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EXPERIMENTAL STUDY ON IMPROVING ATTACKING TECHNIQUES IN 14–16-YEAR-OLD FEMALE BOXERS

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Abstract: The article examines the level of execution of attacking techniques in 14–16-year-old female boxers. During the study, punches delivered with the left and right hands to the head and body were analyzed. The execution of each type of punch was evaluated using a 5-, 4-, 3-, and 2-point scoring system.The analysis of the obtained results showed that most athletes demonstrated average and good levels of performance. At the same time, certain technical errors were observed in the execution of punches, indicating that the level of technical preparedness is not yet sufficiently developed

Keywords: female boxers, adolescent athletes, attacking techniques, technical preparedness, motor skills, punch performance, competitive boxing, boxing training, technical performance, skill development.

Introduction : Although numerous studies have been conducted worldwide on the theory and methodology of women's boxing, the issue of pre-competition preparation in 14–16-year-old female boxers remains insufficiently investigated .In particular, the scientific planning of training loads and the organization of special physical training remain inadequately developed. Taking into account the physiological and psychological characteristics of adolescent girls, the proper organization of the training process plays a crucial role in improving their sporting performance. At the same time, the growing interest in boxing in our country necessitates the improvement of talent identification and selection systems, as well as the development of long-term strategies for the advancement of women's boxing.

In recent years, boxing in Uzbekistan has been experiencing rapid development and growing popularity not only among adult women but also among adolescent girls. This trend reflects the expansion of women's participation in combat sports and highlights the increasing importance of early-stage training systems. Girls aged 14–16 are classified as adolescents, and this stage represents a critical foundation for the long-term development of highly qualified athletes, including future elite female boxers. The sports training of adolescent female boxers is characterized by a well-structured and scientifically grounded system, organized on the basis of a year-round training cycle. This process is continuous and systematic, where all components of preparation are closely interconnected and aimed at achieving high sporting results.

Each stage of training builds upon the previous one, ensuring the consolidation and progressive development of motor skills, technical abilities, and functional capacities. At this stage, special attention must be paid to the methodological organization of training, particularly in the teaching of technical and tactical skills. For girls aged 14–16, verbal explanation plays a crucial role as an effective pedagogical tool. It facilitates a deeper understanding of movement structure, helps to identify and correct common errors, and accelerates the process of skill acquisition.[1;6,.]

Moreover, this approach significantly contributes to the formation and refinement of motor skills, which are essential for successful performance in boxing. Thus, the training process at this age should not only focus on physical and technical development but also ensure a comprehensive pedagogical approach that supports the long-term progression of female athletes toward elite-level performanc. In the process of training boxers, special attention is paid to two interrelated aspects of motor function: the development of technical-tactical skills and the improvement of physical qualities. Since boxing requires a high level of speed, strength, endurance, and coordination, the harmonious development of these components is of decisive

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importance.The technical-tactical preparation of a boxer includes skills such as punching technique, defensive actions, combinations, distance control, and correct positioning in the ring. In this process, the athlete not only learns to execute punches accurately and effectively but also develops the ability to analyze the opponent's actions, quickly assess the situation, and make optimal tactical decisions. In particular, the speed and accuracy of decision-making during a bout are critical factors determining success in boxing.

As noted by V.N. Platonov, general physical preparation reflects the harmonious development of an athlete's motor qualities. In boxing, this is especially manifested in the following abilities. [5;]

- **speed** — the ability to execute punches at maximum velocity;
- **strength** — the effectiveness and impact force of punches;
- **endurance** — the ability to maintain high intensity throughout the bout;
- **agility and coordination** — the ability to perform movements accurately and efficiently.

At the same time, the scientific planning and proper distribution of training loads are particularly important in the training process of boxers. Since the organism of young athletes is not yet fully developed, the excessive use of high-intensity training without proper regulation may lead to overfatigue, functional disorders, and an increased risk of injuries.The training process for girls aged 14–16 engaged in organized practice represents a specific pedagogical and physiological system, as this age period corresponds to a stage of intensive development in athletes. Therefore, the analysis of both training and competitive activities is a key factor in the effective management of their sports preparation.[2;4.]

In analyzing the training process, primary attention is given to the volume and intensity of workloads, the structure of training sessions, and their impact on the athlete's functional condition.

Since the organizm of 14–16-year-old girls is not yet fully developed, it is essential to increase training loads progressively, prevent excessive fatigue, and ensure proper recovery processes.The analysis of competitive activity, in turn, provides an opportunity to assess the real level of technical, tactical, and psychological preparedness of young female athletes under actual performance conditions. During competitions, the following key indicators are evaluated:

- accuracy and effectiveness of technical actions;
- speed and correctness of tactical decision-making;
- level of physical endurance and speed abilities;
- psychological stability and resistance to stress;
- ability to adapt to the opponent and quickly assess changing situations**.**

It is also important to identify the relationship between training outcomes and competitive performance. This allows for evaluating the effectiveness of the methods and tools used in the training process and making necessary adjustments when required. In particular, an individual approach is crucial for girls aged 14–16, as taking into account each athlete's physical and psychological characteristics plays a significant role in achieving high performance.

