

Issues in the identification, assessment and treatment of children and adolescents with ADHD

Dificultades en la identificación, evaluación y tratamiento de niños y adolescentes con TDAH

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RESUMEN

Muchos estudios acerca del trastorno por déficit de atención con hiperactividad (TDAH) han documentado que este trastorno del neurodesarrollo puede estar infraidentificado. De ahí que el diagnóstico precoz de niños y adolescentes con TDAH resulte importante, representando las intervenciones escolares una herramienta fundamental para trabajar en esta área. Para identificar problemas en el diagnóstico, la evaluación y el tratamiento de niños y adolescentes con TDAH, se analizan aquí los hallazgos de investigaciones que podrían conducir a resultados significativamente mejores para los niños y adolescentes con TDAH. Los estudios revisados brevemente proceden de una búsqueda en MEDLINE, entre los años 2009 a 2022, utilizando para ello los términos "TDAH", "identificación", "prevalencia", "evaluación", "tratamiento", "dificultades de aprendizaje" y "TDAH" y "comorbilidad" combinados, al resultar tales términos claves para un diagnóstico preciso. La literatura revisada sugiere que múltiples aspectos asociados a las características psicométricas, así como a los factores clínicos y/o farmacológicos deben ser considerados de gran importancia clínica en la identificación, evaluación y tratamiento de individuos diagnosticados con TDAH. De este modo, se torna importante indagar en torno a las dificultades vinculadas a identificar, evaluar y tratar a niños y adolescentes con TDAH en diferentes contextos.

PALABRAS CLAVE

TDAH; identificación; evaluación; tratamiento; dificultades de aprendizaje.

ABSTRACT

Many studies into Attention-Deficit/hyperactivity Disorder (ADHD) have documented that this neurodevelopment disorder may be under-identified. Early diagnosis of children and adolescents with ADHD is important, and consequently school-based interventions represent an essential tool for work in this area. To identify issues in the diagnosis, assessment and treatment of children and adolescents with ADHD, is reviewed here research findings which could lead to significantly better outcomes for children and adolescents with ADHD. Accordingly, we briefly review studies retrieved in a MEDLINE search, using the terms "ADHD", "identification", "prevalence", "assessment", "treatment", "learning disabilities" and "ADHD" and "comorbidity" combined, as these pinpoint diagnosis, for the years 2009 to 2022. In this respect, the literature reviewed suggests that multiple aspects associated with psychometric features, as well as clinical and/or pharmacological factors should be considered of highly clinical significance in identifying, assessing and treating individuals diagnosed with ADHD. For this reason, it is important to investigate about difficulties immersed in identifying, assessing and treating to children and adolescents with ADHD in different settings.

KEYWORDS

ADHD; identification; assessment; treatment; learning disabilities.

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Introduction

Recent decades have seen major advances in our understanding of the difficulties faced by sufferers of attention-deficit/hyperactivity disorder (ADHD), although there is still much to be learned. In particular, progress has been achieved in identifying, assessing and treating children and adolescents diagnosed with ADHD (Kooij et al., 2019), as potential biomarkers and other diagnostic methods, along with a range of treatments have been developed (Mahone & Denckla, 2017).

Whilst our knowledge is undoubtedly greater, and clinical practice has benefited certain limitations in the existing literature point to future directions to explore, especially regarding the heterogeneity associated with ADHD, and its clinical assessment and treatment (Musser & Raiker, 2019). The importance of identifying, assessing and treating young people with ADHD is still more evident when we bear in mind that numerous studies have documented an increase in the number of diagnoses over the last few decades (Polanczyk et al., 2014). From this perspective, clinicians, educators and families should recognize ADHD as a chronic disorder and therefore consider its early identification as a significant public health issue which varies with the developmental stage in which individual diagnosed with ADHD is found. This is especially true if these individuals will require lifelong health care. In like fashion, more research is needed into ADHD in terms of gender and age in different populations and settings.

