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Research Article

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Attention Deficit Hyperactivity Disorder (ADHD): Social and Educational Inclusion

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Abstract

The Attention-Deficit/Hyperactivity Disorder (ADHD) is a heterogeneous, multifactorial, childhood-onset disorder. It is characterized by persistent inattention and/or motor hyperactivity and impulsivity that make it difficult for the child to integrate and adapt socially. Child impairment (emotional dysregulation ED), may be present in children with ADHD. It is manifested by loss of control, anger outbursts, mood swings, and impaired affective regulation skills.

For a long time, it was believed that ADHD, was an exclusively childhood disorder, scientific evidence has shown how it can persist throughout life in up to 85% of cases. In adults, the worldwide prevalence rate is between 1% and 7%. In this review we will examine the characteristics of the disorder and interventions aimed at social and school inclusion.

Introduction

Attention Deficit Hyperactivity Disorder (ADHD, derived from the English acronym Attention Deficit Hyperactivity Disorder, is a neurodevelopmental disorder involving dysfunctions in the cognitive and motor areas. The former is manifested by a pattern of persistent inattention or easy distractibility, the behavioral one is related to impulsivity, and the motor one is characterized by hyperactivity, these manifestations, interfere with the person's functioning and development, also have a significant impact on the emotional and relational sphere, as reported in the DSM-5 DSM: Diagnostic and Statistical Manual of Mental Disorders, published by the Association of American Psychiatrists) (1) and in ICD- 10 International Statistical Classification of Diseases and Related Health Problems, a manual compiled by the World Health Organization-WHO (2).

The epidemiology of ADHD

The epidemiological picture differs in the variability of the estimated incidence of the disorder, as the results that emerge depend on the different settings studied, the instruments used and the methodological approaches followed (3). This difficulty in having equal data may also be due to the "dissimilarity in the diagnostic criteria adopted by the two manuals" particularly DSM-V and ICD-10 (4). Indeed, there is no concordant data within the consulted theory. It is estimated that ADHD, is predominantly present in school-age children ranging between 3 percent and 5 percent, and in adults between 4 percent and 5 percent. According to Macchia (3) it is among the most prevalent psychological disorders in childhood. Arcangeli (5) estimates the incidence at about 3-4 cases per 100 children. The average therefore is about one pupil with ADHD per classroom with a male-to-female ratio of 2:1 (6).

Characteristics and subtypes of ADHD

Studies conducted and related to Attention Deficit Hyperactivity Disorder are mainly concerned with three dimensions: inattention, hyperactivity, and impulsivity, each of which, contributes to learning and adaptation problems in different life contexts. (6).

Inattention plays a predominant role in school performance problems to which all attentional difficulties are attributable. In the school setting,the child has difficulty concentrating, fails to stay on task, without being distracted by external factors.

In ADHD, the difficulty is in maintaining sustained attention, which affects not only schoolwork, but all activities carried out by the child, including play that he does not complete (3) According to some authors Cornoldi, De Meo, Offredi, Vio, (7) these children, have a difficulty in self-regulation that is, an 'inability to independently regulate their behavior, including attention.

Hyperactivity has an influence on behavior problems (5), and is manifested by agitation, the need for continuous physical movement without a specific goal, and difficulty sitting still.

In adults, on the other hand, hyperactivity is manifested by excessive restlessness or a wearing effect toward others of one's activity. (8).

The description of children with ADHD, is of vigorous, physically agitated little ones who are always on the move, who struggle to remain still and silent, and who have the need to move around, to perform enticing, engaging, tonic, exciting activities (5).

In the school setting, it is necessary to provide them with opportunities for movement and to alternate particularly static lessons, which therefore require a lot of concentration and calm, with more energetic teaching moments. In the home context it is useful, to have corners where the child can relieve his or her tension, such as pillows or punching bags, and others where the child can do some reading, homework or quiet activities (8).

