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Diagnosis or Social Construct?
Perspectives of Parents, Teachers, and School Psychologists on Students with ADHD in Bihor County, Romania

Dissertation submitted in partial fulfilment of the requirements for the doctoral (PhD) degree in **Sociology of Education** (discipline name)

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Prepared in the framework of the Doctoral School of Human Sciences
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(Doctoral Program on Educational Sciences)

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Theses of Doctoral (PhD) Dissertation

Diagnosis or Social Construct? Perspectives of Parents, Teachers, and School Psychologists on Students with ADHD in Bihor County, Romania

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University of Debrecen

Doctoral School of Human Sciences

Doctoral Program on Educational Sciences

2025

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I have not submitted the present dissertation at another institute before, and it has not been rejected.



DIAGNOSIS OR SOCIAL CONSTRUCT? PERSPECTIVES OF PARENTS, TEACHERS, AND SCHOOL PSYCHOLOGISTS ON STUDENTS WITH ADHD IN BIHOR COUNTY, ROMANIA

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INTRODUCTION

Attention-Deficit/Hyperactive Disorder (ADHD) is one of the most commonly identified childhood disorders (Aman et al., 1998) which remains a subject of ongoing controversy, with debates surrounding its nature, causes, and diagnostic process. While the clinical paradigm predominantly defines ADHD as a biological disorder—a persistent pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development (American Psychiatric Association, 2022)—alternative perspectives suggest that ADHD may be more of a social construct than a medical condition.

The most vehement critiques of ADHD medicalization were addressed by the sociologists. Psychiatrists or physicians attend to stakeholders in collecting information about the students with ADHD, and not on the genetic and neuroanatomy investigations. Some sociologists consider that ADHD is not a biological or psychiatric disorder, and it can be better explained by environmental causes or even by personality type (Edmunds, 2011; Hacking, 2000; Timimi, 2015). Because some members of organizations, such as physicians, parents, and teachers, determine which diagnostic criteria are used, there are researchers who support this different theory of ADHD and consider that ADHD is invented and not discovered (Clinard & Meier, 2014).

Research Context

In Romania, the prevalence of ADHD quickly ascended, from 6.77% in 2010 (Dobrescu, 2010) to 8.8% in 2013 (Rad et al., 2017). The increasing prevalence of ADHD in schools has fueled debates about its diagnosis, revealing significant disproportionalities across different populations and cultural contexts (Lakoff, 2000). While ADHD is often treated as a neurological disorder, scholars like Cohen (2006) and Rafalovich (2008) argue that it is largely shaped by social perceptions and environmental stressors. This perspective challenges the dominant medical model and highlights inconsistencies in how ADHD is diagnosed and treated worldwide.

Timimi and Timimi (2015) argue that ADHD's global recognition has been driven in part by online discourse and pharmaceutical marketing. Jutel (2009) highlights that psychiatrists hold the power to define disorders, while digital platforms contribute to the widespread promotion of psychiatric labels (Lloyd et al., 2006). Hawthorne (2013) and Robin (1998, as cited in Bradley-Klug & Grier, 2000) further suggest that modern culture,

including mass media and video games, may contribute to ADHD-like behaviors, with pharmaceutical companies benefiting from the increased demand for medication.

The influence of the pharmaceutical industry introduces another level of disproportionality in ADHD diagnosis. Reports indicate a rapid rise in ADHD drug prescriptions, including antipsychotics for treating aggression (Kanhere, 2024), raising concerns about overmedication and profit-driven diagnoses. Wedge (2015) reveals how a French neuroscientist from Lyon told her that French child psychiatrists were feeling strong marketing pressure from drug companies to diagnose ADHD and prescribe medication. One of the most striking disproportionalities identified in ADHD treatment is the vast difference in medication usage between countries. Amaral (2007, as cited in Graham, 2010) found that between 2003 and 2005, per capita methylphenidate consumption in the U.S. was six times higher than in Australia, eight times higher than in Spain, and 18 times higher than in Chile. If hyperactive symptoms occur at similar rates globally, these discrepancies suggest that ADHD is perceived and treated differently across cultures, with some countries medicalizing the condition while others approach it as a behavioral issue.

Another major disproportionality is the gender gap in ADHD diagnoses. Studies consistently show that boys are diagnosed more frequently than girls (Reeves, 2022; Rucklidge, 2008), likely due to differences in symptom presentation. Boys tend to exhibit more hyperactive behaviors, making their symptoms more visible, whereas girls often display inattentiveness, which may be overlooked (Levy et al., 2005; Rucklidge, 2008).

These disproportionalities in ADHD diagnosis (whether geographic, gender-based, or influenced by the pharmaceutical industry) underscore the need for a closer analysis. Social perceptions, subjective evaluations, and commercial interests all play a role in shaping how ADHD is understood by stakeholders and diagnosed by the psychiatrists. Addressing these disparities requires a comprehensive framework that integrates medical, social, and educational considerations to ensure fair and accurate diagnosis and intervention.

Rationale

Understanding the ADHD diagnosis process is crucial in education, as schools play a fundamental role in both socialization and social control. Hatos (2006) highlights that schools instill values, norms, and behavioral expectations, shaping students into social agents. However, students diagnosed with ADHD often struggle to conform to these expectations, particularly when ADHD coexists with other disorders. Their difficulties in maintaining focus, completing tasks, and adhering to school rules frequently lead to

disciplinary problems, prompting teachers and parents to seek medical evaluations. This dynamic underscores the significant role educators play in shaping ADHD diagnoses, as they are often the first to observe and report disagreeable behaviors in the classroom.

One initial rationale behind this dissertation was that despite the increasing global focus on ADHD, research on this topic remains scarce in Romania. A search conducted in October 2020 in the ProQuest database using the keywords "ADHD in Romania" yielded no results. Further searches in Scopus and SpringerLink revealed very few studies examining the profile of students diagnosed with ADHD in Romania. This gap in research is particularly concerning given the significant rise in ADHD diagnoses in the country, from 6.77% in 2010 (Dobrescu, 2010) to 8.8% in 2013 (Rad et al., 2017). However, the diagnostic process remains inconsistent, relying heavily on subjective observations from teachers and parents rather than standardized assessments (Iancu, 2007; Wedge, 2015).

A primary reason for conducting this research was this growing concern over the accuracy of ADHD diagnoses in students; on the other hand, several educational rationales support the necessity of studying the diagnostic process to ensure more informed, equitable, and evidence-based practices in schools. Historically, in the school environment, ADHD symptoms were classified in social and moral terms, with labels such as “class clown,” “day-dreamer,” or “Tom-boy” (Hawthorne, 2013). Since the 1990s, sociologists and education researchers have analyzed ADHD more critically, questioning the medicalization of behavioral differences. Students with ADHD frequently experience academic struggles, disobedience, off-task behavior, hyperactivity, and impulsivity (DuPaul, 2007). These symptoms contribute to educational challenges and social difficulties, such as struggles with peer relationships and conflicts with teachers, which are central issues for students with ADHD (Hinshaw et al., 1989; Hinshaw & Scheffler, 2014).

Teachers often find it challenging to work with active and inattentive students, particularly in mainstream schools. Stakeholders' perceptions of students' provocative behaviors can significantly influence the path to an ADHD diagnosis, sometimes leading to misidentification. When a teacher interprets challenging or disruptive behavior—such as noncompliance, impulsivity, or defiance—as symptoms of a disorder rather than as reactions to environmental, emotional, or pedagogical factors, they may unintentionally initiate a request for clinical evaluation. These perceptions are shaped by personal beliefs, past experiences, and varying levels of training in behavioral and developmental disorders (Drugaș, 2015). Without a comprehensive understanding of the child's background or alternative explanations for the behavior, the stakeholders’ interpretation may carry

disproportionate weight in the diagnostic process. As a result, students who are merely reacting to unmet needs, inconsistent discipline, or other classroom dynamics may be mistakenly labeled with ADHD, leading to inappropriate interventions and stigmatization rather than an appropriate support.

After the diagnosis is established, Romanian teachers frequently hold negative perceptions about students with special needs, influenced by stereotypes and misinformation (Gherguț, 2020; Drugaș, 2015). Studies suggest that many teachers prefer to exclude students with ADHD from regular classrooms rather than adapt their teaching methods to accommodate them (Drugaș, 2015). This highlights the need for a deeper exploration of ADHD as a social construct and its implications for educational practices in Romania. The limited awareness and training among educators lead to challenges in integrating students with ADHD into regular classrooms, reinforcing educational inequalities.

In 2013, I conducted a cross-sectional survey on teachers' attitudes toward the inclusion of students with ADHD in mainstream schools, later published in the Hungarian Educational Research Journal in 2015. This survey revealed significant resistance among Romanian teachers. Regardless of their experience and specialization, teachers found it challenging to integrate students with special educational needs into mainstream classrooms (Drugaș, 2015). When asked which disabilities should be excluded from mainstream education, teachers ranked autism, intellectual disabilities, and ADHD as the top three. While ADHD was ranked third in terms of exclusion preference, it was identified as the most challenging disorder for teachers to manage in the classroom. The study also found widespread misconceptions about ADHD among teachers. Many confused ADHD with conduct disorder, were unaware that genetic factors account for over 60% of ADHD cases, and failed to recognize the positive traits associated with ADHD, such as creativity, tenacity, and courage. When asked about support strategies, 72% of teachers stated that assistance for students with ADHD should come from specialists like itinerant teachers and school psychologists rather than from themselves. Moreover, many teachers did not propose any direct intervention strategies, such as adapted curricula, engaging activities, or reward systems.

In conclusion, in Romania, there is a notable gap in scientific research concerning ADHD, particularly in relation to how teachers' perceptions influence the diagnostic process. This lack of localized data and analysis creates a risk that subjective interpretations of student behavior—especially provocative or non-conforming actions—may be

mistakenly attributed to ADHD, thus contributing to inaccurate or premature diagnoses. Teachers, often being the first to observe and report behavioral issues, play a crucial role in initiating the referral process, and their limited training in differentiating between behavioral challenges and clinical disorders can result in mislabeling. By exploring this dynamic, we can provide valuable insights for teachers, psychologists, physicians, and psychiatrists. The present dissertation has significant educational relevance, as it not only contributes to scientific discourse but also informs policy and practice regarding the flawed diagnostic procedures for students with ADHD in Romania. By addressing these issues, this research aims to bridge the gap between medical and educational perspectives, fostering a more inclusive and accurate approach to ADHD diagnosis in Romania.

Research Objectives

The primary objective of this study is *to investigate the process of diagnosing ADHD in Bihor County, Romania*. We use the social construct theory as a framework to understand the practice of diagnosing ADHD. By analyzing medical records and stakeholder perspectives, this research aims to identify patterns, biases, and discrepancies in the diagnostic process. Using social constructivism (Wedge, 2015) as a theoretical framework and ethnomethodology (Macbeth, 2010) as a methodological approach, the study seeks to examine how ADHD is defined, understood, and reported by medical professionals, educators, and parents. To achieve the general objective, the research is divided into three specific studies, each addressing a key aspect of ADHD diagnosis in Bihor County.

The first study aimed to investigate the profile of students diagnosed with ADHD in Bihor County and to examine whether this profile aligns with the demographic patterns reported in the existing literature. Additionally, the study seeks to identify potential disproportionalities in the diagnosis process, such as the presence of different symptoms across various groups, which may reflect systemic biases or inconsistencies in how ADHD is identified and labeled in educational and clinical settings

The second study aimed to establish which were the criteria in diagnosing ADHD in Bihor County taking into consideration the most frequent symptoms presented by students. We aimed to identify the symptoms recorded in the medical file by the psychiatrists (based on the clinical evidence and psychological evaluations and the parents' interview) and to explore the associations of the diagnostic terms in the descriptions elaborated by the experts with the official duty of evaluating each case.

In the third study we aimed to identify the opinions of parents, teachers, and psychologists regarding the most important symptoms manifested by students diagnosed with ADHD. Analyzing the general perception on ADHD among the most important social groups who provide information for clinical experts (psychiatrists), we will be able to identify the general social representation of ADHD in Bihor County.

The Content of the Dissertation

We start our dissertation with a comprehensive literature review, which, in the next chapter, outlines a general framework of three different perspectives of ADHD: neurobiological, psychoeducational, and sociological. A significant portion is dedicated to the social construct perspectives. Theories developed by Hacking (2000), Jutel (2009), and Timimi (2009, 2015) provide the foundational concepts for understanding how the social construction of psychiatric diagnoses occurs. Their approaches establish the necessary framework for analyzing how the diagnosis of a disorder can be influenced by external factors—such as social interactions and representations, the internet, the pharmaceutical industry, and psychiatrists' subjectivity—rather than being solely determined by clinical and neurobiological evidence.

The research process for this study follows a structured approach that integrates both qualitative and quantitative methods to examine the diagnosis of ADHD in Bihor County, Romania. The first phase of the research focuses on data collection and profile analysis. A total of 196 medical records of students diagnosed with ADHD are examined to establish the demographic and symptomatic characteristics of these cases. Special attention is given to gender differences, particularly the prevalence of hyperactivity and aggression among boys, as well as the characteristics of the families and school environments of diagnosed students. In the second phase, a semantic network analysis is conducted to investigate the diagnostic criteria and clinical descriptions recorded in medical files. The study identifies the key symptoms reported by psychiatrists, based on clinical observations, psychological assessments, and parental reports. The final phase of the research examines stakeholder perceptions and the broader social representation of ADHD. By analyzing the perspectives of parents, teachers, and psychologists, the study explores how ADHD symptoms are interpreted in educational and familial contexts.

We end the present dissertation with the discussions and conclusions of our research. We highlight through our findings how the diagnosis of ADHD in Bihor County, Romania, is heavily influenced by social representations rather than by strictly adhering to clinical or biological standards.

I. LITERATURE REVIEW

ADHD is one of the most common disorders in childhood, but also one of the most extensively researched (Aman et al., 1998). Literature drew attention since the 19th century on children who showed hyperactivity, inattention and impulsivity. In this chapter, after reframing the origins of ADHD, we will describe three main paradigms regarding the nature and treatment of ADHD: the neurobiological perspective, where we will analyze the research of physicians and psychologists; the psychoeducational approach, where we will focus on psychologists and educational researchers; and in the last approach we will analyze why sociologists consider ADHD to be a metaphor and not a biological disease, overviewing the social construct theory of ADHD.

I.1. Reframing the Origins of ADHD: Historical and Diagnostic Constructions

Starting with 19th century, physicians mentioned different symptoms of ADHD, such as: difficulties with attention, hyperactivity, fidgety behavior, and only in the 1960s ADHD was described as it is defined today. In all of its history, ADHD was considered a mental disorder by specialists in mental health. In this section we will present a brief history of ADHD, focusing on two approaches: one shaped by Lange et al. (2010), and the second one outlined by Rafalovich (2001), both having in common the biological cause of ADHD.

Some of the earliest descriptions of hyperactivity and the etiological theories were similar with what we are calling today "the attention-deficit/hyperactivity disorder," which is defined as a neurodevelopmental disorder characterized by inattention, hyperactivity and impulsivity (American Psychiatric Association, 2000). The features of ADHD were identified based on observation over many years from professionals who were working in pediatric medicine, neurology, education, and pharmacology. The clinical characteristics of ADHD, the basic concepts or the malfunctions' nomenclature for this diagnostic, had changed over time, but most of them have the same symptomatically frame as the contemporary literature show (hyperactivity, impulsivity, and inattention).

In 1798, Sir Alexander Crichton, a Scottish physician who worked with clinical cases with a history of mental illness, described for the first time a disorder that appears to be similar to ADHD (Lange et al., 2010). Sir Alexander Crichton had an unusual approach, because until that period no cases were analyzed both medically and psychologically. In one of his works dedicated to mental illness, Crichton (1798) described the human attention

and its disorders in an entire chapter (as cited in Lange et al., 2010). Thus, the attention deficit disorder was described for the first time, assuming that the inability to manifest attention in different situations may have as a cause the malfunction of the nervous system. What was not known for sure was the exact nature of comorbid disorders (presented by Dr. Crichton' patients) that were considered similar to the ADHD symptoms as we know them today.

1.1.1. From Hoffman's Story to the DSM: How Narratives Shaped the ADHD Label

The behavioral syndrome of ADHD was recognized since the early 1900's (Conners, 1998). In 1844, the German doctor Heinrich Hoffmann created some illustrated stories and poems for children, including "The Story of fidgety Phil," which nowadays are a popular allegory for students with ADHD. Hoffman (1846, as cited in Thome & Jacobs, 2004) published an English edition the original German collection of poems *Struwwelpeter - Merry Stories and Funny Pictures,* where "The Story of Fidgety Phil" was included. The story illustrated the image of a family (parents and child) which had a conflict during dinner; the feuds were caused by the restless behavior shown by the little boy who was acting agitated, in the end spilling food on the table. The case of Phil actually identifies symptoms of ADHD, and some authors (Lange et al., 2010) were convinced that the story of fidgety Phil was an early description of ADHD. Hoffmann's works demonstrated a close link between disruptive behavior and its negative consequences, also adding an educational message.

In 1902, George Frederick Still brought to the attention of medical professionals, concepts, such as "inattention", "hyperactivity" and "poor capacity of behavioral self-control"; this contribution was considered the beginning of the scientific approach of ADHD (Barkley, 2006). With a specialization in pediatrics, George Still dedicated his professional research to disorders which occur in childhood.

Conrad (1976, as cited in Rafalovich, 2001) considered that the discovery of hyperactivity can be attributed to the interaction between three social factors: the pharmaceutical revolution; trends in the medical profession, and government action. The pharmaceutical revolution was represented by the synthesis and marketing of Ritalin, which in the 1960s promoted an intense advertising campaign into the medical and educational sectors. The pharmaceutical revolution was supported by new trends in the medical

profession, with an emphasis on the biochemical and organic origins of behavioral problems.

The years 1930–1932 brought important contributions in defining and outlining ADHD, establishing the "neurocerebral damage" as the main cause of this disorder. Kramer and Pollnow (1932, as cited in Lange et al., 2010) defined for the first time "the Hyperactivity Disorder," including the main symptoms, including: sleep disturbance or nocturnal agitation, behavior disorders, increased motor activity (e.g., students cannot stay seated at school activities, they are in a continuous motion around the room, they are climbing furniture etc.). These symptoms were similar with those established in the fourth edition of the *Diagnostic and Statistical Manual* published by the American Psychiatric Association (2000). Also, during this period, it was established that the presence of hyperactivity disorder is a predictor of academic underachievement.

In 1937, Charles Bradley showed the positive effects of medication on students who presented different incentives of behavioral disorders (Lange et al., 2010). Bradley established that "stimulant medications" (such as Benzedrine—a related product of Methamphetamine) have positive effects in modeling the behavior of hyperactive students, and in increasing their school performance. Presently, the prescribed medicine in ADHD is based on methylphenidate, and marketed as Ritalin, Concerta, Equasym, Medikinet or Rubifen. This stimulant was first synthesized in 1944 by Leandro Panizzo (Lange et al., 2010).

In 1968, the 2nd edition of the *Diagnostic and Statistical Manual (DSM)* presented for the first time the "Hyperkinetic disease" diagnosed in childhood as a disorder characterized by hyperactivity, restlessness, and short attention span manifested particularly by young students, the symptoms decreasing in intensity during adolescence (Barkley, 2006). Between 1960–1970, the concept of "minimal brain dysfunction" was widely criticized, considering that the statement is very general, this dysfunction included disorders such as learning disorders or speech disorders. The third edition of the same manual defined "Attention Deficit Disorder: With or Without Hyperactivity" (Barkley, 2006). The manual did not focus on hyperactivity as an essential diagnostic criterion, it could be manifested as a symptom or not. In this edition of the manual, three separate lists of symptoms appeared for the first time. They were referring to: "inattention", "impulsivity" and "hyperactivity." This list included 16 symptoms listed in these three domains; 5 symptoms were for inattention, 6 for impulsivity, and 5 for hyperactivity.

The 3rd edition of the DSM, published in 1987, included "Attention-Deficit/Hyperactivity Disorder" for the first time (Lange et al., 2010). Those three lists of symptoms presented in the last edition were combined into one. After the publication of DSM-III, Swanson et al. (2012) developed a rating scale (SNAP III) based on this edition of the manual. The authors transformed each DSM item from the symptom list requiring a judgement about the psychopathology, establishing a degree of the maladaptive and inconsistent behavior. For this, a 4-point evaluation scale was used for each item (not at all = 0; just a little = 1, pretty much = 2, and very much = 3). A score of 0 represented the absence of the psychopathology and 3 reflected the symptom presence. Using SNAP III, specialists were able to establish a summary score for this diagnosis in general, and the symptom-severity dimension in particular. This instrument was developed to assess the efficiency of the pharmacological methods in treating attention deficit disorder with or without hyperactivity.

The modification that appeared in the 4th edition of the DSM, published in 1994, was that ADHD can be diagnosed not only in childhood, but also persisting into adulthood, in many cases. This edition of the DSM-IV-TR did not propose changes to the definition of ADHD. Nevertheless, the American Psychiatric Association (2000) presented in DSM-IV-TR that the diagnosis of ADHD can be established only if the symptoms cause significant difficulties in social, academic, or occupational functioning of the child. It considered that the hyperactive child had a reduced ability to focus on tasks, difficulties in controlling attention, a cognitive and behavioral impulsivity, with all of the symptoms with the appearing after the age of 7.

The 5th edition of the *Diagnostic and Statistical Manual* (also the last that was published, in 2013), presented the diagnostic criteria for ADHD in a similar manner to the previous edition (DSM-IV-TR). One of the important changes which occurred in this edition was the age by which some symptoms of inattention or hyperactivity and impulsivity could be diagnosed in children/youth. The DSM-5 diagnostic criteria included that the symptoms of inattention or hyperactivity-impulsivity should appear before the age of 12, compared with DSM-IV-TR, where the age of 7 was established (American Psychiatric Association, 2013). The diagnosis of ADHD in association with autism is a new modification specified in this edition of the manual. ADHD is presented in the chapter of neurodevelopmental disorders to reflect the correlates between ADHD and brain development. According to this manual, adult ADHD diagnosis should be made by

identifying at least five items (from the symptom list), instead of six, necessary in diagnosing children and adolescents.

1.1.2. Defining ADHD Today

We would like to complete the history of this disorder with the current perspective of the 5th edition of the Diagnostic and Statistical Manual [American Psychiatric Association, (APA), 2013]. The diagnosis for ADHD, according to the APA, should be performed according to five criteria. The first criterion refers to "the nature of the disorder," and is divided into two categories (A1)—inattention and (A2)—hyperactivity/impulsivity. Each category includes a list of nine items, and the subject should meet at least six of them to be diagnosed with ADHD. Another important aspect in its assessment refers to the persistence of symptoms over time; the symptoms should persist at least six months and should be ubiquitous (both at home and school or in the playground). Some items from the first category "criterion for inattention" include: (a) often, is unable to give proper attention to details or makes mistakes being negligent in carrying out homework, at work, or in other activities; (b) often, does not seem to listen when spoken to directly; (c) often has difficulties in organizing tasks and activities; (d) often, is easily distracted by irrelevant stimuli.

Regarding the A2 criterion, the diagnosis of ADHD is established when six or more of the nine hyperactivity/impulsivity symptoms persist for six months, being maladaptive and inconsistent with the developmental level of the child. Some items from the second category "criterion for hyperactivity/impulsivity" include: (a) often, is playing with his or her hands or feet or is fidgeting in the same place; (b) often runs around or climbs excessively in situations when this is inappropriate (in adolescents or adults this symptom may be limited at the subjective feeling of the restlessness); (c) often, is "on the go" or acts as they are "driven by a motor"; (d) often gives answers before a completely drawn question.

In addition to those two categories of symptoms presented in the first criterion, there are four more criteria described in this last edition of the manual (DSM V, 2013), and these include: criterion B—data about the disorder' debut (Some symptoms of inattention or hyperactivity are present before age 12); criterion C—the conditions of symptoms' manifestation (Some deteriorations caused by symptoms appear in two or several situations: at school, at home, etc.); criterion D—the functional deterioration (There must

clear evidence of clinically significant deterioration in educational and vocational functioning); and criterion E—the exclusion of other type of disorders (Symptoms do not occur exclusively during a pervasive developmental disorder, schizophrenia, or other psychotic disorder, and are not better explained by another mental disorder). Assessing these five criteria, the diagnosis could differ. If both categories of first criteria (A1 and A2) are met for six months, subject may be diagnosed with *attention deficit/hyperactivity disorder, the combined type* (code 314.01); if only the first category of symptoms (inattention) is met for six months, the diagnosis is *attention-deficit/hyperactivity disorder, predominantly inattention type* (code 314.00); if the second category of symptoms is met for six months, the diagnosis is *attention-deficit/hyperactivity disorder, predominantly hyperactivity/impulsivity type* (code 314.01); and the last diagnosis is *attention deficit/hyperactivity disorder without further specification* (code 314.9).

The etiology of ADHD maintained, by physicians and psychiatrists defined two major causes: the neurological cause—there are differences in the brain morphology; the genetic cause—about 65% of children with ADHD have at least one relative diagnosed with this disorder (Brown & La Rosa, 2002). Rowland et al. (2002) developed research regarding the etiology of ADHD. They presented three areas of pertinent evidence that suggested the biological basis of ADHD, and these were: neuroimaging studies, genetic studies, and other etiologic studies. The neuroimaging investigations of ADHD identified a dysfunction and dysregulation of cerebellar prefrontal circuitry, this means that the anatomy of prefrontal area has an abnormal function. Other researchers in molecular genetics identified an important role of the dopamine transporter and the dopamine receptor genes that influence risk of ADHD (DiMaio et al., 2003; Purper-Ouakil et al., 2005). Besides the neurological and genetic causes in ADHD, Rowland et al. (2002) suggested another cause, the reproductive and environmental risk. In this category the authors included: the low birthweight (between 1.500 and 2.500 grams), gestational age, pregnancy complications, cigarette smoking during pregnancy, or a toxicant environmental (for example high levels of lead).

The evolution and prognosis of ADHD can be positive: if those who are diagnosed with this disorder do not show the existence of a major comorbid disorder (e.g., autism, conduct disorder, severe emotional disorders); if there is a positive adherence to treatment (students with ADHD show improvement into dysfunctional areas if they are taking the prescribed medication); if the learning disorders or emotional problems, as a comorbid

disorders of ADHD, are diagnosed early and all the measures to treat them are investigated and appropriately addressed (Barkley, 2006).

The entry into adolescence does not eliminate the difficulties faced by students with ADHD, moreover, the situation can be worse. Many students with ADHD reach their teens with low self-esteem and self-confidence. Their emotional immaturity, the delay in their general development, and their social maladjustment predispose these teens to a difficult adaptation. A significant percentage of adults with ADHD are at risk of developing conduct disorder, antisocial personality, substance abuse, depression, anxiety disorder, or even crime in severe cases (Ramsay & Rostain, 2007). The ADHD diagnosis and its early intervention, as in other disorders, make the recovery process and the rehabilitation easier. If the diagnosis is not established in childhood or adolescence, in adulthood it is much more difficult. Some researchers confirm that adults with ADHD who consult the clinical specialists often report symptoms of depression, addiction or anxiety, making them much more complicated for an accurate identification of the main disorder and comorbidities (Ramsay & Rostain, 2007).

Conners (1998) argued that researchers' conclusions about ADHD remain to be clarified, as the developments in cognitive neuroscience point to the multidimensional nature of both attentional processes and activity levels that are poorly operationalized. Later, connected with this, Rowland et al. (2002, p. 164) considered that the diagnosis of ADHD should be made in a "developmental context." The authors emphasized that ADHD symptoms are not always apparent in a well-structured setting, which makes the observation of the child during an office visit or interview less effective in diagnosis. Many professionals believe that parents' and teachers' observations and histories are more valuable for this purpose. Even if the diagnosis is based on DSM criteria, Rowland and his collaborators (2002) considered that there is some data that physicians should know, and these should be collected through teachers and parents' reports.

It is important to know that only medical practitioners can diagnose ADHD. The diagnoses of ADHD should combine the assessment based on DSM criteria and parents and teachers report. If the diagnosis is based only on parents and teachers report, Mitsis et al. (2000, as cited in Rowland et al., 2002) highlighted that the results will describe more about the subtypes of ADHD (inattentive or hyperactive) and not on the combined subtype. If the assessment is based both on the DSM criteria and parents' and teachers' reports, then most of the students will be included into the combined subtype and the inattentive and hyperactive subtypes will become less common. The cited authors emphasized that the

issue of how to combine the reports from different respondents has important implications for treatment.

However, the etiology of ADHD presented by physicians is no longer generally accepted; for example, Graham (2010) claimed that there is no evidence to support the conclusion that all children with ADHD have symptoms that reflect neurobiological dysfunction, and only the evidence accumulation from genetic, biochemical, neurobehavioral and neuroimaging studies strongly suggested a neurological etiology in most children.

I.2. Neurobiological Paradigm: Scientific Authority and Stakeholder Interpretation

Thomas Kuhn (2008), a well-known American philosopher, defined the contemporary meaning of "paradigm" in his book entitled, *The Structure of Scientific Revolutions*. Kuhn presented that scientific knowledge achieved its fulfillment not with a scientific theory, but with something more complex which is a "paradigm." An achievement inside a domain, which, for a period of time, analyzed problems and offered solutions for different subjects, provided a specific theory. Kuhn considered that the common experiences and the scientific practices provided conclusions which are included into a specific paradigm. The paradigms are high scientific achievements, concrete examples of different problems with their solutions, considered as an agreement of a group of scientists. Kuhn considered that the knowledge assumed by a paradigm is more complex, compared with the information provided by a specific theory. The information shared by different theories, but with related findings or observations, constitute a family, a scientific community, according to Kuhn. The paradigm is considered the fundamental unit of knowledge, which includes more theories with common and related information. Kuhn highlighted that the paradigm is nothing else than a dominant theory in a set of similar theories. Also, Kuhn assumed that the research based on paradigms promotes a really complex and efficient knowledge, because it includes an overview on different theories form the same discipline.

The nature of a paradigm is determined by the commonalities among theoretical approaches (Clarke, 1981). In the study of ADHD, Teeter and Semrud-Clikeman (1995) identified five types of paradigms, considering the unitary information about etiology, diagnosis, and treatment of ADHD. In their paper, the cited authors reviewed researches on ADHD from five different points of view: the neurobiological, the cognitive, the psychological, the behavioral, and the social, outlining in this manner five specific

paradigms. A more recent categorization of the paradigms for the study of ADHD was provided by Wedge (2015) who concluded that there are three general hypotheses regarding ADHD's cause and nature. The first hypothesis states that ADHD is a real illness, primarily caused by biological factors such as genetic anomalies. The second hypothesis is a combination of biological and social factors, and the third one is that ADHD is not a true disease entity, not a medical condition, and what we call ADHD is caused by is considered normal or abnormal based on the society's representations, beliefs and knowledge. This last hypothesis is considered to represent the position of the social construction of ADHD.

Achieving an adequate level of impulse control is one of the most important developmental tasks during childhood and adolescence (Rauch et al., 2012). Impulse control, among the various cognitive and personality traits, plays a central role when it comes to predict important school achievement or life outcomes in general. It is very important for teachers to help students develop this feature of their personality. The problem appears when students cannot control themselves because they suffer from different disorders. One of these disorders could be ADHD. As we presented in the previous section, the characteristics of children and adolescents with ADHD are the excessive motor activity, inattention and impulsivity. The clinical characteristics changed over time, but the core symptoms necessary for diagnosis remained the same: hyperactivity, impulsivity, and inattention.

A large part of the ADHD literature is based on clinical samples of students, and these samples often have the advantage of extensive evaluation, but also the disadvantage of not representing most students in community (Rowland et al., 2002). Most of the clinical-based samples tend to show more psychiatric symptoms and more impairment, but the population-based samples of students received less thorough evaluations; the findings based on these samples can only be used to make inferences about the general population.

According to Hawthorne (2013), the initial causes of ADHD and the mechanisms that sustain it are not yet understood. The author summarized the next clinical hypotheses: the dopamine transmission is slower in ADHD; the norepinephrine or other neurotransmitters may not have a correct function; a variation or delay in brain development is primary in ADHD; or some potential environmental triggers such as maternal smoking during pregnancy, pesticides, television viewing, or lead could cause ADHD symptoms. Hawthorne concluded that even if ADHD is considered a mental disorder, primary care physicians are those who commonly diagnose and treat this disorder.

In the category of primary care physicians, we can include family physicians, pediatricians, and internists, to the detriment of psychiatrists. Sax and Kautz (2003, as cited in Hawthorne, 2013) assumed that physicians are the first to suggest that a person might suffer from ADHD in about 14% of cases, parents in 30%, and school personnel in 52% of cases.

Rowland et al. (2002) considered that the estimation of ADHD prevalence is sensitive because the literature reviews report very different prevalence estimates (between 1.7%–17.8% and 4%–12%). The most prevalent estimation of ADHD is the one established by the Diagnostic and Statistical Manual (5th edition): about 5% among school age students, estimated for the United States population (American Psychiatric Association, 2013). The ADHD rate was compared among the youngest and oldest students, and Elder (2010, as cited in Hawthorne, 2013) showed that younger students have an ADHD diagnosis rate of 28% to 60%, which is considered higher than that of their older classmates. The correct diagnostic rate is debatable, considering the large number of variables.

Contemporary literature supports the theory that ADHD does not heal, being a disease that lasts throughout a diagnosed person's life (Barkley, 2006). In this context, over 50% of students with ADHD also exhibit behavioral symptoms into adulthood (Chang et al., 2009). According to Sagvolden (1999), the most visible behavioral symptoms of ADHD are reflected by motor hyperactivity and impulsivity. Hyperactivity can be seen easily in classroom situations, but it is not shown by students with ADHD in new situations. This was analyzed in an experimental setting, where researchers found that in new activities students with ADHD had a normal level of involvement, but during the activity their involvement level began to increase (Sagvolden, 1999). The research also investigated the students with impulsivity, and the findings showed behavioral outbursts recorded in various stages of tasks.

The development of neurosciences, the new information regarding the neurotransmitters' functioning and the advances in medical imaging led to the identification of affected neurological areas in ADHD, and their impact on the lives of students with ADHD. To define the cognitive deficits specific in ADHD, Douglas (2004) examined executive functions, inhibition and self-regulation ability. In describing the cognitive development in students with ADHD, it is important to clarify the concept of "executive functions" and to identify their role in acquiring academic skills. Executive functions determine how various mental processes, such as encoding, recognition, and retrieval are working together in performing a task (Schachar & Logan, 1990). students need executive control to choose, construct, execute, and maintain optimal strategies for performing a task,

as well as to inhibit strategies that become inappropriate when goals or task demands change or errors occur.

1.2.1. Executive Function Deficits: Scientific Framing and Educational Realities

The cognitive theories on ADHD primarily focus on the constructs of impulsiveness or poor behavioral inhibition and impairments in executive functions (Reddy et al., 2008). Behavioral inhibition leads to secondary impairments in different areas of executive functioning, such as nonverbal and verbal working memory, self-regulation, or motivation. These areas of executive functioning are very important for developing healthy social relationships and reach academic achievement. Students with ADHD have some deficits in these areas, and they will have difficulties in school and in society in general (Barkley, 1997).

The interest on executive functions in ADHD is prominent. Barkley (1997) mentioned the existence of six areas of executive functions: nonverbal working memory, language internalization, affect self-regulation, motivation, arousal, and planning capacity. Chan et al. (2008) added three more areas: flexibility of thinking, answer inhibition, and activity initiation and monitoring.

Researches in this field have demonstrated that the dysfunctional prefrontal cortex of children with ADHD is associated with specific cognitive deficits (Brown et al., 2011; Douglas, 2004; Kantini et al., 2011; Lorch et al., 2006). The findings of research conducted by Shue and Douglas (1992, as cited in Douglas, 2004) supported the hypothesis that the dysfunctions in the prefrontal areas play an important role in explaining the cognitive and motor deficits in children with ADHD, and that is why students with ADHD fail to organize cognitive tasks. Moreover, processing or interpreting errors in a correct manner represents a challenge for children with ADHD, because this ability is not well developed, affected by deficiencies existing in the area of executive functions (Chang at al., 2009).

Barkley (1997) considered that the most evident symptom of students with ADHD is their inability to inhibit their behavior, and this inability negatively influences four executive functions involved in behavior planning: nonverbal working memory, internalization of language, affective-motivational self-regulation and the analysis and synthesis processes. These four areas of executive functioning are very important in developing positive social relationships and/or in obtaining positive learning outcomes.

Barkley concluded that the core deficit in ADHD is the inability of inhibition, because it obstructs the development of other important processes (especially working memory).

Denney and Rapport (2001, as cited in Douglas, 2004) claimed an inverse model, compared with the one proposed by Barkley (1997); they assumed that the deficit of working memory would be the central cause of the dysfunctionality manifested in ADHD. Therefore, poor working memory development would be the main symptom of ADHD, and not the spontaneity or the impulsivity. Working memory characterizes the ability to retain and use information that was in less contact with the subject, for example: mental mathematical calculations or retaining a phone number during a conversation (Johansen et al., 2009). Working memory allows components to connect each other forming a whole, and it facilitates analyzing things from different perspectives. Barkley (1997) believed that working memory maintains the information active while the child works with other information. In this way, the child's interaction with two things at once is facilitated. Working memory capacity is synonymous with executive attention, which means that people with a large volume of working memory will perform well in tasks which require the inhibition to distracting information (Melby-Lervåg & Hulme, 2013).

Verbal working memory is used in formulating sentences, in pursuing different indications, and in the verbal expression of language. Deficits in working memory may occur in association with comorbid disorders, such as specific learning disorders. Depending on how specific learning disorders are defined, they were identified in 35% to 75% cases of students with ADHD, as comorbid disorders (Semrud-Clikeman et al., 2008). A limited working memory is associated with failure in maintaining attention, in response inhibition, and in inefficiency of behavioral reinforcement programs.

Executive functions involve the ability to plan, organize information, and use it in problem-solving process (Semrud-Clikeman et al., 2008). This process also includes the ability of self-monitoring of behavioral changes. People often believe that students with ADHD are misbehaving on purpose. In reality, students with ADHD make the same mistakes (endlessly), because they are not learning from past experiences. Chang et al. (2009) explained this phenomenon by showing that students with ADHD fail to foresee the consequences of errors appeared in almost all daily activities. The self-monitoring of behavior is a critical component of the self-regulation process, and it is effective especially when the target behaviors or results are valuable for the subject. This research suggests that psychological interventions in ADHD may help students develop the self-monitoring of behavior in students with ADHD in order to decrease the frequency of disruptive and

aggressive behaviors (Hoff & DuPaul, 1998). In a more recent study, Harris et al. (2005) concluded that behavior and the ability to self-monitor improve performance in simple cognitive tasks when students with ADHD are on medication, even in the absence of an externally applied reinforcement.

Inhibition problems occur only in certain situations, reflecting rather an inability to delay the answer, than just a general lack of inhibition (Sagvolden, 1999). This theory is supported by the daily experience of students; in cases when students with ADHD respond too slowly, leading to a redefinition of the inhibition deficit, namely, as an existence of a deficit in the respondent's engagement to stimuli (Oosterlaan & Sergeant, 1998, as cited in Sagvolden, 1999). Often, students with ADHD show disruptive or maladaptive behaviors generated by the inability to control their impulses. Douglas (2004) emphasized that the self-regulation issue representative for ADHD has at least three components: (a) the attentional component (the energetic aspect of cognitive processes); (b) the inhibitory component (the process which controls the impulsivity as an inappropriate response); (c) the strategic / organizational component (which guides the cognitive processes in preparation, planning and execution). In measuring impulsive actions, the ability to self-control refers to the strength of the inhibition mechanism designed to modulate internal or external desire for reward (Rauch et al., 2012). This self-control ability is probably the most important mechanism in developing a behavior conducted by rules and impulsivity reduction (Kaduson & Finnerty, 1995).

An objective interpretation of the behavior of students with ADHD is difficult to determine, because of the hyperactivity associated with the impulsive behaviors. Negative prejudices, like the belief that students with ADHD can control themselves, but they do not want to, are often present. According to the psychodynamic approach, the symptoms of ADHD are rooted in the students 's personal inability to synthesize, organize, or interpret their own experience (Gilmore, 2000). The behavioral characteristics of students with ADHD are explained through the low levels of behavioral inhibition (which mean a high degree of impulsiveness). The ability to inhibit their behavior refers to specific skills such as: retaining a planned response, interrupting a started response, protecting an ongoing activity from others who are interfering, and delaying (Sagvolden, 1999). Inhibition is involved in traits such as perseverance, retaining a well-reasoned response, impulsivity, delaying gratification, sensation seeking, risk-taking, and excessive reaction to frustration.

Students with ADHD fail to successfully use self-control in modifying their responses for given situations. For example, during tasks based on reaction time, students

with ADHD are aware that they made an error, but they do not reduce their speed of response to prevent further errors. They are able to identify the dangers in different scene-based game activities, but they anticipate less serious consequences than students who do not have ADHD issues. In other words, even if the self-monitoring behavior appears, its adaptation is poor (van Meel et al., 2005). The inattention and inhibition problems presented by students with ADHD can cause difficulties in developing organizational skills. Students need executive control in choosing, building, running, or maintaining efficient strategies in carrying out a task, and also in inhibiting the inadequate strategies for achieving their goals. Developing their behavioral self-regulation capacity is an essential component of personal development. The necessity to train this capacity is obvious, this can be a challenge for some students and even more so for students with ADHD (Harris et al., 2005). This deficit affects skills such as: information processing, inhibition of responses, planning, the ability to sit in expectation, self-monitoring or metacognitions (Miranda et al., 2002).

The *inconsistency of attention* is considered a hallmark for ADHD in organizing and conducting tasks. In childhood, poor organizational skills (often manifested in losing things), lack of skills in taking notes, or ignoring homework can compromise school performance and acquiring knowledge (Abikoff et al., 2013). Inattention not only affects school activity, but also has negative effects on peer relations, because peers often feel uncomfortable in the presence of peers with ADHD because they are impulsive, inattentive, intrusive, pretentious leaders, aggressive, and/or disruptive (Pelham et al., 1990). Difficulties in time management and planning problems lead to inefficiency in carrying out daily activities, and this may cause conflicts with parents and teachers. A key issue highlighted by Abikoff et al. (2013) is that even if some children with ADHD succeed in developing their skills of organization, planning, and time management, they do not know how to put them into practice. In this sense, the authors considered that the low performance may have two causal factors: (1) the executive functions deficit, which strongly affects the ability to relate the knowledge with skills and performance; or (2) the lack of motivation, which is often manifested by the difficulty of children with ADHD to initiate and sustain an activity for a longer period of time, in the absence of well-defined structures or reinforcements.

Due to the pervasive and persistent symptoms, social difficulties and problems are considered central for students with ADHD (Hinshaw et al., 1989; Hinshaw, & Scheffler, 2014). Their difficulties in maintaining attention, controlling their impulses, or staying

seated lead to problems in school, low social skills, conflicts with adults and peers, all of these opening the door to behavioral and emotional problems (Ohan et al., 2008). Armstrong (1999) considered that few specialists working within the ADHD paradigm have written about the inner emotional worlds of students labeled with ADHD. He emphasized that the literature as a whole is sadly lacking a description of the personal emotions of these students. For a complete understanding of students with ADHD, stakeholders also must have an understanding of their inner emotional lives. This perspective is important for helping students with ADHD to become successful in school and life.

The management of emotional experiences represents an important determinant of functional social skills of children (Jones, 2002). Research has demonstrated the importance of self-attributions for the functioning of children with ADHD (Johnston, & Leung, 2001). To explain this theory, the authors provided examples of using medication in treating ADHD. There are concerns that using medication can lead to the attribution of success to medication itself, and not to the rehabilitation strength of children with ADHD. If the attributional style is associated with external factors (e.g., "the therapist is the most important, without him I cannot handle," "the medication is what is helping me," etc.), the risk is higher to develop learned helplessness. Conversely, if the attributional style is associated with internal factors (e.g., "I have the power to control myself." "If I make the effort, I can concentrate."), then positive traits such as optimism or ambition can be developed. Boys diagnosed with ADHD and depressive symptoms often have a negative perception of themselves. In contrast, Hoza et al. (2004) explained that boys with ADHD without depressive symptoms tend to have a positive perception called "positive illusion" (embodied in overestimation of their skills). Because children with ADHD often face setbacks and failures in different areas, they are often characterized by positive illusion. Boys with ADHD who also show aggression tend to have a distorted perception of themselves in all social conjunctures and behavioral interactions (Hoza et al., 2004).

The adverse events and the hostile social situations, the negative emotions, or the internal conflicts or states developed by children with ADHD should not be overlooked or underestimated (Jones, 2002). The author believed that children's ability to control and adjust their effects is dependent on the caretakers' empathy and harmony. When the parents are not emotionally available or when their answers are repeatedly inconsistent, the child will most likely develop an emotional imbalance. Adult emotional sensitivity is the major determinant of how children learn to manage stressful situations and how to relate to others.

If the comorbid disorders have a high level of severity, the adjustment problems of children with ADHD are more common and more intense. If a child with ADHD is also diagnosed with anxiety disorder, the relationship between the parent and the child becomes more tense, because there are issues regarding the acquisition of autonomy and the manifestation of independence. Parents of children with ADHD and comorbid anxiety disorder have less developed parenting skills and tend to be overprotective (Jarrett, 2013). This research shows that 30% to 40% of children diagnosed with ADHD also meet the diagnostic criteria for anxiety disorders (Tannok, 2009, as cited in Jarrett, 2013).

Considering the *comorbid disorders* of ADHD, it was also established that a high frequency of the oppositional defiant disorder (Barkley et al., 2001) and conduct disorder (National Resource Center on ADHD, 2005) existed. Oppositional defiant disorder is comorbid with ADHD; 45% to 65% of students diagnosed with ADHD also have this type of disorder (Barkley et al., 2001). Oppositional defiant disorder is defined as a recurrent pattern of a negativistic, defiant, disobedient, and hostile behavior manifested towards people who are representing authority; this behavior must persist for at least six months (DSM IV TR, 2003). This disorder is characterized by frequent occurrences of behaviors such as: loss of temper, quarrels with adults; actively defying or refusing to obey adult rules; committing deliberate things which are annoying other people; blaming others for their own mistakes etc. Oppositional defiant disorder is strongly associated with intense conflicts in the family, emotional management problems in adolescents, rebellion, anti-social behavior, and experimentation and consumption of prohibited substances.

Another frequent comorbid disorder in ADHD is conduct disorder; 25% to 45% of children and adolescents with ADHD also present this type of disorder (National Resource Center on ADHD, 2005). Conduct disorder is defined as a persistent and repetitive pattern of those behaviors in which the basic rights of others, the social norms or rules are violated (DSM IV TR, 2003). Among the diagnostic criteria for conduct disorder the DSM manual pointed out *the aggression towards people and animals* (e.g., often threatens or intimidates others; is physically cruel to other people; threatens the victim and steals from them (e.g. banditry, theft of purses, extortion, assault with armed hand); *property destruction* (e.g., deliberately destroys others' property, other than by fire); *fraud or theft* (e.g., breaks into a house, outbuildings or someone's car); *serious violation of the rules* (e.g., is frequently absent from home at night before the age of 13 years, despite the parents' ban). These antisocial behaviors are predictive of school and social problems (Hinshaw, Heller & McHale, 1992).

Levy et al. (2005) investigated the data from 4,371 Australian twins and siblings diagnosed with ADHD, and the results revealed that boys presented a higher rate of oppositional defiant disorder and conduct disorder. Girls diagnosed with ADHD (the predominant inattention subtype) had less frequent externalizing disorders comparing with boys, but were also more often diagnosed with separation anxiety disorder.

Students with ADHD have a high risk of developing antisocial behavior, and the authors presented an impressive overview of studies that have shown the presence of high rates of delinquency and substance use in adolescents and young people with ADHD.

1.2.2. Medication and Meaning

The American Academy of Pediatrics' Committee on Quality Improvement and the Subcommittee on Attention-Deficit/Hyperactivity Disorder, reviewed and analyzed the literature for the purpose of developing an evidence-based clinical practice guideline for the treatment of the school-aged child with ADHD (Brown et al., 2005). These reviews provided substantial information about different *treatments for ADHD* and their efficacy in improving certain characteristics or outcomes for students with ADHD, as well as the adverse effects and benefits of multiple modes of treatment compared with single modes (e.g., medication or behavior therapies alone). According to the literature, the following therapies are effective in ADHD: pharmacotherapy (McGoey et al., 2002), cognitive-behavioral therapy (Bloomquist et al., 1991), behavioral therapy (Drugaş & Drugaş 2010; Phelan, 2003) therapeutic intervention on parents and family (Teeter, 1998), and classroom and school intervention (Barkley, 2007). The clinicians evidenced strongly support for the use of stimulant medications for treating the core symptoms of students with ADHD and, to a lesser degree, for improving functioning. Physicians consider that behavior therapy alone has only limited effect on symptoms or functioning of students with ADHD, although combining behavior therapy with medication seems to improve functioning and may decrease the amount of (stimulant) medication needed (Brown et al., 2005). On the other hand, Fewell and Deutscher (2002) maintained that medication and behavior therapies must be completed with parent counseling and teacher training.