Firstly, we briefly review studies retrieved in a MEDLINE search, using the terms “ADHD”,

“identification”, “prevalence”, and “ADHD” and “comorbidity” combined, as pinpointers of diagnosis, given that ADHD prevalence and co-occurrence with other mental disorders are two of the five areas in the clinical guidelines for ADHD published by the American Academy of Pediatrics (American Academy of Pediatrics [AAP], 2011). This has implications for the relevance of ADHD from a lifespan perspective, and the need of increasing our knowledge of the condition among communities of parents, educators, students of general and mental health, and practitioners of mental health.

Various population-based studies have found a prevalence of around 5% for ADHD in child populations (Taylor, 2017), while at the same time noting that significantly fewer than this number of children receive treatment for the condition (Tatlow et al., 2016). As a result, mental health professionals find serious difficulties in predicting treatment response, and are thus hindered in developing tailored treatments. Many countries have made concerted efforts to diagnose ADHD earlier, although there are notable national differences. This has been strongly confirmed in a recent systematic review and meta-analysis by Thomas et al. (2015), which suggests 7% as an approximate figure below which rates would be indicative of underdiagnosis. Taylor (2017) notes that this figure is possibly rather lower in Europe as opposed to the USA, a disparity unrecognized by the medical community until a few years ago, and most likely due to differences in the patterns of diagnosis and the perceptions of the impact of the disorder on sufferers. In the UK, one significant cause hypothesized for originat-

ing the differential in rates of diagnosis is the demands of the education system, in particular the competition between schools regarding examinations results (Hinshaw & Scheffler, 2014). Because the perceptions of family and teachers plays such an important role in the diagnosis and treatment of ADHD, these are even more essential for ADHD than for other disorders. One of the challenges of obtaining teacher reports for teenagers is the need to coordinate between different subject teachers. Parents are also likely to have fewer opportunities to observe their children's behavior than when they were younger (AAP, 2011).

The methods used for diagnosing children and adolescents have varied greatly in the last ten years, while other variations in the apparent prevalence rate seem to be accountable for by differences in the population surveyed. Apparent differences in the evaluation of ADHD could stem from social and cultural factors specific to each population. An example of such a case concerns a study of Jewish and Arab children who had recently started school and were evaluated with DSM-IV criteria by both teachers and parents (Ornoy et al., 2016). This study found a rate of 9.5% among the Jewish children and 7.35% among the Arab children. More significantly, the difference between the teacher and parental evaluation was far more marked in the Jewish population (2.3 times higher) than in the Arab population (only 12% higher).

After a review of research findings, McLennan (2016) advocates a move away from conceptualizing ADHD in terms of categories. It was found that the empirical studies reviewed

supported a predominately dimensional conceptualization of the disorder, rather than regarding it as a discrete entity. Nevertheless, for practitioners, these findings in no way diminish the needs of those presenting substantial ADHD symptom clusters, nor the risks that such symptoms entail.

In order to locate children on the ADHD spectrum, many clinicians, educators, and parents place considerable importance on cognitive and behavioral measures. In this respect, psychoeducation for families has proved to be effective (Ferrin et al., 2014). Parental capacity to support their children can be assessed by the parenting class instructor and reported to the clinician. Where children can be assessed directly by their teachers, these can provide a first-hand report on the core symptoms of the child (AAP, 2011).

An important lesson which could be learnt of identifying, assessing and treating individuals with ADHD from early developmental stages is that it will serve for implementing future measures which will be useful when those individuals become adults diagnosed with this chronic disorder (Koumoula, 2012).

Medication

Recognition of ADHD as a neurobehavioral disorder affecting a significant percentage of young people around the world has important implications for the psychiatric care, especially as many symptoms of ADHD often persist into adulthood. Despite this, it is as well to recall a set of studies providing evidence that pharmacological interventions can be highly effective in reducing core symptoms of most chil-

dren and adolescents (Nolen-Koeskema et al., 2009). Such core symptoms include developmentally inappropriate levels of inattention, hyperactivity, and impulsive behavior. Adults in this group have a high rate of related comorbidities, in particular functional difficulties in key areas such as relationships, education, and employment (Epstein et al., 2014). Clinicians thus should keep in mind that extra support might be necessary for the educators and parents of children and adolescents with ADHD who have the disorder, in particular with regard to providing medication on a consistent basis and implementing a consistent behavioral program. In a similar vein, longitudinal studies have found that many children do not receive sustained treatment, even though this puts them at greater risk of significant problems in the long-term (AAP, 2011).

