance with the physiological capabilities and psychological

characteristics of young athletes, the quality of flexibility and technical accuracy of movements will increase significantly.

theoretical, empirical and statistical methods was used in the research process. Through theoretical analysis, the role of gymnastics in the educational process, the scientific foundations of developing flexibility in young athletes, physiological norms of exercise load and psychopedagogical principles were studied. Based on these analyses, a conceptual model of the methodology was developed.

At the empirical stage, practical observation of the training process, tests to determine the movement skills and joint mobility of students were conducted. During the exercises, body flexibility, muscle elasticity, and joint range of motion were systematically measured. Interviews were organized with teachers and coaches, and their experience in developing flexibility in young gymnasts was analyzed. The didactic orientation of the training, the volume of the load, and the rest ratio were evaluated on a scientific basis.

In the experimental process, a set of exercises developed with young gymnasts was tested. This system included stretching exercises, dynamic and static movements aimed at increasing the amplitude of movement, as well as game elements. The exercises were organized on the principles of regularity, sequence and individual approach. The intensity, duration and number of repetitions of the load were strictly controlled by the trainers.

The results of the study were processed using mathematical and statistical methods, and the reliability of the changes was checked at a scientifically sound level. The differences in flexibility indicators were determined using the t-test, variance (ANOVA) and correlation analysis methods, and the effectiveness of the training methodology was proven on a numerical basis. Also, the changes in the attitude and motivational factors of young athletes to training were qualitatively analyzed.

As a result of the study, a step-by-step system for developing the quality of flexibility in 7–8-year-old gymnasts was developed. In this system, the correspondence of the load and type of exercise to physiological norms, the dynamic structure of the training, as well as the role of the motivational approach were determined. The use of exercises in dynamic, static and mixed forms, as well as the physiological justification of the rest phases, were found to be effective.

The practical significance of the research is that the developed methodology can be used in sports schools, gymnastics clubs and physical education classes. It serves to improve muscle elasticity, joint mobility and coordination of movements in young athletes. It also provides effective recommendations for trainers and teachers on planning training sessions, correctly distributing the load and taking into account the individual characteristics of students is designed in accordance with the morpho-functional characteristics of the body of young gymnasts, ensuring the continuity, systematicity and individualized approach of the training process. Through this approach, the development of the quality of flexibility in young athletes is consistently improved not only in terms of physical, but also in terms of psychological preparation, special attention was paid to determining the level of flexibility of 7–8-year-old gymnasts at the initial training stage, experimentally testing methodological approaches aimed at its development, and assessing their effectiveness. Diagnostic tests conducted at the initial stage showed that joint mobility and muscle elasticity were not sufficiently developed in young gymnasts. In particular, the amplitude of stretching in the back, hip, and shoulder muscles was low, and there was no stability in the level of plasticity and balance in performing movements. This, in turn, was found to have a negative impact on the accuracy of performing technical elements, the aesthetics of movements, and overall training.

After the training system developed during the study was applied in practice, positive changes were observed. During the training, stretching exercises were carried out based on a combination

of dynamic and static methods. The intensity and duration of the load were gradually increased, taking into account the physiological capabilities of the children. The introduction of game elements in the training increased the interest of the students in the exercises and created a psychologically favorable environment.

As a result of the experimental training, the indicators of forward bending of the body, reaching the ground with the knees fully extended, backward bending, and amplitude of leg and arm movements of 7–8-year-old gymnasts significantly improved. In the experimental group, the average bending angle increased by 18–22 percent, and muscle elasticity by more than 15 percent. In the control group, these changes were much lower, namely in the range of 6–8 percent. This scientifically confirms the practical effectiveness of the new methodology.

The results of the observation showed that when the load volume, rest intervals and alternation of exercise types in training planning are organized based on physiological norms, the adaptive capacity of the young organism is formed faster. The selection of exercises aimed at increasing the body's elasticity in training by trainers based on an individual approach increased the athletes' coordination of movements, joint mobility and the overall level of flexibility of the body. In addition, the teacher's use of the demonstration method in the process of teaching the correct technique of performing exercises allowed students to master the movements faster.