Medical researchers outlined that *stimulant medication* improves the neuronal substrate responsible for behavioral inhibition and executive function (Miranda et al., 2002). Jones (2002) found that there is a growing trend in using medication; for example, prescribing Ritalin (the most well-known medication for ADHD) increased by 500% in

2000 compared with 1990. Hawthorne (2013) presented that in the United States between 1991 and 2000 roughly 90% of ADHD diagnosed persons received a prescription for a stimulant medication. This type of medication has led to increased performance in attention, learning, memory, and impulsivity in students with ADHD; that is why, in almost 80% of cases, the prescribed medication is based on psychostimulants (Daly et al., 2007). Psychostimulants activate the central nervous system, and can be issued only on prescription. The medication's efficiency is obvious in various areas of development of students with ADHD: behavior during activities, relationships with peers, interactions with parents, etc. (Jones, 2002). In managing students with ADHD, pharmacotherapy experts prescribe stimulants, antidepressants, bupropion, and alpha-adrenergic medication (Brown & La Rosa, 2002). Stimulant medication is the most frequently prescribed and the most extensively studied form of medication provided to people with ADHD. Pelham et al. (2002) presented a series of studies carried out in laboratories, in which students with ADHD who received medication based on of methylphenidate have been shown to be happier in those days, compared with those days when a placebo was administered.

Hinshaw et al. (1989) evaluated the impact of methylphenidate on various aspects of social behavior manifestations for a group of 25 boys diagnosed with ADHD, aged between 6 and 12 years. Students were recorded for three weeks in a summer program, during this time some of them received placebo, another low dosage (0.3 mg/kg) and others moderate dosage (0.6 mg/kg) of methylphenidate. During this time, 15 boys who did not have ADHD were also observed. The methylphenidate increased the compliance, reduced the physical and verbal aggression of boys with ADHD, but there were no differences between groups in terms of prosocial behavior manifestation. The results obtained by authors emphasize that while medication can generate beneficial effects, it does not in itself ensure the positive development of social skills.

Despite the beneficial effects, using stimulant medication raised and still raises many concerns. The use of amphetamine-type medication (as is Ritalin or Concerta) to treat ADHD represents a source of an intense debate because it causes visible and disturbing side effects (e.g., agitation, anxiety, tics, weight loss, and insomnia). The most common side effects of psychostimulants, which occur in 4% to 10% of treated students, include loss of appetite, headaches, abdominal discomfort, insomnia, irritability, motor tics, dizziness, and fatigue (Daly et al, 2007). Therefore, the prescription of non-stimulant medication to treat ADHD is taken into consideration. Some psychiatrists considered that the medication should only be the last solution and not a panacea, emphasizing instead the

efficiency of psychotherapy and teamwork with parents (Batstra et al., 2014). There are arguments for continuing efforts to elaborate non-drug interventions in ADHD. Pfiffner et al. (2006) listed some of them: 1. Despite the remarkable discoveries regarding the pharmacological treatment of ADHD, medication has no effect on some students; and for those who experience positive effects, the behavior is not necessarily normalized. 2. Some students experience strong side effects, and parents choose not to use medication, instead, using only behavioral therapy. 3. Although the medication is effective in reducing the symptoms of ADHD, the effects on educational and social deficits are poor.

Daly et al. (2007) cited a study sponsored by the National Institute of Mental Health from the United States of America, which investigated the evolution of 579 students, between 7 and 10 years of age, diagnosed with ADHD, comparing the effects of four types of intervention: (a) behavioral intervention on students (developing social skills, in association with teachers and parents, involved in the training of behavior; (b) the latest medication administered rigorously; (c) a combination of medication and behavioral intervention; (d) transient interventions involving contact with the community, school attendance, etc. The results showed that in all cases the ADHD symptoms decreased over time. Intervention types 2 and 3 were relatively equal in efficiency and both were superior to the transient interventions in the community (type 4) and behavioral interventions (type 1). The combined therapy was more effective than medication alone because it did not only reduce the negative behaviors, but also improved the children' family life, school performance, and social skills. Those who received the combined therapy needed a lower dose of medication and their parents were more satisfied with the students's behavior at home, compared with those parents whose students received medication only. Finally, perhaps the most important idea is that the effects of the combined therapy were maintained over time (about 10 months later). Even so, further tests showed that each of the surveyed groups failed in maintaining normal relations with colleagues.

Medical professionals tend to analyze the physiological aspects of ADHD and recommend medication. Specialists in the field of family therapy and psychotherapists focus on emotional problems encountered in families of students with ADHD. The psychologists and experts in education science minimize the importance of the etiology and medication, focusing on information processing problems and possible psycho-educational interventions. Considering this last vision, we dedicated a separate section of this chapter to debate the educational approach on ADHD.

I.3. Psychoeducational Paradigm on ADHD: Needs, Labels, and Institutional Responses

The educational paradigm on ADHD is a complex approach, considering the social inclusion and inclusive education that some students with ADHD should receive in their educational process. In this section of the chapter, we focus on the educational features of students with ADHD, what inclusive education means for these students, and what teachers should do to improve the teaching and learning processes of students with ADHD.

Regarding students with clear evidence of specific impairments, the past decade has seen a spate of "new" diagnostic categories, in which case the organic etiology has not been clearly established, even though, in time, research might identify such a link (Mittler, 2000). Dyslexia, attention deficit disorder with or without hyperactivity, autism and Asperger's syndrome are some examples which can be included into this category. The Salamanca Conference in 1994 reminded governments that, students with difficulties should be included in national plans to expand the number of children gaining access to schooling (Mittler, 2000). The leadership provided by UNESCO had encouraged many education ministries, throughout the world, to accept responsibility for the education of excluded students and to educate them in ordinary schools, with appropriate support. In the context of an equitable education, teachers from mainstream schools must stand up to inclusive processes for students with different types of disabilities.

Barkley (1997) defined ADHD as a pervasive neurodevelopmental disorder characterized by developmentally inappropriate levels of inattention and hyperactivity/impulsivity. Early signs of possible ADHD (Fewell & Deutscher, 2002) easily observed in school environments include: these students act before thinking, change activities frequently, have a short attention span, fail to focus on and follow directions, distract easily, and have difficulty staying on task. Having a child with ADHD in the classroom can bring several challenges to teachers. The student's difficulties with sustained attention, controlling impulses, and staying seated often result in academic problems, social skills deficits, and conflicts with peers and adults, paving the road to behavior and emotional problems (Ohan et al, 2008).

The American Psychiatric Association (2013) defined ADHD as a persistent and elevated level of inattention and/or hyperactivity-impulsivity. As we discussed in the section dedicated to the clinical paradigm, the core symptoms of ADHD are: inattention, hyperactivity, and impulsivity. These symptoms contribute to impairment in a variety of areas, such as social functioning (Hoza et al., 2005, Rad et al. 2017) and academic

achievement (Frazier et al., 2007). Students with ADHD are highly sensitive to environmental stimulations, „their behavior being quickly disturbed" (Drugaș, 2016, p.55). They have a poor capacity of self-regulation when they are bored or frustrated, when they must resist different impulses, or when they must reorganize their responses as a result of confrontation with new situations (Douglas, 1988, as cited in Crone et al., 2003). These students tend to fail to be persistent when they are involved in a task and find it difficult to accept the postponement of a reward. McGee et al. (1991, as cited in Daley & Birchwood, 2010) found that adolescents who were hyperactive (ADHD under observation) as preschoolers, presented poorer reading ability comparing with their peer controls. The authors considered that a hyperactive childhood could predict adolescent behavioral problems, academic problems which tend to culminate with leaving school with no qualifications.

1.3.1. Academic Underperformance and the Role of Diagnosis in Framing Support

Most often, the main problem faced by teachers, psychologists, neuropsychiatrists, and parents involved in the *education of students ADHD* is how to help to avoid school failure (Neef, & Lutz, 2001; Northup et al., 2001). The National Attention Deficit Disorder Information and Support Services (ADDISS, n.d.) presented some concerning results: school exclusion for 39% of students with ADHD (for fixed term), 11% for permanent exclusion; 80% with no help from social services; 92% were affected in their ability to achieve in school; 19% had been in trouble with the police; 83% were affected in their ability to make new friends; 84% were affected in their ability to keep friends. School problems are almost always present in the diagnosis of ADHD (Loe & Feldman, 2007). Problems occurred in school are considered a key feature of ADHD, often bringing the students with ADHD to clinical attention. Loe and Feldman (2007) presented a review regarding the outcomes of students with ADHD in their academic and educational activity. The review's findings emphasized that students with ADHD develop significant academic underachievement, lower in reading and arithmetic achievement, poor academic performance, an increased frequency in remedial academic services or special education services.

Among many other factors that contribute to academic achievement, *motivation* and adopted strategies play a crucial role (Feng & Chen, 2009). For the best performance in school or home activity, students with ADHD need to be motivated to fulfill all the

conditions, and they need sufficient reinforcements (Kaduson & Finnerty, 1995). While motivation represents the strength of encouraging and mobilizing students in the learning process, the adopted strategies into practice represent the techniques or means used by the students to acquire knowledge and skills.

A large number of studies on the relationship between motivation and strategies emphasize their importance in achieving academic performance. Ellis (1985, as cited in Hurd, 2006) noted that the true causal mechanism of the relationship between motivation and performance is not well-known, wondering if motivation leads to develop school performance or school performance develop the motivation.

After almost 10 years, Ellis (1994, as cited in Feng & Cheng, 2009) presented four hypotheses which could define the motivation from a non-theoretical point of view, namely: 1. Motivation comes from an inherent interest during the task that the student must achieve. 2. Students who are not persevering will be discouraged and will take increasingly fewer initiatives. 3. Students start their work load with a certain level of motivation, which is dynamic during the process. 4. The external influences and incentives affect the strength of students' motivation. These four hypotheses emphasize the interactivity principle between motivation and performance.

Eddy (2012) believed that, ideally, all students show an innate curiosity to explore the surrounding environment, in this way they can experience the learning process in a pleasant way and then become intrinsically motivated. However, the curiosity could be vitiated by various factors that are binding in school environments and student performance (e.g., grades, the curricular content). The motivational features of students with ADHD are uncertain; many students with ADHD have a chronically low level of motivation and academic performance and many of these students tend to fail (Barkley, 2006; Brown et al., 2011; Douglas, 2004). The innate curiosity of students with ADHD does not always overlap across the curriculum followed at school, and gradually decreases their intrinsic motivation. Often, students with ADHD explore, ask questions, also running around for a better process of the seized stimuli.

Antshel et al. (2007, as cited in Brown et al., 2011) conducted an investigation which described 49 high IQ (>120) students who fully met the DSM-IV diagnostic criteria for ADHD and showed a pattern of cognitive, psychiatric, and behavioral features typical of students with average IQ diagnosed with ADHD. They found that these very bright students with ADHD tended to have significant difficulties with schoolwork: 22% repeated a grade at least once, while only 3% of matched controls had ever been retained. These

students also had more comorbid psychopathology and were more impaired in multiple domains, relative to similarly bright students without ADHD. Even if they had a high IQ, they showed a pattern of cognitive, psychiatric, and behavioral features typical of students with average IQ, diagnosed with ADHD. The authors' conclusion was that the diagnosis of ADHD can be valid in high IQ students. Many parents of students with ADHD are warned repeatedly by teachers or clinicians that their own child is very smart, but unsuccessful school due to the inability of concentration, inconsistent effort, insufficient organization, and/or common forgetfulness (Brown et al., 2011).

The academic achievement problems associated with ADHD appear to be nonspecific rather than isolated to one particular subject area, for example math or reading (Vile Judon et al., 2006). Examining the behaviors related to academic engagement exhibited by students with ADHD, the authors conducted research on 155 students (92 with ADHD and 63 in a control group) in grades 1 through 4. Academic engagement included specific classroom behaviors, such as writing, practicing tasks, reading, or asking and answering questions. The research findings showed that students with ADHD develop lower levels of academic engagement in comparison with their classroom peers. When students' classroom behaviors were examined, off-task behavior was identified as the most important contributor to academic underachievement. These findings suggested that perhaps students with ADHD experience greater difficulty in maintaining adequate rates of academic engagement during passive activities, such as listening to lectures or silent reading. DuPaul and Volpe (2009) considered that students with ADHD are at higher-than-average risk for grade repetition, placement in a special education classroom, and dropping out of high school. Longitudinal studies showed that the academic difficulties for students with ADHD begin early, starting with preschool age, when students with ADHD or symptoms of ADHD are often behind in basic academic readiness skills (DuPaul et al., 2001).

DuPaul (2007) described the school functioning of students with ADHD and identified the following school difficulties: a high rate of off-task behavior; a low rate of on-task behavior; a hyperactive-impulsive behavior which can lead to disruptive behaviors; disobedience of teachers' commands; disruptive behavior manifested on classmates; deficits in academic skills and performance; a high risk for grade repetition; placement in special education classrooms; and dropping out from high school. A series of studies enrolled by DuPaul and his collaborators (DuPaul & Stoner, 2003; DuPaul et al, 2006a; DuPaul et al. 2006b; Reid et al. 1998) indicated that students with ADHD have significant

difficulties in developing positive relations with peers, teachers, or school personnel. Students with ADHD may not consistently follow the rules, they are likely to interrupt conversations, to respond before the question is finished, may enter into an ongoing peer activity, or behave in a verbally of physically aggressive manner (DuPaul & Stoner, 2003). The Department of Education (2005, as cited in DuPaul, 2007) presented that a large number of students with ADHD are receiving special education services, and are diagnosed with specific learning disabilities in a high percentage (41%) and speech-language impairments (15%). DuPaul noted that 65.8% have other health impairments, 20.6% are characterized by emotional disturbance, and 20.2% of mental retardation.

DuPaul et al. (2006b) investigated 175 students with ADHD regarding their difficulties with ADHD symptoms and their academic achievements. The sample consisted of White (primarily – 58%), Hispanic, and Afro-American students with ADHD, and their families were primarily in the lower middle class and middle class. Participants were divided in two educational consultation groups, the individualized academic intervention and the generic academic intervention. Both interventions were organized by school psychologists and special education doctoral students, and the generic academic intervention was given in collaboration with the classroom teachers. Those groups of students did not differ regarding their gender, ethnicity, mother's occupation, the comorbid obedient defiant disorder or conduct disorder, and receipt of special education services or psychotropic medication. The results indicated a statistically significant growth for math fluency, reading fluency, and passage comprehension reading performance. The type of consultation model did not appear to make difference. Both skills (math and reading) obtained a positive growth trajectory. The research conclusion was that a significant improvement in academic skills of students with ADHD could be obtained through academic interventions delivered through school-based consultation.

DuPaul and Volpe (2009) established that the rates of "on-task" behavior are particularly low when in the classroom passive activities are being used, such as listening to teacher instruction or reading silently. The disruptive behaviors as talking without permission, leaving the assigned area, or interrupting teachers' instruction occur frequently from students with ADHD, because of their hyperactive and impulsive behavior. The school behavior difficulties are frequently associated with academic performance deficits. Students with ADHD are at higher-than-average risk for academic achievement difficulties and learning disabilities.

Harris et al. (2005) investigated the self-monitoring of attention and self-monitoring of performance in the case of six students who met the criteria for ADHD. These six participants were from the third, fourth, and fifth grade, and all of them received medication for ADHD. The main problems of the students were the difficulties in maintaining their attention and facing with severe difficulties with spelling, frequently receiving low grades or failing their spelling tests. The research was based on an experiment conducted by two special education teachers and the procedures were implemented during the students' language arts period. For the self-monitoring of attention, participants were taught a modified version of a specific spelling study procedure (the Fitzgerald spelling procedure). This included six steps: to look at the word, to close their eyes and spell the word aloud, to study the word again, to cover the word, to write the word three times, and to check to see if the word was spelled correctly. For the self-monitoring of performance, participants were taught the monitoring procedure for their performance in practicing spelling words, by recording the number of correct practices on a graph. The researchers' findings presented a positive impact on the spelling study behavior of students with ADHD; all six participants demonstrated a significant increase in on-task behavior. Students' performance in the self-monitoring of attention and self-monitoring of performance led to high performance in spelling.

Most of what is known in this area is based on studies using samples of boys. Rucklidge (2008) showing that girls were less diagnosed with ADHD. Even if the diagnosed girls manifested similar deficits and outcomes as the boys did, Rydell (2010) identified that boys had a significantly higher number of ADHD symptoms than girls. These are some of the reasons why Skogli et al. (2013) concluded that ADHD was diagnosed more often in males than in females. Reeves (2022) dedicated an entire book to present the modern man conditions in the current society. The author started his book saying, "I have been worrying about boys and men for 25 years" (2022, p. 1). Reeves emphasized the growing tendency in the headlines about boys struggling at school, how the educational system is structured in ways that put male students at a disadvantage, facing problems with school discipline and being overdiagnosed with ADHD. Considering the social functioning of students diagnosed with ADHD, Rucklidge (2008) identified that boys were more aggressive with their peers than girls. In contrast, girls with ADHD were identified to have more emotional problems (lower self-esteem, a negative attributional style, or hopelessness), compared with boys.

DuPaul et al. (2006a) investigated the differences in academic, social, emotional, and behavioral functioning considering the gender of students with ADHD. Their study involved elementary school students diagnosed with ADHD, 133 boys and 42 girls. Sixty-seven students also met the criteria for comorbid oppositional defiant disorder, and another 27 of the participants presented significant conduct disorder symptoms. Additionally, 29.1% of the participants were receiving part-time special education services, and 28.5% were receiving psychotropic medication. The researchers used teacher ratings, direct observations of classroom behaviors, and a standardized, norm-referenced achievement test. Teachers reported that the participants were underachievers academically. The results of a series of multivariate analyses of variance revealed no significant gender differences in the academic functioning of students with ADHD. Differences between girls and boys were identified for behavior assessment, individual *t* tests revealed that girls with ADHD were rated significantly higher on the externalizing problems, in comparison with boys with ADHD. Another conclusion emphasized that both girls and boys with ADHD were found to be functioning in the low average range in math and reading.

Another interesting research assessed ideal temperaments of students as viewed by teachers in four cultural settings: The United States, England, Israel and Japan (Klein & Ballantine, 1990). This research approached the cultural ethno-theories about child development, which provides the context of early socialization in homes and schools. Researchers found similarities between the United States and England concerning the ideal temperaments of students, and differences between the United States and Israel. The researchers found cross-cultural differences regarding the temperament components of mood, intensity, activity, and adaptability. The authors underlined the importance of understanding the cultural ideals of temperaments by teachers, who must know the learners, and must make the best decisions about classroom environments and about individual adjustment patterns.

1.3.2. Hyperactivity and Social Challenges: Teachers' and Peers' Interpretations in School Settings

Often, classmates perceive students with ADHD as annoying, immature, intrusive, verbally and physically aggressive, impulsive, and bossy; they are less preferred for friendships, less pleasing, and often are among those rejected (Daly et al., 2007). The deficits in establishing interpersonal relationships and in social adjustment manifested in

adolescence often continue into adulthood, and it may be one of main causes of social maladjustment, of mental problems, or crime. In contrast, for students with ADHD who can manage to overcome their social problems the prognosis is optimistic (Woodward & Fergusson, 2000). Students with ADHD cause a high stress degree to teachers compared with students without ADHD. Stress is even more intense if the students with ADHD also have comorbid disorders (Ray et al., 2007). DuPaul and Stoner (2003) concluded that the main reasons for which students with ADHD are sent (by teachers) to the school psychologist or the clinician are: (a) the child's inability to maintain attention and (b) the lack of self-control behavior. What cause teachers' stress are not just the behavioral problems of students with ADHD, but also the discomfort felt by these students due to the persistence in time of their problems.

Research coordinated by Cornett-Ruiz and Hendricks (1993, as cited in Ray et al., 2007) showed that watching videos with specific ADHD behaviors negatively influenced teachers' and schoolmates' perception, while the diagnosis itself of students with ADHD did not do this. These findings emphasized that the intense behavioral symptoms affect, in a negative way, teachers' and peers' perceptions, reducing the welfare of students with ADHD in school (Ray et al., 2007).

DuPaul et al. (1998) investigated the effects of class wide peer tutoring on the classroom behavior and academic performance of students with ADHD. This study involved 18 students (15 boys and 3 girls) who met the criteria for ADHD, with ages between 6 and 10. It was established that all participants were underachievers academically. The researchers also included a group of 10 peer students for comparison. This group was from the same classrooms as the students with ADHD, and the second group was characterized as average in terms of behavior and academic performance. The program based on class wide peer tutoring was implemented by the teachers from participants' classrooms. The direct observations of classrooms established the frequency of on-task, off-task, and fidgety behavior exhibited by all of the participants. For assessing the academic performance, the teachers administrated brief pretests and posttests of academic material (math and spelling tests) covered during the week. The effects of the program were measured using an ABAB reversal design (A - no intervention; B - intervention; A - no intervention; B – intervention) in 18 classrooms over the course of 2 school years. For students with ADHD the mean active on-task behavior increased from 29% to 80%. Similar results were also found for the comparison peers. The off-task behavior exhibited by students with ADHD decreased from 27% to 6%. Regarding the third variable, the range

of fidgety behaviors, a reduction was identified after the implementation of the class wide peer tutoring. The research results indicated that the implemented program increased the active engaged time for students with ADHD and reduced their disruptive off-task behavior.

Regarding what students with ADHD know and what they do, O'Neill and Douglas (1996, as cited in Douglas, 2004) demonstrated that there is a large gap between the level of knowledge of students with ADHD about effective rehearsal and study strategies, and their actual use of the strategies in test situations. This conclusion outlined the difference between not knowing and not doing. As such, these students may have fewer difficulties knowing what to do than doing what they know. Many of the parents of students with ADHD report that they have been told repeatedly by teachers, clinicians, and others that their son or daughter is very bright, but doing poorly in school because of inadequate focus, inconsistent effort, insufficient organization, and excessive forgetting (Brown et al., 2011). Recognizing the difference between not knowing and not doing may help avoid performance failure of executive problems, such as working memory, inadequate attention, or inhibitory control.

The parents of students with ADHD are often concerned with their children's difficulties faced at school. Rogers et al. (2009) argued that parents of students with ADHD have a low level of self-efficacy in solving educational and behavioral problems faced by their children. Power et al. (2012) considered that parents can support their children's school performance by at least two ways: (a) developing a strong bond with the child and training the self-control capacity, and (b) the direct involvement of the family in their child's education. Family involvement may be interpreted as a form of commitment in carrying out educational activities, either at home (e.g., helping the child with their homework) or in school (through conferences and lectures organized in partnership with teachers).

Power et al. (2012) proposed a program through which parents could learn to become involved in the school activities of students with ADHD, entitled Family-School-Success (FSS). FSS effectiveness was supported by consultations offered to parents regarding behavioral modeling, and by systematic interventions where parents were meant to be involved into educational activities at home. The program also involved the use of cards which described the students' daily work, completed by teachers and also by parents. Consultations conducted jointly by parents and teachers were aimed at structuring a problem-solving approach and identifying risk situations, based on behavioral therapy.

Identifying the causal factors of the behavior of students with ADHD in the school context helped both parents and teachers set realistic expectations about what the students could do, how and under what conditions could manifest themselves at the highest degree of functionality. In this way, parents could truly learn the peculiarities of their child, because otherwise they often would maximize, or contrarily minimize, the real potential of their child. The main purpose of the systematic interventions organized at home by parents was to determine the optimal time needed from the child to fulfill their workload. The results were promising because realistic expectations and goals were established, the performance could be assessed in relation to what was proposed, and then an efficient reward system could be established.

1.3.3. Romanian Education Policy and Its Implicit Messages about ADHD

Romania's legislative framework, particularly the Law of National Education no. 198/2023, includes provisions supporting the education of students with Special Educational Needs (SEN), including ADHD, through both specialized and inclusive educational practices. According to the Organization for Economic Co-operation and Development (OECD, 2006, p. 281), "All Romanian citizens have an equal right to education, at all levels and in all forms, regardless of gender, race, nationality, religious or political affiliation, and social or economic status." Students in Romania are placed in special schools based on the severity of their disabilities. Those with minor deficiencies, such as learning or behavioral problems, are integrated into mainstream schools with provisions for special support. Special schools cater to students with severe disabilities, while mainstream schools accommodate those with mild to moderate impairments (OECD, 2006). Students with deficiencies who are integrated into mainstream schools are classified as SEN students.

A 2022 UNICEF report highlights the most commonly diagnosed mental disorders among Romanian children: conduct disorders (24.19%), ADHD (22.65%), anxiety disorders (19.23%), autism spectrum disorders (14.47%), depressive episodes (9.14%), attachment disorders (4.3%), school phobia (3.10%), and eating disorders (2.88%).

Despite these statistics, Law no. 198/2023, as issued by the Ministry of National Education and the Romanian Parliament, does not explicitly recognize ADHD as a distinct category within its Special Education provisions. Chapter V, Section 2, which addresses Special Education, lists the following categories: mental, intellectual, and sensory

disabilities; physical disabilities; emotional disorders; neurodevelopmental disorders; social maladaptation; and other impairments resulting from genetic or chronic dysfunctions. Although ADHD can be classified under neurodevelopmental disorders, the law does not provide specific guidelines for accommodating students with ADHD in mainstream schools.

Law no. 198/2023 outlines four levels of special support for SEN students: Level 1 (Basic Support): Mainstream curriculum with flexible teaching strategies, psychopedagogical assistance, counseling, and special interventions from a multidisciplinary team. Level 2 (Additional Support): Special support from itinerant teachers and a reduced curriculum (up to 20%). Level 3 (Intensive Support): Enhanced intervention strategies and individualized learning plans. Level 4 (Special Support): Comprehensive assistance for students with severe disabilities.

A special committee in each Romanian county determines the appropriate support level for each SEN student. However, students diagnosed solely with ADHD, without comorbid disorders, are often not recognized as SEN students and, consequently, do not receive specialized support.

The identification and classification of disabilities fall under the jurisdiction of the Commission for Child Protection (OECD, 2006). Special education in mainstream schools is provided through standard curricula, slightly adapted curricula, or specialized curricula. Psycho-pedagogical rehabilitation and recovery services complement these educational supports.

According to Gherguț (2011, p. 1694), "Almost one-third of all children and youths with special educational needs in Romania attend mainstream schools." SEN students include those with motor difficulties, Down Syndrome, speech impairments, behavioral disorders, autism, and ADHD (Simion, 2015). Ensuring an appropriate learning environment for SEN students remains a challenge for both teachers and parents (Simion, 2015).

In Romania, "integration" refers to the process of inclusion, incorporation, and harmonization within the educational system (OECD, 2006, p. 290). This process must align with both social integration and educational development, gradually evolving into full inclusion. Support services for SEN students include itinerant teachers, who assist students with learning, adaptation, and developmental challenges, including those with attention deficits. Additionally, school counselors provide psychoeducational support within mainstream schools.

Despite clear guidelines on individualized learning approaches for SEN students, a prevailing characteristic of the Romanian education system is the expectation that all students meet uniform academic standards (OECD, 2006, p. 328). Gherguț (2011, p. 1697) emphasizes the need for allocated resources to drive changes in attitudes, teaching methodologies, curricula, and learning environments to better accommodate all students. A review of OECD reports on educational policies for at-risk students and those with disabilities reveals that ADHD is not explicitly recognized as a distinct SEN category. Instead, "attention span" is noted as a deficiency qualifying students for itinerant teacher support.

Some teachers in Romania express negative perceptions about the integration of SEN students in mainstream schools, often influenced by prejudices, stereotypes, and unfavorable attitudes toward students with special needs (Gherguț, 2020). Addressing these biases and enhancing teacher training is essential for fostering a truly inclusive educational environment.

In conclusion, Romania's legislative framework, including the National Education Law no. 198/2023, includes measures to support the education of students with Special Educational Needs (SEN), including ADHD, through both specialized and inclusive educational practices. Although the law supports the integration of students with disabilities into mainstream schools, it does not explicitly recognize ADHD as a distinct category within special education, leading to a lack of specific guidelines for accommodating students with ADHD in these schools. Despite alarming statistics regarding mental disorders among students in Romania, there are significant challenges in ensuring an adequate educational environment for all SEN students, including teacher training and necessary resources. Additionally, negative attitudes and persistent stereotypes about students with special needs create major barriers to truly inclusive education. Therefore, it is essential to invest in changes at the level of teaching methodologies, resources, and teacher training to create a more equitable educational system that meets the needs of all students.

1.3.4. ADHD students and Special Needs

A diagnosis of ADHD means, in many jurisdictions across the world, the assurance of *additional support in schools*. The attentional difficulties in classrooms can lead to a description of deviance for those students who manifest ADHD symptoms and can be

perceived as belonging to another clinical category, such as emotional disturbance or behavioral disorder (Graham, 2010).

Because the ADHD construct is still contested (Bradley-Klug & Grier, 2000; Mather, 2012; Rafalovich, 2008; Wedge, 2015), the most efficient pedagogical approach, the appropriate school policies, or the effective interventions are hard to be established. Considering this, Graham (2010) argued that if there is a difficulty to recognize the consonance between the behaviors that indicate ADHD and those aroused from poverty, anxiety, or language impairment, it is not surprising that the educational systems find it difficult to formulate appropriate responses. In these conditions, terms such as special education, special needs, special needs students, inclusive education, and inclusion versus exclusion are often used.

Inclusive education embraces human rights, equal opportunities, and social justice (Armstrong, 2012; Armstrong & Barton, 2000). Using the same idea, Thomas and Vaughan (2004) showed that the emphasis towards inclusion comes from many directions: research, the imperative for greater social justice, call for civil rights, legislation that prohibits discrimination, original and distinctive projects started by imaginative educators, and the voices of those who have been through special education. Some researches view inclusive education as an ongoing development of special education, others believe that what we refer to as inclusion is, and should be, derived from the mainstream approaches to instruction and school organization, creating an alternative to special education knowledge and practices (Ballard, 1999). This latter perspective provides the idea of inclusion like a merger of special and regular to maintain a medical, curative model of education that includes those labelled as special from the curriculum and from other experiences available to non labelled students.

Inclusion is not about placing students with special educational needs into mainstream schools, it is about changing schools to make them more responsive to the needs of all students (Mittler, 2000). This educational approach is to help all teachers accept responsibility for teaching all students in their school and preparing educators to teach those students who are currently excluded from their school, for whatever reason. Mittler (2000) was referring to all students who are not benefiting from schooling, not just those who are labelled as having special educational needs.

The greater integration of students with special educational needs into mainstream schools was emphasized in the Warnock Report (1978, as cited in Mulhern, 2003) and ratified in the 1981 Education Act. The Warnock Report founded a department for policies

and approaches to educating all people with handicaps. This department was pervasive until the late of 1970s, when the Education Act was constructed. The Warnock Report recommended that the mainstream setting was the best for all students. The report's commitment to integration had a wide range of influence on later policy and practice, particularly in the original and revised Code of Practice on Special Educational Needs, where the Report's approach was amplified and developed. The Warnock Report was clearly an important historical and influential landmark in the development of "inclusive education" (Gulliford, & Upton, 1992; Mulhern, 2003).

A large number of nations have expressed a strong commitment to a more inclusive society and a more inclusive school system (Ballard, 1999; Lindsay, 2003; Thomas, & Vaughan, 2004). In the field of education, inclusion involves a process of reform and restructuring of the school as a whole, and its aim is to ensure that all students can have access to the whole range of educational and social opportunities offered by the school (Mittler, 2000). This school reform concerns the curriculum, the assessment, recording, and reporting to the students' achievements, the decisions that are taken on the grouping of students within schools and classrooms, pedagogy and classroom practice, sport and leisure and recreational opportunities. In an inclusive, school it is important to avoid segregation and isolation, providing opportunities for all students, including those from ethnic or linguistic minorities, for those with disabilities or learning difficulties, for students who are frequently absent, or for those at-risk for exclusion.

The Code of Practice on the Identification and Assessment of Special Educational Needs (DfE, 1994, as cited in Mittler, 2000) provided advice on students with moderate learning difficulties, specific learning difficulties, emotional or behavioral difficulties, and sensory impairments, and implemented the concept of the individual educational plan (IEP). This outlined that the students with special educational needs require a different approach in the teaching and learning processes. The realities of inclusive education are difficult to accomplish sometimes because of teachers' lack experience and/or negative attitudes. Gruchy (2000, as cited in Mulhern, 2003) blamed the government's drive for the greater inclusion of more pupils with special educational needs as contributing to increased stress among teachers. Inclusive education is a complex process, and its implementation may give rise to contradictions, inconsistencies, and tensions in professional practice. Mittler (2000) considered that teachers play a central role in promoting inclusive education, but also, teachers can represent the greatest obstacle in this process because of their perceptions and/or attitudes. "What happens in schools is a reflection of the society in

which schools function" (Mittler, 2000, p.1). The values, beliefs, and priorities of one society will permeate the life and work of schools and do not stop at the school gates. Teachers, who are working in schools, are citizens of their society and local community, and they have the same range of beliefs and attitudes as any other group of people.

The complexity of inclusive education may cause tensions and confusion about what it means, conceptually and in practice. Teachers often perceive themselves as inadequately prepared to teach students with special educational needs (Spasovski, 2010). Many competencies important for efficient practice are not systematically developed. For inclusion to occur, teaching practice should respond to the individual differences of all students. Such practice demands teachers and in-school professional staff to develop appropriate competencies that involve knowledge, skills, and dispositions in order to teach equitably and promote learning of all pupils. Practicing inclusive education is strongly determined by the teachers' perception of the students with special needs and by the perception of their capabilities and limitations (Spasovski, 2010). Those perceptions are simultaneously the reason and the result of the prejudices and stereotypes related to students with special needs. The influences of these perceptions have consequences on the learners and the quality of the whole educational process.

"The debate is not so much about the principle of inclusive education on which there appears to be general agreement, but rather how it is to be realized in practice" (Mulhern, 2003, p. 5). Mulhern (2003) considered that barriers to inclusive education associated with teachers' dilemmas can be identified through the following questions: What do teachers understand by inclusive education? Should anyone be excluded? Do teachers have experiences of working with students who are challenging? What was challenging about these students? How do they resolve such issues?

In the context of an equitable education, teachers from mainstream schools must stand up to the inclusive process of students with different types of disabilities. Having a child with ADHD in the classroom can present several challenges to teachers; their work becomes much more demanding. The difficulties of the students with ADHD concerning the sustained attention, controlling impulse, and staying seated often result in academic problems. In this context, many teachers may be unprepared to effectively manage the academic, social, and emotional needs of these students. Their problems with attention span, impulse control, and activity level frequently interfere with both classroom and social activity (Perold et al., 2010).

The difficulties related to ADHD are often most apparent in the school settings and teachers are often intricately involved in interventions for ADHD (Kern & Seabi, 2008). To improve school outcomes of students with ADHD, teachers must add novelty, stimulation, and activity to teaching materials and methods (Gregg, 1995). Moreover, for an efficient inclusion of students with ADHD into mainstream schools, teachers must have information about ADHD and knowledge about at least one type of therapy which can be used effectively with students with ADHD (Drugaş & Drugaş, 2013). In this context, many teachers may be unprepared to effectively manage the academic, social, and emotional needs of these students.

1.3.5. Multimodal Treatment: An Intersection of Medical, Educational, and Parental Strategies

Numerous studies have shown the importance of *the multimodal treatment* in ADHD: psychosocial therapies combined with pharmacotherapy. Generally, these studies claimed that medication provides the basis for a successful psycho-educational intervention, which in turn provides the possibility of lowering the doses of medication (Johnston & Leung, 2001). ADHD symptoms and their manifestations (all the time and everywhere) emphasized the importance of using complex and varied therapeutic interventions. In this regard, Dindelegan (2011) listed the following objectives in the therapeutic intervention on students with ADHD:

- reduce the frequency of disruptive behavior
- develop the relationship with parents, siblings, teachers and friends
- improve school performance (workload, efficiency, finality and accuracy)
- increase self-esteem; to develop their independence and personal autonomy
- improve the safety activities in community (such as crossing the street, cycling, using public transport etc.)

Establishing these objectives and considering their complexity, the followers of the multimodal intervention argued that treating students with ADHD means involving parents, other family members, friends, the child themself, teachers from their class, or their classmates. The guide offered by the ADHD Subcommittee of the American Academy of Pediatrics provided valuable information and practical complex information about various treatments for ADHD and their degree of efficiency to improve certain dysfunctions manifested by students with ADHD (Brown et al., 2005). Different types of treatment were

compared, provided alone or in dyad (for example using stimulant medication alone or in association with behavioral therapy). Conclusions highlighted the importance of stimulant medication in treating severe symptoms of ADHD and in improving student abilities to be autonomous and adapted. Applied behavioral therapy combined with other interventions had certain limitations in terms of improving the symptoms of dysfunctional students with ADHD, but combining it with drug therapy seemed to improve the functional adaptation of students with ADHD, reducing the need for stimulant medication. Medication and behavioral therapy should be associated with teacher training and counseling for parents (Fewell & Deutscher, 2002).

Schachar, & Wachsmuth (1991) found that ADHD and a comorbid conduct disorder are associated with dysfunctional parent-child relationships and moderate adversity. An increased rate of psychopathology is characteristic to those parents of children diagnosed with conduct disorder or ADHD associated with conduct disorder, but not of those with an exclusive diagnosis of ADHD. Blaming children or parents for those problems and difficulties which have external determinants (such as the ADHD diagnosis) is inadequate, unattractive, and with no utility (Jones, 2002). The symptoms of ADHD affect not only the child's life, but also the relationship with their parents. Those parents who are inconsistent in their relationships with their children, who have a poor ability and/or desire to monitor their children, or who adopt punitive discipline strategies, raise children with poor social skills and competencies (Fabiano, 2007). Moreover, their parenting results will have a negative valence, even including alcohol or drugs consumption, delinquency, and school failure (Power et al., 2012). The authors emphasize that parents' inconsistency in terms of maintaining the discipline can lead to a weak and ineffective parenting style, which makes it difficult to correct errors regarding negative behaviors. If children have various disabilities or disorders, parenting skill development is an extremely important objective in therapeutic interventions. The goal of family-centered therapy is to develop the parents' skills in raising and educating their ADHD children, embodied in a better adaptation to the family and social environment (Rogers et al., 2009).

Generally, the effectiveness of combined pharmaceutical treatments, parent training, and intervention on children's behavior is supported, all being focused on developing the child's capacity to cope with disruptive behavior (McGoey et al., 2002). At this age, the behavior self-regulation ability is not well developed, so the child's response in various situations is impulsive. They often require not only the teachers' attention, but of the entire school staff, because they have poor self-control (e.g., impulsive verbally and

physically), are hyperactive (e.g., ongoing running and moving) and unable to maintain attention even in a brief conversation. To alleviate these symptoms, an intervention is often necessary, as established by mental health professionals (Barkley, 1997; Dindelegan, 2011; McGoey et al., 2002). Child-centered therapy refers to an individually planned psychological counseling program or psychotherapy for children with ADHD. The therapeutic aim of the child-centered program is determined by the manifested symptoms, specifying which is the most severe maladaptive behavior. Researchers have recommended to evaluate and consider the possibility of comorbid disorders, when the program is planned and the therapeutic intervention is structured (Ray et al., 2007). The evaluation process results are the main determinants of the child-centered therapies' effectiveness.

The way parents perceive and assign the responsibility in defining the child's maladaptive behavior manifestations represents an important pattern in establishing positive or negative relationships with their child (with ADHD) (Johnston, & Leung, 2001). If the focus is moving increasingly toward the child ("He did that thing on purpose!"), the parents tend to react negatively in maladaptive behavior manifestations (e.g., to quarrel, to accuse, to offend). Connected with this, children with ADHD need a highly structured and organized environment, with very clear and concise guidance and requirements (Bilbow, 2011; McGoey et al., 2002). If these guidelines and requirements vary, children may have difficulties in following and finishing them. Unfortunately, in many cases children's treatment is fragmented; the diagnosis and intervention on children and their families being based on the profession, branch, or specialty of the person who is planning the therapeutic intervention for the first time (Bogas, 1993).

Fabiano (2007) emphasized a specific problem observed in parents training program: the studies where the effectiveness of the parents' training program was assessed, the participants' adherence at the intervention had a low value. Similarly, Barkley (2002) stated that families involved in behavioral training programs fail to follow through to the end of the programs or interrupt them prematurely. Observing the low parents' adherence in training programs, researchers' attention was directed to discover the effective ways in increasing the involvement of participants (especially of the parents). Among the pursued objectives, Fabiano (2007) thought that it should be important to develop parents' expediency or to identify personal problems faced by participants (e.g., maternal depression). The same author reviewed a large number of studies investigating parents' involvement in behavioral training programs and they concluded that 87% of the analyzed materials did not include information about the results of fathers of children with ADHD,

focusing only on the mothers' results. Fabiano emphasized that mothers of children with ADHD were more stressed, with a higher frequency of negative reports in their parent-child relationships. Difficulties also arose in the relationship between the father and the child with ADHD; in addition, fathers had difficulties in their relationship with mothers (their wives or partners).

As we mentioned at the beginning of the presentation of the educational paradigm, this approach requires a complex view, starting with what ADHD students are able to do (due to their clinical conditions) and ending with what teachers should do to improve the school achievement of students with ADHD. Regarding the dysfunction level in ADHD, the discussion is whether ADHD-associated traits and behaviors should not be considered all dysfunctional, because they differ as a function of the frequency and severity of the symptoms (Hawthorne, 2013). The specialists who considered that ADHD is over diagnosed emphasized that too many behaviors or symptoms are classified as dysfunctional, and those who considered that ADHD is under diagnosed mentioned that there are too few behaviors and symptoms. This is the start of the disagreement between those who consider ADHD a disease and those who consider ADHD more like a metaphor. In the next section we will analyze a different point of view regarding the causes of ADHD, contrary to those established by physicians. This represents the social construct paradigm of ADHD.

We dedicated the next section to the social construct paradigm of ADHD, which will help the reader to identify and understand what external factors can influence the diagnosis of ADHD. We will focus on illness as a social construct, on how the social interactions provide specific representations on ADHD, and we will analyze which factors can influence the psychiatric diagnosis process of ADHD (e.g., the subjective interpretations and the individual perception of the specialists, and the power of pharmaceutical industry). This analysis inside the social construct paradigm also provides valuable information about what and how professionals and parents should investigate the ADHD diagnosis as a social construct (the document analysis and the semantic analyses). These theoretical and methodological frames aim to highlight the general logic of the present thesis.

I.4. Social Construct Paradigm: Diagnoses, Expectations, and Stakeholder Realities

The nature of ADHD remained a continuous source of controversy over the last years. As we presented in the section dedicated to the clinical paradigm, ADHD is analyzed as a predominant biological concept. Biology must play a role in ADHD symptomatology, because people are biological creatures (Hawthorne, 2013). Hawthorne considered that the medical approach presents ADHD as a "biological" disease, and a counterpoint presents it as a "social" problem; if medicine considers ADHD a "dysfunction," the alternative view suggests that it is more a "difference" and not a disease. Robin (1998, as cited in Bradley-Klug & Grier, 2000) emphasized an indictment of American culture which may encourage ADHD symptoms through mass-media, films or video games; other times, the label of ADHD is received by "temperamental students"; finally, the pharmaceutical industry is accused that it promotes the diagnosis of ADHD, considering it a neurodevelopmental disorder.

The nature of ADHD represented a source of controversy over the last years. ADHD was analyzed predominantly as a biological concept; ADHD was considered a biological dysfunction caused by genetic influences, neurochemistry or neuroanatomy (Bayard et al., 2020; Demontis et al., 2023). Bayard et al. (2020) presented imagistic proofs for a general population of adolescents diagnosed with ADHD (n = 1,093). MRI findings show a smaller structure in prefrontal and anterior cingulate cortex. If these imagistic analyses are not included in the diagnosis process, the ADHD has no biological evidence, being established on different criteria. The psychiatrists' contribution in the overdiagnosis of ADHD is provided by focusing only on ethical or other social norms, ignoring the necessity of concrete biological evidence. However, the interest in ADHD exceeded the borders of psychiatry and psychology, and since the 1990's, ADHD started to be attentively analyzed by sociologists and researchers in education, with a focus on the analysis of the diagnosis process. In Romania, research on ADHD has a relatively short history, which explains the short experience of diagnosis, and misunderstandings of its evolution. In the clinical evaluation, the analysis of the child`s behavior is based on what teachers, parents, and psychologists describe regarding the child`s behavior (Iancu, 2007; Wedge, 2015).

In the context of the controversial diagnosis of students with ADHD, the neurobiological paradigm of ADHD became more and more criticized, especially by sociologists who consider this disorder more a social construct and not a disease (Bradley-Klug & Grier, 2000; Mather, 2012; Rafalovich, 2008; Wedge, 2015).

It is important, for our work, to understand how the social construction of the illness and psychiatric diagnosis occur and what methodology could help study this topic. In this section of our thesis, we describe the social reality of ADHD through the methods and theories related with social constructivism. In the first part, we will present a short and general framework of social interactionism and its role in the social representations' occurrence. These social forces (interactions and specific perceptions) influence our knowledge (representations) and actions (classifications) towards illness and diagnosis. The process of the diagnosis is analyzed in detail in the second part of this section, trying to identify if the ADHD diagnosis process is a clinical procedure, or if it is about labeling temperamental students. In the end of this section, we dwell on ethnomethodology, which provides important means for researchers to analyze the social construction of ADHD.

1.4.1. Constructing ADHD: Social Narratives and Diagnostic Consequences

What is social reality and how is it formed from a construction viewpoint? Pierre Bourdieu was, without doubt, one of the most important sociologists from the 20th century (Hatos, 2006), whose theory regarding social structure and social constructivism represents a central concept in the field of sociology (Leyton, 2014). Bourdieu's contributions changed the understanding of different sociological areas (Hatos, 2006), his theory investigating social class inequalities (Leyton, 2014), the concept of social capital (Claridge, 2015), public education policy and educational sociology (Grémion, 2005), and he had an important contribution to disclose the idea that individuals are simple objects, with regulated practices and without specific influence (Nash, 2003).

Bourdieu (1987) proclaimed that social reality is constructed by its agents, and this reality is understood as a product of their interactions. Earlier, Berger and Luckmann (1967, p. 43) discussed, at the beginning of the 1960's, the idea that "the reality of everyday life is shared with others." They emphasized the subjectivism, discussing about how social interactions are developed progressively and analyzed in an anonymous way through the individuals' face-to-face situations. Anonymity is occurring as an automatic phenomenon when the face-to-face situation is ended. These authors presented how easily we can typify an individual analyzing and interpreting aspects from their conduct, behavior, and emotional reactions. In the end of these analyses, different characteristics of that individual are named, which include them into a specific class or category. This subjectivity provides a dynamic reality, where different social phenomena occur. One social phenomenon, in

Berger and Luckmann's (1967) opinion, is based on three important moments experienced by individuals in everyday life, and these include: externalization, objectivation and internalization. One's behavior has a subjective framing, because it expresses their emotional disposition and beliefs. These subjective manifestations are reflecting the externalization moment, which is an ongoing process. The second moment is the objectivations, which define that process where the externalized manifestations are transformed and interpretated through different criteria. The internalization is presented as being the third moment when an individual processed the objectivated information through their consciousness.

Bourdieu (1987) discussed the opposition between social structuralism and constructivism, using the terms of "subjectivism and objectivism." Social structuralism identifies individuals into different categories, being treated as elements which can be classified. In contrast, social constructivism identifies the individuals as active agents who are able to construct their social reality. Bourdieu's theory emphasized that structuralism and constructivism are not in opposition, the individuals being both "classified and classifiers, but they are classified according to their position within the classification" (Bourdieu, 1987, p. 2). Hatos (2006) presented that the key concepts of Bourdieu's theory are: the social space, the social field, and the habitus. The social space is an ensemble of physical environment proprieties, independent from the individuals' characteristics, but in relations with them. This space is constructed considering the characteristics of the fundamental powers presented earlier. These capitals (economic, cultural, and social), in terms of their volume, composition, and trajectory, distribute the individuals and the groups in different ways. As Hatos summarized, Bourdieu assumed that the positions in the social space are formed considering the similarities between the capital size and structure or nature. The second key concept, the social field, is defined by the individuals, groups, and the organizations existing it the social space. The individuals' actions and interactions provide the consistency of the social field. Hatos (2006, p. 210) highlighted that Bourdieu considered each social field "an arena of conflicts" because each social life is in a constant fight for control and power."

The main task of the social sciences lies in the explanation of social phenomenon, and not the behavior of single individuals (Coleman, 1994, as cited in Drugaș & Drugaș, 2016). Coleman believed that in isolated cases the social phenomenon may derive directly, through summation, from the behavior of individuals, but more often this is not so. The focus must be on the social system, whose functioning is important to be explained.

One social phenomenon, in Berger and Luckmann's (1967) opinion, is based on three important moments experienced by the individuals in everyday life, including: externalization, objectivation, and internalization. One's behavior has a subjective framing, because it expresses their emotional disposition and beliefs. These subjective manifestations are reflecting *the externalization* moment, which is an ongoing process. The second moment is *the objectivation*, which refers to that process where the externalized manifestations are transformed and interpreted through different criteria. *The internalization* is the third moment, when an individual has processed the objectivated information through their consciousness. These concepts provide us the first explanations about how an individual can change reality based on their perspective, and understanding this is important for our present work.

