

Inclusion of People with ADHD in School, College, University, and Work

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ABSTRACT

The inclusion of people with Attention Deficit Impulsivity and Hyperactivity Disorder (ADHD), in school, college, university, and work has been developing since the nineteenth century because this disorder has similar symptoms to those of a hungry infant, an anxious or antisocial child, a young impetuous or otherwise without social contact, immature adults, lacking an order or commitment; but in the past it was derived from the responsibility of the elders, from the values instilled and from the culture, from the society itself, where they grew up. The inclusion of people with this disorder is due to a multidisciplinary intervention, family interaction, academic-labor-social, therapies, variety of neurobiological specialists, implementation of Educational Integration Projects (PIE) where the entity and its different human and physical resources must adapt to the students to achieve inclusion; the methodologies and processes of inclusion vary according to the field, that is, in the labor part with respect to the entities of initial, middle, and higher education.

Keywords: ADHD, NEE, Learning, Inclusive schools, Treatments

INTRODUCTION

Attention deficit, impulsivity, and hyperactivity disorder (ADHD) is a neurobiological anomaly that interferes with physical and mental synchronization causing difficulties to the individual in all activity performed, this disorder causes alterations in the mechanisms of executive control affecting their memory, emotions, language with thoughts, and vision of their reality in a negative way (Gasteiz, 2020). ADHD is hereditary in 80%, 10% by genetic factors premature, low birth weight, and also by socio-environmental factors such as in the stage of pregnancy: the mother was subject to abuse, malnutrition, lived or frequented contaminated places, or at the time of birth there was no proper care or was in precarious conditions (Ureña Morales, 2007). This disorder can develop at any stage of the individual by blows to the head, accidents, neurobrain trauma.

Inattention or fleeting attention, hyperactivity, and impulsivity and their combination constitute the axes of ADHD; in addition, this disorder can merge with others (Mateu Gollart & Sanahuja Ribés, 2020). Reason why

its diagnosis is complicated because its symptoms are similar to a bad behavior of the person, in the different stages of life, for example, in school performance, infants make mistakes due to carelessness, their work is disordered, incomplete, and carried out without reflection, in the work or social performance is presented: negativism, aggressiveness, low self-esteem, emotional instability, among others: that is; have difficulty learning (de la Parra Yelincic, 2015; Medranoa & Leóna, 2016). The difficulty in learning, also known as special educational needs (SEN) includes the coexistence of various anomalies that can be grouped into several groups of disorders that may or may not coexist with ADHD or belong to one of its axes or types (Romero Pérez et al., 2005).

This disorder was identified in the 1960s because before the symptoms were attributed to school problems (PE), low school performance (BRE), learning difficulties (DA), borderline intellectual disability (DIL), lack of care of their parents, among others; and since the 1990s it has begun to progress thanks to the advancement of technology, combined and multicomponent programs that facilitate intervention from an early age collectively with medical-pharmacological and psychoeducational treatments; therapeutic strategies and medications (Liesa Orús et al., 2017; Ramos-Quiroga, 2009; Rubiales et al., 2011), one of these interventions is cognitive behavioral therapy that provides enormous information capable of simulating daily activities and providing various responses (Mesa Mas, 2018), where the individual with ADHD copies and creates solutions to the different situations they face daily, either; at home, school, college, university or work allowing their attitudes to increase positively and progressively increasing their adaptation to society, changes their style of seeing reality, cognitive behavioral therapy (CBT) interferes in vision and negative thinking resulting in environment-positive thinking-response, solution or adaptive behavior (Fontecha & Sánchez, 2017; Pérez Galán et al., 2014).

We also have inclusive institutions where they value cultural-economic-social diversity, they have Inclusion Projects and Educational Integration Programs – PIE that constitute specialized multidisciplinary teaching-learning strategies that continuously evaluate both the academic-social learning of the participants with or without special educational needs progressively and the collaborative work of the educational community: teachers, technicians, assistants, environment, that is, human and physical resources of the inclusive entity (MINEDUC, 2016).