Impulsivity also causes problems in 'social interaction (5). Behavior reflects actions without respect for social rules, without concern for consequences and emotional inhibition. The consequence is to be judged as gruff and cynical and unable to have appropriate and stable social relationships (4). Impulsivity affects both the cognitive part of the person and the interpersonal part; it is the key requirement that allows differentiating a child with ADHD from others with mild problems or psychological difficulties (3) it is also defined as the inability to limit behaviors). This peculiarity has a not insignificant impact on the lives of people with ADHD. Often, because of their own actions without thinking about the consequences, they are confronted with complex and dangerous situations. Studies Barkley (9) have shown that adolescents with ADHD tend to have twice as many traffic accidents as their peers and a greater tendency to engage in unhealthy behaviors such as drinking, smoking and drug use (4). Vettori states that this difficulty is not due to a difficulty in self-regulation, but rather to the thalamus-their behavior is not simply caused by rudeness or lack of self-discipline, but rather by an internal signaling system in the brain that does not function the way it should." (4).
Moreover, this dimension persists over time and remains quite firm even in adults, although clearly it can have different facets depending on the age of the person (4).

Cattaneo and Foderaro (10) offer a reflection, so many young people and in a variety of situations may manifest one or more of the characteristics described above. In Attention Deficit Hyperactivity Disorder, however, symptoms need to be early, occurring before age 12 and pervasive, that is, appearing in two or more of the person's contexts. For example, at school, in extracurricular activities, at home, or otherwise. It is necessary that these behaviors be limiting, i.e., that they have an influence on the person's various personal spheres (social interaction, school or work performance) and that they are not due to additional present mental disorders (anxiety or mood disorder).

As indicated by the DSM-V and cited by Cattaneo and Foderaro (2021) there are three different types of ADHD, which may change over time. Specifically: inattention, posited as the predominant feature; hyperactivity and impulsivity, as a single subtype; and a combined manifestation of two dimensions, inattention and hyperactivity/impulsivity.

Inattention, which is present in 20 percent of cases, is mainly to be found in the dimension of inattention previously described.
It includes people who do not manifest behavioral and social interaction disorders, but have attention disorders, which is likely to go unnoticed by parents and teachers (8). This subtype is associated with: "academic difficulties, low self-esteem, poor work success, low adaptive functioning" (10).

The type with predominant hyperactivity-impulsivity affects 10% of people with ADHD. The characteristics of this category, are to be found in the dimensions of hyperactivity and impulsivity and could also include some peculiarities of inattention. The reduced amount of symptoms, however, do not reach a threshold of clinical relevance (8). This subtype is associated with: rejection from peers, aggression, risky behavior (e.g., driving), accidents and trauma" (10).

The last category is that of the combined manifestation of inattention and hyperactivity/impulsivity, which is found in 70% of people with Attention Deficit Hyperactivity Disorder (10). The manifestation is typical of the developmental age [...]".
The difference with the previous type is the strong presence of aggression, which increases the possibility of developing an additional conduct disorder or oppositional defiant disorder (4).

As made explicit by Re et al. (2010), the different aforementioned subtypes of ADHD could also be distinguished according to different criteria such as: age of diagnosis, executive function efficiency.

In addition to these primary disturbing behaviors, there are additional, so-called secondary symptoms that influence this disorder. They emerge from the relationship between the primary aspects of the subject's ADHD and his or her environment (3). Some secondary factors that are mentioned as a consequence of the primary ones are: difficulties in school, social interaction, and low self-esteem (4). It is considered as a secondary symptom the risk of developing additional psychological issues including conduct disorder, oppositional/provocative disorder, and mood or anxiety disorders (8), as they would lead as a direct consequence of academic and social difficulties.

The course of ADHD

Cattaneo and Foderaro (10) believe that as they grow older the symptoms of hyperactivity and impulsivity decrease, inattention and executive-type problems, would remain over time.
Let us review these aspects:

