

## On the Issue of Formation of Cognitive Status and Non-Specific School Disapption In Children with Attention and Hyperactivity Syndrome

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### Abstract

*Attention-deficit hyperactivity disorder (ADHD) is one of the most common neurobehavioral disorders of childhood and is accompanied by significant changes in cognitive functioning, affecting the mechanisms of attention, executive control, working memory, and behavior regulation.*

Keywords: Neuropsychology, attention, behavioral disorders, child psychiatry.

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### 1. Introduction

The maintenance of stable cognitive activity in a school-age child is determined by the degree of maturity of neurocognitive mechanisms that ensure concentration of attention, control of impulsive reactions, processing of information and adaptation to the educational environment.

With attention deficit hyperactivity disorder, disruption of these processes becomes systemic and affects not only academic activity, but also the emotional and communicative sphere. According to the European Psychiatric Association, about 70% of children with ADHD experience severe learning difficulties already at the initial stage of school education, while 35–40% develop persistent signs of social maladjustment.

The cognitive status of a child with ADHD is characterized by heterogeneity and high variability of clinical manifestations. In some patients, disorders of selective attention and short-term memory predominate, while in

others, severe dysfunction of executive functions is detected, accompanied by an inability to plan and maintain a learning task.

Neuropsychological studies show decreased activity in the prefrontal cortex, which is involved in self-control and cognitive regulation. Magnetic resonance imaging reveals a decrease in the functional activity of frontal-subcortical structures by approximately 8–12% compared to neurotypical peers.

School maladaptation in ADHD is not limited to low academic performance. The structure of the disorders includes emotional lability, conflict, exhaustion, a decrease in the motivational component of activity and difficulties in interpersonal interaction. A child often demonstrates a high level of intellectual potential with a pronounced inability to realize it in an organized learning environment. Such a contradiction creates additional psycho-emotional stress for both the student and the teaching staff.

The practical significance of the study is due to the increase in the number of children with signs of neuropsychological immaturity in educational institutions. According to pediatric and psychoneurological observations in the CIS countries, symptoms of ADHD are detected in every 18–20 schoolchild, while less than half of the children receive timely specialized care. The lack of early correction contributes to the consolidation of behavioral and cognitive disorders, which increases the risk of developing anxiety disorders, school phobia and secondary social isolation.

Clinical practice demonstrates that children with attention hyperactivity disorder often have a preserved or even high level of general intelligence. For example, a 9-year-old child with an IQ of 112 on the Wechsler scale is able to successfully solve logical problems in an individual setting, but in a classroom setting he makes a large number of mistakes due to decreased stability of attention and increased distractibility. Cases like these support the need for a comprehensive assessment of cognitive profile rather than a formal analysis of school performance.

The study of the mechanisms of formation of cognitive status in ADHD is of particular value for child neurology, psychiatry, clinical psychology and correctional pedagogy. Establishing cause-and-effect relationships between neurocognitive deficits and school maladjustment allows us to develop more effective models of supporting children, including neuropsychological correction, behavioral therapy, family counseling and adaptation of the educational environment.

The study was conducted at children's neurological and psychological-pedagogical centers with the participation of 84 children aged 7 to 11 years. The main group consisted of 52 children with clinically confirmed attention deficit hyperactivity disorder according to the criteria of DSM-5 and ICD-10. The control group consisted of 32 apparently healthy schoolchildren without signs of cognitive and behavioral disorders. The gender distribution in the main sample was characterized by a predominance of boys - 73.1%, which correlates with international epidemiological data on ADHD.

The methodological structure of the study included clinical-anamnestic, neuropsychological, psychometric and statistical stages of analysis. The assessment of cognitive status was carried out using a set of diagnostic tools: the D. Wechsler intellectual development scale (WISC-IV), the Conners CPT-3 continuous performance test, a battery of neuropsychological tests by A.R. Luria, as well as the SNAP-IV scale to assess the severity of symptoms of

inattention and hyperactivity. Indicators of school maladaptation were determined on the basis of pedagogical characteristics, a survey of parents and an analysis of the level of educational performance.

The examined children showed pronounced impairments of voluntary attention, a decrease in the speed of information processing, and a deficit in working memory. The average rate of inattention errors in the CPT-3 test in children with ADHD was  $31.4 \pm 4.2$ , while in the control group this figure did not exceed  $11.7 \pm 2.1$ . Impairment of executive functions was accompanied by a decrease in the ability to make cognitive switching and control impulsive reactions. Special attention was paid to the analysis of family and social factors.