EVOLUTION

Several studies indicate that the evolution of ADHD depends on age, the type of ADHD, and gender; It has been classified into the following general groups of ADHD: attention deficit, hyperactivity, impulsivity, combined, and ADHD with functional diversity, that is, ADHD simultaneously with other disorders; that can last a person's entire life or appear from stroke. It can be identified by the duration of symptoms, usually if they stay more than six months both at home and at school because their character is changeable,

they can be passive at school and impulsive, restless at home, or the opposite (Ureña Morales, 2007).

Treatment of ADHD is multimodal with drugs and various therapies such as psychosocial stimulants, in children it is recommended that their treatment be with therapies and that they are prescribed, only if it is strictly necessary; 3% of children identified with ADHD in schools take medications that are addictive, decreasing their movement in classrooms and exacerbating their learning difficulty (Mateu Gollart & Sanahuja Ribés, 2020; Medranoa & Leóna, 2016).

The attention deficit is the most difficult to determine because in the school stage studying second grade onwards, they begin to emphasize their school performance, teachers to notice what difficulties the child has to learn due to lack or little concentration, has a fleeting, selective, or short-term attention according to the assigned task, if it is to your liking and you are easily distracted from a routine activity. On the other hand, indicators of hyperactivity are noticed from 0 to 2 years the moment of sleep the infant suffers from myoclonics, problems in the rhythm of sleep, startles when waking up, irritability to sounds, from 2 to 3 years anomalies in both oral and body language, excessive movement of their limbs, suffer numerous accidents, from 4 to 5 years: disobedience, does not respect shifts; hyperactivity in adolescence, 11–13 years decreases their motor activity and increases impulsive cognitive; and from the age of 5 for parents and 6 years for teachers: impulsivity stands out, interrupts any activity, wants to be the center of attention, act without thinking, uneasy, do not have patience, change of attitude from unruly to absent, in itself; and the combined ADHD and ADHD various dysfunctions from 1 or 2 years due to: their difficulty expressing themselves orally and bodily, startles when sleeping, hearing problems, motor-linguistic difficulties (de la Parra Yelincic, 2015; Liesa Orús et al., 2017; Ramos-Quiroga, 2009; Rubiales et al., 2011).

We can also mention that the hyperactive-impulsive ADHD subtype is four times more frequent in men than in women, and ADHD with attention deficit is two to one (Gasteiz, 2020). The course of TDHA, before the 1960s, its behavior was attributed to poorly instilled values as a result of the irresponsibility of their elders, hostile environment, and wandering; the first cases are recognized in 1960 and they were treated only by administering stimulant drugs individual, in the 1970s they were prescribed drugs and behavioral therapy, especially to children and adolescents because the drugs had side effects, they are addictive; for the 80s, epidemiological and categorization aspects are considered, predominating Psychoeducational, behavior, with which cognitive behavioral treatments appear for all stages: infant, childhood, adolescence, youth, and adult; from there, studies continue to be carried out on possible treatments that allow the integration and inclusion of everything (Fontecha & Sánchez, 2017; Ibáñez-Tarín & Manzanera-Escartí, 2012; Unicef, 2021).

The following is a summary of the evolution of ADHD according to age, gender, and type of ADHD (see table 1) and historical (see figure 1):

Table 1. Summary of the evolution of ADHD by age, gender, and type.

Guy	Age	Symptoms	Gender: male- female
Attention deficit	0-2	Absent or Fleeting Attention, maximum task of 7 minutes	2-1
	2-3	Fleeting attention: Maximum task of 9 minutes	
	3-4	Fleeting attention: Maximum task of 13 minutes	
	4-5 from 5 years	Maximum task of 15 minutes Selective attention, do not complete tasks for a maximum of 30 minutes, lose interest, get distracted, Short-term care: they do not meet schedules; forgetful, they live that moment without thinking about the consequences	
hyperactivity	0-2	Sleep problems	4-1
	2-3 years	Expression deficit	
	4-5 years From 5 years	Impatience, disobedience Extremely restless, unruly	
Impulsiveness	From 5 years	They interrupt any activity, thoughtless, multifaceted: calm-restless	4-1
combined		Not expressed, startles, change of attitude from aggressive to passive, lack or little behavioral inhibition	4-1
ADHD with functional diversity	0-2 years	ADHD with sleep disorders such as eating disorders, ASD, Dow syndrome	
	From the age of 2	ADHD with disorders such as language, hearing, motor, visual, sleep, anxiety, fears and phobias, eating, self-esteem, intellectual disability, etc.	

