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# THE IMPACT OF ATTENTION TRAINING ON THE COMPETITIVE RESULTS OF YOUNG ATHLETES

## ВЛИЯНИЕ МЕТОДИКИ ТРЕНИРОВКИ ВНИМАНИЯ НА СОРЕВНОВАТЕЛЬНЫЕ РЕЗУЛЬТАТЫ ЮНЫХ СПОРТСМЕНОВ

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***Keywords:*** *attention, concentration, attention stability, attention capacity, attention switching, distribution of attention, attention training, equestrian sport.*

***Abstract.*** ***In this paper, we analyzed the efficiency of application the methods for attention training to increase the competitive results of the young athletes involved in dressage and show-jumping. It was shown that the systematic use of exercises for attention development during two months leaded to athletes' attention improve, and to improve the competitive results.***

***Ключевые слова:*** *внимание, концентрация внимания, устойчивость внимания, объем внимания, переключение внимания, распределение внимания, тренировка внимания, конный спорт.*

***Аннотация.*** ***В статье проведен анализ эффективности применения методов развития внимания для повышения соревновательных результатов юных спортсменов, занимающихся выездкой и конкуром. Показано, что систематическое применение упражнений по развитию внимания в течение двух месяцев приводит как к улучшению внимания спортсменов, так и к повышению соревновательных результатов.***

**Introduction.** Attention is associated not only with the processes of perception, but also with human motor activity. It is the insufficient concentration during the competition that often explains athletes' failures [2-7, 9]. Numerous studies have shown that both insufficient and overabundant attention concentration can impair the effectiveness of performing well-learned skills [2, 8]. However, despite the rather high interest in the problems of attention in sports, there is a limited number of empirical studies in the scientific literature on the application of attention training methods in sports activities and their impact on competitive results [4-6]. Research in this area was mainly carried out in team game sports, but in individual sports the results may also depend on attention.

Especially this dependence is observed in equestrian sports, where the athlete's attention should be focused not only on their actions and external objects, but also on the actions of a horse. Features of activity in each sport put forward the specific requirements to develop of separate attention qualities. At the moment, in the scientific and methodical literature, the question of concrete recommendations on attention training for young athletes in both dressage and show-jumping is opened.

In this regard, the purpose of this study was to identify the specific characteristics of the high level athletes` attention in dressage and show-jumping to build model characteristics with the subsequent development of techniques to improve the attention qualities of young athletes.

**Materials and Methods.** The study was conducted on the basis of sports schools «Yunost Moskvy». At the first stage of research the diagnostic of attention qualities for masters of sports (MS) was carried out, the model characteristics were developed.

At the second stage results of young athletes` diagnostics with model characteristics were compared, individual programs on attention training (Xat) were developed.

At the third stage, the medium level athletes in dressage and show-jumping were divided into six groups – 2 experimental (EG) and 4 control (CG). Attention training were conducted according to the experimental plan (Figure 1). As the program of attention development used a modified ideomotor training, for each sport has been allocated 2 control groups: one of them (CG-2) no impact was made, another (CG-1) was performed only ideomotor training in its classical version (Xid) and in the volume corresponding to the experimental group.

At the fourth stage we repeated diagnostics of athletes` attention characteristics in both control and experimental groups; changes in competitive results which were estimated by means of official competitions protocols were analyzed, and it was measured in percent for dressage and in seconds for show-jumping.

Experimental plan

| | | | | |
|---|---|---|---|---|
| EG (10+10*) | R | $O_1$ | $X_{at}$ | $O_2$ |
| CG-1 (5+5) | R | $O_1$ | $X_{id}$ | $O_2$ |
| CG-2 (5+5) | R | $O_1$ | | $O_2$ |

R – randomization, O – diagnosis,
X – impact, * - number of subjects

**Figure 1 - An experimental plan to assess the impact of the attention developed method to the competitive results of young athletes**

The study involved 59 athletes: 19 masters of equestrian sports (9 in dressage and 100 in show-jumping) (age 20-31 years old) and 40 young athletes (20 in dressage and 20 in show-jumping) level of the candidate of master of sports (CMS) and below (14-19 years old).

For the diagnosis of separate attention qualities, we used computer tachistoscope, the technique of «Landolt Rings», and Schulte tables.

To develop the attention qualities, we selected methods, some of which were used in similar studies [1, 5], some were used for the first time. They can be divided into general-preparatory and special-preparatory techniques. For general (regardless of the sport) attention development, exercises such as continuous observation of moving and stationary objects with distribution of attention to several objects or switching of attention between them, as well as with retention of objects in the field of peripheral vision were used [1]. In order, to develop the amount of attention, athletes were offered to memorize and reproduce the maximum number of details of the image presented for a few seconds [5].