Danziger (1990, as cited by Hacking, 2000) considered that a social construct could be applied for four distinct entities, such as: a concept, a practice, a body of knowledge, and an individual themself. The first entity, *a concept* or an idea, is represented by one specific subject observed or tested in difference experiments. *The practice* is represented by a list of actions where the subject is integrated. The third entity analyzed as a possible social construct is the *body of knowledge*, more precisely how different methods or techniques produce knowledge, for example, the differences existing over time in the educational system, hospitals, or military institutions. The last-named entity is *the individual themself*: how an individual finds general or specific information about themself, how the individual is the subject for different tests and investigations.

For the present dissertation the analyzed entity as a possible social construct is ADHD and the practice of diagnosing ADHD (a psychiatric procedure). An important contribution on the social construct paradigm of ADHD had Hacking (2000). Hacking debated the mental illness (in general) as a social construct, in one chapter of their book entitled, *The social construction of what?* Analyzing if different mental illness were biological realities or social constructs, Hacking considered that this topic is most pressing, because in this case people have to deal with disagreeable patterns of behavior. In establishing what is and what is not a normal or agreeable behavior, different factors can interfere, from the individual subjectivism to cultural differences. An important difference was observed by Hacking, who identified the position of the mental illness between the methodological and social construct. They used for the exemplification “the child abuse” problem, which was considered by Hacking a real fact, but the perception constructed by the individuals around the concept of child abuse was considered by the same author a

social construction. Hacking encouraged readers to think and address different questions, as the best starting points in their analysis.

In his debate on the mental illness topic (as a biological fact or a social construct), Hacking (2000) exemplified *the diagnosis of ADHD*. The Canadian philosopher recalled that "there has been a historical succession of ideas: fidgety, hyperactive, attention deficit, and Attention Deficit/Hyperactivity Disorder" (Hacking, 2000, p. 102). The fidgety children, identified a few decades ago, are different from those who are diagnosed now with ADHD. To explain these differences, Hacking emphasized that there are differences between "the interactive" and "the hyperactive" concepts. The interactive is considered a new concept which is not used to describe individuals, it is used instead to define a type of classification.

Hacking's (2000) theory provided the basic explanation of how the classification is the core element for a social construction. We emphasize three important elements in his explanations of social construct theory: the *social interactions* (of ADHD stakeholders), which facilitate specific *classifications* (psychiatric diagnosis), which in turn lead to the *social construct*. This process helps us to establish the structure of the present section. Therefore, we divided our next theoretical framework of the social construct paradigm into two parts. The first is about the social interactions and how the social representations on illness emerge, being important to analyze the social reality of ADHD among the stakeholders (parents and teachers). It is important for our topic to lead the detailed analysis towards the medical field, so, in the second part we define the illness and diagnosis from a socio-representation angle, focusing on how external social forces influence the psychiatric diagnosis process.

1.4.2. The Emergence of Meaning through Stakeholder Interaction

Because health contributes at the same time to individual, group, and societal issues, Aim et al. (2018) concluded that health is not just a somatic-physic state, but it also has a social value. The authors assumed that the social representations of health are studied not only by using genetics, but also by using the socio-anthropological perspectives. As such, the state of health represents a connection between biological and social norms.

According to Mather (2012), social construct theory is based on peoples' interactions and relationships around different events or beliefs. They presented that the social construct theory of ADHD was based on the interpretative assessment of a specific

social phenomena. By observing and analyzing the individuals' behavior, interactions, and relationship, there can be identified the core elements which are very important to understand how different social phenomena occur, especially in contemporary society. As a result of core elements analyses, Cheung (1997, as cited in Mather, 2012) emphasized that people develop different beliefs about what is around them, and these beliefs are developed based on their perceptions, definitions, and mostly subjective representations. What is considered normal or abnormal is established based on the society's beliefs and knowledge.

1.4.2.1. Symbolic Communication in Stakeholder Contexts

Social interactionism explains how society is created and maintained by the repeated interactions between individuals (Carter & Fuller, 2015). These interactions between individuals are developed through language and symbolic communication. The outcomes of these interactions consist in subjective points of view and unique perspectives. The authors determined that the symbolic interactionism presents the individuals' interactions in a particular social and cultural context, according to the meaning of specific things. Blumer (1969) described these things as everything that individuals observe in their world. These can be physical objects, human beings, categories of persons, institutions, individuals' features and characteristics, activities, or situations met by individuals in their daily life.

Theory and research in symbolic interactionism were developed based on Blumer's approach (Carter & Fuller, 2015), who formulated for the first time the concept of symbolic interactionism. Blumer (1969) elaborated this concept as a label for "a relatively distinctive approach to the study of human group life and human conduct" (p. 1).

Blumer (1969) presented three premises which help the reader understand how the symbolic interactions emerge. The first premise is about the simple interaction of individuals with different things which exists toward them. In this case, the interaction is between the individual and the objects. Through this first interaction, the object receives a specific meaning. The second premise sustains that the meaning of the object occurs from the interactions developed between individuals. The third perspective reveals that the object's meaning is not stable, it is dynamic because it is changing through the individuals' interpretative process in that moment when they are dealing with the encountered object.

People develop symbolic interactions analyses according to their understanding of "the object's meaning." Blumer (1969) explained that the object's meaning occurs based on interaction between and among individuals, and not as an individual's emotional

expression provided by the perception of the object. This last perspective is studied by the psychological sciences, and debates the sensations and feelings occurred when an object is perceived. In conclusion, Blumer (1969) highlighted that in symbolic interactionism people see or develop "meanings" as social products emerged from how individuals are interacting.

When individuals observe undesirable behavior or emotional reactions, they start to act toward these specific behaviors, and the process of interpretation and representation is established. The cognitive representations become social through persons' interpretations, evaluations, and reevaluation considering the social context. In the end of this process, different characteristics are identified, and the individual includes that undesirable behavior or emotional reaction in different categories. If these categories correspond with the symptoms of different disorders (known by the individuals), the decision to recommend/attend a medical consultation is made. The sociology of illness and diagnosis explores the social forces which influence the clinical process of the diagnosis.

When individuals interact toward a specific object, then a process of interpretation and representation is established. Neculau (1996) considered that *social representations* occur through *symbolic interactions*. Laszlo (1997) also illustrated how social representations are developed through the interactions between individuals. Considering this, researchers have identified similarities and important connections between symbolic interactionism and social representations (Fedor, 2015; Neculau, 1996; Verkuyten, 2007; Walmsley, 2004). Social representation theory is understood as a detailed explanation of what Blumer (1969) named "the interpretation process of the object's meaning." It is relevant for our dissertation to explain how a concept is developed in the social field, considering its meaning. Because we focus on the diagnosis process of ADHD, in which a variety of individuals (stakeholders: parents, teachers, psychologists) contribute with their own perceptions and evaluations, social representation theory will provide us the appropriate theoretical framework. Therefore, our next paragraphs provide a detailed analysis of social representation theory.

1.4.2.2. Social Representations Theory

Adrian Neculau, a Romanian specialist in social psychology and group dynamics, emphasized that the interest for studying the social representations is recent (Neculau, 1996). More specifically, Wachelke (2012) presented that social representation topics were included in the literature of social psychology in the last 50 years. Wachelke emphasized

that in this time, a great variety of theoretical approaches and methodological strategies were proposed by social psychology and the social sciences in general.

The concept of "social representation" was defined by Serge Moscovici after a reinterpretation of Durkheim's collective representation (as cited in Neculau, 1996). Social representation analysis has its foundation in symbolic interactionism, which is based on the analysis of the role of behavior and communication in social relations. Through symbolic interactionism, different rules, ideologies, behavior strategies, and interactions are established.

But how do the social representations occur? Abric (1996) described three specific phases of the social representation occurrence. At the beginning, *the elaboration process* of the social representation is established, which means that the abstract becomes concrete, through a simplification process. The second phase is defined by *the functioning process*, which provides a meaning to the social representation, it becomes coherent and consensual, already having an important influence on the group. The third phase is *the transformation process*, when a new representation is changed from an old one. Analyzing this last phase, Abric (1996) identified three types of transformations from an old practice to a new one, namely: resistant, progressive and brutal. The resistant transformation takes in consideration the existence of two different, almost opposite, practices. This means that the transformation requires more effort, but not necessarily for a long time. The progressive transformation identifies two practices which are not totally different, and it is done in time, without major breaks. The third type of transformation occurs brutally, because it does not give the chance to return to the old mechanism or practice.

Several years later, Rateau et al. (2011) emphasized the existence of three orientations in the history of social representation: (a) the sociogenetic model, (b) the structural model, and (c) the sociodynamic model. The first orientation, the sociogenetic model, is based on Moscovici's theory (1961), who considered that social representations are developed when an unpredicted situation or an unknown phenomenon appears (as cited in Rateau et al, 2011). After its appearance, a lot of details are discussed about the phenomenon's limits or gaps. This process is creating new beliefs, hypotheses, or speculations, emerging in a general opinion of the social group. As Moscovici presented, the sociogenetic model is based on two processes: "objectification" and "anchoring" (as cited in Rateau et al, 2011). In objectification, the social group defines how the new object is simplified, imaged, and diagrammed by the social group, through communication. In the

anchoring process the group describes how the new object's representation is completed through different knowledge and forms which were already known by the group.

The second orientation of social representation theory, the structural model, had its origins in France in the 1970's and 1980's (Wachelke, 2012). This model emphasized that at the bases of social representations are stabile socio-cognitive logics, which are established through a specific structure. Flament (1994) presented, in an empirical study, that the structural approach emphasizes that the representation is considered autonomous, having a central core, and a well-defined structure. The central core gives meaning to the whole representation, and the elements existing in this central core form a structure which provides a strong sense to the representation. Likewise, in the social representation content there are also some peripheral elements which are considered negotiable, and can variate between persons. These variations are not in a violent contradiction with the principles of the central core.

A recent study, relevant for the present thesis, which exemplified the representational content and the structure of the social representation of health in France, was developed by Aim et al. (2018). In their study, a total of 120 French participants completed a free associations task, listing four words that came spontaneously into their mind, activated by the stimulus word "health." After this task, the participants had to rank those four words in accordance with their importance, and in the final step, they had to compose a phrase with each word. The research concluded, through a semantic analysis, that "illness" and "well-being" represented the core words associated with "health." At the periphery, health was associated with prevention, diet, good mood, freedom, and cancer. The most frequent word considered important in connection with health was well-being, but the conclusions emphasized that well-being and illness represented (for French participants) the core elements of the social representations of health. This research offered us not only an exemplification of the structural model, but also an example of the statistical procedure used in the research of the social representations. This means that social representations are networks of connected concepts.

The third orientation of social representations theory presented by Rateau et al. (2011) is the sociodynamic model, which emphasizes that social representations cannot appear without communication and interactions. This dynamic process is about sharing, discussing, and making relationships in the social group. This last model is considered similar with Moscovici's theory (1961) where the anchoring process of the new social event or situation (the new object) is presented (as cited in Rateau et al, 2011). The cognitive

representations become social through persons' interpretations, evaluation, and reevaluation considering the social context (Neculau, 1996). This means that the reality is not neutral or objective, because it is seen through different representations influenced by social interactions, context, and circumstances. The social representations are transformed in values which moderate the interpersonal relations. Neculau (1996) emphasized that it is false to consider the social representations as cognitive representations, because the social representations are based on social context, interactions, having both internal and external determinants. The conclusion of the sociodynamic model is that the social representations are combining the individual beliefs with the social context, the rational with the irrational, and through the interpersonal interactions, they provide new models and norms, which become specific with our culture and society (Neculau, 1996). Understanding this process, helps us to outline the directions of our work; to analyze the possibility of external determinants in the psychiatrists' practices.

Regarding the characteristics of the social representations, Rateau et al. (2011) considered that these are well organized, are shared, are collectively produced, and socially useful. The first characteristic describes that the social representations are not just a collection of cognitive elements, they *are organized* in a specific structure. The second characteristic is that the social representations *are shared* by the members of the group, establishing a homogenous perception of the group, and the position of one member. The third characteristic is that the social representations *are collectively* produced through a global process of communication. The last characteristic is that social representations *are socially useful*. They help the members of the group to better understand the object to which the social representations refer. In conclusion, if the representations are considered collective, they prepare and act in a uniform manner.

Social representations are changing, because they are directly connected with the social context and the collective perceptions, which are very dynamic. Social interactions offer a specific context to explore the facts, and, based on this, individuals define the normality by their reality (their facts, events, or interactions). Guimelli (as cited in Neculau, 1996) presented a well-defined schema by which old representations are transformed into new ones. This schema includes the next steps: (1) a specific event occurs, and this has a high impact on the group; (2) circumstances are changed as an effect of the event's occurrence, and the transformation is considered irreversible by the group; (3) new practices are required and installed in a systematic and frequent way; (4) the new practices activate the specific schema and give it importance in society; (5) the representations field

is reorganized, and in this way the old representation is transformed; (6) the new concept is installed and considered unique and very important in the society (p.44).

Social representations have two components: a cognitive and a social one (Abric, 1996). The cognitive component includes the person's perception of the reality, and the social component means that the representations are generated by social interactions. Abric (1996) thought that the social representations are considered a socio-cognitive logic, because the social representations are based on social information and facts, and these develop the social context. So, the social representations provide different outputs which help them to become more and more well-known and well-defined in society. Going further, the social context urges the person to change, to build, to take decisions in the social context. The person's decisions, actions, or relations help to build the representations.

Social interactions create concepts for each behavior, action, or situation, and over time peoples construct different representations, knowledge and reactions (acceptance or rejection of the phenomenon). The representations are the images brought together by the members of the same group; the person shares the group ideology, values, and attitudes. This means that a representation becomes an active structure based on the ideologic speech of the group (Neculau, 1996). According to the cited author, cognitive representation becomes social through the person's interpretations, evaluations, and reevaluations in the social context. The reality is not neutral or objective, because it is seen through different representations influenced by social interactions, context and circumstances.

As Moscovici (1961, as cited in Rateau et al, 2011) emphasized, it is important to remember that the social representations are not the product of the society as a whole, but the product of the social groups who are building this society. The school, the family, the institutions and the media provide different ways of seeing the world, offering a particular vision of the things around us (Rateau et al., 2011). After a first influence, our perceptions are shaped by groups, associations, by our contacts, and interactions. Our representations are social because of their influences on our perception of reality. Even if not all social groups share the same values, standards, or ideologies, all construct representations are closely based on the external influences. Rateau et al. (2011) defined social representations as "systems of opinions, knowledge, and beliefs particular to a culture, a social category, or a group with regard to objects in the social environment" (p. 478). Based on the idea that social representations were created by social interactions through symbolic communication, we are not discussing about persons' strong and well-defined opinions or

attitudes, we emphasize the oscillation between scientific and imaginary, between cognitive and emotional, which cannot offer a specific and an exact answer or opinion.

In conclusion, social representation is the image of the group members; the person shares the group's ideology, values, and attitudes. This ideology is defined through multiple interactions and interpretations, the social practices of the group member. Continuing in this process, the social practice appears when a person faces a social situation and has the autonomy to freely act. When the situation is emotionally charged, it activates issues which are shared with the group. This means that the social representation becomes an active structure based on the ideologic speech of one group (Neculau, 1996). But what happens when a child manifests a disagreeable behavior in a classroom? How is his temperamental behavior perceived by stakeholders? Are there specific social representations on ADHD? To answer at these questions, we will end the section dedicated to the social interactions and representations describing the parents' and teachers' experiences in raising and teaching students diagnosed with ADHD.

1.4.2.3. Interpreting ADHD: Parents, and Teachers in Practice

Hatos (2006) emphasized that one of the schools' missions is to maintain social control; this means that it offers the practices, values, and norms which transform the child from a biological to a social agent. Teachers and parents expect their students or children to be able to listen and follow the lessons, to get good grades, to also carry out short-term and long-term projects, to use their homework time to reinforce or practice the skills and knowledge learned in school (Bradley-Klug & Grier, 2000). Starting with middle school, teachers expect students to acquire a relatively independent and well-organized behavior in terms of self-management and responsibility. For students diagnosed with ADHD, these expectations are extremely challenging and demanding, especially when the diagnosis of ADHD coexists with other disorders, for example, conduct disorder, anxiety, oppositional disorder etc. (Bradley-Klug & Grier, 2000). A moderate to severe disciplinary problem can be identified in those students who experience frustration in performing well in school. Demonstrating frequent and intense disciplinary problems could motivate teachers, parents and even psychologists to exhort a neurological examination.

Connected with this, Diller (1998, as cited in Cohen, 2006) supported the idea of the dominance of cultural rejection of underperformance, which is contrary with the emerging culture of disability. He considered that in the American culture the desirable image of people is to be happy and successful. According to this, the persistent difficulty, disappointment, and sadness are not acceptable nor tolerated in human condition. When

teachers analyze learners' characteristics, they must consider the information about students' culture or social features (Csépes & Drugaş, 2014). In this case, teachers must know about learners' values, beliefs, or their perspectives on acceptable and unacceptable behavior. Learners' thinking, feelings, or behaviors are governed by the culture and society in which they are living. The culture imbues learners with significant influences, which are expressed inside or outside of school.

Deviant events take place in specific social contexts, developing their histories and evolving over time. Social control represents the influence of people's action through sanctions or specific reactions to behavior. One of the most effective methods in managing the deviance is represented by the internalization of norms. If the internalization process is difficult to be developed, the social control can operate through formal or informal methods and different types of sanctions. Sociologists judge deviance and social control relative to specific standards, considering that measures of social control should vary if the behavior that constitutes deviance varied from group to group. To respect the norms is considered to stay in line and respect your place. Considering this, Cohen (2006) presented the opinion of William Carey (clinical professor of Pediatrics at the University of Pennsylvania), who described the behavior of children diagnosed with ADHD differently. He argued that ADHD represents the normal variation of temperament, and the professionals tend to ignore the issue of temperament when discussing ADHD.

In addition to Carey' opinion, David Stein (2001, as cited in Edmunds, 2011) considered that parents and teachers should treat their children as normal and not diseased. Children should not take any medication, because if the noncompliant behaviors do not occur, they cannot be helped to control them and learn new habits. In this approach, social reinforcement is encouraged, rather than material reinforcement; parents are recommended to refrain from excessive prompting and coaxing. We emphasize here that parents are the first who interact with a child, and in this context, children receive for the first time and in a systematic way the values and the ideology of the group (Hatos, 2006). Chronologically, the family is followed (in this process of values transmission) by the educational system and, after that, by the social class.

Teachers' knowledge and attitudes regarding ADHD are likely to influence their role and the subsequent behavioral and learning outcomes for students; these attitudes differ in different stages of teachers' career (Anderson et al., 2012). Mayes and Bagwell (2005, as cited in Kern, & Seabi, 2008) considered that teachers' perceptions about ADHD are vital in several ways: teachers are often the primary source of information regarding ADHD

diagnoses in school students; teachers' knowledge may influence how to educate students with ADHD in their classroom; existing psychological research on ADHD is based on teachers' reports of students' symptoms and behaviors; and many empirically supported psychosocial treatments include a substantial school-based component implemented at least in part by teachers.

In this topic, Drugaș (2015) developed research regarding the inclusive education framework in Romania: which is the Romanian teachers' perception about inclusive education; which is the most appropriate support for students with ADHD in the Romanian mainstream school. Sixty teachers from preschool, primary school, and gymnasium were split in two groups, from the southeast and northwest geographical areas in Romania. A large number of participants (82%) considered that it is very difficult to have a child with special educational needs in their class. The first three disabilities which teachers wanted to be excluded from mainstream schools were: autism, mental deficiency, and ADHD. If in this analysis ADHD was on the third place, when we investigated the most challenging disorder, ADHD occupied the first place. The results did not emphasize significant differences between northwest and southeast regions in Romania concerning teachers' perception about inclusive education. The conclusions reported were that teachers have a high level of stress in teaching students with special educational needs, and also a lack of knowledge about ADHD.

Wedge (2015) assumed that discovering the cause of the child's distress, can help them cope with sadness or anxiety, compulsive behaviors or aggressiveness, inattentiveness at school, or moodiness at home. Because the behaviors mark the ADHD symptoms, Wedge recommended behavioral solutions, which should include a solid plan of discipline: to keep calm in interaction with these students, not yelling, rewarding good behaviors, and so on.

Breggin's psychosocial approach (1999), analyzed by Cohen (2006) and Edmunds (2011) argued that ADHD diagnosis is nothing more than a list of all the behaviors that annoy teachers and require extra attention in the classroom. The author considered that the specific difference between behaviors exhibited by students without ADHD and students with ADHD is the term of "often." Moreover, Barnes et al. (2003, as cited in Cohen, 2006) concluded, in a study conducted on 115 students from a large urban university, that individuals are consistent with themselves in the view of "often," but this view varies considerably from individual to individual. The anti-psychiatry view considers that offering medical treatment to increase the compliance of the behavior with different standards is a

coercive method. If someone's life situation is undesirable to others and the situation is wanted to alter with medical treatment, rather than relaxing the values and the life situation, it means that this is coercive. Breggin recommended strategies that are focused on parents, who must be taught how to feel empowered and how to be a compassionate therapeutic adult in the lives of their children (as cited in Edmunds, 2011). Next to this, Breggin considered that it is necessary to examine the environment where the students live, and if there are stressors around them. Through specific trainings, parent self-esteem could be improved, and parent' stress and ADHD symptoms in general could be reduced, especially the negative attitudes toward parental authority and aggression.

In a literature review on teachers' attitude regarding students with ADHD, Anderson et al. (2012) emphasized the existence of three components: cognitive, emotional, and behavioral. Teachers' thoughts and beliefs represent the cognitive component of teachers' attitude; the emotional component is represented by their feelings towards students with ADHD, and the behavioral component refers to the actions that teachers take for students with ADHD. In general, teachers with high knowledge about ADHD reported less confidence in their ability to manage these students (Ohan et al., 2008, as cited in Drugaș, & Drugaș, 2015). The lack of clarity in teachers' knowledge (about the increased risk of students with ADHD for later delinquency, for example) may reflect the fact that teachers do not follow students with ADHD into their teens (Ohan et al., 2008). If the teachers know that students with ADHD are at risk for arrests and school dropout, they may be more motivated to take action while the student is still in the elementary school. Teachers with high knowledge are significantly more likely to report that students with ADHD would benefit from professional assessment services, and that they would seek and/or *encourage the child's parents to seek professional assessment services* (Ohan et al., 2008).

An increasing prevalence of ADHD in the American school population was a source of significant controversy in the 1990's (Lakoff, 2000). Lakoff analyzed the evolution of attention deficit disorder, identifying the evolution of inhibitions (that continue to decrease). Because of the decreased inhibition and its general perception as a disagreeable behavior, the acceptance of the ADHD diagnosis became quickly widespread, not only in US, but worldwide (Lakoff, 2000).

Cohen (2006) dedicated an entire book (*Critiques of "ADHD" enterprise*) to highlight the ADHD as a social construct and not a clinical condition. The author considered that ADHD could be a result of socio-cultural mutations. The DSM criteria are

considered by sociologists as components of ordinary, normal childhood behavior that would not be expected to cause distress or impairment to any individual manifest. Cohen described how medication is not prescribed only in classic cases of deviance such as alcoholism, suicide, or homosexuality (at that time), but also in ordinary and normal conditions of life (educational difficulties, violence, excessive gambling or racial prejudice).

A possible explanation of Cohen's conclusion, which argues that teachers and psychologists could facilitate the medicalization process, could be found in Rafalovich analysis on ADHD history and its development. In 1971, Wender (as cited in Rafalovich, 2008) considered that psychological perspectives on ADHD are influenced by non-physiological factors. These reactions are not defined by hyperactivity as a high level of activation, but rather described by the level of depression, immaturity, or narcissism. This means that children who exhibit symptoms such as: hyperactivity, extroversion in terms of social aggression, poorly modulated activation in terms of overreactive to stress, are affected by events from their life, rather than by neurological difficulties. The mentioned symptoms are understood, by psychologists, to be directly linked to the anxiety experienced by children as it arises from the inability to succeed in their world. In this approach, the physiological difficulty becomes less significant than the damaging patterns children and their families incorporate into daily life. In this way the psychodynamic view concerning children with ADHD is shaped (i.e., the causes are social rather than neurological). As we identified until now, the evidences of ADHD presence are in the social context.

Clinard and Meier (2014) considered that social behavior is an acquired activity, learned after birth. Socialization is the process which develops human behavior in social interactions. Human behavior is modified according to the demands and expectations of others. The authors considered that in these conditions, all behaviors are the product of social interactions. Even individual emotions are social products, because anger, depression, shame, or love actually express social reactions. The effectiveness of social control depends on people's ability to behave according to others' expectations. These expectations are conceptualized largely in norms or roles. The process of internalization of the norms and roles of a specific group or community is considered a process of socialization. If a person does not behave in this manner (expected by others), they tend to be considered deviant. In sociological terms, deviance is considered like being a hypocrite (Clinard, & Meier, 2014). Considering this, it is important for the present dissertation to lead the detailed analysis towards the medical field. Is it possible for concepts such as

health, illness or disease to have social perspectives? How does the diagnosis occur? Is it possible for specific psychiatric diagnoses to be socially constructed? We elaborate the answers into the next section, analyzing the mental illness occurrence, and more specifically, the process of the psychiatric diagnosis.

1.4.3. The Sociology of Diagnosis: Systems, Labels, and Interpretive Frames

From a socio-representational angle, Aim et al. (2018) considered that health cannot be understood in the absence of illness. Much knowledge about health or illness is gathered through different interactions and relationships developed inside social groups. This provides reasons for a detailed analysis of the illness and the diagnosis from the sociological point of view. The sociology of medicine is organized around the social construction of diagnosis and illness (Brown, 1995). Considering this, our analysis is directed towards how social forces influence our knowledge and actions toward disease and illness.

The medical sociologists' analyses pointed out differences between "the social construction of medical knowledge" and "the social construction of illness" (Brown, 1995). The social construction of the medical knowledge refers mainly to the professionals' beliefs, the dominant biomedical framework, professional advancement, and the labor market needs. The social construction of illness is based more on the interactions at the personal, dyadic and group levels. In this topic, the individuals' experiences of illness, and the symbolic interactionism approach predominate.

The constructions of medical knowledge and illness are connected, people perceive and deal with the illness largely in accordance with the social elements of medical knowledge (Brown, 1995). Considering this, the social construction of a phenomenon incorporates a large variety of social forces which create and modify that phenomenon. Brown (1995) described that beyond a given biomedical fact there are reactions, actions, interactions, knowledge, experiences, and relations which have a specific force and influence on the reality.

Another conceptual boundary proposed by Brown (1995) is the difference between "the social causation" and "the social construction" of health and illness. The social causation reveals that the social factors are integrated to the health status, and these social factors are categorized by Brown in: underlying social causes (social structural elements such as: class, race, gender), proximate social causes (such as environmental and work

places), and mediating social causes (referring to social support and networks). The social construction of health and illness represents the experience of illness, and how the professionals define the illness and what are the issues of the required services.

In his article entitled, "Naming and Framing: The Social Construction of Diagnosis and Illness," Brown (1995) analyzed, in a detailed manner, the existence of controversial and conflictual diagnoses generated by different cultural and sociological influences. The author considered that the medical sociology explaining the social sense of health and illness is influenced at three levels: the microlevel (the individual actions, and interpersonal communication), the mesolevel (the hospitals and medical education), and the macrolevel (the national health system, the structure and the political economy of hospitals). Considering these sociological influences, Brown (1995) concluded that the medical sociology explains the social constructionism through three main versions. The first version is focused more on social labeling of behaviors than the medical conditions. The second version of constructionism is going forward with the analysis, and explores the social production of knowledge, where the social perceptions are depending on time and space, actors, and groups. In this approach, the medical system has a much more important role in social constructionism of the physical and emotional health. The third version is named by Brown (1995) as science in action, because from this point of view, the constructionism is provided by professionals' discoveries which bring their perspectives for the public services.

Brown's general approach on social constructionism in the medical field offered the path in analyzing how ADHD could be a social construct and not a medical condition. In the next sections we focus on the first two versions described by Brown; more precisely, we explore the thin line between disease, illness and diagnosis, focusing on the process of psychiatric diagnosis. These analyses will help us to identify and understand the external factors can influence the diagnosis of ADHD.

1.4.3.1. Beyond Disease: The Layers of Illness and Diagnostic Identity

Before the experience of the illness there is the appearance of the deviance, named by Brossard and Carpentier (2016) "troubles." Considering the consequences of these troubles, the experience of illness is going forward or not. Different events and situations influence the observability of troubles, and represents an important step in having a medical consultation. If the troubles have a great impact on patients' and caregivers' lives, the decision to attend a medical consultation is made.

Jutel (2009) assessed that experiencing different disturbing contexts, individuals start to complain about their condition. All these experiences convert into a narration of the individuals' states, emotions, physical feelings, behaviors, reactions, etc. The patients' stories include different descriptions which are explored by the professionals as symptoms. The professionals interview the patient, interpret their descriptions, and organize the framework of symptoms, materialized into a diagnosis. Through this process, the medical consultation and most important, the diagnosis, make sense of some disturbing trouble (Jutel, 2009).

In this context, another conceptual delimitation is required. It is important to make differences between concepts such as disease, illness, and diagnosis. Brown (1995) indicated that *the disease* is a biomedical phenomenon; *the illness* is a more subjective phenomenon because it includes the individuals' perceptions, conceptions, and experiences about the disease; and *the diagnosis* is a process of observations and investigations, and also a category which locates the medical condition.

Brown (1995) described four stages of the social construct of the illness. The first stage is represented by *the identification and diagnosis* of a specific condition. The second stage is *the experience of illness*. Brown (1995) described that in this point the biological interact with the social factors because individuals' experiences in a medical condition are very different. The differences in experiencing the illness can be explained by the individual personality, differences in perceptions, and knowledge, social interactions, and interpersonal relations (with family, friends, other family members, etc.). The individuals are making a coherent self-analysis, and through their own narrative they provide descriptions of their medical condition. The third stage is *the treatment*. This is a logical sequence which implies not only medical directives, but also sociological and psychological interventions. The fourth stage is highly linked with the treatment, because in this stage *the outcomes* can validate or not the treatment (with all its dimensions), and also the professionals' work. The outcomes are perceptible at the individual level, and at the social level, and as Brown said, together with the treatment, the outcome plays a central role because it operates as a feedback loop needed to revise the original social construction.

Through the presented stages, Brown (1995) pointed out that the illness is socially discovered and defined. The mentioned author displayed the existence of a possible conflict: there is or there is not a disease. He offered an example (highly relevant for our topic): hyperactivity can be seen by the professionals as a problematic condition or not. The identification and the definition of an illness, can be revealed through lay initiation, social

movement, professional factors, and organizational and institutional factors. The lay initiation highlights the importance of individual' self-awareness and direct experience. The social movements identify the importance of different events occurred in different groups which conceptualize specific issues (e.g., occupational health, environmental health, disability rights). The professional factors represent the newest discoveries in the medical sciences, the resistance or the acceptance of these findings. The organizational and institutional factors are connected with the professional factors, because these administrate and lead institutions and companies.

Every culture defines what is considered deviant or abnormal (Wedge, 2015). As such, mental health categories are identified in particular people and subgroups of society, in a particular time in history and in a particular place. Because the power and authority of psychiatry has grown in time, it led us to accept easier some diagnoses and diseases, such as ADHD. More determined, Edmunds (2011) assessed that today's mental health system is considered by some people as a pattern of fraud and coercion that "takes away the freedoms and dignity of children and their families." (p.26). Is it possible? To offer an answer for this question, a closer analysis of the diagnosis process is needed, focusing on the psychiatric field.

1.4.3.2. Psychiatric Diagnosis as a Social and Institutional Process

The sociology of medicine considers the diagnosis process as an important element in the social construction of the illness (Brown, 1995). The differences between professionals considering a particular disease represent the topic of many medical sociological studies. In the18th century, medical classification was based on the symptoms and the correspondence between those and disease was powerful; in the 19th century, the diseases were identified by the observable pathological lesions, and in the 20th century "the classification became increasingly fuzzy" (Jutel, & Nettleton 2011, p. 795). Starting with the late 19th and early 20th centuries, these practices provided by physicians and psychiatrists presented an external interest and a highly public examination (Hutson, 2015).

"Most specific studies of diagnosis are in studies of psychiatry" (Brown, 1995, p. 38). Critics discouraged the application of the medical model in treating deviance. One of the followers of this approach was Szasz (as cited in Clinard, & Meier, 2014), who had an interesting perspective on psychiatry, seeing it more as a religion than science, and asserting that psychiatrists have too much power. Szasz considered modern psychiatry a form of social control, where the concept of "normality" is narrowed into limits conducting people in a desired direction (as cited in Clinard, & Meier, 2014). Szasz argued that from a

sociological point of view, psychiatry is a secular institution which regulates the domestic relations (as cited in Edmunds, 2011). From this perspective, controlling domestic relations could be considered a form of child abuse.

The psychiatric diagnosis offers the possibility for the individuals to understand their deviance, and explains to the social environment why that person is different from the norm. In her analyses of the diagnosis' sociology, Jutel (2009) focused on how the disease names started to be part of western medicine, and how individual diseases occur. Considering this, Jutel revealed how the diagnosis labels empowered the medical authority, and how this force influenced the non-medical agents.

Brown (1995) believed that most disputed in the sociology of the diagnosis is the existence of the biomedical causes. The biomedical condition represents a physical state, which in some diagnosis is applied, and in others not. For example, "there are no specific cognitive, metabolic, or neurological markers and no medical tests for Attention deficit/hyperactive behavior" (Timimi & Taylor, 2004, p. 8), and still this is considered a neurodevelopmental disorder (American Psychiatric Association, 2022). Considering the psychiatric practices, Brown revealed that a high degree of interpretation and many divergent beliefs on a specific condition are often identified, the biomedical conditions not always being mentioned.

Jutel and Nettleton (2011) explored the diagnosis from two points of view: as a category and as a process. The diagnosis as a category is what we have analyzed in the previous paragraphs, capturing various classifications of symptoms, and the psycho-social background. It represents a symptom-based classification, and reveals a certain medical condition, in other words, a medical identity. Being included in a category of diagnosis, the patient is starting a complex process of diagnosis. This process of diagnosis was defined by Jutel and Nettleton (2011) as a kind of actualization, where the patient starts a new social functioning. For example, Halleröd, and her collaborators (2015) concluded that the diagnosis of ADHD, from the perspective of patients, brings a new actualization and has major positive consequences compared with the undiagnosed situation. In the diagnosis as a category, the attention is focused on the practitioner who must establish the disease, in the diagnosis as a process the attention is focused on the patient who must manage his or her life with the new medical condition/diagnosis. Jutel and Nettleton (2011) indicated that these two concepts (diagnosis as a category and diagnosis as a process) are frequently indistinguishable in practice.

The diagnosis represents a classification tool of medicine, which organizes the illness through a specific process of investigation, some specific treatment options, and with clear expected outcomes (Jutel, 2009). “Being diagnosed gives permission to be ill” (Jutel, 2009, p. 278). According to the cited author, the diagnosis appeared as a medical necessity, providing a nomenclature which should reflect a systematic knowledge about a medical condition.

The diagnoses are included in official taxonomies (Jutel, 2015), which help further medicine, in simple words, to have a picture and a framework of a disease. The official nomenclature of the diagnoses is included in specific manuals, which are fundamental for the medical practice (Vallée, 2011). Each diagnostic manual starts with a theoretical edifice, and then presents: the illness prevalence, who is qualified for the medical diagnosis, and who should get access to medical care resources. For the psychiatric practice, Levy (2014) highlighted that The National Institute of Mental Health pointed out that DSM (Diagnostic and Statistical Manual of Mental Disorders) and ICD (International Statistical Classification of Diseases and Related Health Problems) are the most important manuals used by clinicians and researchers. These manuals are constantly modified and edited. These dynamic versions of the manuals, and the attention provided by the sociology of medicine in the last decade (Hutson, 2015), bring a lot of debates and criticism regarding their accuracy. For example, the last edition of DSM (the fifth) reenergized critical discourse about the place and the role of diagnosis in mental health (Pickersgill, 2014).

By knowing the diagnosis, for professionals it is easier to identify the patterns of symptoms. Foucault (1963, as cited in Jutel, 2009) highlighted that the symptom was removed from its supreme position by the diagnosis. Between the diagnosis and the symptom, the first one provides a clearer boundary between the normal and the problematic medical condition. The biological and clinical investigations provide plausible and concrete symptoms for a specific disease, but Jutel (2009) cited Aronowitz’ conclusion, who highlighted how the social influences largely determined which symptoms become disease. Considering this, we discuss about two separate realities of the symptoms, disease and diagnosis: the physic and the social one. These two realities are linked to each other and help a variety of professionals to explore the diagnosis in more detail; even so, the medicine has the exclusive authority and expertise to establish or label of what is normal and abnormal.

In her well-known book, *Putting a Name to It. Diagnosis in Contemporary Society*, Jutel (2011) associated the diagnosis with a road map. She considered that the power of the

diagnosis is remarkable because, like a road map in the middle of a forest, it provides indicators and signs about your way when you are confused. In conclusion, the diagnosis displays various "benefits". The diagnosis helps the patient to know what is wrong, giving them a sort of control about the problem (Brown, 1995). For the medical professionals, diagnosis concludes the knowledge of the problem, and determines the treatment. For the community, society, institutions, and organizations, the diagnosis can be a tool for social control, labeling the condition. Considering this, we remember that Ohan and his collaborators (2008) pointed out that if the teachers know that students have ADHD, and are at risk for school dropout, they may be more motivated to take action.

Horwitz (1999) assessed that Thomas Scheff brought the social constructionist view point on mental illness into American sociology. The society provides different perceptions about mental health, and develops different stereotyped imagery of mental disorders through ordinary social interactions. Scheff published in 1966 the first edition of his well-known publication, *Being Mentally Ill: A Sociological Theory*. In its first and second edition (published in 1984), labeling theory described by Scheff was oriented toward the formal labeling process (court hearing and psychiatric examination). In the third edition, Scheff (2009) completed the labeling theory with the emotional dimension of the labels, and a detailed micro-level analysis of labeling in the family.

The social labels represent a part of the cultural framework, through which people define and categorize the social world. The concepts analyzed by the labeling theory are the deviant labels associated with stigma, which represents a negative image of stereotype. Becker (1963, as cited in Bernburg, 2009) assessed that people presume that a labeled person cannot or does not want to behave morally and that is why s/he breaks important social rules.

Scheff (2009) concluded that labeling occurs at two different levels: informal and formal. The informal label is constructed in the family environment, where the family members express different negative interactions (e.g., insults, rejections, threats, even violent behaviors). These statements lead to a complex perspective on labeling theory, where the social interactions from the microworld plays an important role. The formal label is provided by authorities, professionals. This second level of labeling is connected with the informal level, because the psychiatric interview is enmeshed with the family position and how they see the patient.

Brossard and Carpentier (2016) highlighted that the usual model of the diagnosis process is based on the symptoms (specific behaviors and reactions), diagnosis (the label),

and meaning and caregiving mobilization (treatment). The authors indicated that the health systems and caregivers are considered more efficient if there is a smaller period of time until the diagnosis is established. Considering this, the reduction of the time to diagnosis is important for professionals and international health authorities. In their research, Brossard and Carpentier (2016) revealed that the diagnosis does not really follow increased symptoms, being focused on the observability and the interpretations of the patient's troubles.

Scheff (1966, 2009) dedicated research to labeling theory, analyzing those diagnoses where the validity of the bio psychiatric approach was raising questions. The author identified three main contentions in the research of mental illness: etiology (what causes the mental illness, and this should be mainly biological), the classification (the types of the mental illness), and the treatment (the mental illness is effectively and safely treated with psychoactive drugs). Scheff (2009) highlighted that many people consider that these three goals are reached by biopsychiatry (the author used the term of biopsychiatry in order to emphasize the importance of the medical/physical causes of the diagnoses). Even if the biological causes exist or not, the psychoactive drugs are often administrated indiscriminately. Considering this tendency to the indiscriminatory prescription, Scheff encountered the next problems: the lack of proof of genetic causations, the chaos of diagnosis, the small average efficacy and dangerous side effects of psychoactive drugs, and their abuse in vulnerable populations.

Bernburg (2009) revealed that formal labeling is more likely to trigger stigmatization and social exclusion. Related with our topic, ADHD, The National Attention Deficit Disorder Information and Support Services (ADDISS, 2006) presented high percentages of school exclusion for students with ADHD, and Loe and Feldman (2007) highlighted that school and social problems are almost always present in the diagnosis of ADHD.

The psychiatric labeling started to become the subject of considerable ethical debate (Charland, 2004). Studying the psychiatric labels and the risks of consulting the internet in the mental health is challenging for researchers. Charland maintained, that most problematic are the considerable risks to which the consumers are exposed when they are using the internet to investigate their psychiatric labels. Charland (2004) described two specific problems: ethical issues associated with the application of an inappropriate or unjust psychiatric label, and the risks imposed by the internet power in providing information about the "social manufacture of the madness." The label itself is bad because

it stereotypes and degrades the person. Considering this, Charland highlighted that the philosophy of psychiatry should have an important contribution to the clinical practice of psychiatry.

A psychiatric diagnosis can legitimize and stigmatize as well (Jutel, 2011), so the social impact of establishing a diagnosis is considerable. Jones et al. (1984, as cited in Jackson, 2005) concluded that the process of stigmatization emerges through four steps. The first is represented by the occurrence of a specific characteristic or a specific behavior of a person, which is inappropriate. In this stage, a mark is shaped. The second step is the social labeling, when the marked individuals start to act like their stigma, and classify themselves as members of that social labeled category. In the third step, the stigmatization starts to function as a mechanism of social control; the marked individuals are encouraged to act as normally as they can, and the unmarked people are encouraged to illustrate the consequences if the first ones do not act normally. The fourth stage is about how community rejects the marked individuals because they represent an obstacle in the community well-being; this stage encourages the link between the mark and the danger. For our topic (the ADHD diagnosis) we identified in the newspapers, articles where students with ADHD were labeled "black sheep" and problematic students (Ciulac, 2012, Tudor, 2016). In one article, Tudor (2016) presented a school situation where the colleagues of one student with ADHD (7th grade) protested and refused to go at classes because this student was considered "a turbulence element."

The physical explanation of a symptom confers a lack of personal responsibility, but a psychiatric diagnosis does not offer such a clear statement, and that is why the stigma and shame can be installed (Jutel, 2011). Labeling theory implies a critique of conventional psychiatry, and it is not anti-psychiatric (Scheff, 1966, 2009).

In the end of this section, we remember how Robin (1998, as cited in Bradley-Klug & Grier, 2000) emphasized the high rate of ADHD labeling, and its connection with the pharmaceutical industry. Considering the force of medicine in diagnosing the psychiatric diseases, the medicalization authority emerged. If there is a diagnosis, there should be a medical treatment with quick benefits. In this context, the pharmaceutical industry was accused that it protected the diagnosis of ADHD. For a complete analysis of the external factors which influence the diagnosis process, we will analyze in next paragraphs the medicalization of the disagreeable behaviors.

1.4.3.3. The Pharmaceutic Market as a "Quick Fix Intervention" of Disagreeable Behaviors

The medicalization is defined by Conrad (1992) as a "process by which nonmedical problems become defined and treated as medical problems, usually in terms of illness or disorders" (p. 209).

In 2009, Jutel assessed that the border literature of medicalization provides information to the sociology of diagnosis, and helps to analyze how social forces are also involved in the diagnosis process. Cohen (2006) mentioned a real concern, which considers that the way from "hyperkinesis" (in the early 1970's) to "attention-deficit/hyperactivity disorder" (in the late 1980's) was developed by teachers and psychologists who seem to be pioneers of medicalization (at least in the US and Canada). Medicalization and diagnosis are strongly connected because their relation provides the quick fix treatment.

Sociologists have criticized the neurobiological paradigm of ADHD; we should remember that ADHD is defined in this paradigm as a biological dysfunction caused by genetic influences, neurochemistry, or neuroanatomy. We must say that this approach does not exclude the roles of society and relationships. The psychiatrists or physicians attend to families and social environment in collecting information about the child, but the center of intervention is the diagnosed individual and not the social and familial circumstances. An important contribution had Wedge (2015) who outlined, as we have presented in the beginning of the present thesis, the existence of three hypotheses regarding ADHD cause: ADHD is a real illness primarily caused by biological factors such as genetic anomalies; ADHD is a combination of biological and social factors; and ADHD is caused by social factors ant not a true disease entity.

The social construct of ADHD was also analyzed by Timimi and Timimi (2015), who pointed out the history of ADHD, the cross-cultural aspects, and how this disorder was worldwide known through the internet. In their chapter, "The Social Construction of Attention Deficit Hyperactivity Disorder," the authors emphasized the important impact of pharmaceutical industry in the history of ADHD, the common patterns of ADHD, and some of the diverse cultural beliefs and practices that surround this disorder.

In the same year, 2015, Wedge considered that over the past decade, the American public has been led to believe that ADHD is a disease, despite the fragile and controversial evidence of a genetic cause. The author made an interesting analysis of research conducted by Williams and a team of British, Icelandic, and Norwegian researchers (2014), who found that rare chromosomal deletions and duplications were associated with ADHD, and

children with this disorder were more likely than other children to have a particular genetic anomaly, so ADHD is not exclusively a social construct. Wedge argued that considering the funders of this study, the results could be influenced. The Wellcome Trust is one of the funders of the Williams research, and they often declared through several public sources that there is direct evidence that ADHD is a genetic condition. It is more interesting that several members of the Wellcome Trust had associations with drugs companies that produce medication for ADHD. Wedge highlighted that it is obviously that drug companies welcome this kind of results which sustain that ADHD is a disease caused by genetic anomaly, and that pharmaceutical treatments are the most appropriate.

Hynd and Voeller (1991, as cited in Graham, 2010) studied the neurobiological basis of ADHD and they argued that there is no evidence which could lead to the conclusion that all students with ADHD have symptoms that reflect neurobiological dysfunction, and only the evidence accumulation from genetic, biochemical, neurobehavioral, and neuroimaging studies strongly suggested a neurological etiology for most students. Nevertheless, there are concerns that question the impact of cultural, social, and systemic differences upon the perception of students with ADHD.

Sherman (2015) explored the pharmaceutical market as a cultural product, and emphasized that there is an assumption that pharmaceutical treatments are more effective and with quick effects in treating ADHD, compared with other types of interventions. Sherman pointed out that it is generally approved that pills can produce major effects with an insignificant effort.

There are a series of reports that indicated a higher rate of drugs prescription for ADHD (Kanhere, 2024), an extremely rapid growth in the use of antipsychotics in treating aggression. Lloyd et al. (2006) considered that “the impact of the internet and of increased international communication between professionals and academics has led to an increasing promotion of labels derived from psychiatric lexicon” (p.2). The subjective nature of diagnosing ADHD seems to be more and more in the focus of non-psychiatric researches. Amaral (2007, as cited in Graham, 2010) argued that ADHD is a social construction after his conclusion regarding the comparison between methylphenidate consumption in United State and Australia, Spain, and Chile. The author presented that between 2003 and 2005 the per capita consumption of methylphenidate in US was approximately six time greater than that in Australia, eight times greater than that in Spain, and 18 time greater than in Chile. If the prevalence of hyperactive symptoms is indeed similar among countries, this comparison concluded that in some countries ADHD is considered a medical disorder, and

in other countries is seen by parents and physicians as a nonmedical condition. This conclusion provided evidences for the social construct paradigm of ADHD.

Baughman, and Hovey (2006) argued that proof for the claimed psychiatry disorders is not required and in this condition the medicalization followers go further and further afield in the search of new billing opportunities. They considered that you cannot make money from a disease that only a few people have, but if the prevalence is growing the profitability does, too. Relational disorders, as is ADHD, which are subjective in establishing the set of symptoms, can have a high contribution to this type of profitability in the pharmacological area. According to the cited authors, ADHD medicalization is going too far and even that the Hippocratic Oath is eclipsed by hypocrisy.

Breggin (1999, as cited in Cohen, 2006) presented two basic behavioral effects of stimulant drugs: (1) stimulants suppress normal spontaneous of self-generated activity, including socialization, and (2) stimulants promote stereotyped, obsessive/compulsive, overly focused behaviors that are often repetitive or meaningless. Breggin considered that children with ADHD are struggling compulsively with their work, under the effects of stimulant medication, and they may seem to be learning, even when they are not. It is considered that a changed behavior occurred after the stimulant administration is not a real human change, but more a specific drug effect. Sherman (2015) highlighted that for a child who is diagnosed with ADHD and medicated, "that child is not only an object of medical knowledge and administration, he has a role to play in the construction of a medical market" (p. 2188).

Garfinkel (1967) presented a series of quantitative studies of different researchers in psychiatric clinics. For example, one of these studies revealed that the socio-economic status was the relevant selection criterion in being admitted to receive treatment at psychiatric clinic, and not the medical condition. In his metanalysis, Garfinkel (1967) concluded that the patients were receiving clinical treatment depending on many other external factors, besides the fact that they may need it (the medical condition). From these factors we selected next examples: socio-economic status, education, annual income, patient desire for treatment, the benefits expected by patients, and the attitude of therapists toward the patient. All these variables are important to be analyzed for our present work, because they shape the line of social construct theory around the topic of diagnosis.