EDUCATIONAL INTERVENTION

“ADHD is a specific term that refers to a group of school and nonschool disorders, which manifests as significant difficulties for family, school and social learning and adaptation” (Romero Pérez et al., 2005). Currently we have different technological resources that reinforce learning and teaching; facilitate the inclusion of people with educational needs with learning difficulties, in particular; students with attention deficit hyperactivity disorder -ADHD that allow us to perform collective activities such as therapeutic learning games together with technological tools such as a therapeutic robot that constantly analyzes and evaluates each and every one of the individuals involved: families, learners, collectivity; since inclusion is about general

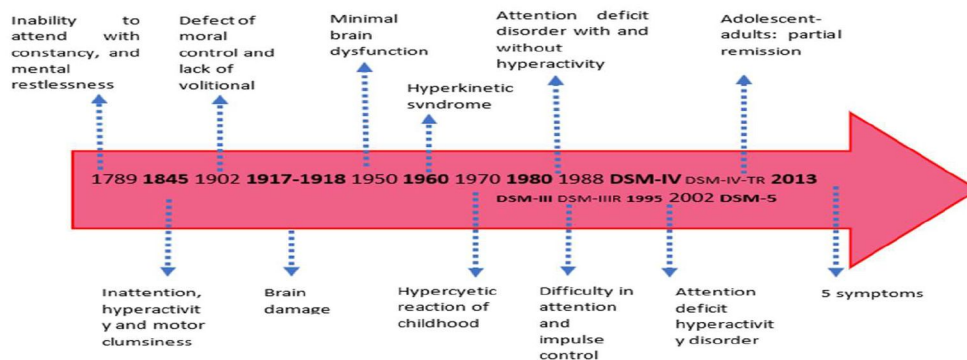


Figure 1: Historical evolution of attention deficit hyperactivity disorder (Medranoa & Leóna, 2016).

education, focuses on the capacities of each one, has principles of equity, cooperation, and solidarity; is the interaction of home, education-labor, social, multi-specialists and the individual to be treated, which is why it provides what each of those involved needs enjoying the same rights, in this case people with ADHD are helped with schedules, schedules, schemes, concept maps and / or digital agendas that reminds them of their daily activities allowing them to be more organized, respect shifts, greater control of their emotions, that is, inclusion is given by a collective learning that allows personal and social growth in equal conditions (Balbuena Aparicio et al., 2014; Cortés et al., 2017; Estévez & Guerrero, 2017).

In all stages of the individual, it is complex to differentiate people with ADHD from those who do not, since the symptoms are similar to the behavior of evolutionary development, the older their age is confused with poorly educated people, without social friction, or are considered conflictive subjects (Millán, 2012). The Educational Integration Program– PIE, an inclusive tool that adapts both human and physical resources to the needs of people with learning difficulties, strengthening a diverse cultural-economic-social educational system, promoting the collaboration of different establishments, disseminating pedagogical practices (MINEDUC, 2016). In these programs, both teachers and the community of their environment have to be aware that a 10-year-old child with ADHD is similar to a student of 7 years, a boy of 18 with TDHA is equal to a student of 12 to 13 years, human resources have to appropriate their socioemotional development that is deficient and stimulate them to improve it; providing them with a guide, a control of behavior through the internalization of language that is acquired unconsciously in the game, in music, dance, theatrical works of situations lived by people with ADHD, sports, yoga, meditation, recreational activities or methodologies and mediations implemented by the teacher and motivating them to create possible ways of acting in any situation that is presented to them in an adaptive way (Vieites-Novio, 2018; Zambrano et al.) (see Figure 2); all this involves coupling the physical environment in such a way that it is not distracted, placing it between model people, workplace large enough to perform activities standing or on the ground, activities according to your taste or that do not

take long to execute them, assign a gradual time according to the difficulty of the action, a schematic schedule or digital timeline, an audio-visual support to remind you of daily goals, motivate them with clear, concrete dialogues and simple rewards (Rocha Tayupanta, 2020; United Nations Educational & Organization, 2020). In most institutions, it has been coupled and committed to promoting the integration and inclusion of people with learning difficulties by compensating their socioeducational needs with all the physical and human resources they possess with the conception that we all learn (Ramos, 2015).