As the additional special-preparatory techniques for the attention development we used ideomotor training, which, when making some features, could be aimed at:

1) the development of the attention volume, if it was necessary to keep in mind as many as possible elements of movement and body parts involved in it;

2) development of attention stability when it was required to carry out ideomotor representation of certain motor skills for a long time;

3) development of attention switching when needed during ideomotor training to quickly switch from one set of feelings and events for others.

Statistical processing was carried out in the program SPSS 21.0 using correlation analysis (r-Pearson) and evaluation of the differences (U-Mann-Whitney criterion and T-Wilcoxon criterion).

**Results.** Diagnosis of attention qualities was carried out for the 19 MS athletes in equestrian sport. It was revealed that MS in dressage had a greater intensity of attention ($p \leq 0.01$), and lesser ability to switch ($p \leq 0.05$), and to distribute attention ($p \leq 0.01$) than MS in show-jumping (Figure 2). Model characteristics of attention qualities for dressage and show-jumping were

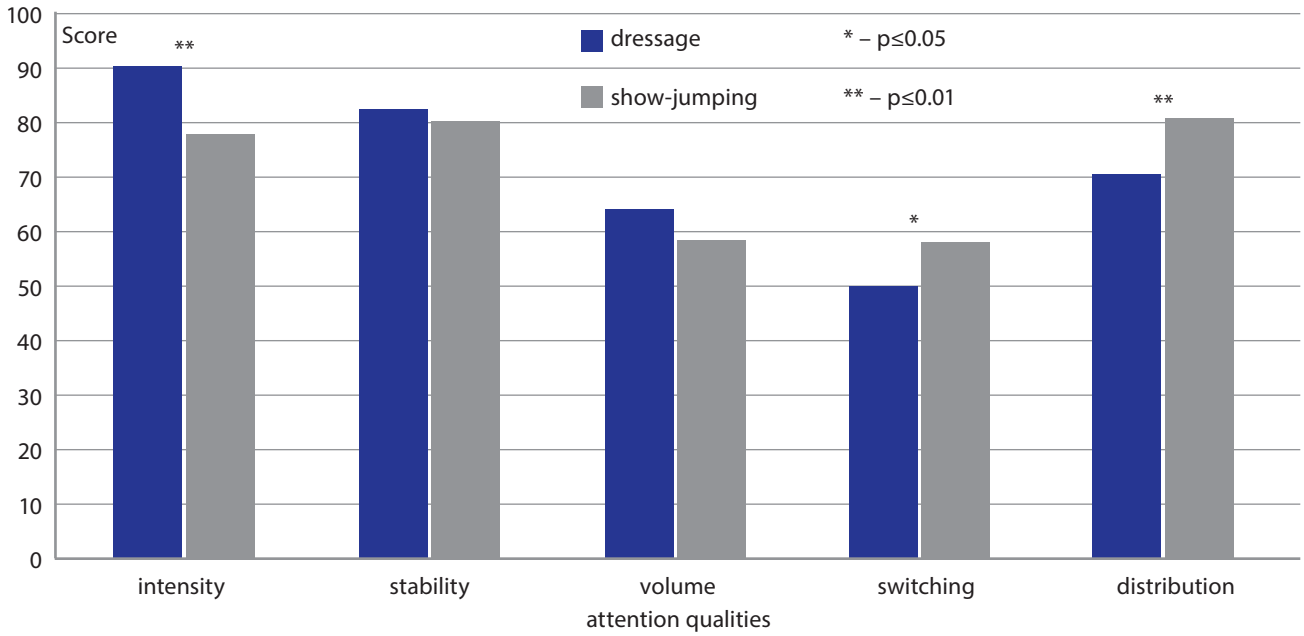


**Figure 2 – Attention qualities of high level athletes in dressage and show-jumping**

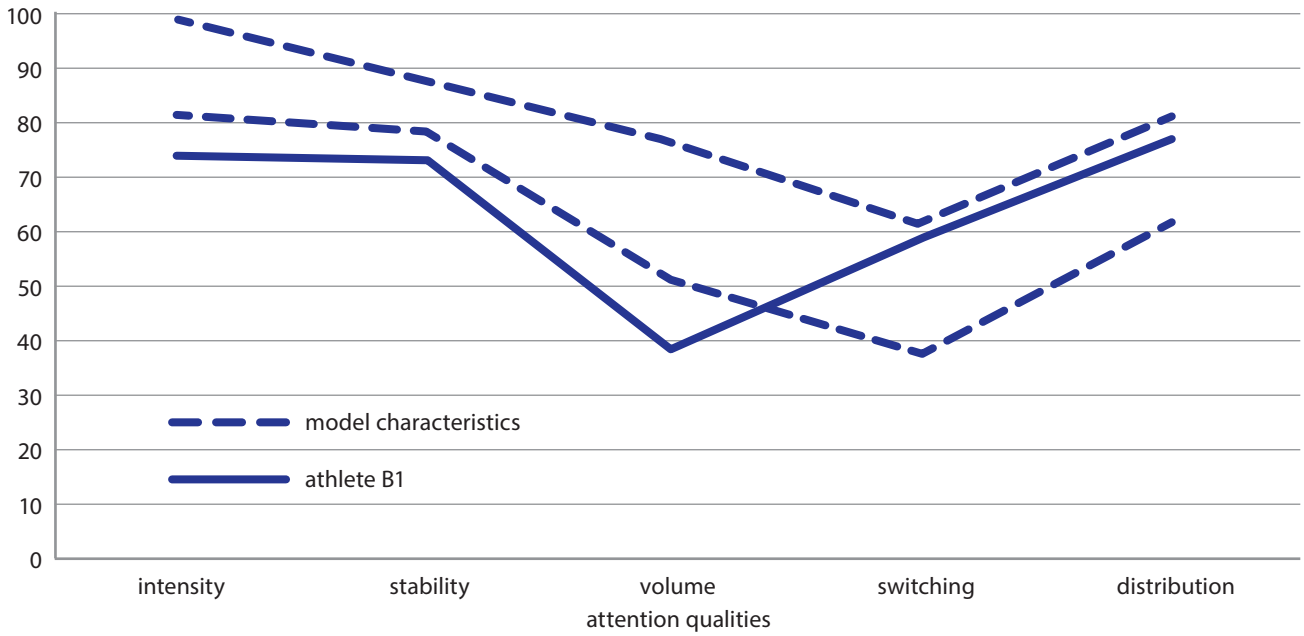


**Figure 3 – Comparison of the prior diagnosis results for the athlete B1 and the model characteristics in dressage**

calculated by means of indicators of average value and standard deviation (x±σ).

In the main part of the experiment took part 40 athletes CMS level and below. Comparison of average and high level athletes` attention qualities showed that in dressage MS in comparison with young athletes had higher intensity of attention (p≤0.01), stability (p≤0.05) and ability to distribute (p≤0.05). In show-jumping, MS showed higher intensity (p≤0.01), switching (p≤0.01) and distribution of attention (p≤0.01) compared to young athletes. Correlation analysis showed that for both dressage and show-jumping, there is a positive relationship between the ability to switch and to distribute attention (p≤0.001), as well as between intensity and distribution of attention (p≤0.05).