Psychological observations were also conducted during the research. The children's motivation level for training increased, they approached the exercises with greater enthusiasm. The use of competition and game elements in the training process created a sense of competition, which led to an improvement in the quality of movement. Also, students developed the skills of controlling their own movements, self-evaluation and analyzing the results of training.

According to the results of mathematical and statistical analysis, a significant difference ($p < 0.05$) was found between the changes in the experimental and control groups. These results were processed using t-test and ANOVA, and the statistical significance of the changes was confirmed. Correlation analysis showed that there is a moderate positive correlation between the level of flexibility and the regularity of participation in training ($r = 0.61$). This means that regular training sustainably develops the physiological adaptation capabilities of young athletes.

The results of the experiment showed that in training programs for 7-8-year-old gymnasts, the share of exercises aimed at stretching, bending, body rotation and expanding joint mobility should be at least one third of the total time. Also, organizing exercises in a game form, combining them with musical rhythm and synchronized movements further strengthened the results.

Based on the data obtained, it was determined that the effectiveness of the methodology for developing flexibility is determined by several factors. First, the scientifically based planning of the training process should correspond to the physical capabilities of young athletes. Second, the purpose of each exercise, the number of repetitions and the rest interval should be clearly defined. Third, the trainer's demonstration during the training, psychological stimulation of children and the combination of exercises with game elements make the process more interesting.

In general, the results of the experiment showed that improving the training system aimed at developing flexibility in young gymnasts gave positive results. Their body plasticity, balance, accuracy in stretching and bending movements significantly improved. The effectiveness of the methodological approach strengthened not only physical, but also psychological preparation. Thus, the developed methodology was proven to be of great importance in the systematic development of physical fitness of young gymnasts, in the formation of their technical and aesthetic movement culture.

CONCLUSION

Scientific and pedagogical studies have shown that when the process of developing flexibility in 7-8-year-old gymnasts is organized systematically, scientifically based and in accordance with physiological capabilities, their level of physical fitness, technical skills and sports results increase significantly. The quality of flexibility is one of the important components that determine the muscle elasticity, joint mobility, coordination capabilities of the body and general movement culture of young athletes. Therefore, improving the methodology for developing this quality is one of the most important pedagogical tasks of the gymnastics training system. According to the results of the study, the use of stretching and bending exercises in dynamic, static and mixed methods, enrichment of training with game forms and organization of exercises in sequence in accordance with physiological norms gives the highest effect. Taking into account the psychological state of young athletes, stimulating them in a positive emotional environment during training also serves as an important factor in developing flexibility. This approach increases the athlete's activity, independence and awareness of their own capabilities. Based on the results of the experiment, it was found that the growth rates of the quality of flexibility in groups trained using the new methodology were significantly higher. This confirms the practical effectiveness of the developed methodology. It was also found that systematic planning of training, maintaining a physiological balance between the volume of the load and the rest interval, and selecting types of exercises in accordance with age characteristics are the most important pedagogical conditions for developing flexibility proved that the process of developing flexibility in young gymnasts serves not only to improve physical quality, but also to form their sports skills, technical accuracy, body control and aesthetic movement culture. The methodology has proven itself as a pedagogical system that develops students' movement accuracy, joint freedom, muscle stretchability and aesthetic expression of movements. The practical significance of this scientific work is that the developed methodological recommendations can be widely used in sports schools, gymnastics clubs, and physical education classes. It creates a methodological basis for improving the physical fitness of young gymnasts, ensuring their healthy development and achieving sustainable success in sports activities. In general, the improved methodology aimed at developing flexibility in 7–8-year-old gymnasts gives effective results in the sports training system, since it was developed taking into account the physiological capabilities of the body, psychological state and dynamics of personal development of young athletes. This prepares young gymnasts to successfully perform complex technical elements in the later stages and serves to develop their sports skills at a high level.

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