SCHOOL STAGE

In the school stage, it is difficult to differentiate the symptoms of ADHD since its attitude is similar to an infant without special educational needs; they are aggressive, restless, do not concentrate, do not respect shifts, do not pay attention, are not orderly, lose things, do not complete tasks, act without thinking, do not measure danger, labile emotionally, are considered unruly, among others (Estévez & Guerrero, 2017; Ureña Morales, 2007); these attitudes not only harm the child with ADHD by being rejected, avoided by other children; but to the whole group in the environment there is discord, fear, less attention to the teacher, neglect of learning (Rocha Tayupanta, 2020; Romero Pérez et al., 2005); so the teacher must adopt teaching methods that involve everyone in a creative, fun way, must fit the need of their students; which is the objective of the Educational Integration Program – PIE.

The best way to reach children is play, art, and/or sports, activities that include cognitive behavioral therapy. This therapy is multimodal, treats the whole, group; to particle, individual; treats all students, including family educators-community, and constantly diagnoses in such a way that the whole group progressively advances without distinction (Ibáñez-Tarín & Manzanera-Escartí, 2012; Paltín Pacheco & Romero Bustillos, 2019; Pineda, 2016) (See Table 2).

COLLEGIATE AND UNIVERSITY STAGE

Children and adolescents with ADHD are described as poorly educated and insensitive, challenging behavior persists, increases, or appears due to neuropsychological injuries and socio-environmental factors: contaminated places, socioeconomic precarious sites, these students put resistance to the authority of the learners creating deep gaps in the teaching-learning relationship; that it impairs their development, their performance because it increases their cognitive impulsivity and decreases their motor impulse (Ureña Morales, 2007); in university students with ADHD the consequences of their symptoms are complicated, they do not plan, they lose time, they postpone routine or academic activities, they are not clear about their goals, they are disorganized, a deficit in inhibitory control that affect their lifestyle (Medrano & León, 2016); the teacher must be sensitive and adapt to students of special educational needs providing security with a calm body expression,

Table 2. Playful methodology: emotional training for a 6-year-old (Mateu Gollart & Sanahuja Ribés, 2020).

Number	Objectives	Methodology	Time
Mastery of emotions	Facial recognition of emotions: joy, sadness, anger, surprise, fear, shame, doubt. Encourage attention.	6 tokens are distributed for each participant. It is the classic game of dominoes in which two tiles must be placed with the same face, one next to the other. You can talk about the characteristics of each of the faces so that the child internalizes the characteristic features.	30'- 45'
Memori-emotions	Facial recognition of emotions: joy, sadness, anger Foster memory.	The cards are dealt on the table randomly and pairs must be made of the cards that are the same. Whoever has more partners wins.	30'- 45'
Mysterious box	Facial recognition and interpretation of emotion.	In a box are the tiles of the emotions and by turns, a card is drawn and the same thing that comes out in the card must be done so that the other player recognizes the emotion.	30'- 45'
Mirror	Facial recognition and interpretation of emotion.	In a mirror, each participant performs an emotion and the other person has to get it right.	20'
Who's Who	Expression of emotions.	Each player takes a card from the deck and puts it on his forehead without looking at it, and through questions to the other participant, must guess what emotion he has on his forehead.	30'- 45'
Calendar of meetings	Recognize the emotion you feel at that moment.	At the beginning of the session, the child must put in the file of how I feel today, the emotion he is feeling at that moment using the drawings (cutting and pasting) and explain why, if the child is not able to write, the teacher puts the explanation that the child gives.	10'- 15'
Calendar of meetings	Recognize the emotion you feel at that moment.	At the beginning of the session, the child must put in the file of how I feel today, the emotion he is feeling at that moment using the drawings (cutting and pasting) and explain why, if the child is not able to write, the teacher puts the explanation that the child gives.	10'- 15'

eye contact and simple, positive and serene language; that motivates you to observe, listen and adopt that attitude to respond to your speaker (de la Parra Yelincic, 2015).

Table 3. Strategies for Preschool and School Students with ADHD.