- Between the ages of 0 and 12, elements present are: distractibility, hyperactivity/irreactivity, impulsivity, causing school difficulties, aggressive behavior, low self-esteem, peer rejection, difficult family relationships;
- Between the ages of 13 and 17, the factors present are: reduced motor restlessness, inattention, difficulty in planning and organization, resulting in aggressive behavior with antisocial and dangerous conduct; strong sensation seeking, alcohol and drug abuse (*sensation seekers* or as self-medication).
- After age 18, impulsivity, inattention and restlessness, may remain stable, albeit at problematic levels and with the presence of hyperactivity, albeit diminished (8).
- Attention Deficit Hyperactivity Disorder has an inevitable impact both on the school side, with the learning obstacles, and in the family sphere, where it generates a strong general stress, in the management by the caregiver; in the social sphere given the difficult interactions with peers and therefore are victims of exclusion and isolation (10).
- ADHD changes over time, and consequently the functional impact changes, the environment plays a determining role. Cattaneo and Foderaro, state that the three possible evolutions of ADHD in becoming an adult, can be: complete remission , with the change of primary symptoms and no functional impact, or a persistence of difficulties, with mild-moderate symptoms with functional impact, or a 'negative evolution with psychiatric and behavioral disorders.

Psychiatric disorders mean anxiety disorders, or mood disorders, or even personality disorders (e.g., borderline or even antisocial disorder), while behavioral disorders mean common addictions, such as drugs, alcohol, internet, and gambling. These disorders would also be the cause of instability in emotional relationships and inability to maintain employment.

The comorbidity of ADHD

In 70% of cases Attention Deficit Hyperactivity Disorder is accompanied by other disorders: internalizing, externalizing, or neuropsychological disorders. (10) these have a negative influence on social interactions and the surrounding living and academic environment (5).

By internalizing disorders, we mean disorders such as: anxiety, depression, low self-esteem, *learned helplessness* (*learned helplessness*), tendency to hypercontrol, inhibition, social withdrawal, and somatic problems that are nonspecific and often without objective medical findings (headache, nausea, abdominal pain, fatigue, eye discomfort, joint pain, feeling of fainting). Foderaro, are the issues the child falls back on, without showing them to others or taking them outside (11).

These types of symptoms do not affect the child's context but rather the child's self and are in fact complex to identify (6).
By externalizing we interpret those problems directed toward the outside world and other people (6). Among these disorders are mainly those of impulse control, including oppositional-provocative disorder (in the three subcategories: with choleric/irritable mood, with argumentative/provocative behavior, with vindictive behavior), intermittent explosive disorder, and conduct disorder. Neuropsychological issues include the various specific learning disorders (SLDs) (dyscalculia, dyslexia, dysorthographia, dysgraphia), dyspraxia, and motor coordination disorders. (10), which are estimated to be present in 45% of ADHD children. (11).
There are also additional issues that might develop in comorbidity with ADHD, but they occur in minor cases and are therefore not often mentioned by researchers. Some examples are: tics and Tourette's syndrome, which causes non-constant motor and phonatory tics (3).

Recognizing ADHD

Attention Deficit Hyperactivity Disorder, as Cattaneo and Foderaro (10) state, is not primarily due to an attention deficit, but rather a deficit in self-regulation, mainly cognitive and emotional. Therefore, strategies such as: adapting and structuring the environment, proposing intriguing and not too long activities, anticipating and defining routines of events, following the pupil individually, employing and teaching strategies, proposing regular rewards, stimulating awareness and metacognition in the child, should be used to help the pupil self-regulate and reduce symptoms.

The role of self-esteem plays a key role; people with ADHD have a tendency to decline due to poor academic performance or from the non-positive judgments of people in their life contexts. They also often feel a sense of rejection from others and feel that they are not competent or intelligent. Impaired self-esteem can be the cause of destructive and self-destructive behaviors.

Some clues are typical of ADHD: irregular sleep-wake rhythm, -precocious runner-, does not tolerate no and frustration, easily irritable, does not tolerate changes and unexpected events, peculiarities in feeding.

The manifestations of a child with possible inattention are: he is easily caught up in the environment, often in his own world, head in the clouds, struggles to keep up, gets lost, struggles to maintain concentration, dislikes games or activities with rules or that require cognitive engagement, better concentration in highly enjoyable and stimulating activities.

Some clues that might lead us to suspect the presence of hyperactivity include "moving hands and feet, can't sit still, struggles to sit still, hyperloquacious, talks all the time, can't play quietly, gets hurt often, puts himself in danger.

