

EDUCATION OF STUDENTS WITH ADHD

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Abstract: Attention deficit / hyperactivity disorder (ADHD) is a neurodevelopmental disorder characterized by impulsivity, hyperactivity, and attention problems. These symptoms significantly affect the school and social life of students with ADHD, causing very often reduced school achievement. The aim of this paper is to familiarize with specificities of schooling students with ADHD. A review of available and relevant literature was performed by searching electronic databases Google Scholar, Serbian Library Consortium for Coordinated Acquisition (KOBSON), HRČAK portal of Croatian scientific and professional journals that offer open access to their works, as well as available printed books. The search was done through the search engines ScienceDirect, Ebscohost, SpringerLink and WileyInterScience. Numerous abilities of students that are important for schooling are in deficit. The cognitive specificities of students with ADHD are most often related to mild deficits and learning difficulties (reading, writing, and math). Poorer quality of verbal working memory, later language adoption, less developed vocabulary, short-term maintenance of attention, tendency towards fast transition from one activity to another and distractibility are just some of the common features of cognition of students with ADHD. Problems in motor development are registered, as well as in conative abilities. Students with ADHD are at risk of academic and social failure, and during schooling they have significantly lower average value of school grades for theoretical subjects compared to peers of typical development. Adapting the school environment to these students can significantly help in execution of school tasks. It is important to establish predictable routines, clear rules and restrictions. There are more and more of these students who are educated in regular schools, so the current question is which type of education is more efficient in this case. The paper provides recommendations for adjustments in school work with students with ADHD. The most important thing is to emphasize the importance of achieving optimal results in the education of these students, which must include the support of special educators-oligophrenologists, because teachers from regular schools do not have knowledge about methods and modifications of work within this disorder.

Keywords: ADHD, impulsivity, inattention, schooling, school abilities

1. INTRODUCTION

Attention deficit / hyperactivity disorder – ADHD (instead of hyperkinetic disorders defined in ICD-10), in DSM-5 and ICD-11, recognized as a neurodevelopmental disorder, has rightly found a place in this group. It is most often diagnosed in childhood, before the age of 12, but it can also linger through adulthood (APA, 2013; WHO, 2018). Symptoms ADHD include inattention (inability to maintain focus), hyperactivity (excess movements that do not fit the specific circumstances) and impulsivity (hasty actions that occur at the moment, without thinking). According to these symptoms, ADHD is divided into three subtypes: predominantly hyperactive-impulsive type, predominantly inattentive type, and combined type (Dawidowsky et al., 2019). Regardless of which type of this disorder is dominant in a child, the clinical picture includes significant symptoms of all three characteristics, but to different extent (inattention, hyperactivity and impulsivity) and they seriously affect the child's school, family and social life. Research shows that the disorder is more common in boys than in girls, more than three times. The same source states that frequent violations of rules and non-compliance with instructions by these students are noted in the classroom, with frequent conflicts with peers and teachers (Roberts et al., 2015). ADHD very often causes reduced school achievement, as well as social rejection and teasing by peers. Incomplete schooling and reduced intellectual achievement compared to peers are often registered with these students, although there are exceptions (Tresco et al., 2017). In order to achieve optimal results in each type of education, the support of a special educator-oligophrenologist is necessary, because teachers from regular schools do not have knowledge about the methods and modifications of their work with these students (Đurić-Zdravković, 2020). There are more and more students with ADHD who are educated in regular schools, and it is important to study this topic which deals with their specifics, learning abilities and schooling opportunities. The aim of this paper is to familiarize with specificities of schooling students with ADHD.

2. CHARACTERISTICS OF ADHD

According to the DSM-5, the symptoms within attention deficit disorder that are characteristic for students with ADHD are:

- neglect of details (oversight, or omission) and making mistakes due to carelessness in school work and other activities;
- difficulty focusing and maintaining attention during class, long reading, or conversation;
- frequent “absence” during conversation, even when there are no distractors;
- easy loss of focus and difficulty in following instructions for completing school assignments;
- difficulties in organizing school activities, messy school materials, poor time management – failure to meet deadlines;
- avoiding involvement in tasks that require cognitive effort;
- frequent loss of things, especially those related to schoolwork (books, pens, PE uniform, tablet, accessories for art and technical education...);
- easy distraction by external distractors;
- forgetfulness when needing to perform everyday responsibilities (APA, 2013; Dawidowsky et al., 2019).