After carrying out the prior diagnostics of young athletes` attention, we randomly divided them into experimental and control groups. Prior to the

experiment, no significant differences in individual qualities of attention and competitive results between the groups were revealed. For each athlete in experimental group, comparison with model characteristics was carried out and those qualities of attention which need to be developed were revealed. For example, for athlete B1 engaged in dressage (Figure 3), it was necessary to increase the intensity, stability and volume of attention. As for the subject B1, similar schedules were constructed for each of athletes in experimental group and on their basis the programs of attention training were developed.

After 8-8.5 weeks from prior diagnostics, during which training in groups were held according to the experimental plan, repeated, similar diagnostics of young athletes` attention qualities were carried out. In young athletes engaged in dressage, in the experimental group there was a statistically significant improvement in attention intensity ($p \leq 0.01$), stability, volume, and distribution of attention ($p \leq 0.05$). In show-jumping after attention training, the athletes of the experimental group had a higher ability to distribute attention ($p \leq 0.01$), intensity and ability to switch attention ($p \leq 0.05$). In control groups (CG-1 and CG-2) no changes were found before and after the experiment.

As the main indicator of sports efficiency, we analyzed the subjects` competition results. For the dressage athletes, only in experimental group increase in the competition percent ($p \leq 0.01$) was revealed (Figure 4). In the group of athletes involved in show-jumping, a difference in experimental group was found, showing a decrease in the average time of distance passage ($p \leq 0.05$). In CG-1, there was an improvement in time, which, however, was not statistically significant due to the small sample size.