Diller (1998, as cited in Rafalovich, 2008) argued, from a sociological point of view, that there are outside forces (not exclusively biological causes) that contribute to the behavioral problems associated with ADHD, such as social causes. Considering the

etiology of ADHD, the family dynamics are under considerable attack. Also, the strict physiological perspective on ADHD is not appropriate. Rafalovich (2008) highlighted that our contemporary discussion around ADHD is represented by a plurality of views: academic, clinical, cultural, journalistic, and so on. Even if ADHD is a subject for different domains, the author considered that the vagueness of what constitutes ADHD has contributed to a large number of children diagnosed with this disorder. As a sociologist, Rafalovich was considering himself implicitly skeptical toward the strict bio-chemical definitions of mental health. In one of his books (2004), *Framing ADHD Children: A Critical Examination of the History, Discourse, and Everyday Experience of Attention Deficit/Hyperactivity Disorder*, he analyzed ADHD from sociological perspectives, examining how deviant behavior became "medicalized" and what role the historical and contemporary discourses about ADHD played in shaping people's conceptions on this disorder.

Sherman (2015) summarized a list of researchers who analyzed ADHD as a social construct, each one specifying different causes of this social phenomena. They highlighted the American psychiatrist Breggin (1999), who focused on how the diagnosis is a mechanism of social control over children; the British psychiatrist Timimi (2015), who revealed the influence of the pharmaceutical power on diagnosing ADHD; the American sociologist Lakoff (2000), who focused on the social and historical contexts from which ADHD occur, and also how important is the psychiatry's evolution (he indicated how easy, but not scientifically correct, is to diagnose a mental disorder through a standardized questionnaire).

Jutel (2009) maintained that the medicine holds the power of diagnose, and many other agents have the ability to promote, or even create particular diagnoses. The author encompassed how a growing number of internet communities are focused on diagnoses. The large number of webpages have an important part in the social health movement. These groups are able to create their own separate and distinct medical culture. In addition to this, Charland (2004) revealed that "the psychiatric labels may no longer be solely under the control pf psychiatry" (p. 338). The consumer receives a specific autonomy through the internet and they became more self-determined to find solutions for their psychiatric diagnosis. Moreover, Charland emphasized that the cyberspace is very powerful, being able even to manufacture psychiatric diseases.

We conclude this analysis of the sociology of illness and diagnosis with Jutel's statement (2009), indicating that "exploring the social forces which influence the clinical

process of diagnosis provides a greater understanding of the fluidity and fallibility of the diagnosis" (p. 294). They emphasized that the sociology of the diagnosis helps to understand the patient compliance, disease control, but also public health, and health education. The sociology of diagnosis is not only about the individual experiences or professional practices, it is also about understanding the relationship between medicine practice, culture, and society. In a more recent article, Jutel (2015) explored the importance of the diagnosis' sociology in topics such as commercial conflicts of interest, disease expansion and restriction, stigma and political understanding of normality.

The sociological research, presented in this section, outlined the well-shaped evidences of the ADHD social construct paradigm. Inside this paradigm, we identified sources which assessed that ADHD is not a biological or psychiatric disorder, but it can be better explained by environmental and social causes or even by the personality type. We observed in the first part how the stakeholders of ADHD students, such as physicians, parents, and teachers, can influence the diagnosis process through their social experiences and, therefore, their subjective representations. In our analyses, there were researchers who supported the social construction theory of ADHD, considering this disorder as invented and not discovered. The supporters of the social construct paradigm of ADHD considered that the diagnosis process of ADHD is a subjective interpretation of the disagreeable behaviors, and not a clinical assessment. We observed in our theoretical framework of the social construct paradigm that a lot of researchers in this field followed the ethnomethodology structure (Aim et al, 2018; Brossard, & Carpentier, 2016; Flament, 1994; Lakoff, 2000). To understand how we can research the informational and personal representations' influences on human action, we analyze in next section the general framework of the ethnomethodology. For the present thesis, the ethnomethodology will provide valuable information about using the documentary analysis and semantic analysis as research methods.

1.4.3.4. Ethnomethodology as a Tool to Investigate Stakeholder Interpretations of ADHD

Through ethnomethodology, symbolic interactionism, and related approaches and theories, sociologists reveal the hidden world of everyday interactions (Brown, 1995). Human actions are governed by human knowledge. Ethnomethodology was first defined by Harold Garfinkel in 1967 (Macbeth, 2010). Garfinkel, an American sociologist, had an important contribution in social sciences, and he developed the concept of the ethnomethodology in his book entitled, *Studies in Ethnomethodology.* In his book, Garfinkel described, through various examples and studies, how people react and behave,

giving sense to their everyday lives through norms and rituals. The founder considered that ethnomethodology helps the sociological analysis to connect with reality, the real world. Through an ethnomethodology frame, topics like conversations, stigma, social exclusion, persons' behavior, or even emotions (especially anger) can be analyzed (Goode, 2003).

Watson (2009) described ethnomethodology as "knowledge-in-action," because its procedures help sociologists understand how information and personal representations influence human actions. Macbeth (2010) described that, starting with the 1950s, ethnomethodology helped different sciences develop their research, such as the botanic, pharmaceutical, or astronomy domains. Linsted (2006) assessed that ethnomethodology has a special relevance for health and medical sociology, the sociology of education, the sociology of public administration, the sociology of the professions, gender studies, media studies, the sociology of management, and sociological studies of science and technology. Emphasizing what Linsted maintained, Macbeth (2010) considered that the ethnomethodology gives "form and recurrence to the most ordinary social-organizational things in the world . . . and how those things are jointly produced . . . and achieved" (p. 392).

Macbeth (2010) emphasized the role of ethnomethodology in pedagogy, where specialists are helped to analyze different learning disabilities, to collect data about their particularities, to establish the diagnostic, to provide it to certification procedures, and also to identify best practices.

Zimmerman and Boden (1991) considered that ethnomethodology emphasizes how social order is provided by its members' practices to produce and make sense of their existence. Common sense is considered by Paul ten Have (2004) as an inevitable resource. ten Have highlighted three important arguments collected from the literature: (a) social reality exists in common-sense, the practical activity of everyday life; (b) human knowledge represents important data for sociologists; (c) the constructive and productive nature of examining the recognizable features through different technical ways.

Ethnomethodology is defined as an analytic method which involves finding order in the concrete world (Watson, 2009). It provides empirical studies of the human interactions, and personal reactions (Zimmerman & Boden, 1991). Macbeth (2010) maintained that ethnomethodology studies "aim to show that there is order in the plenum, an ignored, constitutive orderliness" (p.394). Through its application, it is possible to identify order, structure, and recurrence, very important concepts in social and educational sciences. Ethnomethodology researchers analyze from the cultural differences to individual

differences, from macro to micro analyses. Linstead (2006) emphasized that the micro analysis is not less important compared with the macro one, because the micro study of interactions helps us to understand large and fundamental sociological issues.

Lynch (1993) assessed that ethnomethodology is a subfield of sociology, through which social structure and social actions are placed in theories. Lynch described three important themes, parts of ethnomethodology, and these include: accountability, reflexivity, and indexicality. First, accountability represents the observable and reported part of ethnomethodology. The social activities are analyzed into their orderliness, that reveals the nonrandom, recurrent, repeated, and meaningful aspects of social actions. These aspects make social actions observable. In order to keep account of the observed social activities, it is important to use different ways to record. Second, reflexivity is that part from ethnomethodology which helps researchers process what data was accounted for. The sociological descriptions highlighted by the accountability help researchers reflect on their impact, importance, role, etc. This second part of the ethnomethodology is disputed by different researchers (Lynch, 1993), because some consider that the common knowledge represents what "everybody knows." However, the mentioned author highlighted how various programs of sociological research use common sense to achieve a better understanding of historical and cultural differences. Third, indexicality offers different codes and indexes of the observed social actions.

Ethnomethodology is using a variety of methods, such as: observations, interviews, audio tapes, document collections, and all of these have relevance for educational studies (Macbeth, 2010). Considering the strategies applied by the ethnomethodologists, Paul ten Have (2004) classified them into four categories: (a) analyzing the sense-making activities in situations where they are especially prominent; (b) analyzing the sense-making activities in some kind of extraordinary situation; (c) analyzing the activities in their natural settings; and (d) analyzing the mechanically recorded activities, especially used in conversation analysis. The technical aspect of the fourth strategy is also starting to be used in the first three strategies.

The ethnomethodological research include two types of studies: focused on work, and focused on conversations (Lynch, 1993). The first category of ethnomethodological studies describes how different practitioners are making their activities, how they work for different practical purposes. An example from this category is Garfinkle's (1967) research on how staff in a medical clinic managed and manipulated cases files and other records of their activities. The second category of ethnomethodological studies is focused on the

conversation analyses. In this type of research, the language and communication between persons represent the observed actions.

Because of its complexity and multidimensional applicability, conversation analysis became an autonomous program of study (Lynch, 1993). Watson (2009), a specialist in language analysis, dedicated a detailed work to describe how ethnomethodology shapes the academic disciplines through the analysis of practical and professional texts. Language practices (oral communication, numerical constellations, diagrams, and other features of texts) are considered by Watson (2009) instruments for social life, and objects for social order. Watson thought that sociology is also shaped by the ordinary linguistic resources and procedure, and texts are viewed as active social phenomena. Sociologists are orientated to analyze the "conduits" as a reality which exists beyond the texts (Watson, 2009, p. 14). Considering this, texts can be treated as specific analytical phenomena, because they are active, operational, and provide data which are considered specific instruments.

Textual analyses are instruments for the social scientific practices, were, for example, a literary, cultural, or academic specialist comments on other's work from the same domain (Watson, 2009). For example, the instruments analyzed by the most pervasive social practice are newspaper articles, text messages, road signs, shopping lists, and these are interpreted as representative metaphors. This is how ethnomethodologists use common sense in academic research. Watson (2009) exemplified the ethnomethodology strategies through a personal and simple analysis on a group of people formed around a bus station. Watson analyzed how people reacted when they read the bus number, when the bus arrived in the station. Considering the information presented by the bus, there were two different situations: the bus was labeled only with the number "16," and in the second situation the bus had the sign "16," plus the name of the destination. The aim of the Watson analysis was to observe the individuals' reaction from the bus station, when they read the different signs from the bus. What reactions were inducted by what the individuals had read? The bus symbols activated a variety of reactions. When the symbols of the bus also included the route (not only the number 16), Watson observed that the passengers were firmer in their reactions: "self-inclusion"—those passengers who were waiting that bus, "self-exclusion"—those who selected to use another route, and "non-passengers." The configuration of the observed group from the bus station was very dynamic, because the passengers' reactions were diverse and interactive considering the bus symbols. When the passengers read the symbols of the bus, they fulfilled a textual work which gave them the

possibility to react as a function of their intentions. In conclusion, the passengers were reacting in a specific way because they were reading a specific text (symbol and/or words).

Another resource of the ethnomethodology was presented by Zimmerman and Boden (1991), who proposed the term "talk in interaction." The organization of talk helps people to accomplish their tasks, being a valuable resource in understanding human interactions and behavior. The authors also debated the importance of institutional talk, which is considered a structure of institutional interactions.

For the present dissertation topic, an important procedure used by the ethnomethodological researcher is the documentary analysis. Watson (2009) stated that this analysis helps researchers identify a pattern or a particular configuration of a specific activity in a specific context. Paul ten Have (2004) indicated that the workplace studies included the use of documentation analysis, where the documents represent the basic instrument which provide data in the ethnomethodological studies. Many types of documents can be analyzed (e.g., texts, photographs, drawings, graffiti, symbols), but the textual documents are used most often.

Garfinkel (1967) developed an entire chapter to describe how ethnomethodology helped him investigate the psychiatric diagnosis procedure (i.e., intake, psychiatric evaluation, and treatment) with patients from the U.C.L.A. Medical Center. He entitled the chapter, "Good Organizational Reasons for Bad Clinic Records" (1967, pp. 186–207). His source of information was the clinical records of the hospital patients. The clinical records included conclusions of the clinical personnel generated from the patients' activities in the hospital.

The content of the clinical record is expected to be complete, clear, and credible. When they are not as the researcher is expecting, methodological troubles occur (Garfinkle, 1967). Garfinkel named those clinical records "bad records," emphasizing that even the hospital and clinical administrators were aware and concerned about these records. The author commented that these bad records increase the researcher's curiosity, and moreover the study of the bad records highlighted a great uniformity and probably a sociological phenomenon. Garfinkel used numerous metaphorical words to express the difficulties experienced by the researcher in analyzing the content of the clinical records. The author identified two types of troubles when a researcher uses clinic records, including: general methodological troubles, and normal, natural troubles. The general methodological troubles define the discussions about the use of clinical records for research purposes. Continuing with the second set of troubles in using the analysis of clinical records, Garfinkel considered

"normal, natural troubles" those situations where the clinic's personnel or self-reporters act to complete the clinical records in accord with how they know (clinical persons consider that their ways are the right ways of doing things). After the investigation of these two sets of troubles, Garfinkel labeled them as "carelessly kept" clinical records, and revealed an important and strong connection between the records and the social system, where the social system is served by these types of records. In the research data, through the document analysis provided with the help of ethnomethodology, Garfinkel (1967) concluded that "all the clinic's records are kept so as to serve the interests of medical and psychiatric services rather than to serve the interests of research" (p. 207).

As we described in this part, ethnomethodology is successfully used in very specific topics to conclude general and complex findings with impact on the social culture. As Goode (2003) assessed, ethnomethodology helps to analyze topics such as the disability, not only to establish the social order, but also the social setting and model of the disability, the social-cultural construction, the social action (diagnosing and treating), and most of all ethnomethodology provides the possibility to analyze the disability as a social phenomenon.

I.5. Discussions and Research Questions

Focusing on ADHD, psychiatrists are evaluating behaviors according to ethical or other social norms. Aman et al. (1998) emphasized that ADHD is considered one of the most common disorders in childhood. Dobrescu (2010) concluded that in Romania almost 7% from the school population has ADHD. *Why did this disorder become so common among* students*?* We remember that Lakoff (2000) analyzed the evolution of attention deficit disorder, and identified the evolution of inhibitions (that continue to decrease). Because of the decreased inhibition and its general perception as a disagreeable behavior, the acceptance of the ADHD diagnosis became quickly widespread, not only in US, but worldwide (Lakoff, 2000).

According to Wedge (2015), children's problems are the expression of their social contexts: at home, at school, or with their friends, and this point of view is shared by family system therapists. Many sociologists believe that aggressive behaviors develop primarily out of social experiences (Clinard, & Meier, 2014). Behavioral problems such as aggression, disobedience, or other behaviors commonly associated with ADHD (e.g., inattention and hyperactivity) are signs that something is wrong in a child's life: either extreme trauma, like abuse, poverty, lack of discipline, or a difficult family transition.

Mental and behavioral development is not completed in childhood, and the negative emotions arise from a lack of structure or difficult circumstances in students' environments. Because students are not prepared or fully developed, they can express these inappropriate socio-environmental conditions in deviant behaviors. As we presented earlier, social control can diminish or complicate the deviance problems

Is there a possibility that the procedure of diagnosis for ADHD is based on the subjective interpretation of the behavior, and not on the concrete biological condition? Wedge (2015) emphasized this idea, namely that a diagnosis of ADHD is based on assessment of behavioral symptoms; it is not a genetic analysis, and that is why the recognition of ADHD is more prevalent in some countries than others, considering that it is widely subject to cultural interpretation. What we view as normal or abnormal behavior depends on the mainstream beliefs or norms of the society in which we live. Earlier, but in the same line of thought, Rafalovich (2008) maintained, that reliable data that described the incidence of ADHD by racial categories (such as Hispanic, Asian, and Native American) and class-specific data are not available. Many social scientists have concluded from the data collected from these approaches, from the perspective of social constructivism, ADHD is nothing more than a metaphor.

Moreover, the ADHD symptoms were, not long ago, classified more in social and moral terms, like class clown, day-dreamer, or Tom-boy (Hawthorne, 2013). According to the DSM criteria and description, Hawthorne concluded that today ADHD is more often medicalized than moralized. These medicalized assumptions support the biological model, and if mental disorder is considered a biological disease, it means that it belongs to medical practice. A disease could suggest a humanitarian approach, because it is not justified to blame a moral or legal dysfunction. But, even if people declared mentally ill are not blamed, they are judged according to those definition, and they are obligated to alter their behavior (Hawthorne, 2013). The author assumed that thinking of ADHD as a disorder of social expectations draws attention to the details of those expectations. If we understand ADHD as a disorder of the individual, it is inappropriate because of its symptoms that challenge specific social norms, certain forms of school and work achievement, focus, persistence, or carefulness.

Cohen (2006) presented a summary of different researchers who argued that considering ADHD a disease is a fraud. One of these researchers presented by Cohen is Fred Baughman Jr, who is a pediatric neurologist and who repeated in different ways (e.g., articles, letters, commentaries) that children diagnosed with ADHD have no detectable

abnormality specific to that diagnostic label. Baughman and Hovey (2006) emphasized that there are no laboratories tests that have been established as diagnostic in the clinical assessment of ADHD. He considered that during the patients' life physicians cannot detect any abnormality (regarding ADHD), and even after death, at autopsy, it cannot be detected as in the most cases of physical diseases. Baughman and Hovey (2006) described children with ADHD as physically normal. Cohen (2006) revealed that Thomas Szasz had the same opinion, because he emphasized that there is no confirmatory evidence of physical etiopathology.

Do psychiatrists diagnose ADHD in the same way? In 2005, Remschmidt presented a global consensus on ADHD, where a group of experts from nine countries spanning five continents discussed the validity and the impact of ADHD and also the treatment algorithms that would have international relevance. The group of experts re-confirmed that ADHD was a valid disorder that exists across different cultures, and this had a significant impact on a global level. The consensus emphasized the same core symptoms of ADHD: hyperactivity, attention deficit, and impulsivity, and all of these have an important impact on a child's life (on their emotional, social, and cognitive functioning). Moreover, Polanczyk et al. (2007) revealed there is a lack of significant differences in ADHD prevalence rates between North America and Europe, which is against the perspective of the social and cultural construct paradigm. But the cited authors did not suggest that culture has no influence on the prevalence of ADHD in a given population. After almost 10 years, Wedge (2015) highlighted the results of a study conducted in Europe regarding ADHD, identifying differences between United States psychiatrists and those from France. In the United States, child psychiatrists considered ADHD a biological disorder, preferring treatment with psychostimulant medication. In France, child psychiatrists believed that ADHD is a psychosocial situation, focusing on psychotherapy or family counseling. The author affirmed that readers of her research were shocked at the idea that so many American children were diagnosed and medicated, and some Europeans were concerned that the ADHD epidemic would spread to their own countries. Wedge revealed how a French neuroscientist from Lyon told her that French child psychiatrists were feeling strong marketing pressure from drug companies to diagnose ADHD and prescribe medication. In her opinion, ADHD was defined as a constellation of symptoms that our society interprets as a medical condition for reasons that will became clear in time. The behavior tagged in ADHD is considered normal childhood responses to stressful situations (Jones, 2002).

The diagnosis of ADHD is established worldwide by psychiatrists based on the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (American Psychiatric Association, 2013) or based on the International Statistical Classification of Diseases and Related Health Problems, 11th Revision—ICD (Polanczyk et al. 2007). In the 5th edition of the DSM, ADHD was presented in the chapter dedicated to Neurodevelopmental disorders and was described in terms of persistent and elevated levels of inattention and hyperactivity/impulsivity. Symptoms should appear before the age of 12. A clinical practice guideline in diagnosing ADHD was provided by the American Academy of Pediatrics (Wolraich et al, 2019). The procedure of diagnosing the ADHD was summarized in the next steps: 1. the pediatrician's "evaluation for ADHD of any child or adolescent between 4 and 18 years old, who comes with academic or behavioral problems and symptoms of inattention, hyperactivity, or impulsivity"; 2. the diagnosis of ADHD "should determine that the DSM-5 criteria have been met"; 3. prior to evaluation, it is important to conduct a screening for comorbid conditions (including emotional or behavioral conditions), developmental conditions (learning and language disorders, autism spectrum disorders) and physical conditions (tics, sleep apnea); 4. as a chronic condition, ADHD in children should be treated "following the principle of the chronic care model and the medical home"; 5. for preschool-aged children with ADHD, the treatments should be based on behavioral classroom interventions, and for elementary and middle school-aged children with ADHD the approved medication should be prescribed; 6. the medication for ADHD must achieve maximum benefit with tolerated side effects; and 7. if the specialist is not specialized in diagnosing comorbid conditions, he or she must refer to an appropriate subspecialist to make the diagnosis and initiate the treatment (Wolraich et al, 2019, p. 6). This guideline was also used in Romanian psychiatric practice (Bolocan, 2017; Dobrescu, 2010; Iancu, 2007).

Levy (2014) highlighted that the National Institute of Mental Health pointed out that DSM and ICD have an important and positive contribution in facilitating communication between clinicians and researchers, but there is moderate success in establishing the diagnostic reliability through an objective assessment. ICD-10 and DSM-IV criteria provided similar lists of symptoms, what is different is the way of establishing the diagnosis: ICD-10 required a minimum number of symptoms from all three dimensions (inattention, hyperactivity, and impulsivity), and DSM-IV defined only two dimensions (hyperactivity and inattention) (Polanczyk et al. 2007).

What core symptoms of ADHD are recorded into the medical files, and is the biological condition relevant for the diagnosis process? Brent and Lewis (2014) presented evidence of the arbitrariness of clinical decisions. The authors revealed that those specialists who are establishing the diagnosis of ADHD according the DSM criteria, are diagnosing roughly three to four times more, comparing with those who use the ICD 10 diagnostic criteria.

Polanczyk et al. (2007) investigated the worldwide prevalence of ADHD and illustrated that there are discrepancies considering this topic. In their article, the authors provided a systematic review and a meta regression analysis of 102 studies, which included 171,756 subjects from all world regions (but most of them were from Europe and North America). In these studies, criteria from DSM and ICD were used for diagnosing ADHD. One important observation was that from the entire number of studies, only 13 were based on ICD-10, and the rest of 89 used the DSM diagnostic criteria, and more than half of the studies used only one stage of evaluation (41 studies presented two stages in establishing the diagnosis). Differences were identified considering the methodological characteristics of the studies for the following variables: origin of samples (more studies included samples from schools), the number of stages of evaluations (one stage or two stages), and the source of information ("best estimate procedure"—23 studies, "parents"—33, and "teachers"—15 studies). They also concluded that the European researchers were more frequently using ICD-10 for diagnosis of the mental illness, compared with American researchers, who were more often using the DSM criteria. Mather (2012) highlighted "how the power of the DSM influences American society norms, beliefs, and behaviors" (p. 16). They analyzed different mental disorders described by DSM over the years, and Maher's conclusions were that many of these disorders did not have rigorous scientific research, but even so, they provided different "trends" into the American society, behaviors, attitudes, and even beliefs.

Sami Timimi is a British psychiatrist who dedicated much of their research to the controversial topic of ADHD. In one article, Timimi (2015) presented, with a hint of sarcasm, the interests of the National Institute of Mental Health (NIMH) from the United States to developed the framework named Research Domain Criteria (RDoC). On their official site, NIMH described RDoC as a research framework for investigating mental disorders, for a better understanding of the nature of mental health and illness, of the function and dysfunction in the psychological and biological systems (National Institute of Mental Health, n.d.). To explore the basic dimensions of human behavior functioning, RDoC encourages the use of many ways to gather information in the diagnosis procedure,

from genomics and circuits, to behavior and self-reports. Timimi wondered if this was not exactly the purpose of the criteria presented by the diagnostic manuals from their beginnings (i.e., providing rigorous steps that manuals should complete before concluding a certain disorder). It looks that the institutions from the worldwide health systems were facing a large gap of biological evidences when they talked about mental illness. Timimi (2015) highlighted that a properly scientific assessment and diagnosis of ADHD should be established if, and only if, there are clear and concrete biological evidences.

Are the stakeholders` perceptions and representations important for the ADHD diagnosis process? Rowland et al. (2002) considered that the parents and teachers' observations and representations are valuable for the ADHD diagnosis process. The narrative descriptions of the stakeholders are included into the medical conditions registered by psychiatrists in clinical records. In Romania, as elsewhere, students with ADHD are diagnosed by psychiatrists and registered in the medical documentation in hospitals or in private medical services. Most of the specialists are using the criteria described in the DSM (Popescu, 2008). A comprehensive medical approach is used for the evaluation of each child with possible symptoms of ADHD (Iancu, 2007). This comprehensive medical approach includes: a detailed history, a complete physical exam, an evaluation of the neurological development, and some biomedical tests. Iancu (2007) considered that this evaluation confirms the diagnostic of ADHD or identifies other affections which mimic this disorder. The author described the procedure of diagnosing ADHD, and presented that at the beginning the students visit the family doctors or pediatricians and, if they consider that students present a marked behavior for ADHD, then a detailed medical evaluation is provided by psychiatrists or neurologists, who have a limited time for a complex evaluation (Iancu, 2007). This medical evaluation was considered by Iancu (2007) reductive, because it was taking a large number of symptoms which were operationalized until one last certain diagnostic. Iancu revealed that DSM should be considered more like a guideline, and not a manual based on precise evidence. For a correct diagnosis, according to Iancu, the DSM criteria should be completed with reports from more persons (parents, teachers, psychologists, neurologists). The parents' or teachers' reports should complete the psychiatric interview. Iancu (2007) explained that there is a mixture between genetic influences and temperament. Iancu also emphasized that the diagnostic of ADHD should answer the critics (e.g., "As many of normal children have some of these characteristics, how can specialists diagnose ADHD?").

However, Baughman and Hovey's (2006) opinion highlighted that despite having no qualifications for making diagnoses, school staff are facilitating the labeling and medicalization process of ADHD. Rafalovich (2008) outlined that school psychologists are sharing the conclusion of teachers, then the pediatricians are following the direction presented by teachers and school psychologists and in this process the official ADHD diagnosis is established. School officials are threatening parents with reports to social services agencies in those moments when parents resist in medicating their children. By suppressing typical behaviors of children through drugs, it may cause children to act less like normal kids they are and more like docile adults. Adding to these, we can cite Graham's conclusion (2010), who mentioned the inefficiency of the contemporary parenting style (e.g., the lack of male role models, and a "have to have it now" consumer culture), reinforcing the idea that ADHD is a social construct, and not a biological fact.

What other causes can "*lead*" *to the ADHD diagnosis, if the biological evidence is not well shaped?* Wedge (2015) argued that in the absence of a consensus among scientists regarding the genetic cause of ADHD, many researchers who previously supported the genetic theory changed to a more moderate position, considering that environmental factors do play a significant role (in the expression of genes). Wedge proposed that instead of relying on a checklist of symptoms, doctors in collaboration with social workers or child therapists should use a checklist of possible causes. Eleven possible social or environmental causes were suggested by Wedge:

1. Adverse childhood experiences such as physical or sexual abuse, or neglect, and the doctor must determine whether the child's family has a history with children's protective services;
2. Inappropriate discipline or the absence of discipline;
3. Chaotic and disorganized home;
4. A parent's illness, injury, loss of employment, or chronic unhappiness;
5. Unhealthy diet;
6. Excessive screen time;
7. Divorce or chronic marital problems;
8. Conflict with a teacher or boredom in the classroom;
9. Insufficient sleep on an ongoing basis;
10. Insufficient physical exercise;
11. Misinterpretation of a child's normal behavior during a developmental phase.

Wedge assessed that one or more of these causes should be established through interviews with the pediatrician, and then family therapy, individual therapy, and/or parent-training classes should be prescribed.

One of social construct's questions is about how the differences occurred from place to place and time to time are explained, considering the ADHD diagnosis. Pickering (2005) highlighted that this disorder exists only in certain cultural or social frames of reference. This means that what appears to be a natural object will prove to be a social object (an idea) created in virtue of social beliefs. Pickering revealed that what are in fact social and political ideas, become transmuted into what they are not, and the last ones are actually the medical ideas. The distinction between the types of behaviors has been made all the time, and the social and ethical groups appeared in this condition. When some professionals identify impolite, impolitic, impossible behaviors, they tend to classify them in a special category, and Pickering thought that this process was done through a genuine medical scientific distinction. In reality, a social judgement, a medical point of view was being selected. A genuine scientific distinction among human behaviors is considered by Pickering inevitably blind to the ethical status that our beliefs place upon those behaviors. The followers of the social construct theories argued that the behaviors do not have objective physical or psychological features to which medical approaches could refer, and in these conditions, behaviors cannot be classified through medical terms in illness or disease.

Considering the social construction of ADHD, this psychiatric disorder should be analyzed from different perspectives (Hacking, 2000). As Hacking (2000) named the entities of the social construct, to reveal the social construction of ADHD, here we focus on: the ADHD concept (its symptoms), the procedure of ADHD diagnosis (the practices), and the body of knowledge (known by the specialists and stakeholders). The present dissertation is proposing to analyze these perspectives, and we present in next section [Chapter II: *Methodology of research*] a multi-study approach which includes a series of three empirical studies. As the ethnomethodology recommends, the data from the first two studies were collected through a content analysis of 196 files of students diagnosed with ADHD at the Municipal Hospital, from Bihor County. Through this documentary analysis we identified the semantic network of the registered ADHD symptoms. And the third study we analyzed the social representations of ADHD symptoms revealed by parents, teachers, and psychologists, based on the body of knowledge provided by the specialists through their records.

II. METHODOLOGY OF RESEARCH

II.1. The General Research Design

The present research employs a mixed-method approach (quantitative and qualitative), including the analysis of medical documents of students diagnosed with ADHD and questionnaires administered to parents, teachers, and psychologists. This study combines quantitative and qualitative methods to provide a comprehensive overview of the ADHD diagnosis process in Bihor County. The following three studies are complementary, enabling an in-depth analysis of the ADHD phenomenon, from diagnosis to its social perception.

II.2. Research Objectives, Methods and Units of Analysis

The primary objective of this study is to investigate the process of diagnosing ADHD in Bihor County, Romania. We use social construct theory as a framework to understand the practice of diagnosing ADHD. To this end, we have outlined three complementary studies. In this chapter, we present the general framework, including the objectives, research methods, and units of analysis of these three studies, illustrating the different phases of our research process.

The objective of the first study was to investigate the profile of students diagnosed with ADHD in Bihor County, Romania, and to assess whether this profile corresponds with the demographic trends reported in existing ADHD literature. A key focus was on identifying potential disproportionalities in the diagnosis, particularly in symptom presentation across different groups, which may reflect systemic biases. The study employed a **document analysis method**. The *units of analysis* were the **clinical records of** the **196 students** diagnosed with ADHD between 2008 and 2015 by three psychiatrists from the Municipal Hospital Oradea. The research variables were grouped into four categories: (1) demographic data (age, gender, ethnicity, environment), (2) diagnosis-related data (IQ, EEG results, symptoms, comorbidities, treatments), (3) school context, and (4) family background (caretaker type, parental relationship, education level). Seven operational research questions guided the analysis, focusing on gender differences in symptoms and comorbidities, the relationship between EEG results and behavioral manifestations, treatment decisions, links between cognitive ability and academic

performance, the impact of family dynamics on emotional/behavioral issues, and ethnic differences related to caregiving structures.

The second study aimed to identify the symptoms recorded in the medical file by the psychiatrists (based on the clinical evidence and psychological evaluations and the parents' interview) and to explore the associations of the diagnostic terms in the descriptions elaborated by the experts with the official duty of evaluating each case. The study pursued two main objectives: (a) to identify the symptoms associated with ADHD as recorded in students 's medical files, and (b) to analyze the symptomatic profile of these diagnosed students, exploring how diagnostic terms were used by psychiatrists during evaluation. The *research method* for this second study also employed **document analysis** of **196 clinical records**, incorporating a **semantic analysis** of the symptoms described in these records. The registered symptoms were derived from clinical observations, psychological assessments, and interviews with parents. From these, 167 distinct symptom-related terms were identified and grouped into 34 categories. To ensure reliability, the coding of terms was performed by two independent evaluators. Using Gephi software (version 0.9.2), the we visualized the network of symptoms through nodes and edges, representing individual symptoms and their connections. A multimode network analysis was conducted using the Multimode Networks Transformation Plugin, which helped transform the data from a bipartite graph (linking symptoms and students) to a monopartite graph (focusing on symptoms only). This allowed us to detect clusters and patterns in the symptomatology of ADHD diagnoses in the region.

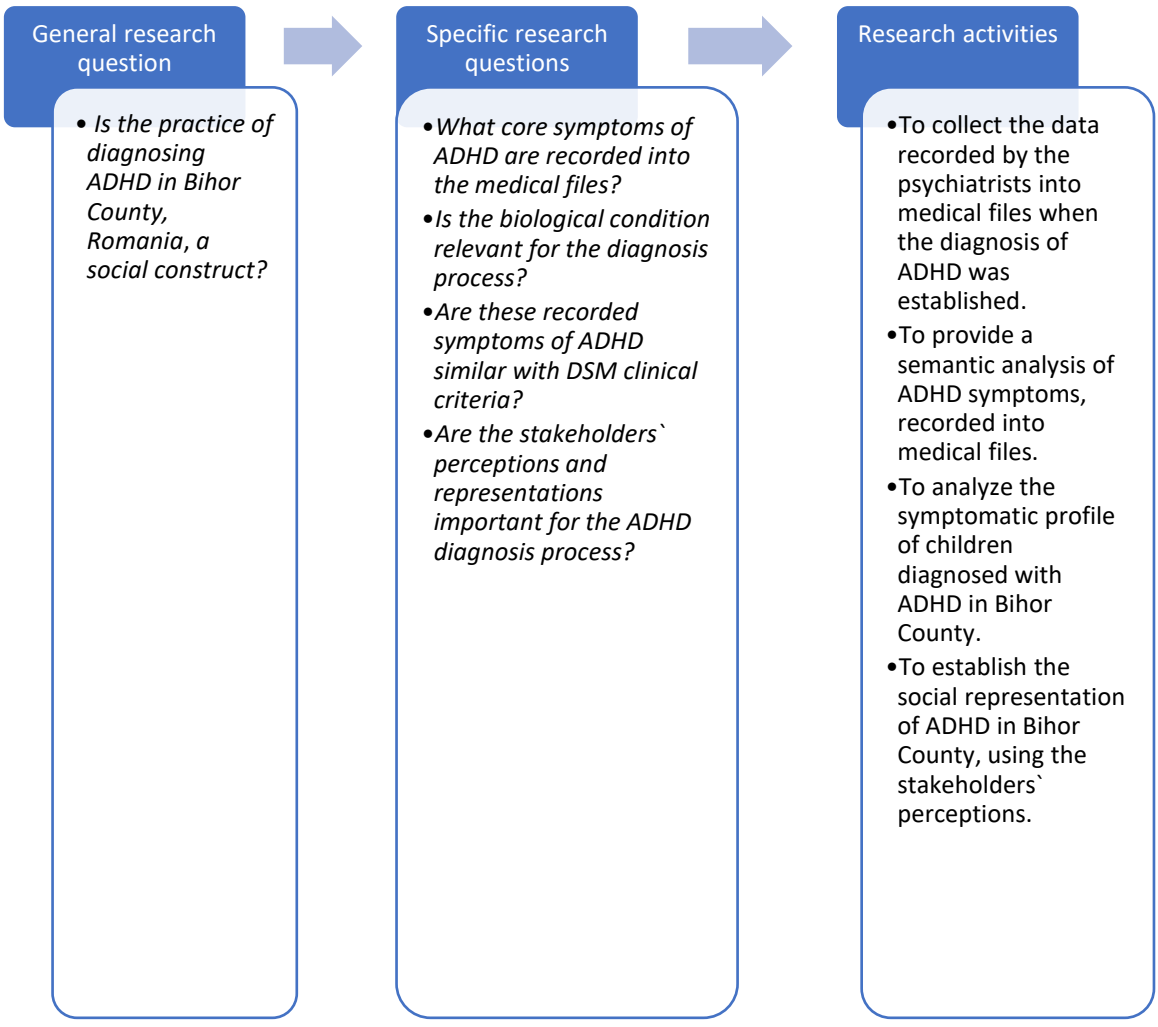
In the third study, we aimed to explore how ADHD symptoms are perceived by key social groups—parents, teachers, and psychologists—in Bihor County, Romania. Building on findings from previous research, the main objective was to identify the social representation of ADHD by analyzing perceptions of its most important symptoms. The study was guided by three specific objectives: (1) to identify ADHD symptoms as perceived by parents, (2) to identify symptoms as perceived by teachers and psychologists, and (3) to compare these two groups to highlight similarities and disparities in perception, thus forming a clearer understanding of how ADHD is socially represented. The *research method* was the **survey data collection**, using two tailored questionnaires: one for parents and another for teachers and psychologists. These questionnaires were developed based on a prior semantic analysis of medical files and included a list of the 16 most frequent ADHD symptoms observed in diagnosed students from Bihor County. Participants were asked to select up to six symptoms they believed to be most critical in defining ADHD. The *units of*

analysis were the **individual responses** of **590 participants**: **370 parents** and **220 teachers and psychologists**. Importantly, participants were not required to have direct experience with children diagnosed with ADHD, allowing the study to reflect broader societal perceptions. For *data analysis*, we used Gephi 0.9.2 to create and visualize networks of perceived symptoms, identifying patterns and clusters within and between the two respondent groups. This allowed for a nuanced understanding of how ADHD symptoms are socially constructed and understood by those who influence or inform clinical assessments. Next chapter presents the concrete empirical results for each study.

In Figure 1 we summarize the dissertation framework, staring with the general question and ending with the research activities.

Figure 1

The dissertation framework



III. EMPIRICAL RESULTS

III.1. Study No. 1: The Profile of Students Diagnosed with ADHD in Bihor County. Descriptive data

The American Psychiatric Association (2000) defined Attention-Deficit/Hyperactivity Disorder (ADHD) as a persistent and elevated level of inattention and/or hyperactivity-impulsivity. Considering this definition, the core symptoms of ADHD are inattention, hyperactivity, and impulsivity. These symptoms contribute to impairment in a variety of areas, such as social and emotional functioning (Hoza et al., 2005) or academic achievement (Frazier et al., 2007).

A survey conducted by the UK's National Attention Deficit Disorder Information and Support Services (ADDISS, n.d.) showed that short-term school exclusions were identified for 39% of the cases of students with ADHD, and permanent school exclusions were identified in 11% of the cases. Eighty percent of students with ADHD received no help from social services, and 19% had been in trouble with the police. For 92% of them, school achievement was affected; for 83% of them the ability to make friends was affected, and for 84% of them the ability to keep friends was affected.

The main objective of our research was to identify the general symptomatic profile of students diagnosed with ADHD in Bihor County and to check for connections with the general descriptions provided by the literature in the field. Previous studies showed that boys are more frequently diagnosed with ADHD than girls (Reeves, 2022; Rucklidge, 2008), that there are gender differences considering their symptoms; boys are more hyperactive compared to girls (Levy et al., 2005, Rucklidge, 2008), or that their school acquisitions (DuPaul et al., 2006b), or the parents` relationship is affected in families with students diagnosed with ADHD (Kousgaard et al., 2018; Rydell, 2010;). We analyzed demographic data of students with ADHD (age, gender, ethnicity, environment), data about their diagnosis (i.e., IQ, EEG, ADHD symptoms, comorbid disorders, treatments), data about school environment and type, and data about the families (i.e., type of the caretakers, parents' relationship, parents` education) and compare them with the descriptives from the literature.

3.1.1. Objective and Research Variables

Considering these findings, the present research aimed to investigate the profile of students diagnosed with ADHD in Bihor County and to examine whether this profile aligns with the demographic patterns reported in the existing literature. Additionally, the study seeks to identify potential disproportionalities in the diagnosis process, such as the presence of different symptoms across various groups, which may reflect systemic biases or inconsistencies in how ADHD is identified and labeled in educational and clinical settings.

Through a document analysis, we collected different types of data (demographic data, symptoms, school environment and acquisition, and data about the family of children with ADHD) registered by the psychiatrists when the diagnosis of ADHD was established for students. We focused our data analysis on the gender differences and similarities in ADHD, on the specificity of hyperactivity and aggressiveness in boys diagnosed with ADHD, and on the characteristics of families who have children diagnosed with ADHD.

Three categories of variables were investigated for our participants: (a) *demographic data* (age, gender, ethnicity, environment); (b) *data about the diagnosis* (IQ, EEG, ADHD symptoms, comorbid disorders, treatments), (c) *school environment and type*, and (4) *data about the families* (type of the caretakers, parents' relationship, parents` educational level).

Considering these variables, we aimed to identify the real symptomatic profile of students diagnosed with ADHD in Bihor County, and we established seven operational questions, namely:

1. *Are there significant differences regarding the core symptoms of ADHD between boys and girls diagnosed in Bihor County?*
2. *Are the comorbid disorders of students diagnosed with ADHD influenced by the subjects' gender?*
3. *Are there significant differences regarding students who manifest aggressiveness or the predominantly hyperactive/impulsive ADHD type considering the EEG results?*
4. *Is the prescription of the medication treatment influenced by the presence of comorbid disorders of students diagnosed with ADHD?*
5. *Is the presence of the lacunar knowledge level influenced by the intelligence level of students with ADHD?*
6. *Are the emotional or behavior problems of children with ADHD influenced by the parents' relationship status?*

7. *Are there differences between students with ADHD from different ethnicities (Romanian, Hungarian, and Romani) considering the type of their caretakers?*

3.1.2. Participants and Measures

Our study was based on empirical research; the data was collected through the content analysis of 196 files of students diagnosed with ADHD in Bihor County from 2008 until 2015. These students were diagnosed by three different psychiatrists, employees of The Municipal Hospital Oradea, Romania. The average age of students was 10.3, with a minimum of 4 years and a maximum of 18 years old. The diagnosis of preschoolers, aged between 4 and 6 years old, was described as "hyperactivity syndrome, ADHD under observation." We identified the age of students with ADHD from Bihor County, which is their ethnicity, in what area they lived, and if boys or girls were diagnosed more often with this disorder. Regarding the family background, we analyzed who were the caretakers of students with ADHD, which was the family structure, where they were living (in their biological families, orphanage, or foster care families). Also, we analyzed which was the most frequent education level and the relationship status of parents who have children with ADHD.

3.1.3. Data Analysis

Our data were statistically analyzed through the SPSS program We analyzed the frequencies of categorical variables; to establish if there were significant differences between the frequencies of categorical variables, we used the chi-square tests ($\chi 2$) of homogeneity and of independence. For significant differences, we analyzed the standardized adjusted residuals to establish the direction of the differences.

3.1.4. Results

The ADHD cases from the present research were diagnosed by the psychiatrists who worked at The Municipal Hospital from Oradea. From the 196 medical records, 69% were diagnosed by psychiatrist 1, 12% were diagnosed by psychiatrist 2, and 19% of cases were diagnosed by psychiatrist 3. There were differences between these three groups of cases ($\chi^2 = 112.7$, $p < .05$), the group size for psychiatrist 1 was significantly larger compared with the groups diagnosed by psychiatrists 2 and 3. For the beginning, we aimed to identify some demographic data of the participants. Most of the students diagnosed with this disorder were males (78%), and they were living in urban area (54%). Also, most of them have Romanian ethnicity (71%). Table 1 presents the condensed view of demographic data for our sample.

Table 1

The Demographic Data of Students Diagnosed with ADHD in Bihor County

Variables	Modalities	%	*n*
Gender	Male	78	152
	Female	22	44
Ethnicity	Romanian	71	139
	Hungarian	20	40
	Romani	9	17
Area	Urban	54	106
	Rural	46	90

There was a significant difference between girls and boys in being diagnosed with ADHD (χ^2 = 59.51, p < .05), boys being more often diagnosed with this disorder. There were three ethnicities identified for students with ADHD in Bihor County, and these were Romanian, Hungarian, and Romani. There were significant differences between students with ADHD considering their ethnicity (χ^2 = 128.643, p < .05). In Bihor County, the Romanian students (71%) had a higher score compared with the Hungarian (20%) or Romani students (9%). We identified that most of the students were diagnosed with ADHD (72%) between the ages of 7 and 12. 20% were diagnosed within the ages of 4 and 6, and 8% within the ages of 13 and 18.

Considering the *data about the diagnosis*, we collected information about the level of the intelligence quotient (IQ), the core symptoms core of ADHD that were manifested (inattention, hyperactivity, and impulsivity), if the students with ADHD had an encephalogram examination, or which were the comorbid disorders and their treatments. Table 2 presents the condensed view of data about the diagnosis for our sample.

Table 2

The Data About the Diagnosis of ADHD Symptoms at Students in Bihor County

Variables	Modalities	%	*n*
ADHD core symptoms	has not ADHD core symptoms	28	54
	one ADHD core symptom	45	88
	two ADHD core symptom	25	50

	three ADHD symptom	2	4
IQ	between 38 and 69 (*extremely low*)	29	57
	between 70 and 89 (*very low* and *low average*)	49	95
	between 90 and 119 (*average* and *high average*)	16	31
	missing value	6	13
EEG exam	unmodified EEG	30	59
	modified EEG	17	33
	without EEG	32	62
	missing values	*21*	*42*
Comorbid disorders	conduct disorder	25	50
	emotional disorder	16	31
Prescribed treatments	ADHD specific medication	56	110
	other type of medication	23	44
	behavioral therapy	8	16
	naturist therapy	5	10
	*missing values	8	16

Note: The table does not contain data for comorbid disorders were not associated with ADHD.

In our analysis, one of the first important observations was that not all the students had at least one ADHD core symptom registered in their medical file (28%), even if the diagnosis was established. For our questions, we selected only those 142 cases which registered the core symptoms of ADHD.

1. *Are there significant differences regarding the core symptoms of ADHD between boys and girls diagnosed in Bihor County?*

We identified the distribution of the core symptom for all 142 cases which registered at least one of these core symptoms. Seven combinations of the ADHD core symptoms were established, and their distribution for boys and girls is presented in Table 3.

Table 3

Distribution of ADHD core symptoms at boys and girls in Bihor County

Diagnosis	ADHD core symptoms	*n*	Boys		Girls	
			n	%	*n*	%
The predominantly hyperactive/impulsive ADHD type	hyperactive	51	39	76	12	24
	impulsive	25	17	81	8	19
	hyperactive + impulsive	27	26	96	1	4
The predominantly inattention ADHD type	attention deficit	12	7	58	5	42
ADHD without further specification	hyperactive + attention deficit	20	14	70	6	30
	hyperactive + impulsive + attention deficit	4	3	75	1	25
	attention deficit + impulsive	3	3	100	0	0
		142	109		33	

The value of the chi-square test showed no evidence of significant differences between boys and girls with ADHD, considering their core symptoms [$\chi^2(6) = 10.566$; $p = .103$]. Having the 7 categories based on the core symptoms registered in the medical files (see Table 3), we categorized them into the ADHD types provided by the Diagnostic and Statistical Manual of Mental Disorders: *attention-deficit/hyperactivity disorder, predominantly inattention type* (code 314.00), *attention-deficit/hyperactivity disorder, predominantly hyperactivity / impulsivity type* (code 314.01), and *attention-deficit/hyperactivity disorder without further specification* (code 314.9).

"Hyperactive" appeared in 36% of the cases (N = 51), followed by the combination between the "hyperactive + impulsive" symptoms (19%, $n = 27$) and the "impulsive" symptom (15%, $n = 25$). In conclusion, 73% of cases had *the predominantly hyperactivity/impulsivity type*, followed by *the combined type* (19%), and the *predominantly inattention type* (8%).

We aimed to check for differences between boys and girls, considering the core symptoms of ADHD. Applying the chi-square for homogeneity in the case of the predominantly *hyperactive/impulsive type*, we identified that there were significant differences between boys and girls, (χ^2 = 36.126; $p < .05$). Boys developed more often hyperactivity and/or impulsivity compared with girls. Conducting an analysis of the ADHD core symptoms distribution, we observed that the combination "hyperactivity +impulsivity" was met at only one girl, meaning that this symptom formula was strongly representative for boys. For the other ADHD types, which represent *the predominantly inattention type* or *ADHD without further specification*, the number of cases was too small for a statistical analysis of the differences between boys and girls.

Another information introduced in our category of data about the diagnosis was the IQ value of students diagnosed with ADHD in Bihor County. The mean of IQ value was 77 (minimum 38, maximum 117). Considering the intelligence levels established by the psychological tests used by the psychiatrists, we categorized the IQ values into three level of intelligence: between 38 and 69—*extremely low intelligence level*, between 70 and 89—*very low and low average intelligence level*, between 90 and 119—*average and high average intelligence level*. Considering this, most of our cases (65%) do not have mental deficiency, registering values between low average and high average intelligence levels. The descriptive data of the mean of IQ value showed that the mean IQ values for boys was 77.23 (minimum 38, maximum 117), and for girls 77.63 [minimum 54, maximum 104].

In our analysis on the comorbid disorders, we identified that ADHD was associated in some cases with "the emotional disorder" and "the conduct disorder". From a total of 196 cases, a quarter of the students with ADHD also presented "the conduct disorder", and for 16% of cases "the emotional disorder" was the associated diagnosis.

2. *Are the comorbid disorders of* students *diagnosed with ADHD influenced by the subjects' gender?*

We identified the distribution of the comorbid disorders for all 196 cases considering the gender of the subjects. The chi-square test for independence did not reveal significant differences between boys and girls considering the association of ADHD with "the conduct disorder" [$\chi^2(1) = 0.093$; $p = .761$] and also considering the association of ADHD with "the emotional disorder" [$\chi^2(1) = 0.917$; $p = .338$]. In a detailed analysis we identified that from a total of 78 cases diagnosed with "the conduct disorder", 54% did not present "aggressiveness" as a symptom. Aggressiveness is the core symptom for the conduct disorder and considering this we conducted a detailed analysis where we found

that boys diagnosed with ADHD in Bihor County were more aggressive, comparing with girls diagnosed with ADHD (χ^2 = 40.205; p < .05). Even if there were no differences between the comorbid disorder considering the gender of our cases, we still identified that boys (n = 67) were more often aggressive compared with girls (n = 11).

