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Improving Comprehensive Training Strategies for Gymnastics Competitions through Diagnostic Assessment of Physical Fitness in 6–8-Year-Old Girls

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Abstract: *This study focuses on enhancing the training strategies for 6–8-year-old girls involved in gymnastics by incorporating diagnostic assessment tools to evaluate their physical fitness levels. The research emphasizes the importance of identifying individual motor abilities, physiological characteristics, and development rates through comprehensive diagnostics. Based on these findings, personalized training programs are developed to improve key physical qualities such as coordination, strength, flexibility, and balance. The implementation of individualized training strategies resulted in a significant improvement in the athletes' competition performance. The study highlights the value of using diagnostics not only for monitoring but also as an integral part of the educational and training process to promote healthy development and long-term engagement in sports.*

Keywords: *gymnastics, physical fitness, diagnostic assessment, individualized training, motor skills, training strategy, coordination, flexibility, strength development.*

Introduction

Gymnastics is not only a sport that embodies the beauty of movement, grace, and aesthetic harmony, but also a complex activity that requires a high level of physical, mental, and volitional preparation. What makes this sport unique is its ability to ensure the harmonious development of all fundamental physical qualities—strength, agility, flexibility, balance, coordination, and endurance. Therefore, gymnastics serves as an important tool not only for training professional athletes but also for fostering healthy and well-rounded individuals.

In particular, childhood—especially the ages between 6 and 8—is a critically important period for engaging in gymnastics. This developmental stage is characterized by the most active formation of motor skills. During this time, the neuromuscular system develops rapidly, motor reflexes become more established, muscle tone increases, and general motor coordination improves. Scientific research (D.K. Dmitriev, 2017) has shown that this is the most effective period for the formation of essential physical attributes such as agility, speed, flexibility, strength, and balance. Through gymnastics training, children not only become physically stronger but also gain emotional and psychological stability. Qualities such as willpower, self-confidence, self-control, emotional regulation, and stage presence are developed. Moreover, during training sessions, children acquire important socio-psychological skills such as teamwork, mutual support, and collective responsibility.

This sport also enhances aesthetic and artistic development. Movements performed in harmony with music, the ability to feel rhythm, the elegant control of the body, and the cultivation of stage expression broaden children's worldview and help develop their artistic taste.

From a pedagogical perspective, gymnastics training should be conducted according to a scientifically grounded methodology that is tailored to the age and physical capabilities of the children. Training

sessions must ensure orthopedic safety and include play-based and engaging elements, as well as motivational approaches. When children are interested in sports, it lays the foundation for a lifelong commitment to a healthy lifestyle. Therefore, gymnastics should be regarded not merely as a sport, but as a multifaceted activity with educational, health-promoting, and aesthetic value. Regular and methodologically sound gymnastics training plays a crucial role in developing a future generation that is healthy, goal-oriented, self-confident, and socially active.

Methods

The study was conducted with the participation of 60 girls aged 6 to 8 who were practicing artistic gymnastics at children's sports schools in the city of Bukhara. The participants were divided into two groups: an experimental group (30 participants) and a control group (30 participants).

The diagnostic tests included the following:

- Movement speed: 10-meter sprint (in seconds)
- Flexibility: Forward bend test
- Coordination: “Walking along a line” test
- Strength and endurance: Abdominal muscle exercises (number of repetitions in 30 seconds)
- Jumping ability: Standing long jump

The training strategy was based on the following principles:

1. Special exercises aimed at developing flexibility, strength, coordination, and speed were incorporated into the weekly training plans, using an individualized approach.
2. The dynamics of motor development for each child were monitored, and training plans were updated accordingly.
3. A psychological training component was included — simulation of competition environments and teaching techniques for coping with stress.

