



Social and Educational Skills of University 'Students with Diagnosis ADHD (Attention Deficit Hyperactivity Disorder)

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Abstract	Original Research Article
<p>The present research paper in which the occurrence of Attention Deficit Hyperactivity Disorder [ADHD] among University students is constantly increasing after the recognition it by Greek Law 3699,2008 [1]. Studies [2] focus both on the social isolation of young people due to ADHD and on their participation in delinquent behaviors [3] ; [4]. The present study investigates the ADHD syndrome as reflected in twenty of students at the University with the corresponding specific learning difficulties in social and educational skills. The data were enriched with weekly sessions that supported the individual study method in the context of metacognitive skills training, with targeted, individual structured inclusive pedagogical interventions in special education adapted to higher education [T.I.S.I.P.S.E.3 T]. The results confirmed the continuity of social and educational difficulties that significantly affect the academic progress and perspective of students with ADHD.</p> <p>Keywords: Attention Deficit Hyperactivity Disorder Syndrome, Students, [T.I.S.I.P.S.E.3 T], Universities</p>	

INTRODUCTION

Attention deficit hyperactivity disorder (ADHD) has gained increasing attention in the past three decades. It is seen across all ethnicities, racial groups, and social classes, with an estimated prevalence of 84.7 million (National Institutes of Health, 2015), Association of People with Attention deficit hyperactivity Disorder (ADHD) - Europe, 2020) [1] . It appears in the developmental course of the individual and affects his ability to concentrate on a certain task and complete it, as is the case with students. It is a lifelong condition with a typical onset before the age of six. Hyperactivity in adults is recorded with executive dysfunction, memory difficulties, impulsivity, inability to sit still, constant restlessness, inability to concentrate on tasks, excessive thinking, excessive physical movement, excessive talking, inability to wait their turn, actions without thinking (American Psychiatric Association,

2013) [2]. In the special education teacher's book, has included learning readiness activities in the neurodevelopmental area of mental abilities with an emphasis on concentration of attention (Ministry of Education-Pedagogical Institute, 2009) [3]. The rationale for this project, with the data of that period, was based on the pedagogical care of school-age children and adolescents with attention deficit with or without hyperactivity because it was the most frequent behavior at a rate of 3%-5% that teachers encountered alongside the accompanying specific learning difficulties [5]. With boys being more affected than girls, at rates of 3:1 to 9:1 with descriptions that are reflected as inappropriate behavior or antisocial behavior or delinquency [8].

According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) of the American Psychiatric Association and the ICD-10 diagnostic tool (International Classification of

Diseases: F90 and ICD-9: 314.00, 314.01), “Attention Deficit Disorder with or without Hyperactivity” has certain forms that manifest “to a degree disproportionate to the age of the children”. The first refers to ADHD with the inattentive type predominating, which is found in both boys and girls, the second with the hyperactive-impulsive type predominating, which is more common in boys and the third form of the combined type, with hyperactivity and inattention together. Individuals of the first type have difficulty staying focused, those of the second type show increased motor activity and speech compared to their peers, as well as acting spontaneously, without thinking twice, and those of the third type combine all of the above. In conclusion, the three main characteristics of the disorder are hyperactivity, inattention and impulsivity [9]. The causes include both genetic and environmental factors, with differential diagnosis being the basic diagnostic method, based on which symptoms and behavioral problems are examined in an interdisciplinary manner after excluding other possible causes. Environmental factors include smoking and alcohol use by the mother during pregnancy, lead poisoning, excessive time spent on or dependence on screens, smart phones, which often indicate inadequate parental care, parental neglect, parental abuse, and living in an environment of domestic violence [10]. In terms of genetic factors, scientists agree that ADHD is not the result of a single factor and are examining heredity, exposure to toxic agents, brain injuries, long hours of daily exposure to screens, as possible causes [11]. Research into the neurophysiology of the frontal lobe of the brain and the neurogenetics of neurotransmitters such as dopamine and noradrenaline demonstrates inhibitions that affect the function of other neurotransmitter systems as well. Special education interventions and training, psychotherapy, lifestyle changes, and medication, which includes Central Nervous System stimulants, such as methylphenidate, mixed amphetamine salts, atomoxetine, guanfacine, clonidine, are often recommended [12].

Students Entering Higher Education with A Diagnosis of ADHD

The necessity of this study arose from the

frequency of students entering higher education with a diagnosis of ADHD and the investigation of educational skills at the level of academic knowledge [13]; [14]. This necessity was also reinforced by the weekly heteroobservations with male and female students with ADHD that I met at two universities [one regional and one metropolitan] with specific learning difficulties [10]. They are characterized by difficulties in coordinating movements, with little or no sports activity and vulnerability to accidents [2]. They also had difficulty sleeping, had difficulty falling asleep at night and waking up in the morning, missed morning classes and were excessively sleepy during the day [15]. They often had aggressive behavior, drove dangerously, received calls for impaired driving, for excessive speed and violation of the Road Traffic Code signs [15]; [8].