3. *Are there significant differences regarding students who manifest aggressiveness or the predominantly hyperactive/impulsive ADHD type considering the EEG results?*

Considering the neurological evaluations registered in our cases, we analyzed the presence of the encephalogram (EEG) test. The EEG is registered by the psychiatrists to observe if there is some modification in the neuro-cerebral activity. In our analysis we collected data from the medical files completed by three different psychiatrists, and one of these psychiatrists did not ask for an EEG examination for any of their cases. For the variable "EEG results," we identified three categories: *modified EEG*, *unmodified EEG*, and *without EEG* examination. For 30% of the cases, the EEG was registered as being unmodified, 17% had modification in their EEG, and for 32% of cases this neurological examination was not provided. For 42 files (21%) we did not have access to the results.

We identified the frequency of "aggressive" as a symptom registered into the medical files for 40% of the students diagnosed with ADHD. For all of these cases which had the aggressive symptom besides the ADHD core symptoms, we identified that there were no significant differences between those who had a *modified EEG* and those with *unmodified EEG* (χ^2 = 4.276; p = .118). Analyzing the cases of students who presented the predominantly hyperactive/impulsive type of ADHD, we also did not find differences (χ^2 = 2.256; p = .324) between the variable categories (modified EEG, unmodified EEG, without EEG).

Making a closer analysis of those 33 cases which had a *modified EEG*, we identified that most of them were boys (n = 24), and mostly not associated with the conduct disorder (N = 28), or the emotional disorder (n = 30). We also identified that in those cases which presented modified EEG, 24 (72%) were diagnosed with the predominantly hyperactive/impulsive ADHD type, and a similar number (N = 26) received medication as a treatment for ADHD.

4. *Is the prescription of the medication treatment influenced by the presence of comorbid disorders of students diagnosed with ADHD?*

Analyzing the prescribed treatments for all 196 cases, we identified that 79% of cases (n = 154) had a prescribed *medication treatment* (ADHD specific medication or other

types of medication), and only 26% had a prescription of *alternative treatments* (behavioral therapy). We also identified the prescription of other type of medication, even the naturist therapy as a prescribed treatment.

We analyzed two categorical variables, namely "comorbid disorder" and "treatment based on medication." The comorbid disorders variable was divided into *conduct disorder* and *emotional disorder.* The prescribed medication treatment included Concerta, Stratera, Timolin, Medikinet). There were significant differences among the cases *without conduct disorder* and received medication treatment and those who had conduct disorder (χ^2 = 35.558; $p < .05$). Analyzing the emotional disorder as a comorbid disorder for ADHD, we also identified significant differences between students without emotional disorder and medication comparing with those who have emotional disorder and medication (χ^2 = 75.740; $p < .05$). The medication was significant more often prescribed for cases diagnosed without emotional disorder.

Table 4 presents the data on prescribing medication in those cases which also had comorbid disorders. The prescription of the medication was not influenced by the presence of the emotional or conduct disorder.

Table 4

ADHD Comorbid Disorders Considering the Treatment Based on Medication

Comorbid disorders			Treatment based on medication	Total
Conduct disorder	not associated with ADHD	observed	114	154
		expected	77	
	associated with ADHD	observed	40	
		expected	77	
Emotional disorder	not associated with ADHD	observed	131	154
		expected	77	
	associated with ADHD	observed	23	
		expected	77	

For a detailed analysis we wanted to identify which were the most frequent symptoms for those cases which receive medication, establishing in this way the main

criteria for prescribing medicine. The medication should be prescribed for the severe form of ADHD and considering this we wanted to identify *how many ADHD core symptoms presented those cases which received treatment based on medication?* From a total of 154 cases which had medication prescribed as treatment, we identified the following categories: 64 cases which had *one ADHD core symptom*, 42 cases which *had two core symptom*, and 45 cases which *did not have any ADHD core symptoms*. We found significant differences between these categories (χ^2 = 51.039; p < .05). Most of those cases which had one symptom of ADHD received medication as a treatment for ADHD. Considering this, we identified that the most frequent symptom in these cases was the *hyperactive behavior*. Also, 78% from those cases which were diagnosed with the *predominantly hyperactive/impulsive type of ADHD* received medication.

In conclusion, the medication as treatment for ADHD is given to those students who manifested hyperactivity and/or impulsivity. We identified that those cases which also manifested aggressiveness (n = 60) did not have prescription of medication as often as those cases which did not (n = 94). Significant more cases without aggressiveness received medication compared with those which presented aggressiveness as a symptom (χ^2 = 7.506; p ;< .05). The main criteria in prescribing medicine treatment were the presence of hyperactivity and/or impulsivity as symptoms, and not the aggressivity, conduct disorder, or emotional disorder as associated diagnostics of ADHD.

5. *Is the presence of the lacunar knowledge level influenced by the intelligence level of students with ADHD?*

Since most of the cases involved school-age students, we analyzed the data connected with *school environment and type*. Table 5 includes data about level of knowledge (information provided by the psychological evaluation made by the hospital psychologist), school type, and environment, recorded in the medical files after the psychological evaluation and the psychiatric interview.

Table 5 presents that most of the students diagnosed with ADHD (66%) had lacunar knowledge, and they were learning in mainstream schools (64%). “Lacunar knowledge” means that the school acquisitions were under the level of criteria asked by the curricula. Even so, only 11% of students with ADHD (n = 21) followed an adapted curriculum in their mainstream schools. Regarding the intelligence level, we had data for 87% from the total cases, and we identified that more than a half of these cases (65%) did not have mental deficiency, registering scores between a low average and high average level of intelligence. The mean of IQ values was 77 (minimum 38, maximum 117).

Table 5

The Data About the Educational Background of Students With ADHD in Bihor County

Variables	Modalities	%	*n*
Level of knowledge	satisfactory knowledge	27	53
	lacunar knowledge	66	130
	*missing values	7	13
School type	mainstream school	64	126
	mainstream school with adapted curriculum	11	21
	special school	9	17
	unschooled	3	6
	*missing values	13	26
School environment	urban area	46	89
	rural area	37	73
	*missing values	17	34

Note: This table does not contain data that is not associated with ADHD

The category of intelligence level (see Table 6) was divided into three categories: *extremely low*, *very low and low average*, and *average and high average*. Applying the chi-square test for homogeneity, we identified that there were significant differences between students who present different level of intelligence, considering the lacunar level of knowledge ($\chi^2 = 23.048; p < .05$).

Table 6

The Distribution of the Lacunar Knowledge Level Considering the Intelligence Level of Students With ADHD

Intelligence levels	Observed	Expected
Extremely low	37	41.3
Very low and low average	65	41.3
Average and high average	22	41.3
Total	124	123.9

Many cases which presented *lacunar knowledge level* were defined by a low average of intelligence (n = 65). These data sustain DuPaul's educational paradigm on ADHD who considered that students with ADHD or symptoms with ADHD were often behind in basic academic skills (DuPaul et al., 2001). To establish which were the symptoms associated with the lacunar knowledge level of students diagnosed with ADHD, we analyzed the particularities of these cases. Our data revealed that only 8 cases with lacunar knowledge level were diagnosed with *learning difficulties*, and only 28 were registered as *disturbing the class*. Table 7 shows the distribution of different symptoms for the 124 cases which presented a lacunar knowledge level.

Table 7

The Distribution of Different Symptoms at Students Diagnosed With ADHD Who Present Lacunar Knowledge Level

Symptoms	Observed	Expected	Chi-square	*p*
Hyperactive behavior	72	65	1.508	.219
Low tolerance frustration	61	65	.492	.483
Aggressive	47	65	9.969	.00
Impulsive	41	65	17.723	.00
Emotional issues	35	65	27.692	.00
Disturbing the class	28	65	42.123	.00
Attention deficit	26	65	48.800	.00
Opposer	21	65	59.569	.00
Learning difficulties	8	65	99.969	.00

We observed that the number of students with *hyperactive behavior* was not significant different compared with those without hyperactive behavior. The same situation was for *low frustration tolerance*. For our cases, *the lacunar knowledge level* often appeared at students with ADHD who had *low and average intelligence level*, but was not often met at those students who presented *learning difficulties*, *disturbing the class*, *attention deficit*, *aggressive* or *impulsive behavior*.

6. *Are the emotional or behavior problems of students with ADHD influenced by the parents' relationship status?*

We also collected data about students` family. We identified that after the interview, the psychiatrists registered information about the types of the caretakers, parents` relationships, and educational level. Table 8 presents the categories of these three variables from *data about the families* of students with ADHD.

Table 8

The Data About the Family Environment of Students n with ADHD in Bihor County

Variables	Modalities	%	*n*
Type of the caretakers	biological family	79	154
	orphanage	6	12
	caregiver	14	28
	*missing value	1	2
Parents' relationship	married	47	92
	divorced	18	35
	single parent	12	23
	*missing value	23	46
Parents` educational level	superior	10	20
	medium	54	105
	unschooled	2	5
	*missing value	34	66

Note: This table does not contain data about foster care families.

Table 8 presents that majority of students with ADHD from our cases (79%) were raised by the biological family, where 47% of the parents were married and 54% had a medium educational level. Data was not available in all files on *the parents` relationship* or e*ducational level*. For 66 of the cases, we identified that the parents` educational level was not registered by the specialists.

We were interested to find if there were differences between students with ADHD and emotional problems considering their parents' relationship status. For this, we analyzed two categorical variables: "emotional problems" and "parents' relationship status". The emotional problems variable is divided into: *present* and *absent*; and the parents'

relationship status is divided into: *married, divorced,* and *single parent*. Applying the chi square test, we concluded that there was no evidence for significant differences among the categories of variables [$\chi^2(3) = 0.044; p = .978$]. We cannot identify an influence of parents` relationship status on students with ADHD who also presented emotional problems. The same situation was also registered for the variable "behavior problems" [$\chi^2(2) = 2.346; p = .309$].

7. *Are there differences between students with ADHD from different ethnicities (Romanian, Hungarian and Romani) considering the type of their caretakers?*

For our last question we were interested to find if there are differences between students with ADHD and different ethnicities considering their type of caretakers. For this, we analyzed two categorical variables ("ethnicities" and "type of caretaker"). The ethnicities variable is divided in: *Romanian, Hungarian, Romani*; and the type of caretakers was divided into: *biological family, orphanage,* and *caregiver*. Applying the chi square test, we concluded that there were significant differences among the categories of variables [$\chi^2(4) = 12.575; p = .01$]. Table 9 presents the categories of variable where we had significant differences.

Table 9

The Caretakers of Students With ADHD and Different Ethnicities

Ethnicity	Type of caretakers	Biological family	Orphanage	Caregiver	Total
Romanian	Count	113	8	17	138
	Expected count	109.5	8.5	19.9	
	Adjusted residual	1.4	-.4	-1.3	
Hungarian	Count	33	1	5	39
	Expected count	31.0	2.4	5.6	
	Adjusted residual	.9	-1.1	-.3	
Romani	Count	*8*	*3*	*6*	17
	Expected count	13.5	1.1	2.5	
	Adjusted residual	-3.4	2.1	2.6	
Total		154	12	28	194

We observed that the significant differences were for the Romani students, fewer of them being raised by the biological family than expected, and more than expected at an orphanage or raised by caregivers. Romani students with ADHD were more often raised by other caretakers than the biological families. We did not have other evidence for significant differences in the case of the Romanian and Hungarian students with ADHD.

This first study reveals the reality of ADHD diagnosis in Bihor County, recorded into the medical files. Our document analysis provides valuable information about the psychiatrists' practice in diagnosing ADHD. These findings provide answers to our first research` questions and identify some possible causes of *why ADHD has become so common among students* and if *there is a possibility that the procedure of diagnosis the ADHD is based on the subjective interpretation of the behavior, and not on the concrete biological condition.* To maintain a coherent and fluid framework for the overall research results, the discussions generated by the data analyzed in Study 1 are included in chapter IV, generically titled „Discussions"**.**

III.2. Study No. 2: A Semantic Analysis of ADHD Symptoms of Diagnosed Students in Bihor County

Starting with the 19th century, physicians mentioned different symptoms of ADHD, including attention difficulties, hyperactivity, or fidgety behavior, but only in the 1960s ADHD was described for the first time as it is known today (American Psychiatric Association, 2022). In all of its history, ADHD was considered a mental disorder by clinicians (Dobrescu, 2010). The development of neurosciences, the new information regarding the neurotransmitters' functioning and the advances in medical imaging led to the identification of the affected neurological areas in ADHD and their impact on the everyday life of children with ADHD (Douglas, 2004).

The clinical symptoms have changed over time, but most of them include the main symptoms, as the contemporary literature shows (hyperactivity, impulsivity, and inattention). Hawthorne (2013) observed that even if ADHD was considered a mental disorder, primary care physicians were those who commonly diagnosed and treated this disorder. In the category of primary care physicians, family physicians, pediatricians, or internists are all included, to the detriment of psychiatrists. Sax and Kautz (2003, as cited in Hawthorne, 2013) concluded that physicians were the first to suggest that a person might

suffer from ADHD, in about 14% of cases, followed by parents (30% of the cases), and school personnel (52% of the cases).

Sociologists criticized the clinical approach of ADHD (Bradley-Klug, & Grier, 2000; Rafalovich, 2008; Wedge, 2015), claiming that psychiatrists and physicians focused on families and social environment in collecting information about the students with ADHD, while keeping in the center of the intervention the diagnosed individual and not the social and the familial circumstances. Moreover, the ADHD symptoms were classified, not long ago, in social and moral terms, such as class clown, day-dreamer, or Tom-boy (Hawthorne, 2013). The cited author considered that ADHD was more medicalized, rather than moralized (and this opinion was stated in 2013!). Since then, the impressive changes that occurred in the socio-economic and technological domains brought important influences on children's behavior (Gottschalk, 2019). Nowadays, the parenting style is not the same with our parents' style in educating us (Bonchiș, 2021; Stefany, & Prihandini, 2017). Considering the differences between what childhood was a couple of decades ago and what childhood is today, the accelerated development of pharmaceutical industry and its implication in many domains, and most of all the need of normality and obedience as we used to know it, we are wondering which are the sources which provide the valid information in establishing the ADHD symptoms and how are they applied in evaluation settings.

For instance, Rafalovich (2015) raised questions on the validity of medical and psychodynamic perspectives on ADHD from a sociological perspective. Medicalization was considered by Rafalovich a process able to explain the expansion of ADHD, as such the sociological point of view was a critique of diagnosing the behavior disorder using a biological model.

The reason of the present study comes from this controversial nature of ADHD. The clinical approach of ADHD was criticized, especially by sociologists (Bradley-Klug & Grier, 2000; Rafalovich, 2008; Wedge, 2015). In Romania, the prevalence of ADHD quickly ascended, from 6.77% in 2010 (Dobrescu, 2010) to 8.8% in 2013 (Rad et al., 2017). In the psychiatric assessment, the analysis of students` behavior is based mostly on what teachers, parents, and psychologists describe.

3.2.1. Objectives

Inspired by the controversies surrounding the diagnostics of ADHD, we aimed to establish which were the criteria in diagnosing ADHD in Bihor County taking into

consideration the most frequent symptoms presented by students. We aimed to identify the symptoms recorded in the medical file by the psychiatrists (based on the clinical evidence and psychological evaluations and the parents' interview) and to explore the associations of the diagnostic terms in the descriptions elaborated by the experts with the official duty of evaluating each case. As such, we established two objectives: (a) *to identify the ADHD symptoms at students diagnosed in Bihor County*, and (b) *to analyze the symptomatic profile of students diagnosed with ADHD in Bihor County.*

3.2.2. Data Collection and Participants

For this research, we conducted a content analysis on the medical cases recorded until 2015 by psychiatrists from Bihor County for 196 students diagnosed with ADHD. These students were registered at the Municipal Hospital Oradea, Romania. The average age for our subjects is 10.3, with a minimum of 4 years and a maximum of 18. That diagnosis of preschoolers, aged between 4 and 6 years old, is described as "hyperactivity syndrome, ADHD under observation." To describe the relationships between ADHD symptoms, we identified all the symptoms registered by the psychiatrists in the students' file.

3.2.3. Data Analysis

We analyzed the content of the diagnostic files using semantic analysis. Starting from the identified symptoms, we developed a Glossary of Terms (Appendix A). We identified 167 terms which described different symptoms, and they were divided into 34 categories. The distribution of terms in these 34 categories (i.e., their codification) was realized by two independent evaluators, to ensure the fidelity of codification. Then, we identified the connections between the symptoms through their co-occurrence, and these steps provided us the possibility of visualizing the symptoms in diagnosing ADHD in Bihor County as a network.

The semantic analysis was conducted using *Gephi version 0.9.2*, an open-source software which allows the identification of hidden patterns and distinct clusters inside a network through various algorithms (Bastian et al., 2009). The essential Gephi data structure which we analyzed in our research were nodes and edges. A node represents a basic entity in the data set and two nodes can be connected by an edge. The nodes were divided in two categories: "source" and "target." The difference is provided by the direction of the graph. An edge between two nodes indicates a direct path between the source and the target. To establish if there were more clusters of students diagnosed with ADHD,

considering the registered symptoms, we used the *Multimode Networks Transformation Plugin* from the same software. Because in this case we needed a multimode networks projection ("symptoms" and "students"), this plugin helped us with the data analysis. We transformed our bipartite (two-mode) graph to monopartite (one-mode) graph. The transformation was based on the matrix multiplication approach and allowed us to identify different types of projections.

3.2.4. Results

In this section we identified the network of ADHD symptoms of 196 students diagnosed in Bihor County (each subject received a number between 1 and 196). To do this, we established the glossary of symptoms registered in medical files, and we visualized the network of all symptoms. Identifying the most important symptoms in the network, we were able to define the most frequent connections provided by the "source" symptoms. In the second part of this section, we analyzed the symptomatic profiles of students diagnosed with ADHD in Bihor County.

1. Identifying the Network of ADHD Symptoms of Students Diagnosed in Bihor County.

In our analysis, we identified 167 symptoms in the medical records of 196 participants. All symptoms were renamed, for each subject, and 34 categories (see Table 10) resulted (e.g., impulsive, emotional issues, destructive behavior). For the first objective we followed four steps. We: 1. established the glossary of the symptoms registered in the medical files; 2. visualized the network of all symptoms; 3. identified the most important symptoms in the network; and 4. defined the most frequent connections provided by the "source" symptoms. For further exploration of the obtained network, we used layout, centrality, modularity, and weighted degree measures.

Table 10

The Categories of Symptoms Identified in ADHD Students in Bihor County

1. Impulsive	2. Opposer	3. Emotional issues	4. Problems in organization
5. Absenteeism	6. Appetence	7. Hypomnesia	8. Low motivation
9. Aggressive	10. Attention deficit	11. Inconsistence	12. Negativism
13. Hyperactive behavior	14. Absent psychic contact	15. Inappetence	16. Somatization

17. Destructive behavior	18. Dependent by adult	19. Sleep disorder	20. Suicide attempt
21. Disturbing the class	22. Dyslalia	23. Slowness	24. Tics
25.learning difficulties	26. Desire for attention	27. Talkativeness	28. Low frustration tolerance
29. Enuresis	30. Social exclusion	31. Lying	32. Behavior disorder
	33. Howl	34. Communica-tion problems	

2. Establishing the Glossary of Symptoms Registered in Medical Files.

Our first objective was to establish a glossary of all the symptoms registered for our subjects. We identified more descriptions which matched the same symptom. For example, "the hyperactive behavior" was described in different ways: widespread hyperkinesia, hyperkinetic, hyperkinetic behavior, psychomotor restlessness, agitation, activism, agitated, bored quickly, impatient, agitated, fidgeting, and restless. Our glossary included 34 categories of symptoms registered for our subjects (see Table 10).

The categories presented in Table 10 were randomly listed, and each symptom's category included a different number of related symptoms. For example, the "hyperactive behavior" category included 10 related concepts, but the "inappetence" category included only one, because we did not identify any other related concept matching with this description. We analyzed the frequencies of each symptom for the 196 cases of ADHD. Table 11 presents the frequency and the percentage for all 34 symptoms recorded in our participants medical files.

The symptoms listed in Table 11 are presented in the descending order of their frequency. The most frequent symptom is "hyperactive behavior" (102 of the students had this symptom), followed by "low frustration tolerance" (91); the next most frequent symptom is "aggressive". At the end of the list, with the lowest frequency, were symptoms such as "somatization," "suicide attempt," or "slowness."

Table 11

The Frequencies of Symptoms Identified in Students With ADHD in Bihor County

Item	Symptom	Frequency	%
1	Hyperactive behavior	102	52
2	Low frustration tolerance	91	46
3	Aggressive	78	40
4	Impulsive	59	30
5	Emotional issues	55	28
6	Disturbing the class	45	23
7	Attention deficit	39	20
8	Opposer	33	17
9	Learning difficulties	12	6
10	Behavior disorder	10	5
11	Negativism	9	5
12	Social exclusion	8	4
13	Talkativeness	7	4
14	Inappetence	6	3
15	Communication problems	6	3
16	Low motivation	5	3
17	Desire for attention	5	3
18	Dyslalia	5	3
19	Tics	5	3
20	Enuresis	5	3
21	Destructive behavior	4	2
22	Sleep disorder	4	2
23	Lying	4	2
24	Absenteeism	2	1
25	Dependent by adult	2	1
26	Howl	2	1
27	Problems in organization	1	0.5
28	Appetence	1	0.5
29	Hypomnesia	1	0.5

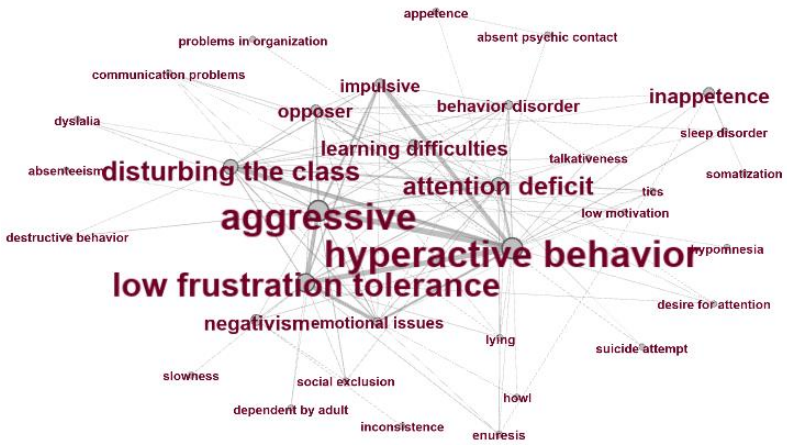
30	Inconsistence	1	0.5
31	Absent psychic contact	1	0.5
32	Somatization	1	0.5
33	Suicide attempt	1	0.5
34	Slowness	1	0.5

3. Visualizing the Network of all Symptoms.

Having a list of all symptoms presented by students diagnosed with ADHD, we could identify the main criteria in diagnosing this disorder in students from Bihor County, by the psychiatrists. We remember that the core symptoms in diagnosing ADHD are inattention, hyperactivity and impulsivity, but in our glossary, we identified another 31 symptoms. Gephi also helped us to visualize the edges, the connections between the nodes. An edge represents a concurrence, and this means that the symptoms appear in the same file. The graph is showing which node is connected with any other nodes, for each subject. For example, a subject registered three different symptoms: "hyperactive behavior", "emotional issues", and "low frustration tolerance". Each symptom occurred with another symptom, and this connection was represented through an edge. For a closer analysis, Figure 2 shows the intensity of nodes in connection with other nodes. Figure 2 presents the nodes particularized by intensity, created by their edges in the network. With the larger fonts we represented the nodes which were more often registered. "Aggressive," "hyperactive behavior," and "low frustration tolerance" were represented with the larger font.

Figure 2

Nodes particularized by the intensity of the edges



The statistical meaning of how often a node appeared on shortest paths between nodes in the network was given by the Betweenness Centrality (Grandjean, 2015). Table 12 presents the highest ranks of the nodes through betweenness centrality, and we can see that the node with the highest rank is “aggressive”.

Table 12 emphasizes the first 12 symptoms with the highest rank, and the first 5 include: “aggressive” (104.4), “hyperactive behavior” (104.2), “low frustration tolerance” (86.4), “disturbing the class” (62.0), and “attention deficit” (54.7). Those symptoms which registered lower ranks (< 2.0) represented the periphery of our network and were not mentioned in the table. The lowest values were for: “absenteeism.” “dyslalia,” “hypomnesia,” “suicide attempt,” and “somatization.”

Table 12

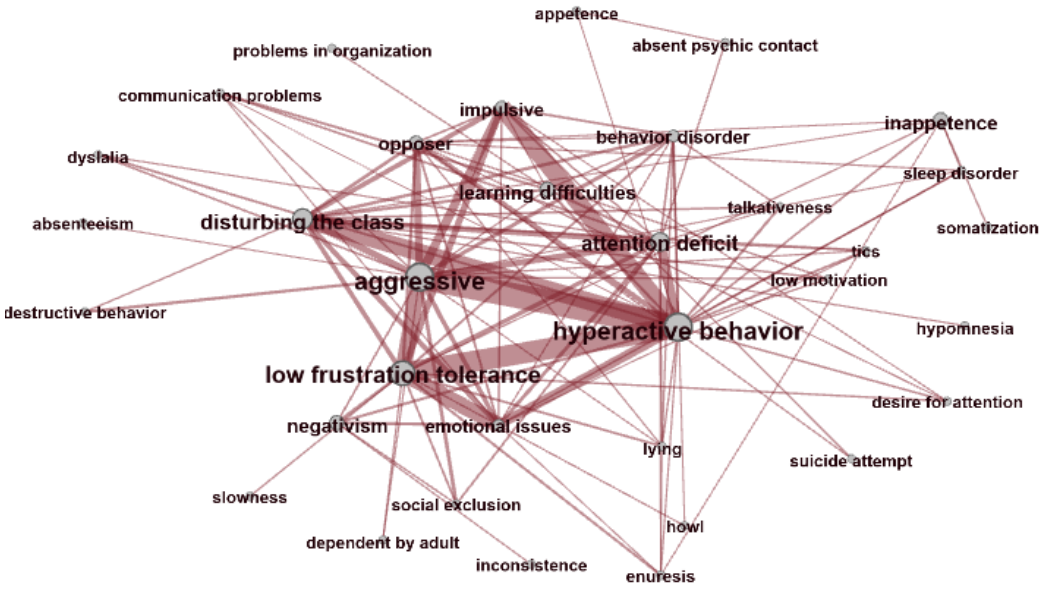
Rank of Nodes Considering Betweenness Centrality

Item Order	Nodes	Betweenness centrality rank
1	Aggressive	104.4
2	Hyperactive behavior	104.2
3	Low frustration tolerance	86.4
4	Disturbing the class	62.0
5	Attention deficit	54.7
6	Inappetence	34.0
7	Learning difficulties	33.0
8	Negativism	32.7
9	Opposer	27.3
10	Impulsive	20.3
11	Behavior disorder	18.4
12	Emotional issues	16.1

To visualize the corresponding edges between nodes, we present their graph in Figure 3. Figure 3 presents the rank of nodes’ betweenness centrality. The thicker the line, the higher is the illustrated rank. The graph density value is 0.2, and this measures how close the network is to be completed. A complete graph has all the possible edges and its density equal to 1. The graph has a low density, and this means that the edges have different intensities and not all the nodes are connected between them.

Figure 3

Rank of nodes considering betweenness centrality and the corresponding edges

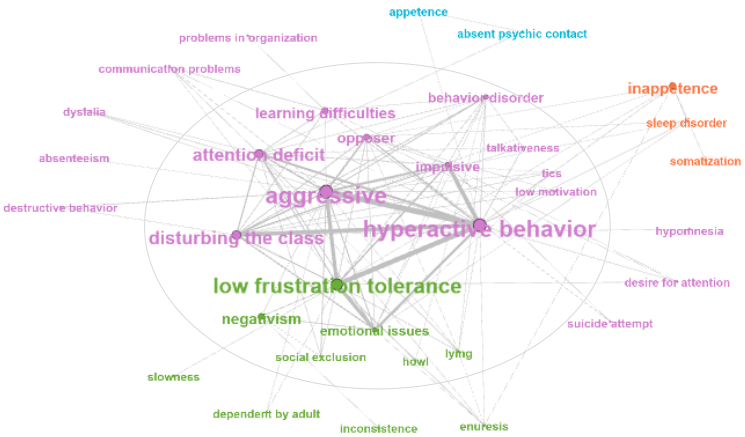


4. Identifying the Most Important Symptoms in the Network.

We extended our statistical analysis through another process, to identify the importance of the symptoms in our network. The modularity class process is an algorithm which helped us to identify how many clusters/classes of the nodes there are in a network considering their importance given by the connections between nodes. The modularity indicator (0.72) represents that there are more classes of symptoms. Figure 4 presents four classes of nodes, based on their weighted degree values.

Figure 4

The symptoms divided into classes considering their weighted degree



The image illustrates four different classes, each one being represented by a different color. The classes divided the nodes considering their edges and weighted degree, and all the 34 symptoms were included. We observe that there are some symptoms placed at the edge of the network, and this means less connections for that symptom. The statistical data provided by the modularity algorithm and the weighted degree report helped us to identify the most important clinical symptoms registered in the medical files for students diagnosed with ADHD in Bihor County. The grey circle emphasizes the most important nodes in our network.

Table 13 presents the componence of the classes and the importance of each node for each class. The symptoms are presented in four classes: “hyperactive behavior,” “low frustration tolerance,” “inappetence,” “absent psychic contact,” and one important node (which gave the class name) was placed in the top of each class. 85% from the entire symptoms were included in the first two classes. These two symptoms, “hyperactive behavior” and “low frustration tolerance,” were connected more often with other specific symptoms, and through the modularity process we identified which was the list of the nodes.

Table 13

Classes of Symptoms Considering Their Connections and the Weighted Degree Report

Modularity		% of nodes	Componence		Weighted degree
1.	*Hyperactive behavior*	56	1.	Hyperactive behavior	725
			2.	Aggressive	521
			3.	Disturbing the class	319
			4.	Impulsive	258
			5.	Attention deficit	217
			6.	Opposer	142
			7.	Behavior disorder	94
			8.	Learning difficulties	60
			9.	Tics	26
			10.	Talkativeness	26
			11.	Low motivation	26

			12.	Communication problems	22
			13.	Desire for attention	20
			14.	Dyslalia	20
			15.	Destructive behavior	18
			16.	Suicide attempt	9
			17.	Problems in organization	4
			18.	Absenteeism	3
			19.	Hypomnesia	1
2.	*Low frustration tolerance*	29	20.	*Low frustration tolerance*	*485*
			21.	Emotional issues	260
			22.	Negativism	53
			23.	Social exclusion	38
			24.	Lying	32
			25.	Enuresis	25
			26.	Dependent by adult	8
			27.	Howl	7
			28.	Inconsistence	4
			29.	Slowness	5
3.	*Inappetence*	9	30.	*Inappetence*	*25*
			31.	Sleep disorder	23
			32.	Somatization	5
4.	*Absent psychic contact*	6	33.	*Absent psychic contact*	*9*
			34.	Appetence	7

Each class had a different componence, and, in a detailed analysis, we observe that first class was represented by the “behavioral symptoms”, and the second class was represented by the “emotional symptoms”. In each class we presented the weighted degree values for each node, given by how many times that node was mentioned in our semantic

analysis. The last two classes ("inappetence" and "absent psychic contact") had a very low percentage of nodes connected to each other, and most important, less connected with the core nodes (identified through the betweenness centrality rank: "hyperactive behavior", "aggressive" and "low frustration tolerance".

For our next analysis, we selected only the most important symptoms, which were established based on the modularity class and the weighted degree report. An indicator that we used was the highest value of the weighted degree obtained by the symptoms from the less important classes. We observed that "inappetence" had the weighted degree value of 25, and because these two classes were not considered representative form our network, we selected all the symptoms which had the weighed degree value higher than 25. Table 13 presented in the class entitled "hyperactive behavior" 11 symptoms with weighed degree values higher than 25, and 5 symptoms from the class entitled "low tolerance frustration."

After this selection we obtained a list of 16 symptoms that we considered important: 1. "hyperactive behavior," 2. "aggressive," 3. "low frustration tolerance," 4. "disturbing the class," 5. "emotional issues," 6. "Impulsive," 7. "attention deficit," 8. "opposer," 9. "behavior disorder," 10. "learning difficulties," 11. "negativism," 12. "social exclusion," 13. "lying," 14. "tics," 15. "talkativeness," and 16. "low motivation."

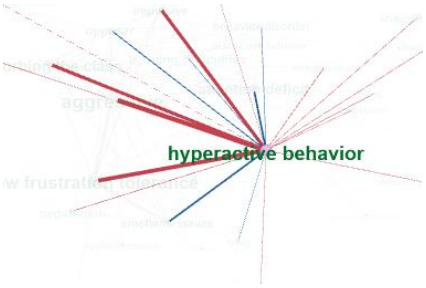
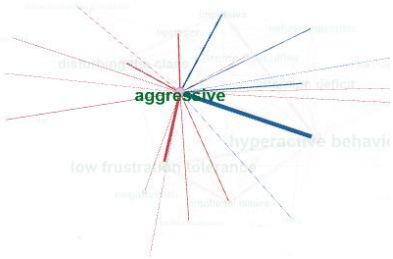
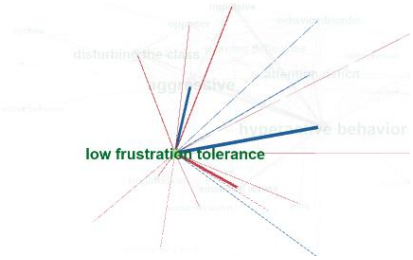
5. Defining the Most frequent Connections Provided by the "Source" Symptoms.

We presented in the Data analysis section that the nodes were divided in two categories, "source" and "target." The difference was provided by the direction of the graph. An edge between two nodes indicated a direct path between source and target. Table 14 presents all the symptoms which had the "source" status in our network and their connections.

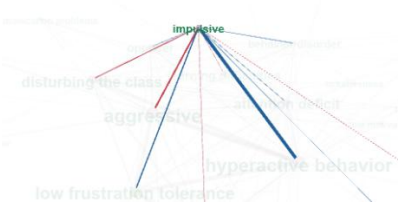
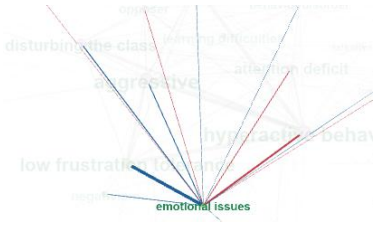
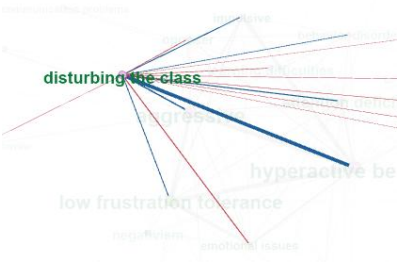
Table 14

The source symptoms and the frequency of their connections

The sources	The targets (connected symptoms)	Weight	Edges illustration
1. Hyperactive behavior	Aggressive	149.0	
	Low frustration tolerance	129.0	

	Impulsive	107.0	
	Disturbing the class	106.0	
	Talkativeness	11.0	
	Negativism	11.0	
	Tics	9.0	
	Low motivation	5.0	
	Total connections (out)	527	
2. *Aggressive*	Low frustration tolerance	96.0	
	Opposer	42.0	
	Disturbing the class	36.0	
	Emotional issues	22.0	
	Social exclusion	17.0	
	Negativism	7.0	
	Low motivation	5.0	
	Learning difficulties	4.0	
	Tics	4.0	
	Total connections (out)	233	
3. *Low frustration tolerance*	Emotional issues	95.0	
	Impulsive	36.0	
	Disturbing the class	23.0	
	Negativism	13.0	
	Opposer	13.0	
	Lying	9.0	
	Social exclusion	8.0	

	Total connections (out)	197	
4. Attention deficit	Hyperactive behavior	54.0	
	Aggressive	33.0	
	Disturbing the class	28.0	
	Low frustration tolerance	21.0	
	Learning difficulties	12.0	
	Social exclusion	8.0	
	Impulsive	6.0	
	Lying	5.0	
	Talkativeness	3.0	
	Tics	1.0	
	Total connections (out)	171	
5. Behavior disorder	Aggressive	18.0	
	Disturbing the class	14.0	
	Hyperactive behavior	10.0	
	Impulsive	9.0	
	Low frustration tolerance	9.0	
	Attention deficit	8.0	
	Talkativeness	5.0	
	Learning difficulties	5.0	
	Emotional issues	4.0	

	Opposer	4.0	
	Total connections (out)	86	
6. *Impulsive*	Aggressive	51.0	
	Disturbing the class	24.0	
	Emotional issues	6.0	
	Learning difficulties	3.0	
	Total connections (out)	84	
7. *Emotional issues*	Hyperactive behavior	54.0	
	Attention deficit	17.0	
	Opposer	9.0	
	Tics	3.0	
	Total connections (out)	83	
8. *Disturbing the class*	Emotional issues	26.0	
	Opposer	15.0	
	Learning difficulties	12.0	
	Tics	9.0	
	Talkativeness	7.0	
	Low motivation	7.0	
	Total connections (out)	76	
9. *Opposer*	Hyperactive behavior	27.0	

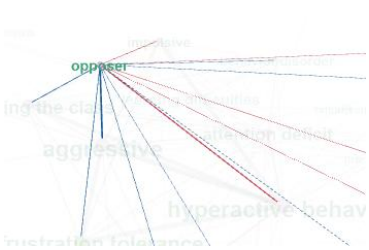
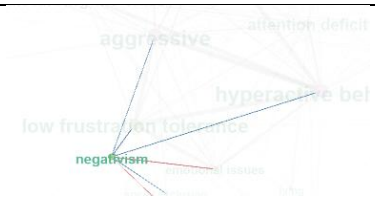
	Impulsive	8.0	
	Low motivation	5.0	
	Total connections (out)	40	
10. Lying	Behavior disorder	5.0	
	Hyperactive behavior	5.0	
	Opposer	4.0	
	Aggressive	3.0	
	Total connections (out)	17	
11. Negativism	Emotional issues	13.0	
12. Learning difficulties	Hyperactive behavior	10.0	

Table 14 presents the sources and their targets, in the descending order of the weight (frequencies) of their connections. We identified that “hyperactive behavior” was the symptom which initiated most of the connections (527) with different target symptoms. On the second place was “aggressive” (233), followed by “low frustration tolerance” (197). In the last column we illustrated through lines all the edges where the symptom was involved. The “out” connections, where the symptom was the source, were represented through a red line, and the “in” connections (same symptom as the target) were represented by a blue line. From the total of 16 selected important symptoms, four of them did not hand out connections, they had only the “target” status in our network. These four symptoms were: “tics,” “talkativeness,” “social exclusion,” and “low motivation.”

6. Analyzing the Symptomatic Profiles of Students Diagnosed with ADHD in Bihor County

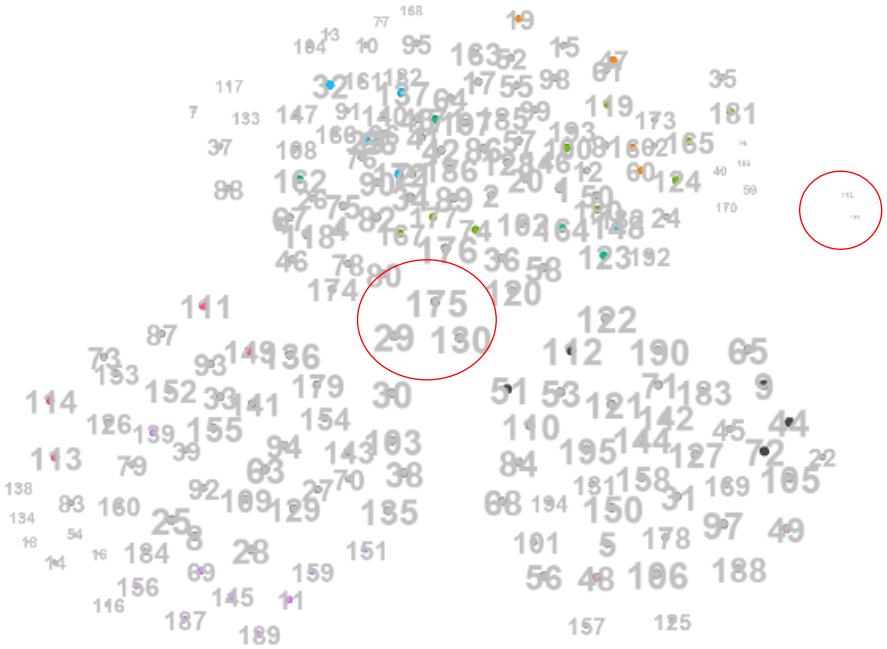
Considering the network identified for our first objective, we wanted to establish if there were more profiles of students divided by the list of the symptoms registered in their medical files. We conducted our further analyses using the *Multimode Networks Transformation Plugin* from the same software, Gephi. To achieve this objective, we followed two steps: (a) the first step was to identify the clusters of students considering all the 34 symptoms registered in their medical files, and (b) the second step was to analyze symptomatic profiles of students diagnosed with ADHD in Bihor County.

7. Identifying the Clusters of Students Considering all the 34 Symptoms Registered in Their Medical Files.

Because for this objective we needed to analyze a multimode network, we transformed our bipartite graph (two-mode: students and symptoms) to monopartite graph (one-mode: students considering their symptoms). The transformation was based on the matrix multiplication approach and allowed us to identify one graph for a multimode network (Figure 5). The density of our first multimode graph was 0.674. A complete graph is considered to have all the possible edges and its density equal to 1. Our graph had a medium density, and this means that the edges had different intensities and not all the nodes were connected between them.

Figure 5

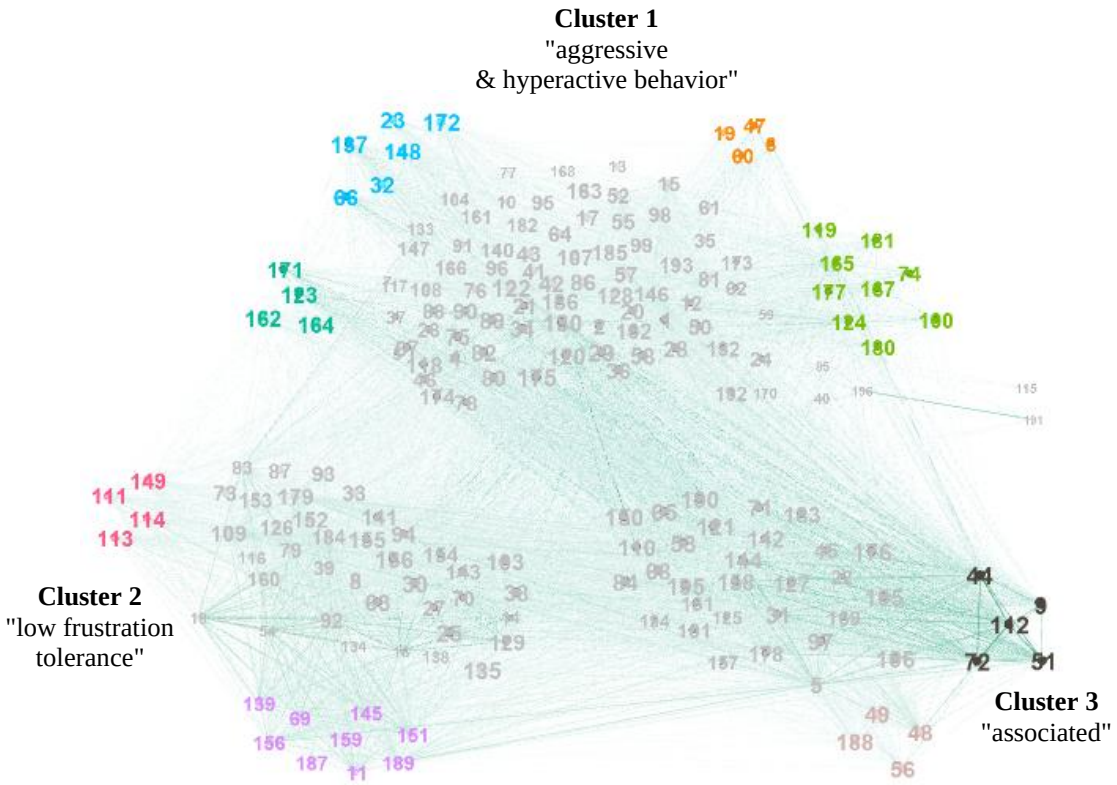
The first layout of the students' network



The modularity class algorithm helped us to identify how many clusters of students were into our network considering their symptoms. The modularity indicator (0.17) indicates that there were more classes of symptoms. Figure 6 presents three classes of nodes, based on how often students appeared with the same type of symptoms. Figure 6 illustrates the clusters through those conglomerate groups of numbers colored with grey. Each cluster includes numbers illustrated with different colors. The colored numbers represent those students who had the same type and number of symptoms registered in their medical file, also defining the core symptoms of that cluster.

Figure 6

The clusters of students considering the core symptoms



We identified that “cluster 1” included 54% of students, “cluster 2,” 26%, and “cluster 3” included 20% of students. There were three core symptoms: “aggressive,” “hyperactive behavior,” and “low frustration tolerance”. The first cluster had two core symptoms “aggressive”, and “hyperactive behavior,” and the second cluster had “low frustration tolerance” as core symptom. A special case was cluster 3, which was represented by the combination between these three symptoms: “aggressive,” “hyperactive behavior,”

and “low frustration tolerance.” Considering these, we named the third cluster “associated.” The named core symptoms had connections with specific symptoms. The type and the number of symptoms registered at the colored numbers are presented in Table 15.

Table 15

The List of Symptoms Common at Different Groups of Students

Modularity class of students	ID's color	Symptoms	Weighted degree
Cluster 1		**Aggressive**, hyperactive, behavior, impulsive	259
		Aggressive, low frustration tolerance	254
		Hyperactive behavior, impulsive	178
		Hyperactive behavior, attention deficit	155
Cluster 2		**Low frustration tolerance**, emotional issues	264
		Low frustration tolerance, emotional issues, impulsive	251
Cluster 3		**Aggressive, hyperactive behavior, low frustration tolerance,** attention deficit	454
		Hyperactive behavior, low frustration tolerance	225

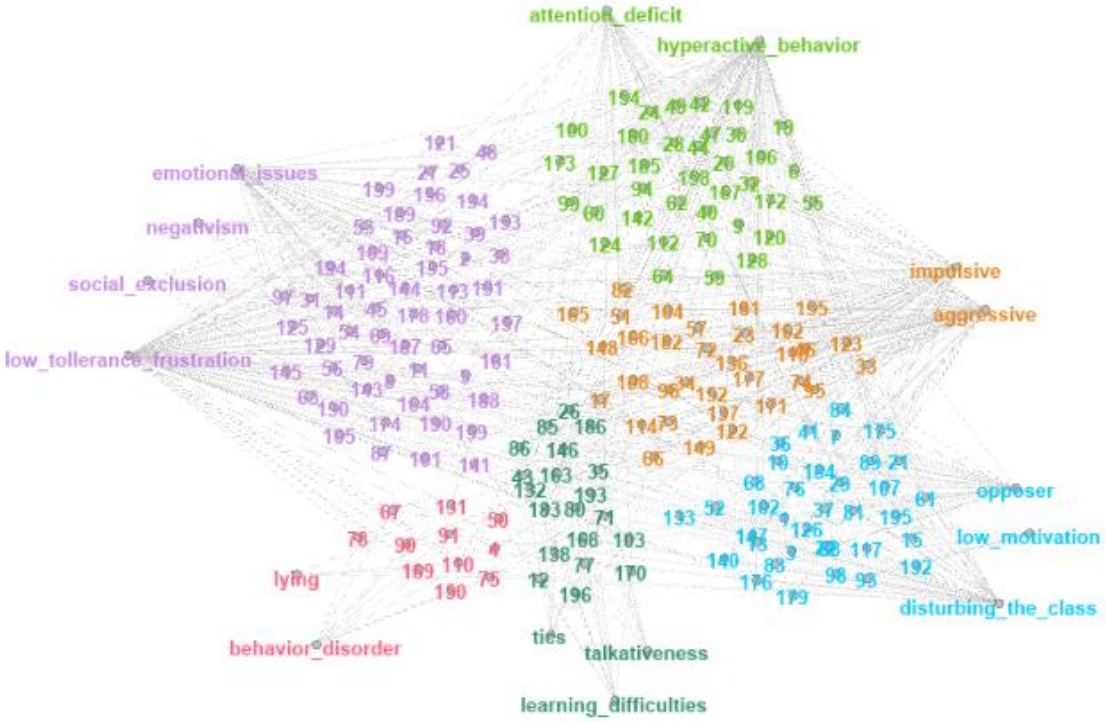
The clusters presented in Table 15 were divided using the centrality of six symptoms: “aggressive,” “hyperactive behavior,” “low frustration tolerance,” “impulsive,” “attention deficit,” and “emotional issues.” The entire list of symptoms (34) was divided in each cluster, considering how many connections they had with these six core symptoms.