**Discussion.** Based on the high level athletes` attention diagnosis, it can be assumed that the athletes in dressage and show-jumping use different strategies to retain control over complex coordination activities. High level athletes in dressage perform successfully by attention keeping for a large number of objects with high intensity; and in show-jumping – by distributing and switching attention between key objects. For example, switching attention between their actions, horse behavior, and barriers that must be overcome. Perhaps also, in show-jumping to a greater extent need to quickly switch attention from one barrier to another.

The received results confirm that the applied technique of attention training, as a whole, influenced the athletes` attention qualities both in dressage and in show-jumping. Based on the experiment results, we can conclude that the method of attention training in experimental group, and the use of ideomotor training in CG-1 had a positive impact on the athletes` competitive efficiency. However, young athletes in dressage, engaged in the attention development, were able to significantly improve their results, in comparison with those who were engaged only in ideomotor training. In show-jumping, young athletes improved their competitive results through the use of attention

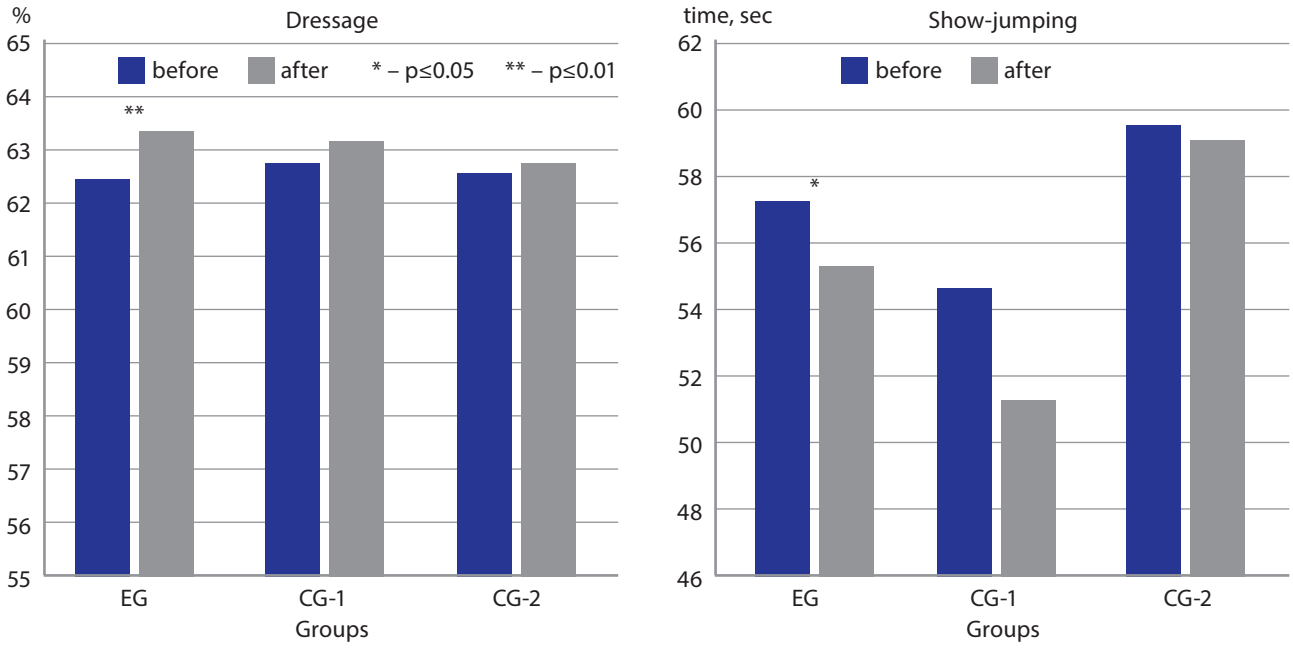


**Figure 4 - Comparison of prior and post experimental competition results in dressage and show-jumping**

development methods, as well as through ideomotor training. This confirms our hypothesis that application of attention training increases competition results.

**Conclusions:**

1. On the basis of high level athletes` diagnostics the attention model characteristics were developed for both dressage and show-jumping.

2. It is shown that young athletes involved in dressage and show-jumping were significantly different from the masters of sports on many qualities of attention.

3. On the basis of model characteristics and young athletes` individual diagnostics, the programs of attention training which were specific for each kind of sports were made for each athlete.

4. It is revealed that the systematic use of exercises for the attention development changes the ability of the athlete to express individual attention qualities and has a positive impact on its competitive results.

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