In the hypotheses of the work, educational difficulties were examined with regard to the adaptive abilities of the sense of time, since this is directly linked to the functional memory known as non-verbal working memory. In particular, educational difficulties included people with special educational needs during the covid 19 period [8] up to and including 2024, who were examined with facilities in the national exams due to diagnosed ADHD [1]. In this hypothesis, it was also examined whether the behavior of procrastination affects the comprehension of texts in the individual study method of students with special learning disabilities [16]; [17].

In the second case, social difficulties were examined, with an emphasis on irritability and intense emotional reactions, in students with ADHD who come to student care and request facilities in the examination process [18]; [19]. These conceal mental disorders with depressive symptoms, which burdened the individual study method of students [12]. The research was conducted without funding and was carried out during the pandemic and until the academic year 2024-2025, focusing on ADHD, mental disorders and the individual study method of students with specific learning disabilities [SpLds] with an emphasis on text comprehension and procrastination. All students stated that they had received special education services since kindergarten [13]; [19] and requested more examination time in order to answer with cognitive adequacy in the lessons. The students with ADHD, whom we met, stated that they had difficulties in educational skills

when asked:

- - to illustrate handwritten graphs, to take notes from course lectures,
- -to answer development questions orally in a certain time,
- -to prepare the individual study of the course they have declared they will be examined,
- -to remember the lesson they are studying "at the last minute", just before the exam.

Educational skills were recorded with certain special education and training [S.E.T.] protocols through the empirical observation of difficulties in concentrating attention in the routine with the individual study method, calculating the time spent concentrating attention in studying with and without interruptions in adhering to assignment delivery schedules, hyperactivity in attending classes in the auditorium and in the laboratory, concentration with hyperactivity in attending a certain time for a course examination, in a certain place - a course examination room and in a certain way of assessing proficiency in the course. The same students stated that they had difficulties with social skills when asked:

- -discuss what makes academic routines difficult for them,
- -discuss the rejection or disappointment they experience in dealing with others,
- -negotiate with others the specific learning difficulties due to ADHD,
- -to understand the reasons for their procrastination when they did not physically attend classes.

As Christakis has teach us, the social skills were recorded with certain SET protocols with empirical heteroobservations of difficulties in concentrating attention in communication, inattention in keeping schedules, in hyperactivity in interactive transactions with others, in concentration and

hyperactivity in the company of peers but also in individual meetings with teachers. They also recorded difficulties in impulsivity, with emphasis on self-esteem, the meaningful acceptance of failure and control of behaviors of anger, sadness, extreme emotional swings and insecurity. But also difficulties in verbalizing interests in learning, as well as difficulties in cooperating with others without the manifestation of unpredictable behaviors.

Research Methodology

The methodology of this research was carried out in the field of special education in higher education with the pedagogical tool represented by the acronym [T.I.S.I.P.S.E.3 T], by applying the "through" special education proposal for inclusive education of children and young people with special needs [1]. This condenses the pedagogical principles that govern the education in metacognitive skills of students with Splds and refers to the targeted, individual, structured, inclusive special education intervention program in higher education. Accordingly, the methodology of heteroobservations of SET [20]; [21] is used in the individual study method T.I.S.I.P.S.E.3 T, with emphasis on the comprehension of texts with the Informal Pedagogical Assessment in the cases of university students with ADHD using the Greek ADHD Assessment Scale-IV [11]. This has been extensively described in the book "Special Education Portfolio and Interventions in Tertiary Education" following the ADHD narrative that has been presented in the book "Special Education Handbook and Narratives of Education" [13].

Table 1 presents the twenty participating students diagnosed with ADHD, of whom fifteen are men with an average age of 19.11 years and five are women with an average age of 19.01 years. Ten (seven men and three women) have been diagnosed by the diagnostic services under the jurisdiction of the Ministry of Education and ten (eight men and two women) have been diagnosed by University Hospital Clinics under the jurisdiction of the Ministry of Health, with seven (six men and one woman) having received a disability certification 60% with other accompanying difficulties that burden mental health.