Other early symptoms that could lead us instead to impulsivity include: struggling to wait his or her turn, interrupting others, demanding insistently, wanting everything right away, may be aggressive and destructive, has no filter, reacts disproportionately, and may say inappropriate things. Behaviors related to possible disorganization, on the other hand, indicate a child: very untidy, forgets or loses objects, inconclusive, goes from one game to another, needs to be followed constantly.

Those related to social impairment, define a person who struggles to abide by rules (often punished), impulsivity that leads him to conflict, struggles to understand others' emotions, is not invited to parties, receives diary notes and punishments, grandparents and babysitters refuse to handle him.

In general, the child with ADHD possesses "difficulties in executive functions, which represent all those cognitive skills used to manage our lives, plan and self-regulate (8).

Early diagnosis plays a fundamental preventive role towards the person, who can be directed to appropriate and effective pedagogical and therapeutic interventions (10).

Fedeli and Vio 2015 (6), state that as early as preschool age some difficulties can be identified and categorized into three groups.
They speak of inhibition deficits, behavioral rigidity and emotional dysregulation, some indicators that by observing learners during play (free or structured) allow us to signal one of the above categories, are:

- Inhibition deficit: child is unable to wait for deliveries for a game or activity; fails to stop de-focused or disturbing behaviors, despite adult reminders; gets distracted by stimuli outside the play activity in which he or she is engaged, which is then interrupted.
- Behavioral rigidity: the child has difficulty adapting to changes in play (e.g., in rules, peers); has difficulty participating in playful activities in groups; emits the same behaviors over and over again, even if they are incorrect and not functional for play.
- Emotional dysregulation: the child constantly appears eager and impatient; easily aroused; easily irritable.
- By having an early diagnosis, timely and effective action can be taken on the person.

Lived experiences of parents of children with ADHD

Parental experience, plays a key role in the growth and well-being of the individual with ADHD.
The study by Galloway et al 2016 (12) examined parents' perceived stress, which has consequences for their children's quality of life, therefore parent training interventions, aimed at reducing parental stress, positively affect their children's relationship and quality of life. Ben-Naim and colleagues (13) found that parents of children with ADHD have higher parental stress, lower self-efficacy and marital satisfaction than parents of children without ADHD, and these would be an expression of parental stress and from their feelings of self-efficacy.

Among the various treatments of ADHD is intervention with the family, which plays a fundamental and relevant role in the child's life, the disorder and its manifestations. Therefore, it is necessary to know it thoroughly and carry out therapeutic work with it, the results achieved, could foster the child's development and make the relationships within the family unit more peaceful and less chaotic (14).

If we take the relationship with siblings into analysis, from the studies the results report that siblings tend to be fatigued and exasperated in their relationship with their siblings, mainly because of the increased parental attention to their brother/sister with ADHD (9).

Barkley (9) argues that parents of children with ADHD, go to great lengths to try to manage unruly behavior, and when they realize that one strategy has not worked, they look for a new one that will prove effective. Sometimes parents believe that their child's behavior is only due to attention-seeking and begin issuing imperious orders and directives to try to have more control over their children's impulsiveness, but to no avail until they reach what Barkley (2011) calls "learned helplessness"; as a result, they do not issue commands to their children, leaving them with complete freedom, even canceling supervision. The consequence is that parents will suffer from depression, low self-esteem and/or low parental role satisfaction. Living with a child with this disorder can therefore lead to impaired parental mental health and educational efforts. "the more aggressive and antisocial a child is, the more severe and numerous the psychiatric problems of relatives seem to be.

Mothers of these children say they have lower self-esteem and frequently experience depressive states, guilt, and social detachment. The severity of stress is proportional to the severity of the child's behavioral problems. There may be additional sources of parental stress within the family unit, but according to the various studies, the child with ADHD and his or her behavior are the main cause. This form of stress can have negative consequences for the marriage or the relationship between the parents.

The ICF System in Schools

The ICF system worldwide has generated normative changes in reference to disability functioning as it is concerned with well-being following a bio-psycho-social perspective of health. (15).