8. The Symptomatic Profiles of Students Diagnosed with ADHD in Bihor County.

For this final statistical analysis, we included the list of the most important 16 symptoms from 194 students (two subjects were excluded because they did not have at least one symptom from the list of 16). This analysis emphasized the symptoms considering the most frequent connections (edges) between them (see Figure 7).

Figure 7

The symptomatic profiles of students considering the edges between the symptoms



The modularity had a value of 0.28, which defined the existence of more classes. The Figure 7 presents the existence of six types of profiles. The graph density value was 0.02 and this measures how close the network is to be completed. A complete graph has all the possible edges and its density equal to 1, and our graph had a very low density, and this means that the edges have different intensities and not all the nodes are connected between them. Those symptoms connected to each other form a specific class. In a detailed analysis we identified how many students were included in the same symptomatic profile. Table. 16 presents the componence of each symptomatic profile and how many students were included.

Table 16

The Componence of the Symptomatic Profiles

Item	Core symptom	%	Number of students	Symptomatic profile componence	Weighted degree
1	*Low frustration tolerance*	29	57	Low frustration tolerance	91
				Emotional issues	55
				Negativism	9
				Social exclusion	9
2	*Hyperactive behavior*	18.5	37	Hyperactive behavior	102
				Attention deficit	39
3	*Disturbing the class*	18.5	36	Disturbing the class	45
				Opposer	33
				Low motivation	5
4	*Aggressive*	17	33	Aggressive	78
				Impulsive	59
5	*Learning difficulties*	11	20	Learning difficulties	11
				Tics	8
				Talkativeness	7
6	*Behavior disorder*	6	11	Behavior disorder	10
				Lying	4
Total		100	194		

Table 16 reveals that 29 % of students were included in the symptomatic profile entitled “low frustration tolerance” and the symptoms connected with this core symptom were: “emotional issues,” “negativism,” and “social exclusion.” Two symptomatic profiles appeared to be equal considering their percentages of students (18.5%): “hyperactive behavior” and “disturbing the class.” From the total of 16 symptoms, “attention deficit” was connected more often with the “hyperactive behavior,” and together formed one

specific symptomatic profile. “Opposer” and “low motivation” were two symptoms which were often connected with “disturbing the class.” We observed that “impulsive” was most often connected with “aggressive” and their symptomatic profile included 17% of the students. “Learning difficulties” and “behavior disorder” formed the last two profiles, and most of students who had “tics” and “talkativeness,” also presented the “learning difficulties,” and those who were “lying” were often with “behavior disorder.” With this final analysis we identified those symptoms which possibly determine the core symptoms.

As an insight provided by the number and the diversity of symptomatic profiles registered by students with ADHD, we extended our research objectives with some comparisons between the psychiatrists who provided the clinical diagnoses. Knowing the concerns about the impact of cultural, social, and systemic differences on the perception of students with ADHD, the psychological perspectives on ADHD being more nonphysiologically influenced (Wender, as cited in Rafalovich, 2008), we wanted to identify if there were differences between psychiatrists considering the nature of symptomatic profiles of students diagnosed with ADHD. In our previous research we presented that from the 196 medical records, 69% were diagnosed by psychiatrist 1, 12% were diagnosed by psychiatrist 2, and 19% of cases were diagnosed by psychiatrist 3. There were differences between these three groups of cases ($\chi^2 = 112.7$, $p < .05$), the group size for psychiatrist 1 was significantly larger comparing with the groups diagnosed by psychiatrists 2 and 3. For our comparisons of the symptomatic profile types, considering the psychiatrist’s ID (1, 2, or 3), we used *Pearson’s chi square test*, and we identified more cells (38.9%) which had the expected count less than 5. In conclusion, we did not have the statistical conditions to validate our comparisons. Even so, we identified that psychiatrist 1, who diagnosed 69% from our subjects, registered significant more students from the “low frustration tolerance” symptomatic profile ($\chi^2 = 30.985$, $p < .05$), compared with other symptomatic profiles: “aggressive,” “learning difficulties,” “behavior disorder,” and “disturbing the class.” The “hyperactive behavior” symptomatic profile was identified as many times as it was expected, not being differences comparing with other profiles.

Analyzing if there were differences between the symptomatic profiles provided by the psychiatrist 2, who diagnosed 12% from our subjects, we did not find significant differences ($\chi^2 = 3.500$, $p > .05$), all the profiles being established in the same percentage. In the case of the third psychiatrist (who diagnosed 19% from our subjects) even if the chi square value did not emphasize significant differences between the symptomatic profiles ($\chi^2 = 8.270$, $p > .05$), we observed a tendency to include students into the “aggressive”

symptomatic profile ($p = 0.08$), the "low frustration tolerance," and "hyperactive behavior" profiles being identified as many times as they were expected.

Having an unequal number of subjects diagnosed by the psychiatrists, this limits our research. Even so, our findings which revealed a specific pattern of ADHD symptomatic profile registered by one physiatrist, raises another question which should be investigated: Is the psychiatric evaluation of ADHD reach such a high subjectivism level as the evaluator's personal features or moral standards? This can be another idea for further research.

This second study revealed the core symptoms of ADHD diagnosed in Bihor County, were different from what diagnostic manuals present. These findings provide valuable information about what is considered disturbing for those students who require a psychiatric assessment. To maintain a coherent and fluid framework for the overall research results, the discussions generated by the data analyzed in Study 2 are included in chapter IV, generically titled „Discussions"**.**

III.3. Study No. 3: The Social Representation of ADHD Symptoms among the Parents', Teachers' and Psychologist' Perception in Bihor County

In our previous study we identified that in Bihor County, at the Municipal hospital, even if the diagnosis of ADHD was clinically established, there were cases in our database without any ADHD core symptoms. We identified that 28% of the students diagnosed with ADHD were not recorded with at least one ADHD core symptom ("attention deficit," "hyperactive behavior" or "impulsive"). In the glossary of all the symptoms registered for 196 students diagnosed with ADHD at the mentioned hospital, we identified more descriptions which matched the same symptom, and in the end, we distributed all the terms in 34 categories which formed the network symptoms of ADHD for students clinical diagnosed with this disorder in Bihor County.

Going forward with the findings from the previous analysis we identified a list of 16 symptoms which the data indicated were the most frequently mentioned into the medical files of students diagnosed with ADHD. We identified that the most important symptoms recorded by students with ADHD were: "hyperactive behavior," "low frustration tolerance," "aggressiveness," "disturbing the class," "attention deficit," "learning difficulties," "negativism," "oppositional behavior," "impulsive," "behavior disorder," "emotional issues," "talkativeness," "low motivation," "tics," and "social exclusion."

Because most of the symptoms mentioned earlier are not easily accepted and understood in social groups, we aim to identify what kind of behaviors are defining ADHD in the social perception. So, the purpose of the present study is to identify the most frequent sources of information from where parents, teachers, and psychologists received information about ADHD, and to analyze the network of the most relevant ADHD symptoms considered relevant for ADHD by parents, teachers, and psychologists from Bihor County. For this, we asked 590 individuals (370 parents and 220 teachers and psychologists) to select the most important source from where they found information about ADHD, and to list the six most important symptoms manifested by students with ADHD.

With these analyses, we offer a clearer image of the social representation of ADHD symptoms in Bihor County, using social construct theory to explain the process of diagnosing ADHD in Bihor County.

3.3.1. Objectives

Considering the findings from our previous two studies, in 2018 we aimed to identify the opinions of parents, teachers, and psychologists regarding the most important symptoms manifested by students diagnosed with ADHD. Analyzing the general perception on ADHD among the most important social groups who provide information for clinical experts (psychiatrists), we will be able to identify the general social representation of ADHD in Bihor County.

The purpose of the study can be detailed into three objectives: 1. *To identify the ADHD symptoms in parents' perception*; 2. *To identify the ADHD symptoms in teachers' and psychologists' perception*; and 3. *To analyze the similarities and disparities between these two networks, establishing in this way the social representation of ADHD in Bihor County*.

3.3.2. Participants and Measures

For the present study we involved a total of 590 participants, from which 370 were parents and 220 were teachers and psychologists. To be the parent of a child with ADHD was not a criterion in collecting our data. Also, for teachers and psychologists, we did not involve only those who experienced direct activity with students with ADHD. For our study, we felt it was important to involve a large number of participants (not necessarily having a direct relation with children with ADHD) to identify the general perceptions of ADHD symptoms among these social groups. The mean age of parents involved in the

study was 36.23 years (min 20, max 64; std. dev.=7.02), and the mean age for teachers and psychologist was also 36.43 years (min 22, max 62; std. dev.=8.66).

These two samples of participants completed a short questionnaire (online and printed version), and we used a convenience sampling procedure. The questionnaires entitled *Questionnaire Regarding the Symptoms of Children With ADHD— Parents Version* (Appendix B) and *Questionnaire Regarding the Symptoms of Students With ADHD—Teachers & Psychologists Version* (Appendix C) were structured in three sections. The following categories of variables were investigated for our participants: (1) *demographic data* (age, gender, environment, and level of education); (2) *data about their interactions with ADHD* (if they have met/worked with students with this diagnose, and which was the main source of information about ADHD); and (3) *the list of the most 16 important symptoms manifested by students diagnosed with ADHD in Bihor County*.

3.3.3. Data Analysis

Starting with the identified list of symptoms obtained after the semantic analysis on medical files from The Municipal Hospital presented in the previous study, we constructed a list with sixteen different symptoms, which were found to be the most frequent for students diagnosed with ADHD in Bihor County. The list was included in the questionnaire, and at the end of it the participants had to select up to six symptoms which were considered (in their opinion) critical to be manifested by students with ADHD. To obtain the network of these important symptoms in ADHD, we used the possibilities of Gephi version 0.9.2, an open-source software which allows the identification of hidden patterns and distinct communities inside a network through various algorithms (Bastian et al., 2009).

3.3.4. Results

Even if the questionnaire was the same, we conducted two different semantic analyses: one on parents' answers, and one was on teachers’ and psychologists’ answers. Identifying the specific networks representative for the parents and for the specialists will be helpful for our further analyses. In the end of the present research, we analyzed the general perception on ADHD for the entire sample of participants.

1. Identifying the ADHD Symptoms in the Parents' Perception

Our first sample of participants consisted of 370 parents (with and without interactions with children with ADHD). The data was collected in the first phase using the printed version of the *Questionnaire Regarding the Symptoms of Children With ADHD— Parents Version*. Because we continued to collect data during the pandemic period, we

elaborated the online version of the questionnaire (Google Forms). First, we aimed to identify some demographic data of the participants. The entire sample of parents was formed by members from the community of Bihor County. Most of the participants were female (92%) and only 8% were male. Table 17 presents the condensed view of demographic data for our sample.

Table 17

The Demographic Data of the Parents

Variables	Modalities	%	*n*
Gender	Female	92	340
	Male	8	30
Area	Urban	84	309
	Rural	16	61
Educational level	University	72	265
	High school	24	88
	Professional school	3	12
	Gymnasium	1	5
	Unschooled	0	0

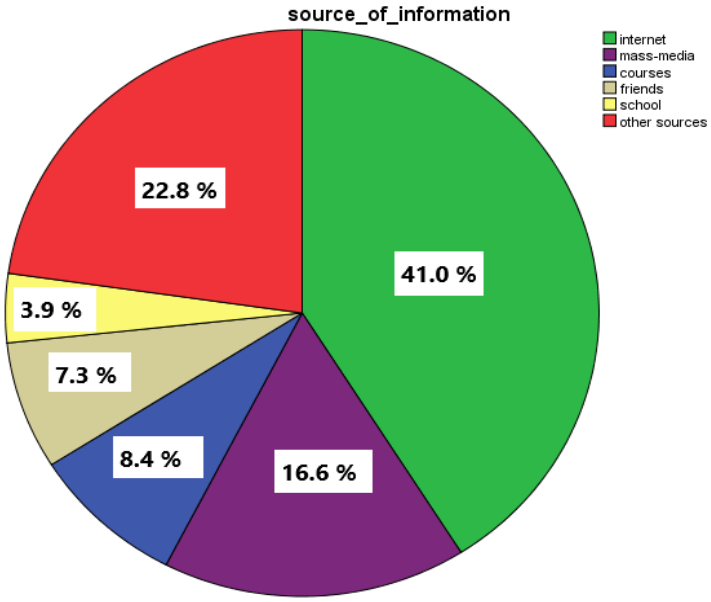
We collected data about the profession of the parents only from 217 (59%) of the participants, 153 (41%) of them did not respond. We identified 14 domains of work, namely: marketing (*n*=41), household (not working at that time) (*n*=37), medical (*n*=31), economy (*n*=28), administrative (*n*=18), production workers (*n*=14), human resources (*n*=11), beauty industry (*n*=10), IT (*n*=9), engineering *(n*=9), sciences (*n*=4), justice (2), press (2), translator (*n*=1). The diversity of the professions was an encouraging finding for our aim.

We aimed to identify the main sources of information about ADHD, and if the participants have met a child diagnosed with ADHD. From a list of six options (courses, internet, friends, mass-media, school where their child was going, and other sources) we identified that the internet was the most frequent source which provided information about ADHD to our participants (presented in Figure 9). Out of the 370 participants, we obtained data from 354 of them, who named the sources used for information about ADHD (14

participants did not respond). From these responses, we identified that the most frequent source which provided information about ADHD for our participants was *the internet* (41%), followed by *the mass-media* (16.6), *formal courses* (8.4%) and *friends* (7.3). Of the parents, 22.8% received information from *other sources*, not specified. We also identified that, from the entire group of parents (*n*=370), 59% have not met a child diagnosed with ADHD, and the rest of 41% have met children with this diagnosis. There was a significant difference between participants considering their direct connection with a child diagnosed with ADHD ($\chi 2 = 11.070$, $p < .05$).

Figure 8

The main sources of information about ADHD for parents' group

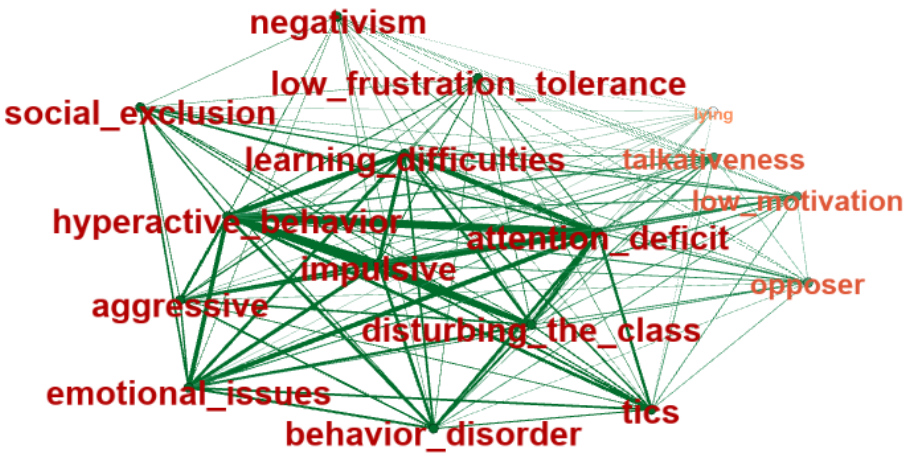


For our *semantic analyses* of symptoms in ADHD, we used a list of sixteen symptoms of ADHD, from which our participants were asked to select a maximum of six symptoms which were considered the most important in this diagnosis. The list included the next symptoms: "impulsive," "low frustration tolerance," "disturbing the class," "behavior disorder," "attention deficit," "low motivation," "emotional issues," "social exclusion," "learning difficulties," "lying," "negativism," "opposer," "aggressive," "hyperactive behavior," "talkativeness," and "tics." For the semantic analysis, we used the possibilities of Gephi version 0.9.2, where the symptoms defined "the nodes," and the connections between the symptoms (nodes) were represented by "the edges" (what symptoms appeared in the same list selected by one participant). Gephi allowed us to

visualize the edges and the connections between the nodes, which offered a first view of the network developed between ADHD symptoms from the parents' point of view. Our first step was to measure the node`s importance based on node connections. Using the eigenvector, we identified the importance of each node measured based on the connections between one node and the others. Figure 9 presents the layout of nodes with their edges, considering the eigenvector centrality.

Figure 9

The nodes importance based on the connections established by the parents group



The analysis on the parents' responses, presented in Table 18, identifies a high number of symptoms (12) considered equally important, with an eigenvector value of 1.0. Four nodes (i.e., “low motivation,” “opposer,” “talkativeness,” and “lying”) had the eigenvector value smaller than 1.0. To identify if there are important differences between the symptoms with eigenvector = 1.0, and those with eigenvector < 1.0, we conducted the modularity process, an algorithm made to identify how many communities/classes of the symptoms were in the present network. The modularity value 0 shows that even if the eigenvector value were different, there were no significant differences between symptoms, all being included in one class.

Table 18

The most important symptoms in the parents` network, considering the eigenvector values

Item	Nodes	Eigenvector value
1	*Aggressive*	1.0
2	*Attention deficit*	1.0
3	*Behavior disorder*	1.0
4	*Disturbing the class*	1.0
5	*Emotional issues*	1.0
6	*Hyperactive behavior*	1.0
7	*Impulsive*	1.0
8	*Learning difficulties*	1.0
9	*Low frustration tolerance*	1.0
10	*Negativism*	1.0
11	*Social exclusion*	1.0
12	*Tics*	1.0
13	Low motivation	0.94
14	Opposer	0.94
15	Talkativeness	0.94
16	Lying	0.81

Going forward with our statistical analysis, we wanted to provide a ranking between those 12 nodes which had the eigenvector value of 1.0. Analyzing the sum of the weight of the edges between nodes (weight degree ranking), we established a list of the symptoms considering this value. Table 19 presents which are the most frequent nodes connected to others, organized in a descending order of their ranks.

The statistical data presented in Table 19 revealed that, in the parents' perceptions, the most important symptoms manifested by children diagnosed with ADHD were: “hyperactive behavior,” “attention deficit,” and “impulsivity”; these three symptoms had the weight degree values between 1,500 and 1,000. With the same level of importance, but not so often connected (with weight degree values between 999 and 500), were the next symptoms: “learning difficulties,” “emotional issues,” “disturbing the class,” and “behavior

disorder.” At the end of the list, with the smallest values (between 499 and 0), were the next five symptoms: “tics,” “aggressive,” “social exclusion,” “low frustration tolerance,” and “negativism.”

Table 19

Rank of Nodes Considering the Weight Degree (Parents' Network)

Item	Nodes	Weighted degree ranking
1	*Hyperactive behavior*	1,280.0
2	*Attention deficit*	1,256.0
3	*Impulsive*	1,049.0
4	Learning difficulties	847.0
5	Emotional issues	813.0
6	Disturbing the class	807.0
7	Behavior disorder	588.0
8	Tics	494.0
9	Aggressive	479.0
10	Social exclusion	355.0
11	Low frustration tolerance	166.0
12	Negativism	75.0

In our extended analysis we identified that “low motivation,” “talkativeness,” and “opposer” had weighted degree values (279, 228, and 186) higher compared with “low frustration tolerance” (166), and “lying” (80) and “negativism” (75). These symptoms (“low motivation,” “talkativeness,” “opposer,” and “lying”) were more frequent selected, but in not so many cases connected with the symptoms with the highest ranking, such as “hyperactive behavior,” “attention deficit” and “impulsivity.” That is why the eigenvector was lower than 1.0. These findings and the modularity value of 0, explain why we did not find more classes of symptoms, and why all of them were included in the same community considering their importance.

2. Identifying the ADHD Symptoms in Teachers' and Psychologists' Perception

The second sample of participants was formed by 220 of teachers and psychologists (working or not with students with ADHD was not a criterion). The data was collected in the first phase using the printed version of the *Questionnaire regarding the symptoms of students with ADHD—Teachers and psychologists' Version*. Because we continued to collect data during the pandemic period, we created an online version of the questionnaire (Google Forms). First, we aimed to identify some demographic data of the participants. The entire sample of teachers and psychologists was formed by members from the community of Bihor County, with a mean age of 36.41 years (min 22, max. 62; std. dev.=8.63). Most of the participants were female (93%) and only 7% were male. Table 20 presents the condensed view of the demographic data for our sample.

Table 20

The demographic data of the teachers & psychologists' group

Variables	Modalities	%	*n*
Gender	female	93	204
	male	7	16
Area	urban	80	174
	rural	20	46
Educational level	university	53	117
	master degree	32	70
	PhD	2	5
	missing values	13	28

Most specialists in education and psychology who participated to this study were female (93%), from the urban area (80%), and high educational level (87%). From a total of 220 participants, 40% were psychologists (from which 6 % were school psychologists), and 60% teachers (from which 43% were at gymnasium and high school, and 17% were teachers in kindergarten and primary school).

The second category of variables investigated if teachers and psychologists worked with students diagnosed with ADHD, and which was the main sources of information about

ADHD. Table 21 presents the distribution of teachers and psychologists who worked with students diagnosed with ADHD.

Table 21

The Frequencies of Teachers and Psychologist Who have Worked With Students With ADHD

Variables	Categories	Worked with students with ADHD		*n*
		yes	no	
Profession	Psychologists	51	38	89
	Teachers	91	40	131
	Total	142	78	220

In the study, 51 psychologists (57%), and 91 teachers (69%) have worked in their professional experience with students with ADHD, this means that 142 (65%) from the entire group of participants had direct experiences with ADHD. Table 22 presents the main sources of information used by teachers and psychologist to acquire information about ADHD.

Table 22

Main Sources Used by Teachers and Psychologists to Acquire Information About Students With ADHD

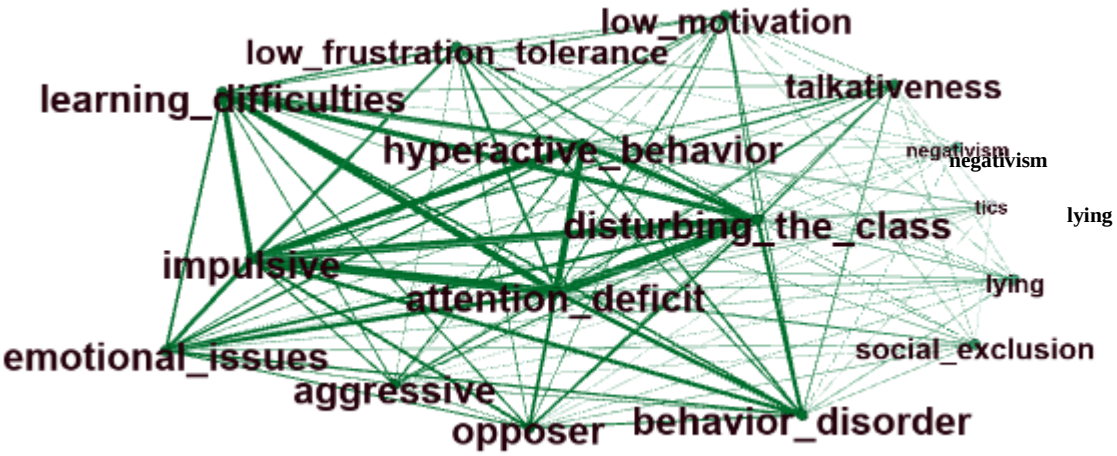
Variable	Modalities	Psychologists	Teachers	*n*	%
Sources of information	Courses	61	61	*122*	*56*
	Internet	3	33	*36*	*16*
	Mass-media	0	16	*16*	*7*
	School (where I work)	0	4	4	2
	Friends	0	2	2	1
	Other sources (not specified)	25	15	40	18
Total		89	131	220	100

From the entire group of participants (*n*=220), 56% were informed about ADHD through *courses*, 16% through *the internet*, 7% from *the mass-media,* and 18% from *other sources*. Going forward with our analyses, we identified that from those participants who have worked with students with ADHD (*n*=142, see Table 21), 57% had as a main source of information formal courses (n=81), 13% used the internet to obtain information about ADHD (*n*=19), and 10% selected the mass-media as the main source (*n*=10). So, the top three main sources used by teachers and psychologists were: the courses, the internet, and the mass-media.

To analyze *the network of symptoms* considered important by teachers and psychologists in defining ADHD, we used the same list of symptoms as in the parents' case. From a list of sixteen symptoms of ADHD, teachers and psychologists were asked to select a maximum of six symptoms which were considered to be the most important in this diagnosis. For the semantic analysis we also used the possibilities of Gephi version 0.9.2, where the symptoms defined "the nodes," and the connections between the symptoms (nodes) were represented by "the edges" (what symptoms appeared in the same list selected by one participant). Figure 10 presents the layout of nodes with their edges from the teachers` and psychologists' point of view.

Figure 10

The network of symptoms identified by teachers and psychologists as being important in ADHD



The importance of nodes was established through the eigenvector centrality, a statistical procedure provided by Gephi 0.9.2. where eigenvector was measuring the

importance of a node in the network based on the node`s connections. For a clear view of nodes' importance, we present in Table 23 the eigenvector centrality values.

Table 23

The most important symptoms in the teachers' and psychologists' network, considering the eigenvector values

Item	Nodes	Eigenvector value
1	*Aggressive*	1.0
2	*Attention deficit*	1.0
3	*Disturbing the class*	1.0
4	*Hyperactive behavior*	1.0
5	*Impulsive*	1.0
6	*Learning difficulties*	1.0
7	*Behavior disorder*	1.0
8	*Emotional issues*	1.0
9	*Opposer*	1.0
10	Low motivation	0.94
11	Low frustration tolerance	0.94
12	Social exclusion	0.94
13	Tics	0.89
14	Negativism	0.83
15	Talkativeness	0.77
16	Lying	0.76

The analysis on the specialists' responses, presented in Table 24, identified 9 symptoms considered equally important: “aggressive,” “attention deficit,” “disturbing the class,” “hyperactive behavior,” “impulsive,” “learning difficulties,” “behavior disorder,” “emotional issues,” and “opposer.” The last seven nodes presented in Table 23 were considered less important in the specialists' network. We provided a ranking procedure between the nine most important nodes, considering the sum of the weight of the edges

between them (weight degree ranking). Table 24 presents which are the most frequent nodes that were connected to each other, organized in the descending order of their ranks.

Table 24

Rank of the nodes considering the weight degree (specialists' network)

Item	Nodes	Weighted degree ranking
1	*Attention deficit*	*824.0*
2	*Impulsive*	*783.0*
3	*Disturbing the class*	*718.0*
4	*Learning difficulties*	*556.0*
5	*Hyperactive behavior*	*551.0*
6	Behavior disorder	391.0
7	Emotional issues	390.0
8	Opposer	286.0
9	Aggressive	165.0

The analyses conducted on the specialists` representations revealed that the most important symptoms manifested by students diagnosed with ADHD were “attention deficit,” “impulsivity,” “disturbing the class,” “learning difficulties,” and “hyperactive behavior.” These five symptoms had the weighted degree value between 999 and 500. At the end of the list, with the smallest ranks, the following symptoms were identified: “behavior disorder,” “emotional issues,” “opposer,” and “aggressive”. A curiosity was provided by the status of the last node (“aggressive”). This node was surpassed by “low frustration tolerance” (267) and “low motivation” (169), even if these two nodes were not included in the important category (see eigenvector). These symptoms (together with “social exclusion,” “tics,” “negativism,” “talkativeness,” and “lying”) were selected by the specialists, but they were not connected in so many cases with the symptoms with the highest ranking, such as “attention deficit,” “impulsivity,” and “disturbing the class.”

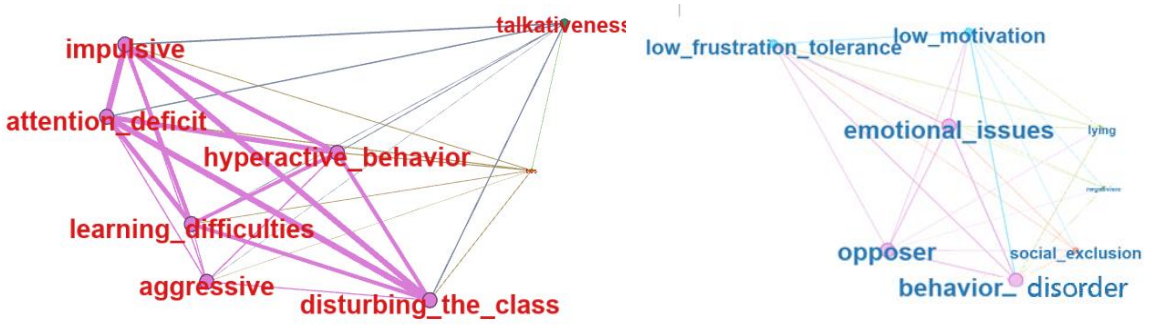
To identify if there were considerable differences between the important symptoms and the less important symptoms, we conducted the modularity process, an algorithm made to identify how many communities/classes of the symptoms there are. The modularity indicator (0.01), represented a very small value but still enough to identify two classes of

nodes. Figure 11 presents the two classes of nodes, based on how often they appeared together.

Figure 11 presented in class 0 the next symptoms: “attention deficit,” “impulsive,” “hyperactive behavior,” “learning difficulties,” “aggressive,” and “disturbing the class,” and in class 1 the next symptoms: “behavior disorder,” “emotional issues,” “opposer,” “low frustration tolerance,” “low motivation,” “social exclusion,” “lying,” and “talkativeness.” These two classes represented the networks of the most connected symptoms. From these two classes, considering the eigenvector and weight degree ranking, the symptoms from class 0 were considered by teachers and psychologists more representative for ADHD.

Figure 11

The network of the most mentioned symptoms named together



Class 0 **Class 1**

3. Analyzing the General Network of the ADHD Symptoms for the Entire Group of the Participants

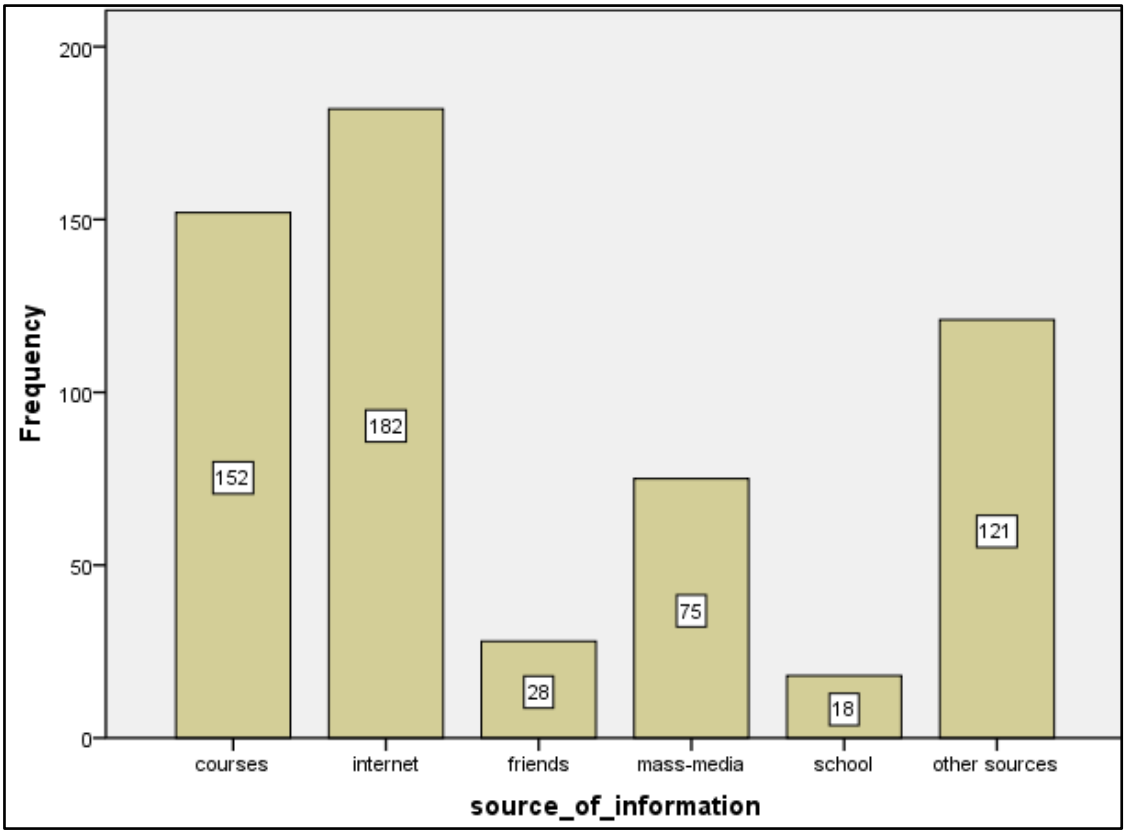
To establish the social representations on ADHD in Bihor County we conducted our next analyses on the entire group of 590 participants, making interpretation without taking in consideration if they are parents, teachers, or psychologists. Taking the entire sample of participants as individuals from the Bihor County community, we analyzed which were the most frequent sources of information used to gather information about ADHD. The bar chart from Figure 12 presents the distribution of the frequencies established for each source of information used to gather information about ADHD.

We identified that 31% of the participants (n=182) used “the internet” to gather information about ADHD, 26% were informed about ADHD through “formal courses” (n=152), and 13% have heard about ADHD from “the mass media” (n=75). For 21% of the

participants (*n*=121) we did not have specific names of the sources, they selected "other sources" as the answer.

Figure 12

The main sources of information about ADHD used by the individuals from Bihor County



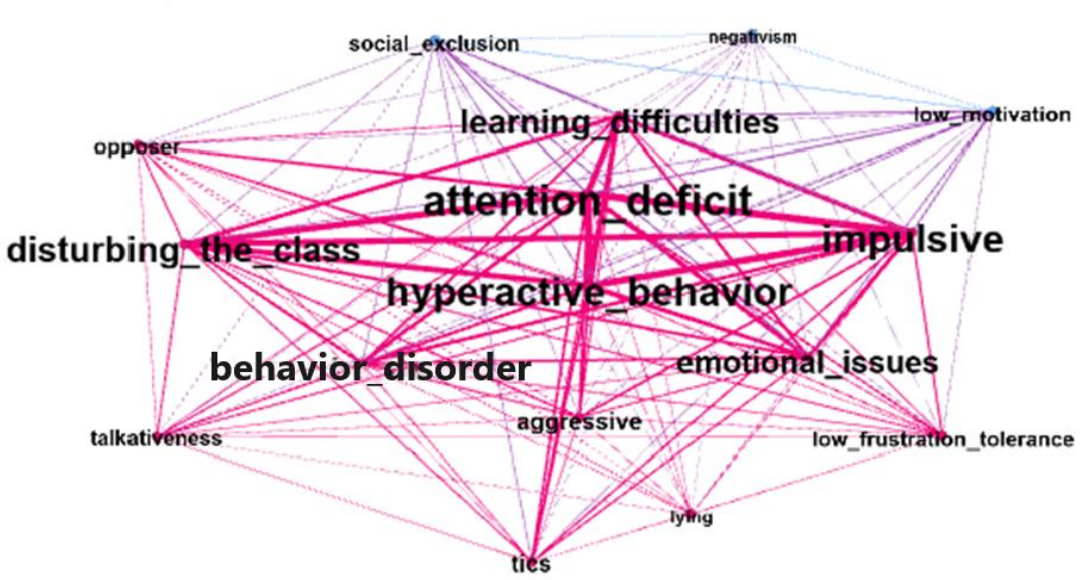
Next, we wanted to identify how the network of the symptoms of ADHD looks in the perception of the entire group of participants. For this we conducted a semantic analysis through the Gephi version 0.9.2, using the established 16 symptoms presented in our previous steps. From the entire group of participants (*n*=590) our network analyzed 14,510 units (how many times the symptoms were mentioned). The semantic analysis included 16 nodes (symptoms) and 7,279 undirected edges between two different nodes (the connections between two symptoms).

In Figure 13, the main symptoms are positioned in the center of the network and the less important symptoms at the edge of the network. The size of the nodes was given by the weight degree ranking. The graph density value was 1, and this measured how close the network was to being completed. Having this value, Figure 13 illustrated a complete graph with all the possible edges. To identify if there were considerable differences between the symptoms from the center and those placed at the edge of the network symptoms, we

conducted the modularity process, an algorithm made to identify how many communities/classes of the symptoms were in the network. The modularity indicator (0.001), represented a very small value, but still enough to identify two classes of nodes. Figure 13 presented these two classes of nodes, with different colors (red or blue).

Figure 13

The network of ADHD symptoms viewed by the individuals from Bihor County



For a closer analysis, we present in Table 25 the descending order of the symptoms considering their weight degree ranking, as a result of our semantic analysis. We also included (in separated columns) the values obtained for the parents' group and the specialists' group to identify the possible similarities or disparities.

Table 25

The Distribution of ADHD Symptoms, Considering the Weight Degree Ranking

Items	ADHD symptoms	General		Parents		Specialists	
		Value	Rank	Value	Rank	Value	Rank
1	Attention deficit	2080.0	1	1256.0	2	824.0	1
2	Impulsive	1832.0	2	1049.0	3	783.0	2

3	Hyperactive behavior	1831.0	3	1280	1	551.0	5
4	Disturbing the class	1525.0	4	807.0	6	718.0	3
5	Learning difficulties	1403.0	5	847.0	4	556.0	4
6	Emotional issues	1203.0	6	813.0	5	390.0	7
7	Behavior disorder	979.0	7	588.0	7	391.0	6
8	Aggressive	644.0	8	479.0	9	165.0	11
9	Tics	601.0	9	494.0	8	107.0	13
10	Opposer	472.0	10	186.0	13	286.0	8
11	Low motivation	448.0	11	279.0	11	*169.0*	10
12	Low frustration tolerance	433.0	12	166.0	14	267.0	9
13	Social exclusion	422.0	13	355.0	10	67.0	15
14	Talkativeness	393.0	14	228.0	12	165.0	12
15	Lying	149.0	15	80.0	15	69.0	14
16	Negativism	95.0	16	75.0	16	20.0	16
Total of units		14,510		8,982		5,528	

Table 25 and Figure 13 revealed that the most important symptoms of ADHD (with the weighted degree rank over 1,000) selected by the individuals from Bihor County were: “attention deficit,” “impulsive,” “hyperactive behavior,” “disturbing the class,” “learning difficulties,” and “emotional issues.” The second group of symptoms, with weight degree rank between 999 and 90, the other the next 10 symptoms from the list: “behavior disorder,” “aggressive,” “tics,” “opposer,” “low motivation,” “low frustration tolerance,” “social exclusion,” “talkativeness,” “lying,” and “negativism.” These symptoms were not so often

selected by the participants, representing only 32% from the entire units from the network componence. Three symptoms were established at the edge of the network: “low motivation,” “social exclusion,” and “negativism” (see Figure 14).

Figure 14

The less important symptoms of ADHD in the social representation



Even if these symptoms did not have the smallest values at the weight degree ranking, they were still considered unimportant for our network because they were not verry often connected with the core symptoms of the network. Going forward with our analyses (see columns 4 and 5 from Table 25), we identified some similarities, but also disparities considering the rank of the symptoms from the networks constructed separately by the parents and specialists. The symptoms with the similarly high level of the rank in the parents' and specialists' networks were: “attention deficit,” “impulsive,” “learning difficulties,” and “behavior disorder.” Also, we identified similarities at those symptoms with low rank levels, such as: “low motivation,” “talkativeness,” “lying,” and “negativism.” We identified disparities with three or more rank levels, for the next symptoms: “hyperactive behavior” (1 compared with 5), “disturbing the class” (6 compared with 3), “tics” (8 compared with 13), “opposer” (13 compared with 8), “low frustration tolerance” (14 compared with 9), and “social exclusion” (10 compares with 15). There were two symptoms with medium differences at the rank level “emotional issues” and “aggressive.” In the general ranking obtained in the social representation network, “emotional issues” was included in the first category of important symptoms of ADHD. For the second symptom, “aggressive,” we observed an ascension in the general ranking: in each group

"aggressive" occupied position 9 (parents' group) and 11 (specialists' group), but in the general ranking it occupied position 8.

Strong disparities between the parents' group and the specialists' group were identified for the next symptoms: "hyperactive behavior" and "disturbing the class" (symptoms with high values), and "tics," "opposer," "low frustration tolerance," and "social exclusion" (symptoms with low values). "Disturbing the class," "opposer," and "low frustration tolerance" were symptoms identified more important from the specialists' point of view. "Hyperactive behavior," "tics," and "social exclusion" of students with ADHD were considered more important by parents compared with the specialists' point of view.

Focusing on the numbers of the connections between two symptoms, we identified that six symptoms represented 68% (*n*=9,876) from the entire number of units analyzed (*n*=14,510). These were: "attention deficit," "impulsive," "hyperactive behavior," "disturbing the class," "learning difficulties," and "emotional issues." Being the most selected symptoms, it was interesting for our analyses to identify which were the most frequent symptoms connected to each other into pairs.

Figure 15 presents the most important six symptoms in the network provided by the social representation of ADHD, and their connections with other symptoms. For a closer analysis, we also detailed in Table 26 the connections established by each one of the most important symptoms, visualizing how each symptom gathered its position into the network

Figure 15

The most important symptoms of ADHD in the social representation

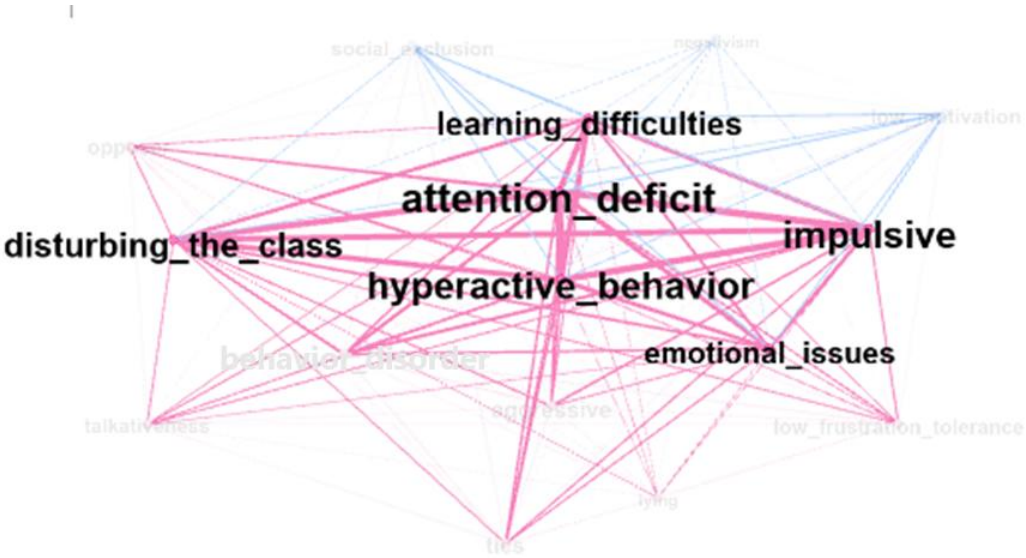


Table 26 presents in a descending order those symptoms which were most connected with the most important six symptoms of ADHD provided by our network. In this manner we can observe a behavioral picture of students who manifest one core symptom of ADHD.

Table 26

The Connections Established by the Most Important ADHD Symptoms

Edges		Weight	Edges		Weight
Symptom	*Connected symptom*		Symptom	*Connected symptom*	
Impulsive	Attention deficit	309	Hyper-active behavior	Attention deficit	335
	Hyperactive behavior	286		Impulsive	286
	Disturbing the class	249		Disturbing the class	230
	Learning difficulties	197		Learning difficulties	219
	Emotional issues	163		Emotional issues	160
	Behavior disorder	142		Behavior disorder	118
	Aggressive	96		Tics	110
	Tics	72		Aggressive	108
	Low frustration tolerance	69		Opposer	59
	Opposer	66		Social exclusion	44
	Talkativeness	58		Low motivation	41
	Low motivation	52		Low frustration tolerance	40
	Social exclusion	42		Lying	13
	Lying	21		Negativism	10
	Negativism	10			
	Total of connections	2432		Total of connections	1773
Attention deficit	Hyperactive behavior	335	Disturbing the class	Attention deficit	270
	Impulsive	309		Impulsive	249

	Disturbing the class	270		Hyperactive behavior	230
	Learning difficulties	256		Learning difficulties	167
	Emotional issues	193		Behavior disorder	117
	Behavior disorder	149		Emotional issues	115
	Tics	97		Aggressive	71
	Aggressive	84		Opposer	60
	Opposer	78		Talkativeness	53
	Low motivation	72		Tics	49
	Social exclusion	65		Low motivation	37
	Talkativeness	63		Lying	22
	Lying	23		Social exclusion	22
	Negativism	15		Negativism	9
	Total of connections	2009		Total of connections	1471
Learning difficulties	Attention deficit	335	Emotional issues	Attention deficit	193
	Attention deficit	256		Impulsive	163
	Hyperactive behavior	230		Hyperactive behavior	160
	Impulsive	197		Learning difficulties	126
	Disturbing the class	167		Disturbing the class	115
	Emotional issues	126		Tics	64
	Tics	60		Social exclusion	59
	Aggressive	57		Aggressive	54
	Opposer	40		Opposer	43
	Talkativeness	33		Talkativeness	28
	Lying	8		Lying	12
	Negativism	5		Negativism	10
	Total of connections	1179		Total of connections	1027

Teachers and psychologists provided in our research a network based on their reality, on their day-to-day professional experiences. These representations constructed after individuals' everyday life were considered by Hacking (2000) social classifications, social constructions. These classes of individuals represented symbolic constructions processed through the individual and the collective interests, and the instruments used for their construction were the well-founded classifications. Considering the possibility that there were differences between the parents' point of view (who had the internet as the most used source of information), and teachers' and psychologists' perceptions (who had the formal courses as the main source of information about ADHD) we identified some similarities and also some disparities, which must be analyzed. To maintain a coherent and fluid framework for the overall research results, the discussions generated by the data analyzed in Study 3 are included are included in chapter IV, generically titled „Discussions”**.**

IV. DISCUSSIONS

Even though each presented study was independent, all of them were connected and, in this last section we make inferences and analyses referring to these connections. The data obtained contribute to a better understanding of ADHD and can be used to improve diagnostic practices and the support provided to affected students.

The first study aimed to provide information about the profile of students diagnosed with ADHD in Bihor County. In our content analysis, we found significant more boys diagnosed with ADHD compared with girls, sustaining Rucklidge's (2008) and Reeves (2022) conclusions that boys were more frequent diagnosed with ADHD. It was interesting to identify the type of symptoms manifested by boys with ADHD, compared with girls. We identified that boys developed more often hyperactivity and/or impulsivity compared with girls, but we could not identify if the girls presented more often the predominantly inattention type or ADHD, because the number of cases was too small for a statistical analysis of the differences.

Rucklidge (2008) also emphasized that girls with ADHD have emotional problems. We did not find significant differences between boys and girls considering the association of ADHD with "the emotional disorder". What we identified was that boys diagnosed with ADHD in Bihor County were more aggressive, compared with girls diagnosed with ADHD. We identified that the frequency of "aggressiveness" as a symptom was registered into the medical files for 40% of the students diagnosed with ADHD.

The clinical evidences strongly supported the use of stimulant medications for treating the core symptoms of students with ADHD, especially for the externalized symptoms (such as hyperactivity and impulsivity). A surprising finding from our data emphasized that from a total of 154 cases which had medication prescribed as treatment, almost 30 % of students diagnosed with ADHD did not have any ADHD core symptom (but still the medication was prescribed). The research in the field emphasized that stimulant medication improves the neuronal substrate responsible with the behavioral inhibition and the executive function dependent on this (Miranda et al., 2002).

Another interesting finding in our research, connected with the medication treatment, was that the medication was significantly more often prescribed for cases diagnosed without conduct disorder or emotional disorder, compared to the cases of students with comorbid disorders. The prescription of the medication was not necessarily

associated with the core symptoms or with the comorbid disorders. These findings should provide future topics for our research, for a closer examination of the symptoms which require medical prescriptions.

The management of emotional experiences represents “an important determinant of functional social skills of children” (Jones, 2002, as cited in Drugaș, 2016, p. 56). Socio-cognitive research shows the importance of self-attributions for an adaptive or maladaptive functioning of students with ADHD (Johnston, & Leung, 2001). To explain this theory, the authors provided examples of using the medication in treating ADHD. There are concerns that in using this type of therapy, the success could inappropriately be attributed to medication, and not to the rehabilitation strength of students with ADHD. If the attributional style is associated with external factors (for example “the therapist is most important, without him I cannot handle,” “the medication is what is helping me”); this may lead to learned helplessness.

In another topic, DuPaul et al. (2006a.) emphasized that there are no significant gender differences in academic functioning of students with ADHD. Considering this variable, we identified that more than half of the students diagnosed with ADHD (66%) had lacunar knowledge, and they were learning in mainstream schools. We did not find differences between boys and girls considering their IQ or knowledge levels.

Our last analysis targeted the family background of students diagnosed with ADHD in Bihor County. From our data, the majority of students with ADHD (79%) were raised by the biological family, where 47% of the parents were married and 54% had a medium educational level. The presence of a diagnosed child with ADHD has a major impact on the parents` relationships and the probability of parents' separation was considered higher compared to the control group (Kousgaard et al., 2018). Rydell (2010) identified an association between ethnicity and disruptive behavior in students diagnosed with ADHD. We were interested to find if there were differences in emotional problems in students with ADHD, depending on their parents’ relationship status, but we did not find statistically significant differences.