Table 1: Study subjects

Sex	Number	Average age	Diagnostic body: Ministry of Education	Diagnostic agency: Ministry of Health	Disability Certification
Male students with ADHD	15	19.11 years	7	8	6
Female students with ADHD	5	19.01 years	3	2	1

Table 2: Social skills of students with ADHD

Social skills-empirical observations of difficulties	Informal Pedagogical Assessment - behavioral restrictions	[N=20 students], 100%
[1]Concentration of attention - communication	Telephone and online communications	[15], 75%
[2] Attention span - schedules	Carelessness in keeping schedules	[18], 90%
[3]Attention - interests in learning	Controlling anger and sadness behaviors	[5],25%
[4]Hyperactivity- dealing with others	Deficient interactive relationships	[17], 85%
[5]Attention and hyperactivity	Participation in groups with peers	[10],50%
[6]Attention and hyperactivity in one- on-one meetings	Negotiation with their university teachers	[5], 25%
[7] Attention – hyperactivity- impulsivity	Volatile transactions	[4],20%
[8] Impulsivity - self-esteem	Meaningful acceptance of failure	[2], 10%
[9]Impulsivity-interest in learning	Extreme emotional swings and cognitive insecurity	[4],20%
[10] Impulsivity - cooperation with others.	Emotional instability	[5], 25%

Table 3: Educational skills of students with ADHD

Educational skills-empirical observation of difficulties	Informal Pedagogical Assessment of ADHD-restrictions behaviors	[N=20 students], 100%
[1]Focus on individual study method	Understanding texts	[18], 90%
[2]Calculating the time it takes to concentrate on studying without interruptions	Individual method less than 60 minutes of continuous study	[18], 90%
[3]Calculating attention span in studying with breaks	Individual study preparation	[10],50%
[4]Maintaining work delivery schedules	Group work	[4], 20%
[5]Hyperactivity in attending classes in the auditorium	Lack of physical presence	[10],50%
[6]Hyperactivity in attending classes in the laboratory	Handwritten notes-working memory	[14]. 70%
[7] Concentration with hyperactivity in the exam syllabus	Specific date and time	[8], 40%
[8]Concentration with hyperactivity in the exam room	Attendance at a specific place - hall	[4], 20%
[9]Concentration with hyperactivity	Investigation of the examination method	[8], 40%
[10] Concentration with impulsivity	Self-assessment of performance in the course	[17], 85%

Research Results

The effects on social and educational skills are recorded with difficulties in understanding the rules and obligations that govern the academic curriculum in the university community and are reflected in the quality of behavior in daily interactive relationships with others. Furthermore, significant cognitive deficits were identified that are accompanied by asymmetrical educational difficulties. Students with ADHD have difficulty concentrating on a specific activity. The results recorded the responses to social skills with empirical heteroobservations of difficulties ranging from 10%-90%. In Table [2] with the Informal Pedagogical Assessment, behaviors in telephone and online communications [15], 75%, inattention to schedules

[18], 9% , in deficient interactive relationships [17], 85% and in participation in groups with peers [10], 50% are noted with great limitations. It seems that the concentration of attention and hyperactivity in one-on-one meetings. Minor limitations are highlighted in behaviors observed in anger control, sadness[5], 25%, in negotiation with teachers[5], 25%, with volatile transactions[4], 20%, extreme emotional swings, with cognitive insecurity[4], 20%, and emotional instability [5], 25%, in the cognitive acceptance of failure [2], 10% due to limitations in attention span, hyperactivity and impulsivity.

The results also recorded the responses to educational skills with empirical heteroobservations of difficulties ranging from 20% to 90%. In table [3] with the Informal Pedagogical Assessment, the

behaviors in concentrating attention in understanding texts [18], 90% with the routine of the individual study method, in calculating the time of concentrating attention in studying without interruptions less than 60 minutes of continuous study [18], 90% and with interruptions in preparing individual study [10], 50% with hyperactivity in attending classes in the auditorium with deficient physical presence [10], 50% and in the laboratory with handwritten notes and working memory [14], 70% and major limitations in self-evaluation of

performance in the course [17], 85% . It seems that their attention jumps from one activity to another and they rarely complete what they start. Minor limitations in behaviors are highlighted, which are observed in keeping delivery schedules by participating in group work [4], 20%, with reduced concentration of attention at a certain date and time and hyperactivity in the examination schedule of courses [8], 40%, in attending a certain place - room [4], 20% and in investigating the examination method [8], 40%.