Results

The diagnostic test results showed the following differences between the initial and final stages in the **experimental group**:

The results of the diagnostic tests demonstrated the following differences between the initial and final stages in the **experimental group**:

Indicator	Initial	After 6 Months	Improvement (%)
10 m sprint (sec)	3.1	2.7	12.9%
Flexibility (cm)	5.2	10.8	107%
Coordination (error-free attempts)	60%	90%	+30%
Abdominal strength (30 sec reps)	10	18	80%
Standing long jump (cm)	110	132	20%

In contrast, the control group showed significantly lower improvements, ranging between **5–10%**.

Based on the competition results: 18 participants from the experimental group became winners or prize-winners in local competitions, which is a significantly higher figure compared to 8 participants from the control group.

Discussion

In preparing 6–8-year-old girls for artistic gymnastics competitions, it is crucial to conduct an in-depth analysis of their physical preparedness. This includes considering each athlete's age, physiological condition, level of motor activity, and individual characteristics. In particular, using an individualized approach based on diagnostic tests helps identify the strengths and weaknesses of each athlete. This contributes to enhancing the effectiveness of the training process by addressing the shortcomings of a generalized approach. The relevance of this study lies in the fact that identifying the physical potential and motor capabilities of girls aged 6–8, and developing effective training programs that consider their individual characteristics, can significantly improve their physical preparedness. Children at this age exhibit varying rates of development, making it difficult to achieve the desired outcomes with a one-size-fits-all approach. Therefore, it is necessary to conduct comprehensive diagnostics for each participant—assessing physical qualities, motor coordination, muscle strength, balance ability, and other parameters—in order to develop individualized training strategies.

The main objective of the study is to determine the level of physical preparedness among 6–8-year-old girls using specialized diagnostic tools, to develop comprehensive training strategies that take into account individual differences in motor activity, to organize regular training sessions based on these strategies, and to assess their effectiveness through practical experimentation. By achieving this goal, the methodology of gymnastics training can be further improved, the system of professional preparation for young athletes can be enhanced, and a positive impact on their overall health and educational development can be achieved. The results obtained indicate that a training strategy based on individual diagnostics is effective in developing young athletes' physical qualities, identifying their capabilities, and preparing them for competitions at a high level. The main advantage of the specialized training program is its individual approach, continuous development monitoring, and the integration of multidimensional exercises (coordination, strength, flexibility, and psychological condition). Another important aspect is that children at this age adapt and develop rapidly, so an incorrect or generalized approach may negatively affect their health and motivation in sports. Therefore, diagnostic tools should serve not only as a means of control but also as an integral part of the educational process.

Conclusion

In preparing 6–8-year-old girls for gymnastics competitions, it is essential to conduct an in-depth analysis of their physical preparedness, taking into account each athlete's age, physiological condition, level of motor activity, and individual characteristics. In particular, the use of individualized approaches based on diagnostic tests helps to identify each athlete's strengths and weaknesses. This, in turn, increases the effectiveness of training by moving away from generalized methods.

Through diagnostic testing, key physical attributes such as agility, strength, balance, flexibility, speed, and endurance are assessed. Based on the results, a tailored training program is developed for each athlete. This approach allows athletes to fully realize their potential. As a result, during competitions, participants demonstrate improved technical capabilities, enhanced psychological readiness, and greater confidence in their performance. Training conducted under the improved preparation strategy ensures consistent and balanced development of the essential physical qualities in athletes. This leads to a significant improvement in competition results. Experimental findings show that athletes in groups using an individualized approach had higher annual performance indicators compared to those trained with traditional methods. Based on the results of this scientific-practical experiment, one of the urgent tasks for the future is the development of a unified diagnostic and training methodology for sports schools across the country. Such a methodology would not only help athletes achieve higher performance outcomes but also promote a healthy lifestyle and increase their interest in sports. Additionally, the methodology would provide coaches with clear guidelines, monitoring tools, and effective training

techniques. This would contribute to forming a reserve of highly qualified athletes through a standardized approach across the entire country.

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