Furthermore, competition analysis helps to identify the strengths and weaknesses of athletes, which contributes to the further improvement of the training process. Video analysis, statistical data, and coach observations are considered effective tools in this regard

Research objective: To evaluate punch accuracy in the attack technique of 14–16-year-old boxers.

Research objectives:

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- To analyze the movement technique of 14–16-year-old female boxers (forward, backward, and lateral footwork) and identify existing deficiencies;
- To determine typical errors in executing straight and lateral punches and examine their underlying causes;
- To develop effective methodological recommendations and practical strategies to eliminate the identified technical deficiencies.

Research methods: analysis of scientific and methodological literature, video analysis, pedagogical observation, expert evaluation, and mathematical statistical analysis.

Organization of the research: The study was carried out during the physical training sessions of 14–16-year-old female boxers at the initial training stage in a children's and youth sports school specializing in combat sports. In this process, more than 15 competitive bouts were analyzed based on video recordings.

Results and Discussion: The results of the study revealed significant differences in the indicators of attacking techniques among 14–16-year-old female boxers.

According to the data presented in Figure 1, the proportion of high scores (5 and 4 points) in the experimental group (EG) was considerably higher than in the control group (CG) across all types of punches.

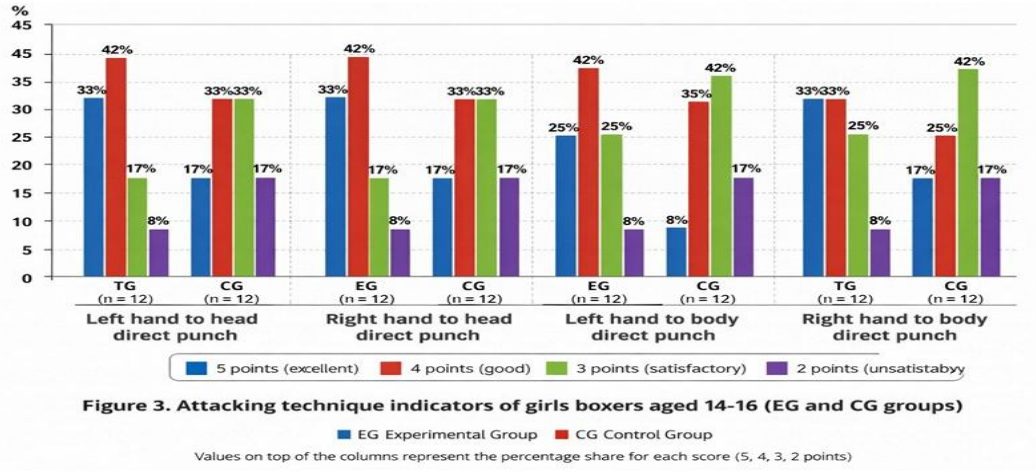

Figure 3. Attacking technique indicators of girls boxers aged 14-16 (EG and CG groups)

In particular, the analysis of left-hand punches to the head showed that the proportion of 5-point scores in the EG reached 33%, whereas in the CG this indicator did not exceed 17%. Similarly, the proportion of 4-point scores was also higher in the experimental group (42%) compared to the control group (33%). These findings indicate a higher level of accuracy and stability in the execution of punching techniques in the experimental group.

A similar trend was observed in right-hand punches to the head. The experimental group demonstrated a predominance of high scores, while in the control group, moderate performance levels (3 points) were more common. This suggests that the technical preparedness of athletes in the control group was not sufficiently developed and that errors in execution were still present.

The analysis of body punches further confirmed the superiority of the experimental group. In left-hand body punches, 4-point scores accounted for 42% in the EG, whereas in the CG, 3-point scores (42%) were predominant. This indicates a lower level of coordination and technical accuracy in the control group.A similar pattern was observed in right-hand body punches. Higher scores (5 and 4 points) were more frequent in the experimental group, whereas the control group continued to show a predominance of moderate-level results. These outcomes demonstrate that the training methods applied in the experimental group had a positive effect on improving the athletes' technical performance.

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The discussion of the results suggests that specialized training aimed at improving attacking techniques contributes significantly to the development of accurate, fast, and technically correct execution of punches. The increase in high scores and the reduction in low scores confirm the improvement in the level of technical preparedness.

Overall, the findings indicate that the training methodology applied in the experimental group was effective and can be recommended for enhancing the attacking techniques of adolescent female boxers

Conclusion: In the process of training 14–16-year-old female boxers, one of the main tasks of the coach is to develop athletes' independence and their ability to evaluate their own performance. During training sessions, athletes should be taught to independently analyze the quality of general and special exercises, with particular emphasis on the correct execution of attacking techniques, including left- and right-hand punches to the head and body.

As athletes' age and level of sports mastery increase, the demand for independence also grows, especially during training camps and competitions, where athletes are required to make independent decisions.The results of the study demonstrated that targeted training focused on attacking techniques leads to a noticeable improvement in technical performance. Special attention should be given to identifying and correcting typical technical errors, such as incorrect body positioning, insufficient coordination between upper and lower body movements, and lack of precision in punch execution.Improving the accuracy, speed, and technical correctness of punches, as well as enhancing coordination, balance, and movement control during offensive actions, significantly increases the level of technical preparedness in female boxers.

Overall, the findings confirm that the application of structured and technique-oriented training methods contributes to the effective development of attacking techniques and can be recommended for improving the performance of adolescent female boxers.

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