The ICF uses an approach that considers the connection between the individual's environment and health status as fundamental; the latter is based on the concepts abilities to perform actions, so that interventions can be made by recognizing and then removing obstacles to social participation, in order to achieve the individual's self-realization, the idea being that disability and handicap" are linked and are the result of the context in which it lives, but also from cultural and physical type peculiarities.

The ICF considers the subject in its totality, the elements that relate to each other concern the context and personal characteristics of the person these factors are interlinked and act not under a vision of disease, but of health, no longer reasoning about infirmity, but about restrictions to participation in social life, environments and contexts that can also be generated by impairments.

This has given rise to a new formative process in Italian schools as well, with the inclusion of the term BES (Special Educational Needs), in the Italian Educational System, centralizing it to be able to achieve important educational goals, preventing the recognition of the problems, allowing the student to follow a specific project by strengthening his or her abilities by overcoming any obstacles and working under a personalized and individualized perspective.

In Italy with the enactment of Law 170/2010 (16) for Specific Learning Disorders, the Directive of 12/27/2012 and consecutive circulars issued by the Ministry, including No. 8 of March 6, 2013, Special Educational Needs were introduced using the acronym "BES." These standards, are based on the attention and well-being of the student with BES.

Miur named the Ministerial Directive of December 27, 2012 (17) as the "Intervention Tools for Pupils with Special Educational Needs and Territorial Organization for Inclusion," accentuating the necessity of Law 170/2010 by including for BES also those apprehensive difficulties that persist even if they are not declared, broadening the practice of personalized educational inclusion.
They are understood as Special Educational Needs according to the Ministry Directive dated December 27, 2012:

- Disability, which refers to cognitive delays, mental impairments, physical and sensory.
- The disfavor from linguistic, cultural, social and economic perspectives.
- Specific developmental disorders, which includes Limited Intellectual Functioning

(FIL), Specific Learning Disorders (SLD), Attention Deficit Disorder and hyperactivity (ADHD), disorders in the ability to perform a bodily movement in a manner efficient, mild autistic disorders or specific prior disorders, disorders concerning the area nonverbal, i.e., difficulty in using patterns, and verbal, such as lack of of language, etc.).

Every student who falls into the BES category enjoys full rights of passage to individualized and personalized type of teaching.
The Ministerial Directive of December 27, 2012 specifies that:
"In every classroom there are pupils who present a demand for special attention.
for a variety of reasons" (M.D. 27/12/2012), "... every pupil with continuity or for certain periods may manifest Special Educational Needs or for psychological reasons, social with respect to which it is necessary for schools to offer adequate and personalized response" (Ministerial Decree 12/27/2012).

Thus, the issuance of this directive requires a redefinition of educational action and broadens the contexts in which underlying disorders emerge that can be diagnosed but do not fall under those provided for in Laws 104/92 and 107/2010, i.e., provide for individualized inclusive teaching and the appropriate means of evaluation (18).

"Special Educational Need is any developmental difficulty in functioning, permanent or transient, in the educational and/or learning sphere, which is due to the interaction of various health factors and which is problematic, including for the subject, in terms of harm, hindrance or social stigma, regardless of etiology and which requires individualized special education" (19).

The major areas that emerged in the close examination of BES are:

- According to the provisions of Law 104/1992, the following are defined as individuals with Handicaps those people who present problems in learning, relating to each other and in the integrate and also show mental and/or physical, sensory impairments that may progress over time.

Incapacity must be proven by the A.S.L., which is a medical team that examining the difficulties of the person in question.

- It should be pointed out that there is a distinction between the terms "disability" and "handicap," because disability is circumscribed as a form of hindrance in performing activities of social life that are carried out on a daily basis because of the person's cognitive, visual and/or hearing, physical limitations.
- Specific Learning Disorders and Specific Developmental Disorders were later called DSA, meaning "Specific Learning Disorders" and incorporated neurodevelopmental disorders that include dysgraphia, dyscalculia, dyslexia is dysorthographia.

They can be expressed in the absence of neurological diseases with the help of appropriate skills that can generate a limitation for the performance of daily life activities or ADHD, such as speech or attention disorders announced by Law 170/2010.