Hyperactivity and impulsivity that are inherent for students with ADHD are manifested through:

- frequent fidgeting when sitting at a desk;
- often leaving their place from the school desk at times when sitting is expected to be mandatory;
- frequent running, or climbing in situations when it is not appropriate;
- often excessive questioning;
- frequent tendency to move;
- during the conversation, often “blabbers” words that are not appropriate for the situation, regardless of the consequences;
- difficulty in waiting his turn;
- interrupting and interfering with others (APA, 2013, Dawidowsky et al., 2019).

Students with ADHD should be regularly reminded of the activities they should perform in a specific situation (Tančić, 2019). Starting new tasks is difficult for students with ADHD, and when they start, they easily lose attention and find it difficult to return to them (Božac, 2017). Their thoughts often “wander”, and they may seem to deliberately ignore the teacher and the instructions given. However, if the students do not show signs of restlessness and hyperactivity, then they sit quietly at the desk and do not interfere with the work in the classroom. This leads to non-recognition of the type of ADHD based on inattention, and the student's failure is attributed to laziness and disinterest (Tresco et al., 2017). Student with ADHD cannot sit in his place for a long time, he starts working before he understands what he should do, he moves on to the next activity even though he has not finished the previous one, he has difficulties in organizing written works, the slightest stimulus distracts him from a certain activity, and his task becomes uninteresting after only a few minutes, unless he is doing something he enjoys (Kudek-Mirošević & Opić, 2010).

It is estimated that about 5% to 10% of children school and adolescent age have symptoms of ADHD (Cuffe et al., 2020; Owens, 2020). Genetic predisposition with environmental influences plays a significant role in development of ADHD. Heredity is determined up to 76%, with large differences in clinical manifestations (Prpić & Vlašić-Cicvarić, 2013).

3. METHOD

A review of available and relevant literature was performed by searching electronic databases Google Scholar, Serbian Library Consortium for Coordinated Acquisition (KOBSON), HRČAK portals of Croatian scientific and professional journals that offer open access to their works, as well as available printed books. The search was done through the search engines ScienceDirect, Ebscohost, SpringerLink and WileyInterScience. Lists of references from the papers were used, which were found on the basis of keyword searches in Serbian and English, such as: neurodevelopmental disorders, ADHD, schooling of students with ADHD, school abilities.

4. THE ABILITIES OF STUDENTS WITH ADHD IMPORTANT FOR EDUCATION

At cognitive level, students with ADHD most often have mild deficits, learning difficulties (reading, writing, and math), difficulties in estimating the time required to complete a task and to plan activities. They have poorer quality of verbal working memory, and reduced sensitivity to mistakes, which leads to poorer success at school (Sedlar, 2019). They adopt language late, have less developed vocabulary, express ideas less and illogically, have difficulties in verbal problem solving, difficulties in listening to and following verbal instructions, and delayed development of moral reasoning. Students with ADHD are more likely to have difficulties in motor development, especially fine

motor skills, which makes it difficult to learn to write and affects child's school achievement (Cuffe et al., 2020; Sedlar, 2019). Attention deficit of students with ADHD is characterized by short-term maintenance of attention, tendency to quickly switch from one activity to another, distractibility and lack of perseverance in tasks that require cognitive effort (Krstić, 2008). These difficulties lead to various problems such as the inability to follow instructions and adhere to rules, as well as forgetfulness in everyday activities (Bandov, 2019). Disinterest is dominant during school class, which is often explained by reduced interests, although at its basis is impossibility to keep attention to the content or situation in which the student is currently in (Bartolac, 2021). In addition to working memory and attention, students with ADHD also have difficulty with internal speech, which is the basis for moral behavior and acceptance of social rules (Bandov, 2019). Difficulties in inhibiting inadequate responses, a rapid decline in efficiency on the tasks of prolonged attention maintenance in terms of the number of errors, as well as a slower response time, are common findings in students with ADHD. The primary deficit in these students is not based on the lack of selectivity of attention, but on the limited ability to use the capacity necessary to perform responses, which leads to the conclusion that these students have impaired executive rather than perceptual component of attention (Krstić, 2008). Impaired working memory, cognitive flexibility, inhibitory control, attention regulation, difficulties in organizing thoughts, sequencing, organization of objects and time, as well as instability in investing efforts, makes it difficult to follow classes and instructions, write notes, complete homework and schoolwork, reading, counting, calculus, writing and learning materials (Bartolac, 2021). Students with ADHD have significant problems in social adjustment which leads to teasing and rejection by peers (Đurić-Zdravković, 2020), and that also adversely affects overall school success.