Inclusion strategies	Activity	Proceeds
Structured Physical Environment Simple tasks Gradual time according to the task (Millán, 2012)	Spacious workplace that allows you to perform tasks standing and, on the floor, quiet companions, visible routine, clear and concrete orders, one-hour activity divided into three parts, and reward you by completing each part (Gasteiz, 2020; Unicef, 2021).	Improve attention, concentration.
Control restlessness auto-controlled activity (Mesa Mas, 2018).	Going up and down steps before a task, assigning daily activities that allow you to move during class such as erasing the blackboard, training your classmates when entering or leaving the classroom for recess, giving controlled times according to the difficulty of the task, planning group activities that demand movement, for example, every half hour for 5 minutes (Mateu Gollart & Sanahuja Ribés, 2020; Pérez Galán et al., 2014).	Decrease hyperactivity Acquire responsibilities Improves memory (Villagómez Puebla, 2018)
Assist children with ADHD during the development of homework (Berrezueta-Guzman et al., 2020).	A robotic assistant and a smart environment assist a child with ADHD to complete his/her homework avoiding any kind of distractions (Berrezueta-Guzman, Pau, et al., 2021; Berrezueta-Guzman, Robles-Bykbaev, et al., 2021; Dolón-Poza et al., 2020; López-Pérez et al., 2020).	Robotic technologies in the care of ADHD have been an important advance.
Motivate and teach with fun (Zambrano et al.).	Read stories, perform plays of daily situations that children face and their possible responses to them. helping them to use self-directed speech, to train solutions, positive instructions for their behavior, encourage self-criticism, self-evaluation, and self-reinforcement (Bravo Decimavilla, 2019; Sigua Guarango, 2020).	Decrease the impulsivity Behavior control Safety

Students with TDHA receive help in addition to the teacher of information and communication technology (ICT) tools such as digital agendas where they are reminded of their tasks, computers and projectors that highlight important concepts, obtaining complete notes, visualize the tasks as many times as they need and can complete them in less time, increasing their performance, allowing them to learn at their own pace, increases confidence decreases frustrations and motivates them to continue learning by rewards created in therapeutic software; they receive the same opportunities as the rest of the students with the help of ICTs that comply with the principle

of equity and inclusion in learning by creating auditory and tactile visual channels (Cortés et al., 2017; Guerrero, 2021; Morales et al., 2020).

WORK STAGE

Adults with ADHD present emotional instability, disorganization, impulsivity, poor money management, low self-esteem, irritability, impatient, easily distracted by any thought or object wasting time to fulfill their activities, among others; the evolution of hyperactivity is not uniform or specific; so young and adult have antisocial behaviors and are even delinquents, they are the ones who suffer the most from being altered have negative consequences that make them more vulnerable (Balbuena Aparicio et al., 2014; Cortés et al., 2017), hence the importance of detecting this disorder at an early age; since 25% of those who have been treated throughout their lives evolve positively decreasing the possible problems they face and 75%, most have a deficiency in planning actions for a goal due to hyperkinetic behavior, a short-term memory or lack of concentration, and others are criminals.

As for impulsivity, they are impatient, misplaced comments, lack of empathy, social disinhibition (Ramos-Quiroga, 2009; Vieites-Novio, 2018). In the work stage, generally individuals with ADHD have problems with their boss, with the schedule, long tasks, friction with their peers due to aggressiveness or lack of attention, economic oversights, their partners do not understand them, they suffer abandonment, their self-esteem is low, some suffer depression and resort to drugs and alcohol. UNICEF and WHO demand the implementation of integration and inclusion in all entities, and it is an obligation to have a percentage of employees with special needs and their facilities coupled to them (Ramos, 2015; Unicef, 2021).

CONCLUSION

In conclusion, the evolution and inclusion of people with attention deficit, hyperactivity, and impulsivity disorder -ADHD is in gradual development trying to reduce treatments with drugs that mostly have side effects especially in the period of childhood and adolescence and compensate them with inclusive therapies, playful methodologies such as cognitive behavioral therapy that can treat most disorders and be implemented both in technological tools how to be adopted by the human resources of all kinds of educational or socioeconomic entity and applied from childhood without distinction helping from the core of society, family, towards every life cycle.

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