- The March 6, 2013 Circular No. 8 regarding pupils with disadvantages in the field social and economic, from the perspective of language and culture.

In order to meet these "special" needs, the legislation prepares a "Personalized Educational Plan" (PDP).

The implementation of it lists what from the pedagogical and educational point of view has incentivized teachers to analyze the intended purposes, to examine the student as a BES and to use customized methods to achieve the intended results.

The term Special Educational Needs is used to indicate and intervene not only on pupils certified and diagnosed by a medical team, but also for those who are in a difficult context, so much so that they require a personalized and centered.

The inclusive educational institution declares what are the educational rights of the BES students, granting them full formative and educational rights, so that they can learn according to different special educational needs.

These refer to the particular action exam for these students who at due to sensory and/or mental impairment or disability, neurological disorders and learning and for disfavor due to lack of knowledge of the language Italian because they belong to different cultures or due to the contexts and consumptive environment related to the society and economic situation in which they find themselves; the school presents and prepares specific, personalized and individualized pathways for them.

Students are recognized as BES at the time when the classical measures are no longer sufficient, their learning limitations are emphasized, and participation in school and social life, ensuring, where it is required, a centered and personalized for the subject, ensuring an affective and educational process Inclusive fruitfulness.

ADHD and School

ADHD and any comorbidities, have a negative impact on the student's academic performance, even if the student's cognitive resources are adequate. The difficulties, may already be present at the entry of elementary school or later in the academic journey (6).

In fact, school turns out to be the environment where these ADHD behaviors emerge prominently, and this is due to various factors: "unclear rules that vary from one teacher to another; consequences of rule violations that are not always immediate and consistent; poor knowledge of ADHD and consequent difficulties in organizing specific and individualized work aimed personalizing, practicing, modeling, compensating, dispensing, monitoring, and reinforcing" (8).

In preschool, as Macchia (3) argues, the relationship between teacher and child can be complex. It is important to avoid entering "a counterproductive spiral between the child's behaviors and negative teacher interventions" and making use of punishment, which can only make the situation worse. This spiral occurs where the pupil has negative behavior and the teacher tries to control it; the pupil opposes, with even more negative behavior and the teacher trying to show more control, and so on.

In elementary school, the demands increase; more attention, adherence to rules and social interaction (e.g., in group work) are needed.

The child with ADHD is not always able to meet these demands. For academic success, self-control and attention are crucial. In fact, numerous skills such as "concentration" (staying present for an appropriate amount of time and using personal strategies), "the ability to focus and select" (e.g. one piece of data among many others), "*problem solving* skills" (to understand, identify and use the correct strategy, check and control the process carried out and its actual feasibility), "effective self-confidence, which allows one to realistically assess the feasibility of the task; the ability to commit oneself (to finish correctly what is required); and the ability to anticipate gratification for the successful outcome (8).

Attention should be paid to the high comorbidity that exists with the various Specific Learning Disorders. Vettori (8) also states that individuals with ADHD who have found themselves in the situation of having to repeat at least one year of school is three times higher than the rest of other learners. Additional obstacles that young people with ADHD may face are related to difficulties in employing their cognitive resources, particularly those related to working memory, learning techniques, and the ability to exclude irrelevant data.

As made explicit by Vettori (2019), "difficulties in executive functions, which represent all those cognitive skills used to manage our lives, plan and self-regulate" is an important aspect, as they affect school learning. They are useful in everyday schooling, particularly the three basic functions: mental elasticity, inhibition and working memory. Being able to self-regulate means being able to use one's intellectual potential effectively. Working memory is a very useful element for the student, it allows one to perform many activities such as: remembering information, keeping in mind directions or questions, supporting comprehension while reading, writing, remembering the steps of various calculations and operations in mathematical situations (8).

Another relevant aspect for the student with ADHD is to develop his own internal conversation, thus being able to be empathetic, to make use of his own metacognitive strategies, and above all to "self-regulate." This will enable him to be able to cope better with certain events and to be more resilient inside and outside school. Thus, improving not only the behavioral aspect but also the relational aspect with other classmates.