5. SCHOOL ACHIEVEMENT OF STUDENTS WITH ADHD

Students with ADHD are at risk of academic and social failure including grade repetition, low self-esteem, and abuse. It was found that about 30% of students with ADHD repeats the grade, 57% are covered by special education services, over 46% drop out of school, 10-20% are expelled from school, and 10-35% fail to finish high school (Dizdarević, 2014). Symptoms of ADHD are especially pronounced in the school environment, where a weaker academic achievement can be observed in relation to intellectual potential. During schooling, they have significantly lower average value of school grades for theoretical classes compared to peers of typical development (Bartolac, 2021). Students with ADHD achieve uneven success in different classes and areas of work (Cuffe et al., 2020; Dizdarević, 2014). They have difficulty writing, especially when it comes to handwriting and writing speed. They also have difficulty with written expression related to the content organization, writing notes, copying from the board, dictation and homework. Difficult regulation of attention and lack of motivation are cited as the dominant reasons for difficulties when writing homework. Doing homework leads to feeling of fatigue, frustration and guilt, because they fail to do all the tasks successfully. During reading, most difficult for them is to maintain attention, especially if the text is long, or they are asked to read in noisy environment and in a room with other distractors. Reading comprehension is difficult due to limitations in attention and working memory (Bartolac, 2021; Owens, 2020). They achieve better results on reading comprehension tasks when they are asked to read the text aloud, and not in silent. They are more successful when answering orally than in writing (Dizdarević, 2014). Calculus is a problem for most of these children, due to difficulties with attention, working memory (simultaneous handling of multiple numbers) and inhibition of hasty reaction (Bartolac, 2021).

In order to overcome the problem of talking during classes and disturbing other students, it is useful to give the student the opportunity to verbally participate in teaching and solving tasks. Programming interaction between students with ADHD and peers who represent a model of desirable behavior, as well as sitting in small groups leading to greater verbal participation, has been shown to be effective in working with these students. During classes, rules and instructions should be short and clear, and rewards immediate and frequent. Verbal and visual support during problem solving can improve achievement (Dizdarević, 2014; Đurić-Zdravković, 2020).

6. ADAPTING THE SCHOOL ENVIRONMENT TO STUDENTS WITH ADHD

The classroom environment is very important for all students, but it is especially important for students with ADHD. Traditional classrooms are set up so that the tables are facing the teacher, and such an arrangement is generally best for these students as well. It is important to establish predictable routines, clear rules and restrictions. It is desirable to use visual support with rules that would be positioned in a visible place in the classroom (Đurić-Zdravković et al., 2020). One of the strategies that needs to be applied often refers to the duration of the task. It is important that the task is short, tailored to student's abilities and that contains immediate feedback from the teacher. It should be possible for students to take short breaks while working on assignment that requires a lot of time. Peer teaching has been shown to be beneficial for students with ADHD in both increasing behavioral and academic achievement. It is recommended for peer tutor to be the same gender, but to have better academic achievement than student with

ADHD. It is possible to involve other students in the tutoring process, where it is important that teacher carefully controls and leads the whole process (Brock, 2009). Using a schedule is very important, because academic performance of students with ADHD worsens as the day passes by, so it is recommended that the instructions are presented in the morning. After that, during the day, a schedule of non-academic activities that require physical engagement should be planned. It is important to simplify and specify school instructions. To ensure understanding of tasks, a student with ADHD should repeat the instruction given to him by the teacher. It can also be helpful if the student is allowed to choose activities, which results in a reduction in disruptive behavior and increases the likelihood that the student will complete the whole task. Eliminating irrelevant distractions such as toys or images of cartoon characters from the work environment is also an effective modification (Brock, 2009; Đurić-Zdravković et al., 2020).

The symptoms of this disorder can be alleviated when the student is provided with adequate support, frequent external rewards and praise, dealing with something particularly interesting and personally important, as well as in the socio-educational situation “one on one” (Tresco et al., 2017).

7. INSTEAD OF CONCLUSION

Students with ADHD represent a very heterogeneous group according to the form and degree of symptom manifestation, regardless of intellectual potential. The progress of these students in school, as well as the possibility of schooling, varies greatly from case to case. There is no specific profile of academic skills and achievement that applies to all students with ADHD. For this reason, educational planning should be based on a detailed assessment of potential and weaknesses of each student with this clinical picture. Furthermore, there are more and more of these students who are educated in regular schools, so the current question is which type of education is more effective in this case (inclusive or special). Regardless of different attitudes that favor one or the other, it cannot be disputed that individual assessment and approach to each student, as well as the involvement of special educators in the education of these children, is very important for achieving maximum educational benefits.

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