Pedagogical principles that govern the training in metacognitive skills of students with special learning difficulties and refer to the targeted, individual, structured, inclusive special education intervention program in tertiary and

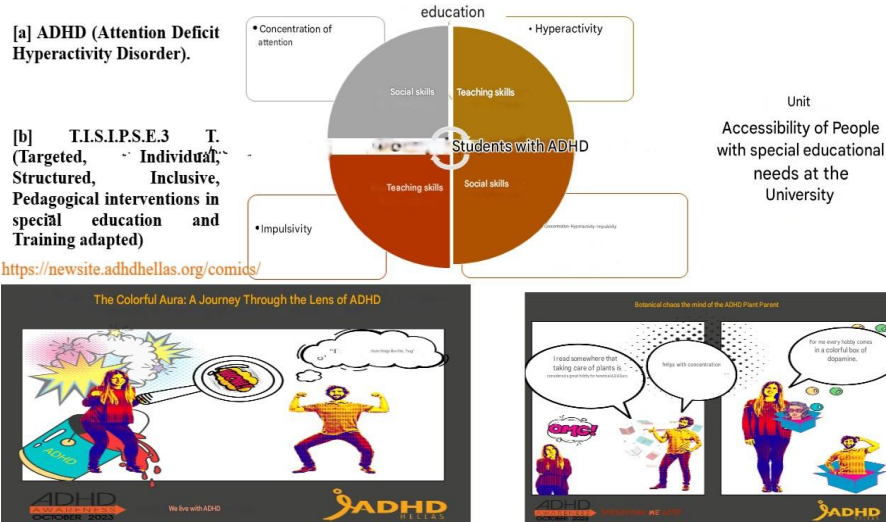


Figure 1: Social and Educational Skills of Students with ADHD with the [T.I.S.I.P.S.E.3 T].

The difficulty in concentrating intensifies during the exam period when they seem to be confused, they often lose things and often do not react when others address them, while they have difficulty thinking in advance about the consequences of their actions and answering questions before they are completed. Impulsivity affects both social and educational skills and is characterized by low self-control, careless mistakes and demands for immediate satisfaction of needs without interactive relationships. In image [1] we represent the graph with the types with ADHD

framed by excerpts from the comic with Avra, another woman, who for years was in undiagnosed and uncharted waters not knowing that she has ADHD, designed by the Hellenic Society for the Study of ADHD.

Conclusions

With the premise that general education and special education are two sides of the same coin [18]; [3], at all levels of education, modern trends are proposed for students with ADHD. In the main

conclusions, educational and social skills are discussed in the context of the metacognitive skills educational program as part of a combination treatment, which may include medication, psychotherapy and other management strategies with the pedagogical tool [T.I.S.I.P.S.E.3 T] [16]. The first concluding point highlighted the special educational needs of university students with non-neurotypical (ADHD), as a neurological disorder that affects their learning ability and behavior. It is the result of brain dysfunctions in the areas responsible for controlling attention and impulses and in the executive functions that control cognitive processes, motor ability and social interaction.

The second concluding point highlights the necessity of supporting students with the [T.I.S.I.P.S.E.3 T], with an emphasis on metacognitive skills and awareness of the individual study method in understanding texts. The metacognitive exercises focus on issues such as timely attendance at the University, reading comprehension and organization of numerical thinking. Exercises that support selective attention, note-taking, organization of thought at a written and oral level, retention of auditory information and following instructions. Furthermore, metacognitive exercises are applied to impulse control by teaching them to respond when spoken to, to verbalize their emotions and to observe the rules that govern the academic community. Awareness exercises around the relationships of students with special educational needs and disabilities at the University that highlight the importance of meaningful contact and interaction with fellow students. The third concluding point concludes with a unified way of supporting both educational and social skills, including strategies for managing memory difficulties, calculating study time, stress control, with unified metacognitive awareness exercises regarding alcohol and caffeine consumption. But also awareness exercises of daily routine-daily program- at the University with an emphasis on the individual study method. These include negotiating the SpLds due to ADHD with others in the community, when it affects social skills, relationships with peers and teachers, with the understanding that dysfunctional behaviors distance them from others and their peers. The fourth

concluding point supports students with ADHD to participate in group work and undertake group projects, without fear of failure and not finding effective solutions to the problems that arise. Given the limitations to adapt their behavior according to the academic curriculum at the university, the examination program of each semester, and the individual study method with which they have been working since elementary school. For this reason, they are encouraged to utilize and combine the use of visual, auditory, tactile and experiential methods.

In conclusion, university students with ADHD, individuals with SpLds need appropriate adjustments in teaching and assessment with copies of notes or slides from fellow students, teachers, more time for exams in a quiet and distraction-free environment, with breaks during exams and precise and clear wording of the topics being examined. Of course, the use of a computer, the possibility of alternative types of exams with oral answers, writing assignments with more time to complete them and the use of a word processor with spell checking and provision of auditory feedback are advisable. In our opinion, the present study needs to be continued in a larger sample of participating students with ADHD because more and more candidates with special educational needs are enrolling in university with accommodations as people with disabilities and or specific learning difficulties.

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Acronyms

[a] ADHD [Attention Deficit Hyperactivity Disorder]

[b]T.I.S.I.P.S.E.3-T. [Targeted,Individual, Structured, Inclusive, Pedagogical interventions in special education and third level university Training]

[c] SpLdS [Specific learning difficulties]

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