48% of children in the main group showed signs of chronic psycho-emotional stress in the family, 37% had pedagogical conflicts associated with violation of discipline and difficulties in mastering educational material. Such conditions intensified the manifestations of school maladjustment and formed secondary emotional and behavioral disorders.

Neuropsychological assessment revealed signs of functional immaturity of the frontal cerebral cortex in 69% of the children examined. Such changes were accompanied by insufficient programming of actions, impaired self-control and severe exhaustion of cognitive activity. Electroencephalographic data in some patients indicated moderate dysfunction of cortical-subcortical interactions with a predominance of slow-wave activity in the frontal areas.

Nonspecific school maladjustment was assessed not only through academic indicators, but also through analysis of the child's communicative behavior. 57% of children in the main group showed difficulties in group interaction, accompanied by social isolation or conflict. More than half of those surveyed reported complaints from teachers about a decrease in educational motivation and the inability to retain instructions for a long time.

A study of the cognitive status of children with attention deficit hyperactivity disorder revealed a stable relationship between impairment of executive functions and the formation of nonspecific school maladjustment. The most pronounced changes concerned the processes of concentration, behavior regulation and stability of intellectual activity. In 64% of the examined children, signs of severe exhaustion of cognitive processes were recorded,

accompanied by a decrease in educational productivity by the middle of the school day.

Such dynamics indicate insufficient maturity of the frontostriatal neuronal systems that provide control of cognitive activity.

It has been established that working memory deficit has a direct impact on the formation of learning difficulties. The average volume of auditory-verbal memory in children with ADHD was  $4.1 \pm 0.8$  units, with the age norm being 6–7 units.

The insufficiency of information retention mechanisms prevented the full assimilation of educational material and reduced the effectiveness of performing multi-stage tasks. Some patients showed a pronounced dissociation between the level of general intelligence and academic performance, which confirms the leading role of regulatory disorders in the structure of school maladjustment.

Analysis of emotional and behavioral characteristics showed that 57% of children showed signs of secondary anxiety, which formed against the background of chronic educational failure. The constant need for control by teachers, the high frequency of comments and difficulties in interpersonal interaction contributed to the development of emotional tension. This state was accompanied by an additional deterioration in concentration and a decrease in the motivational component of activity.

Of particular interest is the influence of the social environment on the severity of cognitive deficit. In children raised in conditions of increased intrafamily tension, impulsivity scores were 19–23% higher compared to patients who received stable emotional support. The presence of chronic psycho-emotional conflict increased self-regulation disorders and prevented the formation of adaptive behavior patterns. The results obtained are consistent with modern neurobiological ideas about the nature of ADHD.

The practical significance of the study is determined by the need for early identification of children at risk. A comprehensive neuropsychological examination allows you to timely determine the structure of the cognitive deficit and select an individual correction program. Using an interdisciplinary approach with the participation of a neurologist, clinical psychologist, teacher and family helps reduce the severity of school maladaptation and improve the quality of the child's cognitive functioning.

The study confirmed that attention deficit hyperactivity disorder is accompanied by severe impairments in cognitive functioning, affecting the processes of attention, memory, executive control and emotional regulation. The identified changes have a direct impact on the formation of nonspecific school maladaptation and significantly complicate the process of social integration of the child into the educational environment.

It has been established that cognitive deficits in ADHD are formed under the influence of a complex interaction of neurobiological and psychosocial factors. The high frequency of anxiety and emotional-behavioral disorders in the examined children confirms the need for an integrated approach to the diagnosis and correction of this disorder. Ignoring early signs of neuropsychological deficiency contributes to the chronicity of school failure and increases the risk of developing secondary psycho-emotional disorders.

The results of the study indicate the high effectiveness of early interdisciplinary support for children with attention deficit hyperactivity disorder. The combination of neuropsychological correction, psychological and pedagogical support and family counseling can significantly increase the level of cognitive adaptation, reduce the severity of behavioral disorders and improve the quality of the child's educational activities.

## References

1. Luria A.R. Higher cortical functions of humans - St. Petersburg: Peter, 2018. - 624 p.
2. Semenovich A.V. Neuropsychological diagnostics and correction - Moscow: Genesis, 2019. - 448 p.
3. Badalyan L.O. Child neurology - Moscow: MEDpress-inform, 2020. - 608 p.
4. Barkley R.A. Attention-Deficit Hyperactivity Disorder — New York: Guilford Press, 2021. — 898 p.
5. World Health Organization. ICD-11 for Mortality and Morbidity Statistics. — Geneva, 2022.
6. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders DSM-5. — Washington, 2022.
7. Wechsler D. WISC-IV Technical Manual — London: Pearson Education, 2020. — 436 p.