In the last part of our first study, we focused on the ethnicities of students diagnosed with ADHD, and the type of their caretakers. Our findings revealed important conclusions which emphasized significant differences for the Romani students diagnosed with ADHD, who were more often raised by other caretakers than the biological families, compared with the Romanian and Hungarian ethnicities.

This first study reveals the reality of ADHD diagnosis in Bihor County, recorded into the medical files. Our document analysis provides valuable information about the psychiatrists' practice in diagnosing ADHD. These findings provide answers to our first research` questions and identify some possible causes of *why ADHD has become so common among* students and if *there is a possibility that the procedure of diagnosis the ADHD is based on the subjective interpretation of the behavior, and not on the concrete biological condition.* As Wedge (2015) emphasized, namely that a diagnosis of ADHD is based on assessment of behavioral symptoms; and not on genetic analysis, our findings revealed that few students diagnosed with ADHD in Bihor County illustrated modifications in their electroencephalogram (as an important medical condition). We also identified that there were established diagnoses and prescribed medication treatments even if some students did not have registered symptoms of ADHD (attention deficit, hyperactivity or impulsivity) or a biological condition. We remember that Lakoff (2000) in his analysis of attention deficit disorder evolution, identified the evolution of inhibitions (that continue to decrease). Because of this decreased inhibition and its general perception as a disagreeable behavior, the acceptance of the ADHD diagnosis can be quickly widespread among the stakeholders. Our findings sustain Lakoff's analysis, being identified in our sample a large majority of students who presented hyperactive behavior and/or impulsivity.

All our findings from this first study encouraged us to develop further analyses on the profile of students diagnosed with ADHD in Bihor County, focusing on the semantic analysis of ADHD symptoms. We analyzed more closely the symptoms of students with ADHD, because even if the diagnosis was established, there were cases in our database without any ADHD core symptom (mentioned by the diagnostic manuals). Were there other symptoms which are more representative for ADHD? Have the core symptoms of ADHD changed? For this, we elaborated in our second study a semantic analysis, revealing the most frequent symptoms of students with ADHD registered in Bihor County

For **the second study** we collected data from 196 students diagnosed with ADHD by psychiatrists at Municipal Hospital in Bihor County. Considering the last edition of the *Diagnostic and Statistical Manual of Mental Disorders–5*, published in 2013, one of the diagnostic criteria for ADHD is that the symptoms of inattention or hyperactivity-impulsivity should appear before the age of 12 (for comparison, DSM IV TR established the age of 7).

In the first section of the present dissertation, the theoretical considerations, we described that the core symptoms of ADHD are attention deficit, impulsiveness, and

hyperactive behavior. To identify the ADHD symptoms for our subjects, the analytical procedure of the present study was based on *Gephi 0.9.2*. All symptoms identified in the medical records were divided in 34 categories. Because the subjects were diagnosed by different psychiatrists, there is the possibility to name the same symptom in a different manner, for example: "the hyperactive behavior" was also found as "widespread hyperkinesia," "hyperkinetic," "hyperkinetic behavior," "psychomotor restlessness," "agitation," "activism," "agitated," "bored quickly," "impatiently," "agitated," "fidgeting," "restless." There were some symptoms which did not have other names, for example "inconsistence" or "hypomnesia." All the identified symptoms were renamed, for each subject, resulting 34 categories.

Our first objective was to identify, visualize, and analyze the network of the symptoms, and the edges between all the 34 symptoms. The network's graph had a low density ($0.2 < 1$), which means that we had symptoms with a high number of connections and also symptoms which were connected only with one other symptom, for example "attention deficit" with "tics" (this combination was registered only once in our network). We did not expect a higher density of the network, because the number of symptoms and their types were different, almost from one medical record to another. We identified some students with the same list and number of symptoms, for example: "aggressive, hyperactive behavior, and impulsive" (6 students), "aggressive, and low frustration tolerance" (4 students), or "hyperactive behavior, and impulsive" (9 students).

As an output of our first objective, we identified a list of 16 important symptoms, which were connected more often into our network. The statistics showed that the highest number of connections were between "hyperactive behavior" and "aggressive" (149), "hyperactive behavior" and "low frustration tolerance" (129), "hyperactive behavior" with "impulsive" (107), and "hyperactive behavior" with "disturbing the class" (106). "Low frustration tolerance" was often connected often with "aggressive" (96), and "emotional issues" (95).

The analysis of our network placed the "hyperactive behavior" as the most frequent symptom (52%) having a total of 525 connections with other symptoms, followed by the "aggressive" (233), and the "low frustration tolerance" (193). "Attention deficit" was a symptom in our network which occupied the fourth place considering the number of its connections with other symptoms (171). The node betweenness centrality emphasized our first three ranked symptoms, and these were: "hyperactive behavior," "aggressive" and

"low frustration tolerance." These three symptoms were considered the core symptoms for students diagnosed with ADHD, in Bihor County.

Analyzing the symptomatic profiles of students diagnosed with ADHD in Bihor County, we identified three clusters of students in our network, considering the type and the number of symptoms. This investigation revealed that the maximum number of symptoms registered in one medical file was six. Considering the type of the symptoms, we identified that the criteria for dividing the network of students into classes was defined by the core symptoms: "hyperactive behavior," "aggressive," and "low frustration tolerance." One cluster was defined by the behavioral symptoms (hyperactive, aggressive), and one was defined by the emotional symptoms (low frustration tolerance). The third cluster was a combination between these two, and we called it "associated."

As an output of the second objective, we identified a number of specific symptomatic profiles for students diagnosed with ADHD in Bihor County. Those students who presented "low frustration tolerance" also had emotional issues, negativism and they were likely to be socially excluded. The majority of students who had "attention deficit" also had "hyperactive behavior," and those who disturbed the class, also presented an opposing behavior and low motivation. There was a specific symptomatic profile compound from "impulsive" and "aggressive," which helped visualize a possible cause and effect relationship. Is it that impulsive behavior leads to aggressiveness, and this is the expression of the impulsive as a core symptom in ADHD? According to our findings, this problem should be researched in detail.

The clinical characteristics, the basic concepts or malfunctions' nomenclature for ADHD, have changed over time, but most of them have the same frame of symptoms as the contemporary literature shows: hyperactivity, impulsivity, and inattention. The last edition of the *Diagnostic and Statistical Manual of Mental Disorder–5*, published in 2013, presented the same diagnostic criteria for ADHD, mentioning that they should appear before the age of 12. Compared with this, our results showed a different view. The average age of students with ADHD, in Bihor County, is around 10 years old, and the core symptoms of ADHD were: aggressiveness, hyperactive behavior and low frustration tolerance.

The clinical guideline provided by the American Academy of Pediatrics (Wolraich et al, 2019, p. 6) strongly recommended that the diagnosis of ADHD "should determine that the DSM–5 criteria have been met." We observe that our data presented symptoms as conclusions of comorbid conditions screening (emotional and behavioral conditions),

developmental conditions (learning and language disorders), and physical conditions (tics, sleep apnea), with few connections with the core symptoms of ADHD. We emphasize that the evaluation for ADHD for students from our database (aged between 4 and 18 years old) investigated the academic or behavioral problems and not necessarily the core symptoms of ADHD (inattention, hyperactivity, or impulsivity).

"Aggressive," "hyperactive behavior," and "low frustration tolerance" are the symptoms which are not easily accepted and understood in social groups. Wedge (2015) supported this idea, namely that a diagnosis of ADHD was based on the assessment of behavioral symptoms, and not on genetic analysis. This is why the recognition of ADHD is more prevalent in some countries than others, being established through a cultural interpretation. In our opinion, the psychiatrists from Bihor County are diagnosing ADHD according to ethical or other social norms. These conclusions support the sociologists` approach to ADHD, namely that the psychiatrists or physicians focus on families and social environment in diagnosing students with ADHD.

Wedge (2015) provided the hypothesis that ADHD was not a true disease entity, not a medical condition, and what we call ADHD is caused by social factors such as trauma, poverty, a chaotic family life, too much exposure to electronic screens, and other environmental adversities.

Although there are concerns that question the impact of cultural, social, and systemic differences on the perception of students with ADHD, Wender (as cited in Rafalovich, 2008) considered that the psychological perspectives on ADHD are more nonphysiologically influenced, being predisposed to an examination of others' reactions to the syndrome. These reactions are not defined by hyperactivity as a high level of activation, but rather described by the level of depression, immaturity or narcissism. It means that these symptoms (hyperactivity, extroversion in terms of social aggression, poorly modulated activation in terms of overreactive to stress) are determined by events in students' lives, rather than by neurological difficulties.

In Bihor County, the majority of cases of students with ADHD called for hospital services because only there a committee functions that could prescribe specific medication for this disorder, and provide free services of counseling, speech therapy, or cognitive developmental programs. Most of the emotional, social or behavioral problems were identified in a social context. This means that a lot of problems occur when students were going to school, and teachers or school personal request parents' attention and involvement in a child`s school activity and behavioral management. Students n who show different

problems in their emotional, behavioral, and social development or are suspected by mental difficulties are evaluated by family physicians at parents` or teachers` request. In this situation, parents ask for specialists' support, and most of them ask for a psychiatric evaluation. The Municipal Hospital from Oradea has a special committee who can provide the specific medication for mental disorders (including ADHD). Many families ask for psychiatric evaluations at the hospital, because of this easy way of prescribing the specific medication which can be bought from the pharmacy only with this special committee prescription.

The basis of the second study is the controversial nature of ADHD. Sociologists criticize the clinical approach of ADHD, considering that at the center of the intervention is the social and the familial circumstances, and not the diagnosed individual. The clinical characteristics of students with ADHD are different from the basic concepts or malfunctions' nomenclature for ADHD. The psychiatric assessment is based mostly on what teachers, parents, and psychologist describe. The core symptoms identified in our semantic analyses are "aggressive," "hyperactive behavior," and "low frustration tolerance." These criteria have a behavioral nature, and provide us more arguments which confirm *that the procedure of diagnosis for ADHD is based on the subjective interpretation of the behavior*. These findings encourage us to sustain the sociologist paradigm where the criteria in diagnosing ADHD are based on social norms end ethics.

One of our present dissertation questions was focused on the *importance of the stakeholders` perceptions and representations for the ADHD diagnosis process*. Were these perceptions and representations more important than the diagnostic manual criteria? We identified through our semantic analysis that the core symptoms for students diagnosed with ADHD in Bihor County include: "hyperactive behavior," "aggressive," and "low frustration tolerance." In a recent article, Wolraich et al. (2019, p. 8) emphasized that if "teachers, parents and child health professionals typically encounter students who demonstrate behaviors relating to activity level, impulsivity, and inattention but who do not fully meet DSM-5 criteria (. . .), the diagnostic criteria should be closely reviewed" because these manifestations may suggest other problems that mimic ADHD. So, it is important to remember that Rafalovich (2015) emphasized that understanding ADHD as a medical condition is "culturally-interpretative."

This second study revealed the core symptoms of ADHD diagnosed in Bihor County, were different from what diagnostic manuals present. This conclusion provided valuable information about what is considered disturbing for those students who require a

psychiatric assessment. Through this second study, we identified that the core symptoms of ADHD are specific behaviors disapproved by the society, "aggressiveness," "hyperactive behavior," or "low frustration tolerance." This supported what Wedge maintained in 2015, namely, ADHD is assessed through observations of behavioral symptoms, and not on genetic analysis.

All our findings encouraged us to investigate the ADHD descriptions of the stakeholders, namely the perspectives of parents, teachers, and psychologists. Is their perspective included into the clinical records? Are their descriptions, about the core symptoms of ADHD, reflected into the psychiatrists' records? For this, we propose a third study, where we will identify the perceptions of teachers, parents, and psychologists on ADHD core symptoms. Considering this, we will be able to compare what psychiatrists identify as core symptoms of ADHD, and which are the non-specialists' opinions.

A global consensus on ADHD was established in 2005 by the Remschmidt who, with a group of experts from nine countries, spanning five continents, re-confirmed that ADHD was a valid disorder that exists across different cultures. The group emphasized that despite the cultural diversity the core symptoms of ADHD were the same: "hyperactivity," "attention deficit," and "impulsivity." These core symptoms affect the child's life (emotional, social, and cognitive functioning) (Remschmidt, 2005). Another finding from our previous study emphasized that the core symptoms of students diagnosed with ADHD in Bihor County were different from those suggested by the global consensus, and these were: "hyperactive behavior," "aggressive," and "low frustration tolerance."

Considering the global consensus, we aimed to identify in **the third study** which was the social representation of ADHD in Bihor County. For our research, we involved 590 participants, from which 370 were parents and 220 were teachers and psychologists. As Rateau et al. (2011) emphasized, the school, the family, the institutions, and the media provide us different ways of seeing the world, offering a particular vision of the things around us. Our first findings supported Rateau's and his collaborators idea, establishing that the most frequent sources from which our participants heard about ADHD was "the internet," "formal courses," and "mass-media." In our detailed analyses we identified that the parents used "the internet" as the main source of information about ADHD, and teachers and psychologists were mostly informed through their "formal courses." Rateau et al. (2011) also considered that besides the influences of these sources, our perceptions are shaped by the groups, the associations, our contacts and interactions.

The further steps of the present research were to identify the symptoms which were considered important by our participants, for students diagnosed with ADHD. We used a list of 16 symptoms which were most frequently manifested by students clinically diagnosed with ADHD in Bihor County. The semantic analysis of the entire social group (*n*=590) revealed that there were six important symptoms manifested by students with ADHD in Bihor County: "impulsive," "attention deficit," "hyperactive behavior," "disturbing the class," "learning difficulties," and "emotional issues." Considering these six symptoms, our participants presented the image of ADHD similar to the global consensus, the core symptoms and its consequences. It is interesting to establish which are which.

Teachers and psychologists provided in our research a network based on their reality, on their day-to-day professional experiences. These representations constructed after individuals' everyday life were considered by Hacking (2000) social classifications, social constructions. These classes of individuals represented symbolic constructions processed through the individual and the collective interests, and the instruments used for their construction were the well-founded classifications. Considering the possibility that there were differences between the parents' point of view (who had the internet as the most used source of information), and teachers' and psychologists' perceptions (who had the formal courses as the main source of information about ADHD) we identified some similarities and also some disparities, which must be mentioned.

The symptoms with a similar importance for both parents and specialists were: "attention deficit," "impulsive," "learning difficulties," and "behavior disorder," and those symptoms also similar, but with low importance were: "low motivation," "talkativeness," "lying," and "negativism." As Abric (1996) considered the social representation a socio-cognitive logic because it is based on social information and facts, and influenced by the social context. The disparities between the points of view of parents, teachers, and psychologists could be explained through Abric's theory. Compared with the parents' point of view, teachers and psychologists gave a high importance to the next symptoms: "disturbing the class," "opposer," and "low frustration tolerance." These types of behaviors were considered harder to be tolerated and accepted in the school activity (Ohan et al., 2008). In contrast, there were symptoms which were considered less important in the specialists' point of view, compared with parents' perceptions, and these were: "hyperactive behavior," "tics," and "social exclusion." These three symptoms were considered more important by parents, compared with the specialists' point of view. They were not

considered to be so important because probably they have to deal more often with types of behaviors (Drugaș et al., 2021). Anyway, this finding could be an idea for further research.

An interesting finding was about one symptom, “aggressive.” For this symptom we observed an ascension in the general ranking: in each group “aggressive” occupied position 9 (parents' group) and 11 (specialists' group), but in the general ranking it occupied position 8. The increased value was determined by the connections between “aggressive” and other important symptoms.

From the entire sixteen symptoms there were three which were not considered representative for ADHD, and there were: “negativism,” “low motivation,” and “social exclusion.” For a further analysis, it would be interesting to identify how are these symptoms presented on the internet and in mass-media sources. We remember that these three symptoms were still registered in the medical files of students with ADHD in Bihor County.

This last study analyzed the reality of ADHD symptoms among the stakeholders’ perspectives. We identified “the power of internet,” as a main source of information about the ADHD for stakeholders. We remember a high number of researches provided by Timimi and colleagues (Timimi 2009; Timimi, 2015: Timimi & Taylor, 2004; Timimi & Timimi, 2015) considering the important impact of the internet in the historical understanding of ADHD. Our findings accede Timimi`s conclusions and provide arguments on how the diverse cultural beliefs and practices occur around this disorder.

Connected with this, our third study revealed disparities between parents and educational specialists (teachers and psychologists) considering the core symptoms of ADHD, each category of participants considered other symptoms more important and relevant for ADHD. The perception of educational specialists was more often identified in the psychiatrist’s records. This conclusion provides a concrete answer to one of our present research questions: *What other causes can* “*lead*” *to the ADHD diagnosis, if the biological evidence is not well shaped?*

As we mentioned earlier, teachers and psychologists provide in this third study a network based on their reality, on their day-to-day professional experiences. Through this is emphasized the importance of the “developmental context” in the diagnosis` process of ADHD and not the biological evidences. As Rowland et al. assessed in 2002, teachers' observations and histories are extremely valuable for the diagnosis process.

All these conclusions certainly sustain the social constructivism of ADHD in Bihor County, and encourage for further analysis on this topic. Which are the

similarities/disparities between the psychiatrists' knowledge and image of ADHD provided by the internet? Are the students with ADHD labeled and stigmatized in schools? Is the medication treatment of ADHD a quick fix intervention desired by parents and teachers? How does this diagnosis influence students' life, teachers' behavior, and even the educational system? The present dissertation provides valid findings as a starting point in analyzing the ADHD as a social construct.

CONCLUSIONS

Attention-Deficit/Hyperactivity Disorder is defined as a persistent pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development (American Psychiatric Association, 2022). The core symptoms of ADHD presented by the diagnostic manuals DSM and ICD (Polanczyk et al. 2007) are inattention, hyperactivity, and impulsivity. However, the nature of ADHD has been a continuous source of controversy over the last years, and the most vehement critiques of ADHD diagnosis and medicalization are claimed by sociologists (Edmunds, 2011; Hacking, 2000; Jutel, 2009; Kanhere, 2024; Lloyd et al., 2006; Timimi 2015).

In my experience as a school psychologist, I observed that we (teachers and psychologists) try to make progress in avoiding the negative labeling of ADHD; teachers know that they should adapt and accept students with ADHD, but for this they must have a concrete diagnosis, and they put pression on parents for a psychiatric assessment. If they know for sure that there is a concrete diagnosis (even if the problem is not a biological one, being probably determined by other powerful external factors), teachers feel validated as professionals. Teachers and parents as well consider that if the undesirable behaviors are named, labeled into a disorder, and medicated, this represents, as Sherman (2015) said, “a quick fix” of the problem. The following case, which is not isolated, is a recent testimony of a mother, who told me that her boy (6 years old) received a prescription for a psychotropic medication from his psychiatrist, which was contested by the neurologist. Also, the screening organized by myself (as a psychologist) for this boy did not reveal attention deficit, and the systematic observations did not reveal hyperactive or impulsive behavior, moreover he was hypotonic. Even if this boy was only 6 years old, the medication was easily prescribed, being the easiest but not the finest way for quick modification.

Even if I am not a sociologist, this kind of experience in my psychoeducational practice made me wonder if ADHD diagnosis is indeed more medicalized, rather than moralized. This statement was highlighted by Hawthorne (2013) who considered that ADHD is more medicalized because its symptoms challenge specific social norms in school environments and beyond. Considering this, our attention was directed to the social construct paradigm as a framework theory to understand the practice of diagnosing ADHD. We focused our theoretical approach on three important entities of the social construct, provided by Hacking (2000), namely: the concept (ADHD), the procedure (the process of

ADHD diagnosis), and the body knowledge (the ADHD profile known and disseminated by the specialists and stakeholders).

To define the concept of ADHD, we elaborated in the first part of the present dissertation the clinical paradigms, where we presented the neurobiological descriptions of ADHD, and also the psychoeducational reality of students with ADHD in their family and school environment. Having the definition of ADHD concept, we continued to analyze if there *is a consensus among psychiatrists considering the ADHD diagnosis*. Remschmidt (2005) presented a global consensus among the specialists, being based on the same core symptoms of ADHD: hyperactivity, attention deficit, and impulsivity. But, Wedge (2015) highlighted important differences between specialists from the United States and those from France; the first ones considered ADHD a biological disorder, being preferred the psychostimulant medication as a treatment, and the second ones defined ADHD as more of a psychosocial situation, preferring the psychotherapy or family counseling. Another difference identified among the specialists was outlined by Brent and Lewis (2014) who revealed that those psychiatrists who are establishing the diagnosis of ADHD according to DSM criteria, are diagnosing roughly three to four times more, comparing with their colleagues who are using ICD 10 criteria.

Considering these approvals and disapprovals among specialists, one of our specific questions, important for the present topic, was about *what core symptoms of ADHD are recorded into the medical files?* Are the hyperactivity, impulsivity, and attention deficit registered in the medical records? *Are the biological conditions registered in the medical files as causes of these core symptoms?* Timimi (2015) outlined that the worldwide health system is facing a large gap of biological evidences when we are talking about mental illness, and the diagnosis of ADHD should be established only if there are clear and concrete biological evidences.

If the biological causes are not well shaped, *what other causes can* "*lead*" *to the ADHD diagnosis?* This was another important question for our topic. The researchers in the field of social constructivism identified a large number of other causes. We revealed some causes connected directly with the specialists and the medical field such as: the external interests of the psychiatrists (Hutson, 2015); the medical authority empowered by the diagnosis labels (Jutel, 2009); the divergent beliefs of the psychiatrists (Brown, 1995); the positive consequences of the diagnosis (Hansson Halleröd et al, 2015); the "quick fix" medical treatment for the undesirable behaviors (Sherman, 2015), and the major influence of the internet, and the pharmaceutical industry (Timimi, and Timimi, 2015).

Another category of the external causes, relevant for our present research, was provided by the stakeholders of students diagnosed with ADHD, such as: the extremely challenging and demanding expectations of teachers and parents (Bradley-Klug & Grier, 2000); the cultural rejection of underperformance (Cohen, 2006), and disagreeable behaviors (Csépes & Drugaş, 2014); the teachers' knowledge and attitudes regarding ADHD (Anderson et al., 2012); or the different external sources of a child's distress (Wedge, 2015). A similar argument was presented by Lakoff (2000) who assessed, that starting with 2000, it was identified as a decreased inhibition for school population behavior. Accordingly, the focus on the disagreeable behaviors and the importance of the ADHD diagnosis was easily increased. Another argument for the importance of the external causes, was presented by Clinard and Meier (2014), and Wedge (2015), who considered that the behavioral problems, such aggression or disobedience (commonly associated with ADHD) are expressions of their social context.

The present dissertation was conducted to answer the main question: *Is the practice of diagnosing Attention-Deficit/Hyperactivity Disorder a social construct?* To answer our question, we used the documentary analysis, and semantic analysis as research methods. Before proceeding with our approach, it is important to mention that we tried several times to collect statistics about the prevalence of ADHD in Bihor County, from the regional authorities, but without any success.

The novelty of the present dissertation is that it offers some concrete data about students diagnosed with ADHD at the Municipal Hospital Oradea, Bihor County. We collected data from 196 medical files registered at the Municipal Hospital from Oradea by three different psychiatrists, and in the end, we tried to identify the social representations of ADHD existent inside of the Bihor County community. For the first two studies, the target group was formed by the medical files of students diagnosed with ADHD in a public hospital. This documentary analysis offered us the possibility to identify the official information registered in the medical records when a child is diagnosed with ADHD. This process provided by the documentary analysis revealed important data about the official practice of diagnosing ADHD. Continuing our research in the field of the social construction of ADHD diagnosis, we focused on a different target group, which was formed by three important categories of individuals: parents, teachers, and psychologists (n=590). We considered this target group important for our research because of the framework provided by the psychoeducational paradigm of ADHD, where parents, teachers and

psychologists were representing the main stakeholders of students with ADHD and contribute at the diagnosis process.

The aim of the present dissertation was to investigate the practice of diagnosing ADHD in Bihor County, Romania, using the social constructivism as a framework theory. At the beginning it was needed to investigate the ADHD diagnosis, to identify the core symptoms registered into the medical files, and also to search if there were registered biological causes through neuroimaging investigations, genetic tests, clinic assessments of the cerebral dysfunctions and dysregulations. To achieve this objective, we conducted three different studies; the first two were based on the data analyses registered in 196 medical files of students diagnosed with ADHD at the Municipal Hospital from Oradea, Bihor County, and the third study was based on a semantic analysis of the social representation of ADHD among the stakeholders from Bihor County.

One of the first important findings revealed by **the first study** (1. "The profile of students diagnosed with ADHD in Bihor County. Descriptive data") was that for *more than a quarter of the students diagnosed with ADHD at the Municipal Hospital in Bihor County, their medical file did not register at least one ADHD core symptom, even if the diagnosis and the treatment were established*. This was an intriguing finding, which raised a lot of questions and concerns, because the criteria highlighted by the researchers from the neurobiological field were not respected.

Hynd and Voeller (1991, as cited in Graham, 2010) studied the neurobiological basis of ADHD, and they argued that there is no evidence to support the conclusion that all students with ADHD have symptoms that reflect a neurobiological dysfunction. Our data revealed that few students diagnosed with ADHD illustrated modifications in their electroencephalogram. We collected data from the medical files completed by three different psychiatrists, and one of these psychiatrists did not include the EEG examination for any of the cases. In half of the medical files, we did not find neuroimaging investigations. This means that all information was collected through interviews with parents, direct observation, and psychological assessment, and these were correlated with the criteria of the diagnostic manuals. Wedge (2015) highlighted that in the absence of a consensus among scientists regarding the genetic cause of ADHD, many researchers have started to take a moderate position, considering that the environmental factors do play a significant role.

We emphasized that most of the students diagnosed with ADHD at the Municipal Hospital in Bihor County were males who were living in urban areas, and most of them had

Romanian ethnicity. As Rucklidge (2008) concluded, usually girls are less diagnosed with ADHD than boys. Also, boys are more often hyperactive and/or impulsive compared with girls. From our data, we identified that the combination "hyperactivity + impulsivity" was met for only one girl, meaning that this symptom formula was strongly representative for boys, which supports Rucklidge's statement.

Regarding the consequences of hyperactivity, impulsivity, and inattention, these contribute to impairment in a variety of areas, such as social functioning (Hoza et al., 2005) and academic achievement (Frazier et al., 2007). Most of the students diagnosed with ADHD at the Municipal Hospital registered lacunar knowledge, and they were learning in mainstream schools. From a total of 196 students with ADHD, only 8 subjects with lacunar knowledge level were also diagnosed with learning disabilities. So, for our cases, learning disabilities were not registered as a frequent comorbid disorder for students diagnosed with ADHD.

Research in the field highlighted that a frequent comorbid disorder in ADHD is conduct disorder; between 25% and 45% of children and adolescents with ADHD also present this type of disorder (National Resource Center on ADHD, 2005). Our findings support these statements, because from a total of 196 cases, a quarter of the students also presented conduct disorder, and for 16% of cases emotional disorder was an associated diagnosis. Aggressiveness is the most frequent symptom of conduct disorder and antisocial behavior is predictive for school and social problems (Hinshaw et al., 1992). Considering this, we conducted a detailed analysis regarding this symptom. In our research, *we identified a high frequency of "aggressiveness", as a symptom registered in the medical files of students diagnosed with ADHD.* In a detailed analysis we identified that from the entire group of students diagnosed with ADHD and conduct disorder, for half of them "aggressiveness" was not registered as a symptom.

In 2006, Lloyd et al. conducted a series of studies that indicated a higher prescription of antidepressants in ADHD, an extremely rapid growth in the use of antipsychotics in treating aggression, even when the symptoms appeared in pre-school aged children. Sherman (2015) explored the pharmaceutical market as a cultural product, and emphasized that there is an assumption that pharmaceutical treatments are more effective and with quick effects in treating ADHD, compared to other types of interventions. Analyzing the prescribed treatments for our cases, *we identified that most of the cases (almost 80%) had a prescribed medication treatment (ADHD specific medication or other type of medication).* Nowadays, the prescribed medicine in ADHD is based on

methylphenidate, and marketed as Ritalin, Concerta, Equasym, Medikinet or Rubifen (Lange et al., 2010). In our research, the prescribed medication treatment identified in the medical files included Concerta, Stratera, Timolin, or Medikinet. There were significant differences among the cases without conduct disorder who received medication treatment, compared to those who had conduct disorder and medication. Analyzing emotional disorder as a comorbid disorder for ADHD, we also identified significant differences among students without emotional disorder and medication, compared to those who have emotional disorder and medication. The medication was significantly more often prescribed for cases diagnosed without emotional disorder.

Medication should be prescribed only as a last solution, and it should not be considered a panacea (Batstra et al., 2014). It is recommended for the severe forms of ADHD, and most of all when some detectable abnormality specific to the diagnostic is identified (Cohen, 2006). We wanted to identify how many ADHD core symptoms presented those cases which received treatment based on medication. We established that the majority of the cases had medication prescribed as treatment, and more than half of them had one, two, or three ADHD core symptoms. However, 29% of cases did not have any ADHD core symptoms. Analyzing the medical treatment in these cases, which also registered comorbid disorders, we identified significant more cases without aggressiveness, but receiving medication, compared with those which presented aggressiveness as a symptom. We observed *that the main criteria in prescribing medication was the presence of hyperactivity and/or impulsivity as symptoms*, and not aggressiveness, the conduct disorder or the emotional disorder as associated diagnostics of ADHD. Having almost 30% of students with medication specific to ADHD, but without even one core symptom of ADHD, and considering that the existence of the comorbid disorders was not an important variable, we concluded that the pharmaceutical market has an important influence for our subjects. Timimi and Timimi (2015) emphasized the important impact of pharmaceutical industry in the history of ADHD. The quick fix effects of the medication (also mentioned by Hinshaw & Scheffler, 2014; Sherman, 2015) are an attractive method for the psychiatrists from Bihor County.

We found that most of the students diagnosed with ADHD in our sample were learning in mainstream schools and had lacunar knowledge (which means that their school acquisitions were under the level of criteria required by the curricula). Even so, a small part of students with ADHD followed an adapted curriculum in their mainstream schools, and they were not registered with learning disabilities. This means that most of the students

with ADHD registered poor school acquisition because of other reasons and not because of the existence of learning disorders. As a possible reason, we also analyzed the intelligence level of students with ADHD. We did not have data about the IQ level for all our cases, but for that group with a registered IQ level, we identified that more than half of them did not have mental deficiency, registering scores between a low average and high average level of intelligence. In conclusion, two variables were excluded as determinants of the lacunar knowledge: the presence of the learning disabilities, and/or mental deficiency.

We also collected information about the families of students with ADHD. Rowland et al. (2002) emphasized that the genetic studies on ADHD concluded that this disorder clusters in families. It was established that 34%–40% of the subjects with ADHD reported a family history of ADHD. From our data, not all the psychiatrists registered information about students' family into their medical files. We did not find any genetics information, or something which could help us identify if ADHD clustered from the child's family. *The data registered into the medical files about the families were very few, not well-structured or categorized, and most of all we did not find any information about the possibility of the genetic cause of ADHD.*

From these medical files where we found some data about the families, we collected information about the family type (biological, orphanage, caretaker), parents relationship status, and parents' educational level. Our findings established that most of the students were raised by the biological family, and for almost half of cases, the parents were married. We observed that very few Romani students with ADHD were raised by the biological parents, compared with the Romanian or Hungarian students (these tree ethnicities were identified in medical files).

A large amount of data collected from the medical files of students diagnosed with ADHD at the Municipal Hospital was about their symptoms (how they behave, how they react, information about their knowledge development, which was their emotional state, and how they manage at school). All our findings encouraged us to develop further analyses on the profile of students diagnosed with ADHD in Bihor County, analyzing more closely the symptoms network.

We aimed, in **the second study** (2. “A semantic analysis of ADHD symptoms of diagnosed students in Bihor County”), to establish which were the criteria in diagnosing ADHD in Bihor County taking into consideration the most frequent symptoms presented by students The first step was to establish a glossary of all symptoms registered for our subjects. We identified more descriptions which matched the same symptom. Our glossary

included 34 categories of symptoms. We observed that the *child's behavior* was in the content of many categories of symptoms, for example: “hyperactive behavior,” “aggressive,” “impulsive,” “disturbing the class,” “opposer,” “behavior disorder,” “social exclusion,” “desire for attention,” or “destructive behavior.” Another central concept was the *child's emotions*; the identified categories of symptoms centered on emotions were: “low frustration tolerance,” “emotional issues,” “negativism,” “low motivation,” “sleep disorder,” “somatization,” or “suicide attempt.” We must emphasize that this information was not confirmed through the neuroimaging investigation.

Having a list of 34 symptoms presented by students diagnosed with ADHD, we were able to identify the main criteria in diagnosing this disorder for students from Bihor County, by psychiatrists. We analyzed the frequency of each symptom and the connections between the symptoms for all 196 cases of ADHD. We used Gephi, an open-source software, which allowed us to analyze a network through various algorithms. The graph provided by this software had the density value equal with 0.2. The graph density measures how close the network is to be completed (a complete graph has its density equal to 1). Considering this, our graph had a low density, and this meant that the connections between symptoms had different intensities and not all the symptoms were connected between them. The general image on the symptoms was diverse because of the high number of the symptoms, and the diverse connections established between them.

The core symptoms of ADHD are attention deficit, impulsiveness, and hyperactive behavior. But, *the top three most frequent symptoms identified in the medical files from the Municipal Hospital in Oradea were: “hyperactive behavior” (102 of* students *had this symptom), followed by “low frustration tolerance” (n = 91,) and “aggressive” (n = 78).* Going forward with our analyses, we identified that the “aggressive” symptom had the highest rank, which means that this symptom occupied a central place into our network, provided by its connections with other multiple symptoms. We remember that Drugaș (2015) highlighted that teachers confused ADHD with conduct disorder. It is possible that those students who manifest aggressive behavior to be diagnosed with ADHD, because they create numerous problems for teachers, and they are sent to the psychiatric assessment?

The modularity class process was an algorithm, also provided by Gephi, which helped us to identify how many classes of the symptoms were in our network, considering their importance given by the connections between them. With this process we identified more classes of symptoms. The core symptoms which divided the symptoms in two classes

were “hyperactive behavior” and “low frustration tolerance.” These were connected more often with other specific symptoms. Each class had a different componence, and, in a detailed analysis, we observed that the first class was represented by the “behavioral symptoms,” and the second class was represented by the “emotional symptoms.” Analyzing the condensed network of symptoms through the weighted degree values, we identified a list of 16 symptoms which were considered the most important in these two classes. We must mention that the other 18 symptoms were excluded from our further analyses because they were placed at the extreme edge of the network. We identified that: “hyperactive behavior,” “impulsive,” and “behavior disorder” were very often connected with “aggressive”; the “attention deficit,” “emotional issues,” “opposer,” and “learning difficulties” were very often connected with “hyperactive behavior”; and “low frustration tolerance,” “disturbing the class,” and “negativism” were often connected with “emotional issues.” An interesting finding was that “aggressive” was more often connected to “low frustration tolerance.”

We observed that “low frustration tolerance” was a central symptom of students diagnosed with ADHD at the Municipal Hospital in Oradea. This symptom is considered a central concept in the theory of the Rational Emotional Behavioral Therapy (Trip & Bora, 2011). This concept emphasizes a multidimensional emotional state. The authors presented that this emotional state is related to anger, frustration, and aggressive behavior. So, even if we also identified in our network “aggressive” as a specific/core symptom, we observed that the “low frustration tolerance” appeared as a distinct symptom, even if is not considered a core symptom of ADHD by the neurobiological paradigm. Our data revealed a close connection between “aggressive” and “low frustration tolerance,” as Trip and Bora (2011) emphasized in their article. A few years after we collected data from the medical files, in 2019, Seymour et al. concluded in their research that ADHD is directly linked to low frustration tolerance. It is possible to modify the diagnostic criteria of ADHD through what is more frequent observed in students’ behavior?

Analyzing the condensed network of symptoms (the list of 16 symptoms), *we identified six symptomatic profiles, which had in their centrality the following symptoms: “low frustration tolerance,” “hyperactive behavior,” “disturbing the class,” “aggressive,” “learning difficulties,” and “behavior disorder.”* These symptoms have, as Hinshaw et al. (1992) highlighted, a high degree of predictive value for school and social problems. Analyzing the number of students for whom these profiles were representative, we identified that the higher percentage of students diagnosed with ADHD (29%) were

included in the profile in which the core symptom was “low frustration tolerance,” followed by “hyperactive behavior,” and “disturbing the class,” which included the same, but a smaller percentage of students.

The results obtained so far offered resources for our further analysis, where we investigated the social construct theory in diagnosing ADHD in Bihor County, considering teachers’ and parents’ perspectives. **The third study** (3. “The social representation of ADHD symptoms among the parents', teachers' and psychologist' perception in Bihor County”), our last research from the present thesis, investigated the perception of teachers, parents, and psychologists on ADHD and its core symptoms. Starting with middle school, teachers expect from students to acquire a relatively independent and well-organized behavior in terms of self-management and responsibility. Bradley-Klug & Grier (2000) considered that for students with ADHD, these expectations are extremely challenging and demanding, especially when other disorders coexist (for example, conduct disorder, anxiety, oppositional disorder etc.). The authors highlighted that moderate to severe disciplinary problems can be identified in those students who experience frustration in performing well in school. Demonstrating frequent and intense disciplinary problems, could motivate teachers, parents, and even psychologists to exhort a psychiatric assessment.

By identifying the network of the clinical symptoms registered by the psychiatrists in the medical files of students with ADHD, we aimed, in our last study, to identify the opinions of parents, teachers, and psychologists regarding the most important symptoms manifested by students diagnosed with ADHD. In our investigation we involved a total of 590 participants (parents, teachers, and school psychologists). Starting with the identified list of symptoms obtained after the semantic analysis on medical files from The Municipal Hospital, we constructed a short questionnaire dedicated to parents and specialists, where we also included the list of those 16 symptoms selected from the medical files.

One item from this short questionnaire investigated the main sources accessed by the respondents in finding information about ADHD. We identified that *the most accessed source which provided information about ADHD to parents was the internet, followed by the mass-media.* This finding supports the conclusions of Timimi and Timimi (2015), who pointed out how ADHD was worldwide known through the internet, and it also supports the statement of Lloyd et al. (2006), who considered that the internet facilitated an increasing promotion of ADHD. In the case of teachers and psychologists, the internet occupied only the third place as a source of information about ADHD, being overweighed by “courses” and “other sources—not specified”.

The network constructed through teachers' and psychologists' opinion was condensed to 9 symptoms (from 16), and the network constructed through parents' opinion was constructed around 12 symptoms (from 16), all of these having the eigenvector equal with 1. Comparing the content of the network provided by the parents' opinion, and that one constructed by teachers' and psychologists' opinion, we observed that the "low frustration tolerance" was not included among the most important 9 symptoms in the specialists' network, but the "aggressive" symptom was included in both networks. Different findings were also obtained at the modularity process, considering the networks provided by the parents' and specialists' opinions. The modularity process did not reveal more classes of symptoms into parents' opinion, but for the specialists' network the modularity process identified two different classes: one was focused on the behavioral symptoms, and the second one, on the emotional symptoms. We remember that similar modularity was found for the network provided by the psychiatrists.

Analyzing the top three symptoms provided by three different networks of symptoms (constructed by psychiatrists, parents, teachers, and psychologists) we identified some disparities and a few similarities. *The parents group knew what the internet taught them, namely that core symptoms of ADHD are: "hyperactive behavior," "attention deficit, and "impulsive.* These three symptoms had the highest weighted degree rank in the network provided by the parents' opinion. *Teachers' and psychologists' perception revealed that the top three symptoms were: "attention deficit," "impulsive," and "disturbing the class."* The psychiatrists' registrations into the *medical files emphasized the next top three symptoms: "hyperactive behavior," "low frustration tolerance," and "aggressive."*

Our findings revealed that parents know some general information about ADHD, available on the internet; teachers and psychologists were learning at courses about ADHD but still the core symptoms excluded the "hyperactive behavior," and included the "disturbing the class" symptom; and last but not least, psychiatrists registered three other core symptoms which did not include "attention deficit" or "impulsivity."

The school, the family, the institutions, and the media provide different ways of seeing the world, offering a particular vision of the things around us (Rateau et al., 2011). After a first influence inside the family, our perceptions are shaped by groups, associations, by our contacts and interactions. Our representations are social because of these influences on our perception of reality. Even if not all social groups share the same values, standards, or ideologies, all construct representations are closely based on the external influences.

We remember that Clinard and Meier (2014) described how human behavior is modified according to the demands and expectations of others. Flament (1994) also presented, in an empirical study, that the structural approach emphasize that the representation is considered autonomous, having a central core, and a well-defied structure. The central core gives meaning to the whole representation, and the elements in this central core form a structure which provides a strong sense to the representation. As Moscovici emphasized (1961, as cited in Rateau et al, 2011), it is important to remember that the social representations are not the product of the society as a whole, but the product of the social groups who are building this society. This statement and our findings strongly support the social construct theory as a framework theory to understand the practice of diagnosing ADHD in Bihor County, Romania.

Every culture defines what is considered deviant or abnormal (Wedge, 2015). Considering this, mental health categories are identified for particular people and subgroups of society, at a particular time in history and in a particular place. Because the power and authority of psychiatry has grown in time, it led us to accept easier some diagnoses and diseases, such as ADHD.

Regarding the limits of the present thesis, we should mention that we did not include all the students diagnosed with ADHD in Bihor County, those diagnosed in the private medical system were not included. Our analyses included those cases diagnosed in the Municipal Hospital, between 2008 and 2015. We were not able to complete our data with new cases from that time onward, because there was established a strict private policy about the personal data from the medical records. Another limit was the inequal number of cases diagnosed by the three different psychiatrists who were working at the Municipal Hospital. This was an impediment to analyze the similarities or the disparities between psychiatrists considering the diagnosis practice, or frequency of the ADHD profile established by each one. We obtained a tendency of the disparities, but without the required statistical condition we could not draw any conclusion in this topic. The limit which was identified for the third study refers to the online modality for collecting data from the parents, teachers, and psychologists. Because the third study was realized in the pandemic period, the majority of the responses (but not all) were obtained online, which provided a certain selection of the respondents. Only those parents, teachers, or psychologists who had internet and an account in different social networks were able to participate to our investigation.

Some of these limits can be considered as starting points for further researches. We consider that the present dissertation has an important scientific contribution in supporting

the social construct theories of ADHD (Clinard & Meier, 2014; Mather, 2012; Sherman, 2015; Timimi & Timimi, 2015; Wedge, 2015), with findings based on the reality of students diagnosed with ADHD in Bihor County, in the north-western region of Romania. To continue the research in the field of ADHD using social construct theory as a framework paradigm and to understand the practice of diagnosing ADHD not only in Bihor County, is a pressing need. As Mather (2012, p. 24) proposed almost ten years ago, "a goal of society should be to help others in the rethinking and reframing of ADHD" for the best of students and their families.

REFERENCES

Abikoff, H., Gallagher, R., Wells, K.C., Murray, D.W., Huang, L, Lu, F., & Petkova, E. (2013). Remediating organizational functioning in children with ADHD: Immediate and long-term effects from a randomized controlled trial. *Journal of Consulting and Clinical Psychology*, *81*(1), 113–128. https://doi.org/10.1037/a0029648

Abric, J.C. (1996). Specific processes of social representations. *Papers on Social Representations,* 5(*1*), 77–80. https://psr.iscteiul.pt/index.php/PSR/article/view/211/176

ADDISS, (n.d.). *ADHD: Paying enough attention? A research report investigating ADHD in UK*. http://www.addiss.co.uk/payingenough attention.pdf .

Aim, M.A., Decarsin, T., Bovina, I., & Dany, L. (2018), Health and Social Representations: A structural Approach. *Papers on Social Representations*, *27*(1), 3.1–3.21. https://amu.hal.science/hal-02527771/document

Akers, R.L. (1964). Socio-economic status and delinquent behavior: a retest. *Journal of Research in Crime and Delinquency*, *1*(1), 38–46. https://doi.org/10.1177/002242786400100105

Aman, C.J., Roberts R.J., & Pennington, B.F. (1998). A neuropsychological examination of the underlying deficit in attention deficit hyperactivity disorder: Frontal lobe versus right lobe theories. *Developmental Psychology*, *34*(5). 956–969. https://doi.org/10.1037/0012-1649.34.5.956

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., Text Rev.). Author.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th *ed*.). www.psychiatry.org

American Psychiatric Association. (2022). *Diagnostic and statistical manual of mental disorders* (5th ed., Text Rev.). https://doi.org/10.1176/appi.books.9780890425787

Anderson, D.L., Watt, S.E., Noble, W., & Shanley, D.C. (2012). Knowledge of attention deficit hyperactivity disorder (ADHD) and attitudes toward teaching children with ADHD: The role of teaching experience. *Psychology in the Schools*, *49*(6). 511–525. https://doi.org/10.1002/pits.21617

Armstrong, F., Armstrong, D., & Barton, L. (Eds.) (2000). *Inclusive education: Policy, context and comparative perspectives*. David Fulton Publisher.

Armstrong, T. (1999). *ADD/ADHD alternatives in classroom*. Association for Supervision and Curriculum Development.

Ballard, K. (1999). International voices: An introduction. In K. Ballard (Ed.). *Inclusive education: International voices on disability and justice* (pp. 1–10). Falmer Press.

Barkley, R.A. (1997). Behavioral inhibition, sustained attention, and executive functions: Constructing a unifying theory of ADHD. *Psychological Bulletin*, *121*, 65–94. https://doi.org/10.1037/0033-2909.121.1.65

Barkley, R.A. (2002). Psychosocial treatments for attention-deficit/ hyperactivity disorder in children. *Journal of Clinical Psychiatry*, *63*, 36–43. Psychosocial Treatments for Attention-Deficit/Hyperactivity Disorder in Children (psychiatrist.com)

Barkley, R.A. (2006). History. In: R.A., Barkley (Ed.), *Attention-Deficit Hyperactivity Disorder: A Handbook for Diagnoses and Treatment* (3rd ed.), (pp. 3–76). The Guilford Press.

Barkley, R.A. (2007). School interventions for Attention Deficit Hyperactivity -Disorder: Where to from here? *School Psychology Review*, *36*(2), 279–286. https://doi.org/10.1080/02796015.2007.12087945

Barkley, R.A., Edwards, G., Laneri, M., Fletcher, K., & Metevia, L. (2001). The efficacy of problem-solving communication training alone, behavior management training alone, and their combination for parent-adolescent conflict in teenagers with ADHD and ODD. *Journal of Consulting and Clinical Psychology*, *69*(6), 926–941. https://doi.org/10.1037/0022-006X.69.6.926

Bastian, M., Heymann, S., & Jacomy, M. (2009). Gephi: An open source software for exploring and manipulating networks. *International AAAI Conference on Weblogs and Social Media*. https://gephi.org/publications/gephi-bastian-feb09.pdf

Batstra, L., Neiweg, E.H., & Hadders-Algra, M. (2014). Exploring five common assumptions on attention deficit hyperactivity disorder. *Acta Paediatrica*, *103*(7), 696–700. https://doi.org/10.1111/apa.12642

Baughman, F.A., Jr., & Hovey, C. (2006). *The ADHD fraud: How psychiatry makes "patients" of normal children*. Trafford Pub.

Bayard, F., Nymberg Thunell, C., Abé, C., Almeida, R., Banaschewski, T., Barker, G., Bokde, A.L.W, Bromberg, U., Büchel, Ch., Burke Quinlan, E., Desrivières, S., Flor, H., Frouin, V., Garavan, H., Gowland, P., Heinz, A., Ittermann, B., Martinot,

J-L., Paillère Martinot, M-L., Nees, F., Papadopoulos Orfanos, D., Paus, T., Poustka, L., Conrod, P., the IMAGEN Consortium. (2020). Distinct brain structure and behavior related to ADHD and conduct disorder traits. *Molecular Psychiatry*, *25*, 3020–3033. https://doi.org/10.1038/s41380-018-0202-6

Berger, P.L., & Luckmann, T. (1967). *The Social Construction of Reality: A Treatise in the Sociology of Knowledge*. Penguin Books.

Bernburg, J.G. (2009). Labeling theory. In Marvin D. Krohn, Alan Lizotte, and Gina Penly Hall (Eds.), *Handbook on Crime and Deviance.* (pp. 187–207). Springer Science + Business Media.

Bilbow, A. (2011). The reality of living with ADHD. *Revista de Psihologie Şcolară*, *4*(7), 54–58. https://www.ceeol.com/search/journal-detail?id=601

Bloomquist, M.L., August, G.J., & Ostrander, R. (1991). Effects of school-based cognitive-behavioral intervention for ADHD children. *Journal of Abnormal Child Psychology, 19*, 591–605, https://doi.org/10.1007/BF00925822 .

Blumer, H. (1969). *Symbolic interactionism: Perspective and method*. Los Angeles: University of California Press.

Bogas, S.M. (1993). An integrative treatment model for children's attentional and learning problems. *Family Systems Medicine*, *11*(4), 385-396, https://doi.org/10.1037/h0089024

Bolocan, M., (2017). *ADHD: Diagnostic și tratament*, https://www.reginamaria.ro/articole-medicale/adhd-diagnostic-si-tratament

Bonchiș, E., (2021). *Generația Z*, Iași, Editura Polirom. https://cdn4.libris.ro/userdocspdf/1264/Generatia%20Z%20-%20Elena%20Bonchis.pdf

Bourdieu, P., (1987). What makes a social class? On the theoretical and practical existence of groups, *Berkeley Journal of Sociology*, *32*, 1–17. https://www.jstor.org/stable/41035356

Bradley-Klug, K.L., & Grier, J.E.C. (2000). Adolescent and their families: Coping with ADHD. *School Psychology Quarterly*, *15*(4), 480–485, https://doi.org/10.1037/h0088803

Brent, E., & Lewis, J.S. (2014). *Learning Sociology*. Jones & Bartlett Learning.