Vettori believes that these learners are not evaluated positively by teachers, as they do not comply with social rules. Early interventions, are definitely less demanding and more effective than treatments carried out later, and should be carried out both within the school setting, and outside according to the age group of the child in question, in addition, the opportunities and learning environment, should be structured according to the needs of the learner.

Fedeli and Vio (6), state that to intervene in the classroom, there is a model, called the "two-way" model, this model allows us to understand and identify the characteristics and points weaknesses of the student, with the aim of planning individualized educational interventions, as they take into account the child's symptomatological characteristics and propose suitable strategies. It is necessary to interpret and understand the manifestations of ADHD difficulties and disorder; observe and assess problem behaviors; and structure classroom intervention.

This model involves an analysis of the student's skills according to two main categories: the energetic pathway and the organizational pathway. Both involve the three main dimensions: the motor dimension, the cognitive skill dimension, and the social-emotional relationship dimension.

The first pathway, the energy pathway, aims to manage the activation required whenvoluntarily starting an activity, when the time to implement a new project is approaching, or when an environmental demand must be met, it involves multiple components:
Alertness, motivation, pace, commitment/effort, and emotions.
The organizational route, on the other hand, works on the child's executive functions and requires them to be used voluntarily and consciously.

The components considered are: inhibition, flexibility, planning, working memory, and monitoring.
An example of the two-way schematization with respect to two dimensions of ADHD: inattention and hyperactivity.

Table 2.1: The two pathways and dimensions of inattention and hyperactivity: a summary scheme (Fedeli & Vio, 2015 repurposed).

		Inattentive student	Hyperactive student
Energetic via	State of alert	is slow to activate	is impulsive and precipitous
	Motivation	appears apathetic and disinterested	Has many transitions in tasks without completing
	Effort	does not show sufficient information in relation to requests	It manifests itself for a short time and in a dispersive way
	Emotions	appears sad and dissatisfied	Seeking immediate gratification
	Rhythm	Is behind the times of an activity	Is ahead of the times of an activity
Organizational via	inhibition	Does not inhibit interfering thoughts	Does not inhibit inappropriate behaviour
	flexibility	Is slow in generating new solutions after the error	He cannot change strategy after the error and is perseverant
	planning	Partially planned at the beginning bute the lost along the way	Trial and error procedure
	Working memory	Makes mistakes in the choice of data o be processed	Has difficulty keeping relevant information active
	Monitoring	Cannot monitor their behaviour until the task is completed	Impulsiveness prevents him from activating revision procedure as the internal language

Systematic observation, of the behaviors of the child with ADHD is a fundamental procedure that the teacher or an outside person must bring into the classroom. This is to get to know the student better and plan the environment and teaching activities accordingly. Possible next steps after systematic observation can be functional analysis, understood as analysis of environmental contingencies (antecedents, behavior, consequences) and evaluation of behaviors (through evaluative scales, normative or criterial type). There is indeed the possibility of working on the environment, or on the antecedents (triggers, what happens just before the presented behavior) to prevent a given behavior from occurring, or again on the consequences, avoiding reinforcing a given dysfunctional attitude (6).

Classroom intervention and teacher support are indispensable elements to help the student with ADHD and increase his or her self-esteem (4). Macchia states that if valued and supported in the proper way, there can be strengths, on which it is important to work and build didactic-educational interventions. These children need a boost to help them become aware of and manage the stimuli offered by the environment; they are particularly sensitive to emotions and in expressing them, this makes them more vulnerable, but also more sincere toward others and extroverted (3).

They also have a lot of creativity, imagination, enthusiasm and soon forget the causes of any conflicts. It is therefore essential that the teacher be able to read these positives and convey them to the student, more so than the negative ones.

Another key aspect is definitely the alliance between school and family. Thus allowing continuity for the child and monitoring his progress or deterioration. The school, and more particularly the teacher, on the other hand, has the important role of designing interventions and doing so by adapting the

environment, teaching materials, learning and teaching procedures to the needs of the child with ADHD.

It is therefore clear that the teacher's input into the student's daily school routine is crucial. To benefit from these adaptations will not only be the person with ADHD, but the whole class.

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