Brossard, B., & Carpentier, N. (2016). To what extent does diagnosis matter? Dementia diagnosis, trouble interpretation and caregiving network dynamics. *Sociology of Health and Illness*, 1–15. https://doi.org/10.1111/1467-9566.12501

Brown, P. (1995). Naming and framing: The social construction of diagnosis and illness. *Journal of Health and Social Behavior*, *35*, 34–52. https://doi.org/10.2307/2626956

Brown, R.T., & La Rosa, A. (2002). Recent developments in the Pharmacotherapy of Attention-Deficit/Hyperactivity Disorder (ADHD). *Professional Psychology: Research and Practice*, *33*(6), 591–595. https://doi.org/10.1037/0735-7028.33.6.591 .

Brown, R.T., Amler, R.W., Freeman, W.S., Perrin, J.M., Stein, M.T., Pierce, K., & Wolraich, M.L. (2005). Treatment of Attention Deficit/Hyperactivity Disorder: Overview of the evidence. *Pediatrics*, *115*(6), 749–757. https://doi.org/10.1542/peds.2004-2560 .

Brown, T.E., Reichel, P.C., & Quinlan, D.M. (2011). Executive function impairments in high IQ children and adolescents with ADHD. *Open Journal of Psychiatry*, *1*, 56–65. DOI: 10.4236/ojpsych.2011.12009. http://www.scirp.org/journal/OJPsych

Carter, M.J., & Fuller, C. (2015). Symbolic interactionism. *Sociopedia.isa*, *1*(1), 1–17. https://www.researchgate.net/publication/303056565

Chan, R.C.K., Shum, D., Toulopoulou, T., & Chen, E.Y.H. (2008). Assessment of executive functions: Review of instruments and identification of critical issues. *Archives of Clinical Neuropsychology*, *23*(2), 201–216. https://doi.org/10.1016/j.acn.2007.08.010

Chang, W-P, Davies, P.L., & Gavin, W.J. (2009). Error monitoring in college students with Attention Deficit/Hyperactivity Disorder. *Journal of Psychophysiology*, *23*(3), 113–125. https://doi.org/10.1027/0269-8803.23.3.113

Charland, L.C. (2004). A madness for identity: Psychiatric labels, consumer autonomy, and the perils of the internet. *Philosophy, Psychiatry, & Psychology*, *11*(4), 335–349. https://www.researchgate.net/publication/236728645

Ciulac, A. (2012). *Oile negre din scoli. Copiilor cu ADHD li se refuza dreptul la educație*. https://evz.ro/oile-negre-din-coli-copiilor-cu-adhd-li-se-refuz-dreptul-la-educaie-1005877.html

Claridge, T. (2015). Bourdieu on social capital—theory of capital. *Social capital Research*. https://www.socialcapitalresearch.com/bourdieu-on-social-capital-theory-of-capital/.

Clarke, J.N. (1981). A multiple paradigm approach to the sociology of medicine, health and illness. *Sociology of Health and Illness*, *3*(1), 89–103. https://doi.org/10.1111/1467-9566.ep11343673

Clinard, M.B., & Meier, R.B. (2014). *Sociology of defiant behavior* (15th ed.). Cengage Learning.

Cohen, D. (2006). Critiques of "ADHD" enterprise. In: G. Lloyd, J. Stead, & D. Cohen, (Eds.). *Critical new perspectives on ADHD*, (12–33). Routledge Taylor and Francis Group Press.

Conners, C.K. (1998). Overview of Attention Deficit Hyperactivity Disorder. *NIH Consensus Development Conference on Diagnosis and Treatment of Attention Deficit hyperactivity Disorder*. (pp. 21–24). November 16–18, 1998, William H. Natcher Conference Center National Institutes of Health Bethesda, Maryland.

Conrad, P. (1992). Medicalization and social control. *Annual Revie of Sociology*, *18*(1), 209– 232. https://doi.org/10.1146/annurev.so.18.080192.001233

Crone, E.A., Jennings, J.R., & van der Molen, M.W. (2003). Sensitivity to interference and response contingencies in Attention-Deficit/Hyperactivity Disorder. *Journal of Child Psychology and Psychiatry*, *44*(2), 214–226. https://doi.org/10.1111/1469-7610.00115.

Csépes, I., & Drugaş, I. (2014). Impulsivity, hyperactivity, and attention deficit in terms of individual learner differences. *Romanian Journal of School Psychology*, *7*(13), 59–77. https://www.ceeol.com/search/article-detail?id=204422

Daley, D., & Birchwood, J. (2010). ADHD and academic performance: Why does ADHD impact on academic performance and what can be done to support ADHD children in the classroom? *Child: Care, Health and Development*, *36*(4), 455–464. https://doi.org/10.1111/j.1365-2214.2009.01046.x

Daly, B.P., Creed, T., Xanthopoulos, M., & Brown, R.T. (2007). Psychosocial treatments for children with attention deficit/hyperactivity disorder. *Neuropsychological Review*, *17*, 73–89. https://doi.org/10.1007/s11065-006-9018-2

Demontis, D., Walters, G.B., Athanasiadis, G. et al, (2023). Genome-wide analyses of ADHD identify 27 risk loci, refine the genetic architecture and implicate several cognitive domains. *Nature Genetics*, *55*, 198–208. https://doi.org/10.1038/s41588-022-01285-8

DiMaio, S., Grizenko, N., & Joober, R., (2003). Dopamine genes and attention-deficit hyperactivity disorder: a review. *Journal of Psychiatry & Neuroscience*, *28*(1), 27–38. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC161723/

Dindelegan, M.C., (2011). Tulburările psihice ale copilului în raport cu influenţele familiale. In E. Bonchiş (coord.). *Familia şi rolul ei în educarea copilului*, (pp.

207–250). Editura Polirom. pdfcoffee.com_e-bonchis-coord-familia-si-rolul-ei-in-educarea-copilului-2011-pdf-free.pdf

Dobrescu, I. (2010). *Manual de psihiatrie a copilului şi adolescentului*. Editura Infomedica.

Douglas, V.I. (2004). Cognitive deficits in children with attention deficit/hyperactivity disorder: A long term follow-up. *Canadian Psychology, 46*(1), 23–31. https://doi.org/10.1037/h0085821

Drugaș, I. (2015). Teachers' perception about the inclusive education and Attention Deficit Hyperactivity Disorder: Comparison between northwest and southeast Romanian teachers. *Hungarian Educational Research Journal, 5*(2), 29–48, DOI: 10.14413/herj.2015.02.03. https://dea.lib.unideb.hu/server/api/core/bitstreams/38dc71fd-0831-4977-9f1b-f91692b270f6/content

Drugaș, I. (2016). Emotional consciousness at children with ADHD. *Nagyerdei Almanach, 1.6.évf.12,* 49–60. https://nagyalma.hu/container/volume/2016/161.03_DI_49-60p.pdf

Drugaș, I. (2021). ADHD și generația Z. Întrebări și răspunsuri. In Elena Bonchiș (Coord.), *Generația Z,* (pp.331–352). Editura Polirom.

Drugaș, I., & Drugaș, M., (2015), Teacher's education for the inclusion of children with ADHD into mainstream schools. *Romanian Journal of School Psychology*, *8*(15), 50–61. https://www.researchgate.net/publication/351746411

Drugaș, I., & Drugaș, M. (2016). Attention deficit/hyperactivity disorder as a social construct. Some thoughts concerning education. *Romanian Journal of School Psychology, 9*(17), 57–67. https://www.researchgate.net/publication/351746500

Drugaș, I, Hatos, A., & Drugaș, M. (2021). The Profile of Children Diagnosed with ADHD in Bihor County. Descriptive Data. *Central European Journal of Educational Research*. *3*(1), 98–111. https://doi.org/10.37441/cejer/2021/3/1/9356

Drugaș, M., & Drugaș, I. (2010). The therapeutic story: A means of reducing aggressive behavior in hearing impaired children with ADHD. *Analele Universităţii de Oradea, Fascicula Psihologie, 18,* 105–119. https://socioumane.uoradea.ro/vechi/socioumane.ro/blog/fasciculapsihologie/files/2010/11/Drugas-and-Drugas.pdf

Drugaș, M., & Drugaș, I. (2013). Therapeutic interventions in ADHD. A training need analysis for Psychology students. *Romanian Journal of School Psychology*, *6*(11), 69–81. https://www.researchgate.net/publication/351746509

DSM IV TR *Manualul de Diagnostic şi Statistică a Tulburărilor Mentale, Ediţia a IV- a Revizuită.* (2003). Asociaţia Psihiatrilor Liberi din România.

DuPaul, G.J. (2007). School-based interventions for students with attention deficit hyperactivity disorder: current status and future directions. *School Psychology Review*, *36*(2), 183–194. https://doi.org/10.1080/02796015.2007.12087939

DuPaul, G.J., & Stoner, G. (2003). *ADHD in the schools: Assessment and intervention strategies* (2nd ed.). The Guilford Press.

DuPaul, G.J., & Volpe, R.J. (2009). ADHD and learning disabilities: Research findings and clinical implications. *Current Attention Disorders Reports*, *1*, 152–155. https://doi.org/10.1007/s12618-009-0021-4

DuPaul, G.J., Ervin, R.A., Hook C.L., & McGoey, K.E. (1998). Peer tutoring for children with Attention Deficit Hyperactivity Disorder: Effects on classroom behavior and academic performance. *Journal of Applied Behavior Analysis*, *31*, 579–592, https://doi.org/10.1901/jaba.1998.31-579

DuPaul, G.J., Jitendra, A.K., Tresco, K.E., Vile Junod, R.E., Volpe, R.J., & Lutz, J.G. (2006a). Children with Attention Deficit hyperactivity Disorder: Are there gender differences in school functioning? *School Psychology Review*, *35*(2), 292–308, https://doi.org/10.1080/02796015.2006.12087993

DuPaul, G.J., Jitendra, A.K., Volpe, R.J., Tresco, K.E., Lutz, J.G., Vile Junod, R.E., Cleary, K.S., Flammer, L.M., & Mannella, M.C. (2006b). Consultation-based academic interventions for children with ADHD: Effects on reading and mathematics achievements. *Journal of Abnormal Child Psychology*, *34*, 633–646. DOI: 10.1007/s10802-006-9046-7 https://www.researchgate.net/publication/6766121

DuPaul, G.J., McGoey, K.E., Eckert, T.L., & VanBrakle, J. (2001). Preschool children with attention-deficit/hyperactivity disorder: impairments in behavioral, social, and school functioning. *Journal of American Academy of Child & Adolescent Psychiatry*, *40*(5), 508–515. https://doi.org/10.1097/00004583-200105000-00009

Eddy, E. (2012). *On the involvement of cognitive processes in the acquisition of English grammar by Slovak learners*. Prešovská univerzita v Prešove.

Edmunds, D.L. (2011). So, they say my child has ADHD: Debunking the bio-psychiatric paradigm. *4th Annual Alternative Education Resources Conference, June 2007, Russell Sage College-Troy, NY*. https://books.google.ro/books?id=LeTdAgAAQBAJ&pg=PA26&dq=thomas+szasz+ADHD&hl=ro&sa=X&ved=0ahUKEwj5h52-3ebMAhXKVhQKHVrHCO4Q6AEIUDAH#v=onepage&q=thomas%20szasz%20ADHD&f=false

Fabiano, G.A. (2007). Father participation in behavioral parent training for ADHD: Review and recommendations for increasing inclusion and engagement. *Journal of Family Psychology*, *21*(4). 683–693. https://doi.org/10.1037/0893-3200.21.4.683

Fedor, C.G. (2015). Current issues on social representations. *Analele Științifice ale Universității "Alexandru Ioan Cuza" din Iași. Sociologie și Asistență Socială*, *8*(1), 35–46.

Feng, R., & Chen, H. (2009). An analysis on the importance of the motivation and strategy in postgraduates English acquisition. *English Language Teaching*, *2*(3), 93–97. https://www.researchgate.net/publication/42386378

Fewell, R.R., & Deutscher, B., (2002). Attention Deficit Hyperactivity Disorder in Very Young Children: Early Signs and Interventions. *Infants & Young Children: An Interdisciplinary Journal of Special Care Practices*, *14*(3), 24–32. https://sites.pitt.edu/~bertsch/Fewell&Deutscher.pdf

Flament, C. (1994), Consensus, salience and necessity in social representations - technical note. *Papers in Social Representations*, *3*(2), 1–9. https://www.researchgate.net/publication/255609215

Frazier, T.W., Youngstrom, E.A., Glutting, J.J., & Watkins, M.W. (2007). ADHD and achievement: Meta-analysis of the child, adolescent, and adult literatures and a concomitant study with college students. *Journal of Learning Disabilities*, *40*, 49–65. https://doi.org/10.1177/00222194070400010401 .

Garfinkel, H. (1967). *Studies in ethnomethodology*. Prentice-Hall, Inc.

Gherguț, A. (2011). National Policies on Education and Strategies fro Inclusion; Case Study – Romania, *Procedia - Social and Behavioral Sciences*, *29*, 1693 – 1700.

Gherguț, A. (2020). School Inclusion and Education of Children with Special Needs in Romanian Educational System; Analitical Study. *Journal Plus Education*, *XXV* (1), 68-79.

Gilmore, K. (2000). A psychoanalytic perspective on Attention-Deficit/Hyperactivity Disorder. *Journal of the American Psychoanalytic Association*, *48*, 1259–1293, https://doi.org/10.1177/00030651000480040901

Goode, D. (2003). Ethnomethodology and disability studies: A reflection on Robillard. *Human studies*, *26*(4), 493–503. https://doi.org/10.1023/B:HUMA.0000003721.39348.23

Gottschalk, F. (2019). Impacts of technology use on children: Exploring literature on the brain, cognition and well-being, *Organization for Economic Co-operation and Development*, *195*. https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=EDU/WKP%282019%293&docLanguage=En

Graham, L.J. (2010). *(De)Constructing ADHD. Critical guidance for teachers and teacher educators*. Peter Lang Publishing, Inc.

Grandjean, M. (2015). *GEPHI: Introduction to network analysis and visualization.* https://serval.unil.ch/resource/serval:BIB_0F0EB41780EB.P001/REF.pdf

Gregg, S. (1995). ADHD – Building academic success. Policy briefs. *Appalachia Educational Laboratory*, 2–12. http://files.eric.ed.gov/fulltext/ED399729.pdf

Grémion, P. (2005). From Pierre Bourdieu to Bordieu. *Études*, *402*(1), 39–53. https://doi.org/10.3917/etu.021.0039

Gulliford, R., & Upton, G. (Eds.). (1992). *Special Educational Needs*. Routledge. http://dx.doi.org/10.4324/9780203312551

Hacking, I. (2000). *The social construction of what?* Harvard University Press.

Hansson Halleröd, S.L., Anckarsäter, H., Råstam, M. et al. (2015). Experienced consequences of being diagnosed with ADHD as an adult—a qualitative study. *BMC Psychiatry 15*(31). https://doi.org/10.1186/s12888-015-0410-4

Harris, K.R., Friedlander, B.D., Saddler, B., Frizzelle, R., & Graham, S. (2005). Self-monitoring of attention versus self-monitoring of academic performance: Effects among students with ADHD in the general education classroom. *Journal of Special Education*, *39*(5), 145–157. https://doi.org/10.1177/00224669050390030201 .

Hatos, A., (2006). *Sociologia educației*. Editura Polirom.

Hawthorne, S.C.C. (2013). *Accidental intolerance. How we stigmatize ADHD and how we can stop*. Oxford University Press.

Hinshaw, S.P., & Scheffler, R.M. (2014). *The ADHD explosion. Myths, medication, money, and today`s push for performance*. Oxford University Press.

Hinshaw, S.P., Heller, T., & McHale, J.P. (1992). Convert antisocial behavior in boys with Attention-Deficit Hyperactivity Disorder: External validation and effects of methylphenidate. *Journal of Consulting and Clinical Psychology*, *60*(2), 274–281, https://doi.org/10.1037/0022-006X.60.2.274

Hinshaw, S.P., Henker, B., Whalen, C.K., Erhardt, D., & Dunnington Jr., R.E. (1989). Aggressive, prosocial, and nonsocial behavior in hyperactive boys: Dose effects of methylphenidate in naturalistic settings. *Journal of Consulting and Clinical Psychology*, *57*(5), 636–643. https://doi.org/10.1037/0022-006X.57.5.636

Hoff, K.E., & DuPaul, G.J. (1998). Reducing disruptive behavior in general education classrooms: The use of self-management strategies. *School Psychology Review*, *27*, 290–303. https://doi.org/10.1080/02796015.1998.12085916

Horwitz, A.V. (1999), The social study of mental illness. In: Carol Aneshensel, and Jo Phelan, *Handbook of the sociology of mental health*, (pp. 57–78). Springer science + Business media.

Hoza, B., Gerdes, A.C., Hinshaw, S.P., Arnold, L.E., Pelham Jr. W.E., Molina, B.S.G., Abikoff, H.B. et al (2004). Self-perception of competence in children with ADHD and comparison children. *Journal of Consulting and Clinical Psychology*, *72*(3), 382–391. https://doi.org/10.1037/0022-006X.72.3.382 .

Hoza, B., Gerdes, A.C., Mrug, S., Hinshaw, S.P., Bukowski, W.M., Gold, J.A., Arnold, L.E. et al (2005). Peer-assessed outcomes in the multimodal treatment study of children with attention-deficit hyperactivity disorder. *Journal of Clinical Child & Adolescent Psychology*, *34*, 74–86, https://doi.org/10.1207/s15374424jccp3401_7

Hurd, S. (2006). Individual learner differences and distance language learning: an overview. *RTVU ELT Express*, *12*(4). http://oro.open.ac.uk/6002/1/IndLearnDiffsDLL-100206.pdf

Hutson, D.J. (2015). *Sociology of diagnosis*. Introduction: Looking within from without. http://dx.doi.org/10.1108/S1057-6290(2011)0000012005

Iancu, M. (2007), Tulburarea hiperactivitate/deficit de atentie (ADHD) la copii (II). *Revista Romana de Pediatrie*. https://www.emcb.ro/article.php?story=20070912150029779

Jackson, J.E. (2005). Stigma, liminality, and chronic pain: Mind-body borderlands. *American ethnologist*, *32*(3), 332–353. https://doi.org/10.1525/ae.2005.32.3.332

Jarrett, M.A. (2013). Treatment of comorbid attention-deficit/hyperactivity disorder and anxiety in children: Processes of change. *Psychological Assessment*, *25*(2), 545–555. https://doi.org/10.1037/a0031749

Johansen, E.B., Killeen, P.R., Russell, V.A., Tripp, G., Wickens, J.R., Tannock, R., Williams, J., & Sagvolden, T. (2009). Origins of altered reinforcement effects in ADHD. *Behavioral and Brain Function*, *5*(1). https://doi.org/10.1186/1744-9081-5-7

Johnston, C., & Leung, D.W. (2001). Effects of medication, behavioral, and combine treatments on parents' and children's attributions for behavior of children with Attention-Deficit Hyperactivity Disorder. *Journal of Consulting and Clinical Psychology*, *69*(1), 67–76. https://doi.org/10.1037/0022-006X.69.1.67

Jones, J.D. (2002). Plea for a measure of understanding: The importance of intensive psychotherapy in the treatment of children with ADHD. *Psychotherapy: Theory/Research/Practice/Training*, *39*(1), 12–20. https://doi.org/10.1037/0033-3204.39.1.12

Jutel, A.G. (2009). Sociology of diagnosis: a preliminary review. *Sociology of Health and Illness*, *31*(2), 278–299. https://www.researchgate.net/publication/24018904

Jutel, A.G. (2011). *Put a name on it. Diagnosis in contemporary society*. Johns Hopkins University Press.

Jutel, A. G. (2015). Beyond the sociology of diagnosis. *Sociology Compass*, *9*(9). 841–852. https://doi.org/10.1111/soc4.12296

Jutel, A.G. & Nettleton, S. (2011). Toward a sociology of diagnosis: Reflections and opportunities. *Social sciences and medicine, 73*, 793–800. https://doi.org/10.1016/j.socscimed.2011.07.014

Kaduson, H.G., & Finnerty, K. (1995). Self-control game interventions for attention-deficit hyperactivity disorder. *International Journal of Play Therapy*, *2*(4), 15–29. https://doi.org/10.1037/h0089359

Kanhere, M, (2024). *Global ADHD drugs market report 2024*. https://www.cognitivemarketresearch.com/attention-deficit-hyperactivity-disorder--adhd--drug-market-report

Kantini, E., Cassaday, H.J., Batty, M.J., Hollis, C., & Jackson, G.M. (2011). Associative learning in ADHD: Improved expression under methylphenidate. *Open Journal of Psychiatry, 1*, 20–29. DOI: 10.4236/ojpsych.2011.12004. https://www.scirp.org/pdf/OJPsych20110200003_88884219.pdf

Kern, A., & Seabi, J. (2008). Educators' perceptions of attention deficit hyperactivity disorder: An exploratory study. *Journal of Psychology in Africa*, *18*(4), 641–644. https://doi.org/10.1080/14330237.2008.10820246

Klein, H.A., & Ballantine, J.H. (1990). Children's temperament: patterns across cultures. *Journal of Research in Childhood Education*, *6*(1), 47–53. https://doi.org/10.1080/02568549109594821

Kousgaard, S.J., Boldsen, S.K., Mohr-Jensen, C., & Lauritsen M.B., (2018). The effect of having a child with ADHD or ASD on family separation. *Social Psychiatry and Psychiatric Epidemiology*, *53*, 1391–1399. https://doi.org/10.1007/s00127-018-1585-z

Kuhn, T. (2008). *Structura revoluțiilor științifice*. Humanitas.

Lakoff, A. (2000). Adaptive will: The evolution of Attention Deficit Disorder. *Journal of History of the Behavioral Sciences*, *36*(2), 149–169. https://doi.org/10.1002/(SICI)1520-6696(200021)36:2<149::AID-JHBS3>3.0.CO;2-9

Lange, K.W., Reichl, S., Lange, K.M., Tucha, L., & Tucha, O. (2010). The history of attention deficit hyperactivity disorder. *Attention Deficit and Hyperactivity Disorders*, *2*(4). 241–255. https://doi.org/10.1007/s12402-010-0045-8

Laszlo, J. (1997). Narrative organization of social representations. *Papers on Social Representations*, *6*(2), 155–172. https://www.researchgate.net/publication/251796130

Leyton, D. (2014). Social structure, its epistemological use, and the construction of the subject in Bourdieu's sociology. *Universum*, *2*(29), 169–183. http://dx.doi.org/10.4067/S0718-23762014000200012

Levy, F. (2014). DSM-5, ICD-11, RDoC and ADHD diagnosis. *Australian & New Zealand Journal of Psychiatry*, *48*(12), 1163–1164. https://doi.org/10.1177/0004867414557527

Levy, F., Hay, D.A., Bennet, K.S., & McStephen, M. (2005). Gender differences in ADHD subtype comorbidity. *Journal of the American Academy of Child & Adolescent Psychiatry*, *44*(4), 368–376. https://doi.org/10.1097/01.chi.0000153232.64968.c1

Lindsay, G. (2003). Inclusive education: a critical perspective. *British Journal of Special Education*, *10*(1), 3–12. http://dx.doi.org/10.1111/1467-8527.00275

Linstead, S. (2006). Ethnomethodology and sociology: an introduction. *The Sociological Review*, *54*(3), 399–404. https://doi.org/10.1111/j.1467-954X.2006.00622.x

Lloyd, G., Stead, J., & Cohen, D. (2006). *Critical new perspectives on ADHD*. Routledge Taylor and Francis Group Press.

Loe, I.M. & Feldman, H.M. (2007). Academic and educational outcomes of children with ADHD. *Journal of Pediatric Psychology*, *32*(6), 643–654. https://doi.org/10.1093/jpepsy/jsl054

Lorch, E.P., Milich, R., Astrin, C., & Berthiaume, K.S. (2006). Cognitive engagement and story comprehension in typically developing children and children with ADHD from preschool through elementary school. *Developmental Psychology*, *42*(6), 1206–1219. https://doi.org/10.1037/0012-1649.42.6.1206

Lynch, M. (1993). *Scientific practice and ordinary action. Ethnomethodology and social studies of science*. Cambridge University Press.

Macbeth, D. (2010). Ethnomethodology in education research. *International Encyclopedia of Education*, *6*, 392–400. https://doi.org/10.1016/B978-0-08-044894-7.01538-4

Mann, E.M., Ikeda, Y., Mueller, C.W., Takahashi, A., Tao, K.T., Humris, E., Li, B.L., & Chin, D. (1992). Cross-cultural differences in rating hyperactive-disruptive behaviors in children. *American Journal of Psychiatry*, *149*, 1539-1542, https://doi.org/10.1176/ajp.149.11.1539

Mather, B.A. (2012). The social construction and reframing of Attention Deficit/Hyperactivity Disorder. *Ethical Human Psychology and Psychiatry*, *14*(1), 15–26. https://doi.org/10.1891/1559-4343.14.1.15

McGoey, K.E., Eckert, L.T., & DuPaul, G.J. (2002). Early intervention for preschool-age children with ADHD: A literature review. *Emotional Behaviour Disorders*. *10*, 14-28, https://doi.org/10.1177/106342660201000103

Melby-Lervåg, M., & Hulme, C. (2013). Is working memory training effective? A meta-analytic review. *Developmental Psychology*, *49*(2), 270–291. https://doi.org/10.1037/a0028228

Miranda, A., Presentación, M.J., & Soriano, M. (2002). Effectiveness of a school-based multicomponent program for the treatment of children with ADHD. *Journal of Learning Disabilities*, *35*(6), 547–563. https://doi.org/10.1177/00222194020350060601

Mittler, P. (2000). *Working towards inclusive education: Social contexts*. David Fulton Publisher.

Mulhern, P. (2003). Competing values, policy ambiguity: A study of mainstream primary teachers' view of 'inclusive education'. *The Journal of Doctoral Research in Education, 3*(1), 5–10. https://www.educatejournal.org/index.php/educate/article/view/26

Nash, R. (2003). Pierre Bourdieu: The craft of sociology, In: M.A. Peters, M. Olssen, & C. Lankshear, (Eds.), *Futures of Critical Theory: Dreams of difference*, (pp. 187–196), Rowman & Littlefield Publisher Inc.

National Institute of Mental Health. (n.d.). Research domain criteria (RDoC). https://www.nimh.nih.gov/research/research-funded-by-nimh/rdoc

Neculau, A. (1996), Reprezentări sociale – dezvoltări actuale, In A. Neculau (Coord.), *Psihologie socială. Aspecte contemporane*, (pp. 34–51). Editura Polirom.

Neef, N.A., & Lutz, M.N. (2001). Assessment of variables affecting choice and application to classroom interventions. *School Psychology Quarterly, 16*(3). 239–252. https://doi.org/10.1521/scpq.16.3.239.19887

Northup, J., Gulley, V., Edwards, S., & Fountain, L. (2001). The effects of Methylphenidate in the classroom: What dosage, from which children, for what problems? *School Psychology Quarterly, 16*(6), 303–323. https://doi.org/10.1521/scpq.16.3.303.19890 .

National Resource Center on ADHD. (2005). *What we know: ADHD and co-existing conditions*. https://www.miottawa.org/Health/CMH/pdf/brains/Attention%20and%20Executive%20Function/ADHD%20Resources/ADHD%20and%20Disruptive%20Behavior%20Disorders.pdf

OECD, 2006. *Education Policies for Students at Risk and those with Disabilities in South Eastern Europe*, Organisation for Economic Co-operation and Development Publishing.

Ohan, J.L, Cormier, N., Hepp, Sh.L., Visser, T.A.W., & Strain, M.C. (2008). Does knowledge about Attention-Deficit/Hyperactivity Disorder impact teachers' reported behaviors and perceptions? *School Psychology Quarterly, 23*(3), 436–449, https://doi.org/10.1037/1045-3830.23.3.436

Pelham, W.E., Hoza, B., Pilow, D.R., Gnagy, E.M., Kipp, H.L., Greiner, A.R., Waschbusch, D.A et. al. (2002). Effects of Methylphenidate and expectancy on

children with ADHD: Behavior, academic performance, and attributions in a summer treatment program and regular classroom settings. *Journal of Consulting and Clinical Psychology*, *70*(2), 320–335. https://doi.org/10.1037/0022-006X.70.2.320

Pelham, W.E., McBurnett, K., Harper, G.W., Milich, R., Murphy, D.A., Clinton, J., & Thiele, C. (1990). Methylphenidate and baseball playing in ADHD children: Who's on first? *Journal of Consulting and Clinical Psychology*, *58*(1), 130–133. https://doi.org/10.1037/0022-006X.58.1.130

Perold, M., Louw, C., & Kleynhans, S. (2010). Primary school teachers' knowledge and misperceptions of attention deficit hyperactivity disorder (ADHD). *South African Journal of Education*, *30*(3), 457-473, DOI: 10.15700/saje.v30n3a364. https://www.ajol.info/index.php/saje/article/view/60041

Pfiffner, L., DuPaul, G.J., & Barkley, R. (2006). Treatment of ADHD in school settings. In R.A. Barkley (Ed.), *Attention-Deficit Hyperactivity Disorder* (3rd ed.) (pp. 547–589). The Guilford Press.

Phelan, T.W (2003). *1-2-3 Magic: Effective discipline for children 2–12* (3rd ed.). Parent Magic, Inc.

Pickering, N. (2005). *The metaphor of mental illness. International perspectives in philosophy and psychiatry*. Oxford: University Press.

Pickersgill, M.D. (2014). Debating DSM-5: Diagnosis and the sociology of critique. *Journal of Medical Ethics*, *40*(8), 521–525. https://doi.org/10.1136/medethics-2013-101762

Polanczyk G., de Lima M.S., Horta B.L., Biederman J., & Rohde L.A. (2007). The worldwide prevalence of ADHD: A systematic review and metaregression analysis. *American Journal of Psychiatry*, *164*(6), 942–948. https://doi.org/10.1176/ajp.2007.164.6.942

Popescu, V. (2008) Deficitul de atentie si tulburarile hiperkinetice (ADHD) - Tratament. *Revista Română de Pediatrie*, *LVII* (2), 137–142. https://rjp.com.ro/articles/2008.2/RJP_2008_2_Art-12.pdf

Power, T.J., Mautone, J.A., Soffer, S.L., Clarke, A.T., Marshall, S.A, Sharman, J., Blum, N.J., et al (2012). A family-school intervention for children with ADHD: Results of a randomized clinical trial. *Journal of Consulting and Clinical Psychology*, *80*(4), 611–623. https://doi.org/10.1037/a0028188

Purper-Ouakil, D., Wohl, M., Mouren, M. C., Verpillat, P., Adès, J., & Gorwood, P. (2005). Meta-analysis of family-based association studies between the dopamine transporter gene and attention deficit hyperactivity disorder. *Psychiatric Genetics, 15*(1), 53–59. https://doi.org/10.1097/00041444-200503000-00009

Rad, F., Anghel, C., Dobrescu, I., Buică, A., & Mihăilescu, I. (2017). ADHD from a multidisciplinarity perspective. *Psihiatru.ro*, DOI: 10.26416/Psih.48.1.2017.1009, https://www.medichub.ro/reviste/psihiatru-ro/adhd-din-perspectiva-multidisciplinara-id-1009-cmsid-66

Rafalovich, A. (2001). The conceptual history of attention deficit hyperactivity disorder: idiocy, imbecility, encephalitis and the child deviant, 1877–1929. *Deviant Behavior, 22*(2), 93–115. https://doi.org/10.1080/016396201750065009

Rafalovich, A. (2008). *Framing ADHD children: A critical examination of the history, discourse, and everyday experience of Attention Deficit/Hyperactivity Disorder*, Rowman & Littlefield Publishers, Inc.

Rafalovich, A. (2015). ADHD: Three competing discourses. In M. O'Reilly, & J.N. Lester (eds.), *The Palgrave Handbook of Child Mental Health*, (pp. 79–95). Palgrave Macmillan.

Ramsay, J.R., & Rostain, A.L. (2007). Psychosocial treatments for Attention-Deficit / Hyperactivity Disorder. *Professional Psychology: Research and Practice, 38*(4), 338–346. https://doi.org/10.1037/0735-7028.38.4.338

Rateau, P., Moliner, P., Guimelli, C., et al (2011). Social representation theory. In: P.A.M. Van Lange, A.W. Kruglanski, E.T. Higgins, (eds.) *Handbook of Theories of Social Psychology*, (pp. 477–487). SAGE.

Rauch, W.A., Gold, A., & Schmitt, K. (2012). Combining cognitive and personality measures of impulse control in the assessment on childhood ADHD. *European Journal of Psychological Assessment, 28*(3), 208–215. https://doi.org/10.1027/1015-5759/a000128

Ray, D.C., Schottelkorb, A., & Tsai, M-H. (2007). Play therapy with children exhibiting symptoms if Attention Deficit Hyperactivity Disorder. *International Journal of Play Therapy, 16*(1). 95–111. https://doi.org/10.1037/1555-6824.16.2.95

Reddy, L.A., Braunstein, D.J., & Dumont, R. (2008). Use of the differential ability scales for children with Attention-Deficit/Hyperactivity Disorder. *School Psychology Quarterly, 23*(1), 139–148. https://doi.org/10.1037/1045-3830.23.1.139

Reeves, R.V., (2022). *Of boys and men. Why the modern male is struggling, why it matters, and what to do about it*. Brookings Institution Press.

Reid, R., DuPaul, G.J., Power, T.J., Anastopoulos, A.D., Rogers-Atkinson, D., Noll, M.B., & Riccio, C. (1998). Assessing culturally different students for AD/HD using behavior rating scales. *Journal of Abnormal Child Psychology*, *26*, 187–198. https://doi.org/10.1023/A:1022620217886

Remschmidt, H. (2005). Global consensus on ADHD/HKD. *European Child & Adolescent Psychiatry*, *14*(3), 127–137. https://doi.org/10.1007/s00787-005-0439-x

Rogers, M.A., Wiener, J., Marton, I., & Tannock, R. (2009). Parental involvement in children`s learning: Comparing parents of children with and without Attention Deficit/Hyperactivity Disorder (ADHD). *Journal of School Psychology*, *47*(3), 167–185. https://doi.org/10.1016/j.jsp.2009.02.001

Rowland, A.S., Lesesne, C.A., & Abramowitz, A.J. (2002). The epidemiology of attention-deficit/ hyperactivity disorder (ADHD): A public health view. *Mental Retardation and Developmental Disabilities Research Reviews, 8*(3), 162–170. https://doi.org/10.1002/mrdd.10036

Rucklidge, J. (2008). Gender differences in ADHD: Implications for psychosocial treatments. *Expert Review of Neurotherapeutics*, *8*(4), 643–655. https://doi.org/10.1586/14737175.8.4.643

Rydell, A-M. (2010). Family factors and children's disruptive behaviour: an investigation of links between demographic characteristics, negative life events and symptoms of ODD and ADHD, *Social Psychiatry and Psychiatric Epidemiology*, *45*(2), 233–244. https://doi.org/10.1007/s00127-009-0060-2

Sagvolden, T. (1999). Attention Deficit/Hyperactivity Disorder. *European Psychologists*, *4*(2). 109–114. https://doi.org/10.1027/1016-9040.4.2.109

Schachar, R., & Logan, G.D. (1990). Impulsivity and inhibitory control in normal development and childhood psychopathology. *Developmental Psychology*, *26*(5), 710–720. https://doi.org/10.1037/0012-1649.26.5.710

Schachar, R.J., & Wachsmuth, R. (1991). Family dysfunction and psychosocial adversity: Comparison of attention deficit disorder, conduct disorder, normal and clinical controls. *Canadian Journal of Behavioural Science*, *23*(3), 332–348. https://doi.org/10.1037/h0079018

Scheff, T.J. (1966). *Being mentally ill: A sociological theory*. Aldine Pub. Co.

Scheff, T.J. (2009). *Being mentally ill: A sociological theory* (3rd ed.). Transactions.

Semrud-Clikeman, M., Pliszka, S., & Liotti, M. (2008). Executive functioning in children with Attention-Deficit/Hyperactivity Disorders: Combined type with and without a stimulant medication history. *Neuropsychology*, *22*(3), 329–340. https://doi.org/10.1037/0894-4105.22.3.329

Seymour, K.E., Macatee, R., & Chronis-Tuscano, A. (2019). Frustration tolerance on youth with ADHD. *Journal of Attention Deficit*, *23*(11), 1229–1239. https://doi.org/10.1177/1087054716653216

Sherman, M., (2015). The cultural production of a pharmaceutical market: The making of ADHD. *International Journal of Communication*, *9*, 2182–2201. https://ijoc.org/index.php/ijoc/article/view/3212/1421

Simion, A. (2015). Strategies for Inclusion of Students with ADHD through Music and Physical Education in Primary School. *International Conference The Future of Education, 5th edition*. ISBN: 978-88-6292-620-1

Skogli, E.W., Teicher, M.H., Andersen, P.N., Hovik, K.T., & Øie, M. (2013). ADHD in boys and girls – gender differences in coexisting symptoms and executive functions measures. *BMC Psychiatry*, *13*(1), 1–12. https://doi.org/10.1186/1471-244X-13-298

Spasovski, O. (2010). Principles of the inclusive education and the role of teachers and in-school professional staff. *Journal of Special Education & Rehabilitation*, *11*(1/2), 67–86. https://doi.org/10.5281/zenodo.28338

Stefany, S., & Prihandini, P. (2017). Interpersonal communication in parenting style across generations (X&Y). *Science*, *3*(6), 1431–1441. https://doi.org/10.2991/icosop-16.2017.46

Swanson, J.M., Schuck, S., Porter, M.M., Carlson, C., Hartman, C., Sergeant, J.A., Cleverger, W., Wasdell, M., McClearly, R., Lakes, K., & Wigal, T. (2012). Categorical and dimensional definitions and evaluations of symptoms of ADHD: History of the SNAP and the SWAN Rating Scale. *International Journal of Educational and Psychological Assessment*, *10*(2), 51–70. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4618695/

Teeter, Ph. A. (1998). *Interventions for ADHD: Treatment in developmental context*. The Guilford Press.

Teeter, Ph. A., & Semrud-Clikeman, M. (1995). Integrating neurobiological, psychosocial, and behavioral paradigms: A transactional model for the study of

ADHD. *Archives of Clinical Neuropsychology*, *10*(5), 433–461. https://doi.org/10.1093/arclin/10.5.433

ten Have, P. (2004). *Understanding qualitative research and ethnomethodology*. SAGE Publications.

Thomas, G., & Vaughan, M. (2004). *Inclusive education: Readings and reflection*. Open University Press.

Thome, J., & Jacobs, K.A. (2004). Attention deficit hyperactivity disorder (ADHD) in a 19th century children's book. *European Psychiatry*, *19*(5), 303–306. https://doi.org/10.1016/j.eurpsy.2004.05.004

Timimi, S. (2009). Why diagnosis of ADHD has increased so rapidly in the West: A cultural perspective. In S. Timimi, & J. Leo (Eds.). *Rethinking ADHD from brain to culture* (pp. 133–159). Palgrave Macmillan.

Timimi, S. (2015). Attention deficit hyperactivity disorder is an example of bad medicine. *Australian & New Zealand Journal of Psychiatry*, *49*(6), 575–576. https://doi.org/10.1177/0004867415580820

Timimi, S., & Taylor, E. (2004). ADHD is best understood as a cultural construct. *British Journal of Psychiatry*, *184*, 8–9. https://doi.org/10.1192/bjp.184.1.8

Timimi S., & Timimi L. (2015). The Social Construction of Attention Deficit Hyperactivity Disorder. In: M. O'Reilly, & J.N. Lester (Eds.) *The Palgrave Handbook of Child Mental Health* (pp. 139–157). Palgrave Macmillan.

Trip, S., & Bora, C. (2011). Psychometric proprieties of low frustration tolerance scale for students. *Procedia – Social and Behavioral Sciences*, *33*(2012), 578–582, https://doi.org/10.1016/j.sbspro.2012.01.187

Tudor, A-M. (2016). *Cum sunt tratati elevii cu ADHD in scolile din Romania*. https://www.portalinvatamant.ro/articole/noutati-7/cum-sunt-tratati-elevii-cu-adhd-in-scolile-din-romania-6766.html

UNICEF. (2022). *Policy Brief Child and Adolescent Mental Health in Romania*. https://www.unicef.org/romania/documents/child-and-adolescent-mental-health-romania

Vallée, M. (2011) Resisting American psychiatry: French opposition to DSM-III, biological reductionism, and the pharmaceutical ethos. In PJ McGann, and David Hutson, *Sociology of diagnosis. Advances in medical sociology* (pp. 85–110). Emerald Group Publishing Limited.

van Meel, C.S., Oosterlaan, J., Heslenfeld, D.J., & Sergeant, J.A. (2005). Telling good from bad news: ADHD differentially affects processing of positive and negative feedback during guessing. *Neuropsychologia*, *43*(13), 1946–1954, https://doi.org/10.1016/j.neuropsychologia.2005.03.018 .

Verkuyten, M. (2007). Symbols and social representations. *Journal for the Theory of Social Behavior*, *25*(3), 263–284. https://doi.org/10.1111/j.1468-5914.1995.tb00275.x

Vile Judon, R.E., DuPaul, G.J., Jitendra, A.K., Volpe, R.J., & Cleary, K.S. (2006). Classroom observations of students with and without ADHD: Differences across types of engagement. *Journal of School Psychology*. *44*(2), 87–104. https://doi.org/10.1016/j.jsp.2005.12.004

Wachelke, J. (2012). Social representations: A review of theory and research from the structural approach. *Universitas Psychology*, *11*(3), 724–741. https://doi.org/10.11144/Javeriana.upsy11-3.srrt

Walmsley, C. (2004). Social representations and the study of professional practice. *International Journal of Qualitative Methods*, *3*(4), 40–55. https://doi.org/10.1177/160940690400300404

Watson, R. (2009) *Analysis practical and professional texts. A naturalistic approach*, Ashgate Publishing Company.

Wedge, M. (2015). *A disease called childhood. Why ADHD became an American epidemic*. Penguin Group.

Wolraich, M.L., Hagan, J.F., Allan, C., Chan, E., Davison, D., Earls, M., Evans, S. W., Finn, S. K., Froehlich, T., Frost, J., Holbrook, J. R., Lehmann, C. U., Lessin, H. R., Okechukwu, K. Pierce, K. L., Winner, J. D., Zurhellen, W. (2019). Clinical practice guideline for the diagnosis, evaluation, and treatment of Attention-Deficit/Hyperactivity Disorder in children and adolescents. AAP Subcommittee on children and adolescents with attention-deficit/hyperactive disorder. *Pediatrics*, *144*(4). https://doi.org/10.1542/peds.2019-3997

Woodward, L.J., & Fergusson, D.M. (2000). Childhood peer relationship problems and later risks of educational under-achievement and unemployment. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, *41*(2), 191–201. https://doi.org/10.1017/S002196309900520X

Zimmerman, D.H., & Boden, D. (1991). Structure in action: An introduction. In Deirdre Boden, & Don Zimmerman, D.H. (Eds.). *Talk and social structure. Studies in*

ethnomethodology and conversation analysis (pp. 3–21). ISBN: 0520075064, 9780520075061. University of California Press.

*Law of National Education no. 198/2023 (*Legea învățământului preuniveritar nr 198 din 4 iulie 2023*)*, Chapter V, 2nd Section, https://legislatie.just.ro/Public/DetaliiDocumentAfis/271896

APPENDIX

Appendix A

Glossary of Terms

	Symptom	***Related concepts/descriptions***
1.	*Impulsive*	impatient, impulsive reactions, impatience, unmotivated laugh
2.	*Opposer*	oppositional, undisciplined, indolent, defiant, disobedient, insolent with the teacher, conflict with the adult, refuse to speak, is not cooperate, refuse to work, difficult cooperation, quarrels with his mom, difficulties in adaptation, provocative, stiffness, verbal refuse.
3.	*Emotional issues*	hypersensitive, emotional lability, easy cry, immaturity, specific fears, specific fear of the dark, inhibition, shyness, anxious, fear of the dark, separation anxiety, tense face, negative elf-esteem, uncertainty, introversion.
4.	*Problems in organization*	does not know how to organize
5.	*Absenteeism*	repeated absences, refusing to go to school
6.	*Appetence*	-
7.	*Hypomnesia*	-
8.	*Low motivation*	low school motivation, total school disinterest, avoiding activities.
9.	*Aggressive*	verbal aggression, physic aggression, self-aggression, fighting with the classmates, conflicts with classmates, aggressive when is frustrated, aggressive in social groups, beating children.
10.	*Attention deficit*	sever attention deficit, unstable attention, short-term attention, high deficit of the attention concentration, lack of concentration and attention span.
11.	*Inconsistence*	-
12.	*Negativism*	pessimistic, feeling alone.

13.	*Hyperactive behavior*	wide hyperkinesia, hyperkinetic behavior, hyperkinetic, psychomotor restlessness, agitation, activism, agitated, boring quickly, flinching, restless
14.	*Absent psychic contact*	-
15.	*Inappetence*	-
16.	*Somatization*	persistent somatic accusations
17.	*Destructive behavior*	destroy objects, smash
18.	*Dependent by adult*	non-autonomous
19.	*Sleep disorder*	insomnia on sleep, nightmares, restless sleep, agitated sleep
20.	*Suicide attempt*	-
21.	*Disturbing the class*	
22.	*Dyslalia*	speaks dyslalic difficult to understand
23.	*Slowness*	
24.	*Tics*	polymorphic tics, motor stereotypes, labial tics, swaying tics, facial grimaces
25.	*Learning difficulties*	difficulties in math, understand simple commands
26.	*Desire for attention*	nee for assertion, vanity
27.	*Talkativeness*	-
28.	*Low frustration tolerance*	nervousness, irritability, affliction, nervous, irritable, easily upset when he makes mistakes, outbursts of anger, intolerance to frustration, tantrums, dissatisfaction, irascible, slightly offensive.
29.	*Enuresis*	enuresis at night
30.	*Social exclusion*	excluded by the colleagues, self-exclusion, rejected by colleagues, rejected by the group, poor interactions, playing alone, withdraw, lack of social interactions.

31.	*Lying*	lie, manipulating the adult.
32.	*Behavior disorder*	compulsively steals from home, steals, smokes
33.	*Howl*	-
34.	*Communication problems*	elective mutism, communicates through gestures, speaks alone, language retardation, bradylalia.

Appendix B

Questionnaire Regarding the Symptoms of Children with ADHD - Parents' Version

Next questions want to identify your opinion regarding the symptoms of children diagnosed with ADHD (Attention Deficit/Hyperactive Disorder). Your individual responses are confidential, and your identification is not needed. All the responses should reflect your own opinions, and there are no "wrong" or "right" answers. Your help and collaboration is extremely important for our research!

Your age: _____

(Mark your answers)

Gender:

- o female
- o male

Area:

- o urban
- o rural

Level of education:

- o unschooled
- o gymnasium (I-VIII)
- o Professional school
- o High school
- o University

Your profession: _____

Have you ever met children diagnosed with ADHD?

- o yes
- o no

In your opinion, which are the most important symptoms manifested by children with ADHD? (*up to six symptoms*)

- o Impulsive
- o Low frustration tolerance
- o Disturbing the class
- o Destructive behavior
- o Attention deficit

- Low motivation
- Emotional issues
- Social exclusion
- Learning difficulties
- Lying
- Negativism
- Opposer
- Aggressive
- Hyperactive
- Tics
- Talkativeness

Which was, for you, the main source of information about ADHD?

- the formal courses
- the internet
- the friends
- the mass-media (radio, TV, newspapers)
- the school
- other sources

Thank you for your collaboration!

Appendix C

Questionnaire Regarding the Symptoms of Students with ADHD - Teachers & Psychologists' Version

Next questions want to identify your opinion regarding the symptoms of children diagnosed with ADHD (Attention Deficit/Hyperactive Disorder). Your individual responses are confidential, and your identification is not needed.

All the responses should reflect your own opinions, and there are no "wrong" or "right" answers. Your help and collaboration is extremely important for our research!

Your age: _____

(Mark your answers)

Gender:

- female
- male

Area:

- urban
- rural

Level of education:

- University
- Master degree
- PhD

Your profession:

- teacher
- psychologist

Which is your specialization? _____

Have you ever worked with children diagnosed with ADHD?

- yes
- no

In your opinion, which are the most important symptoms manifested by children with ADHD? *(up to six symptoms)*

- Impulsive
- Low frustration tolerance
- Disturbing the class

- Destructive behavior
- Attention deficit
- Low motivation
- Emotional issues
- Social exclusion
- Learning difficulties
- Lying
- Negativism
- Opposer
- Aggressive
- Hyperactive
- Tics
- Talkativeness

Which was, for you, the main source of information about ADHD?

- the formal courses
- the internet
- the friends
- the mass-media (radio, TV, newspapers)
- the school (where you work)
- other sources

Thank you for your collaboration!