With these considerations in mind, researchers have investigated various pharmacological interventions, such as the efficacy and tolerability of immediate-release methylphenidate versus placebo in the treatment of individuals with ADHD. It is important to note that whilst a large number of studies have delineated the usefulness of immediate-release methylphenidate in children, very few studies have documented the effects of this pharmacological intervention on adults. In addition, tricyclic antidepressants (TCAs) are sometimes used as a second line of treatment in the reduction of ADHD symptoms in young people. However, the evidence for the use of desipramine as a treatment for children with ADHD is weak. Trials indicate that while desipramine has a short-term positive impact on the core

symptoms of ADHD, the long-term impact on the cardiovascular system is of clinical concern (Otasowie et al., 2014). Although cases of sudden cardiac death in children on stimulant medication are extremely rare, there are concerns about their use to treat ADHD. There is, however, no clear evidence that they increase the risk of sudden death. It is advisable to expand the patient's medical history to include specific cardiac symptoms, Wolf-Parkinson-White syndrome, sudden death in the family, hypertrophic cardiomyopathy, and long QT syndrome (AAP, 2011).

Epstein, Patsopoulos and Weiser's (2014) database search also found that immediate-release methylphenidate can be successful in helping children to improve in core symptoms of ADHD, such as hyperactivity, impulsivity, and inattentiveness, as well as to improve their overall clinical condition. They raise some questions on the design and interpretation of the data in the studies they review, but overall they conclude that adverse effects from immediate-release methylphenidate for adults with ADHD are not of serious clinical significance. Nevertheless, they recognize that this is a qualified conclusion in view of the relatively short duration of the studies returned by the search. In addition, the data concerning symptoms of anxiety and depression as indicators of patients' mental state were not categorical, some reporting a reduction in these symptoms, others no change, and others again an increase.

Storebo and colleagues (2015) have subsequently presented findings that suggest that, among children diagnosed with ADHD, methylphenidate might improve symptoms

of the condition and behaviour in general, at least insofar as reported by teachers, as well as parent-reported overall quality of life. Nevertheless, they note that the evidence on which to draw such conclusions is generally "low quality". In practice, even when methylphenidate has positive effects, there is no certainty about their magnitude.

A further complicating factor was the short follow-up periods typical of the trials included in the review. In particular, there was some evidence of an increase in the risk of non-serious adverse events, such as sleep problems and decreased appetite, associated with methylphenidate, but no evidence of an increase in the risk of serious adverse events. Finally, according to the authors, the results strongly indicate that large randomized controlled trials are required for non-pharmacological interventions (Storebo et al., 2015). In any event, before starting on any course of medication, the physician should assess the severity of the child's ADHD. This should always include a complete history, a physical examination, and a thorough consideration of differential diagnosis and related comorbidities (Bélanger et al., 2018). For children younger than school age diagnosed with ADHD, given our current state of knowledge, medication should be considered only in cases where moderate-to-severe dysfunction has been assessed (AAP, 2011).

In marked contrast to the above studies, there is little evidence on the efficacy and safety of using amphetamines for ADHD in young people. Some readers might find this surprising as they are frequently prescribed to manage ADHD. Driving poses particular risks to adoles-

cents with ADHD, and medication coverage is essential. Symptoms can be controlled either throughout the day by longer-acting medication or by shorter-acting medication taken before driving. Another area of concern among adolescents is the diversion of ADHD medication to uses unconnected with the intended purpose. Prescription-refill requests should be scrutinized, and clinicians should be attentive to signs of misuse or diversion of ADHD medication. In cases where misuse is suspected, they should consider prescribing medications with no abuse potential (AAP, 2011). From a systematic literature review of the use of amphetamines in the treatment of ADHD, Punja and colleagues (2016) concluded that the risk of bias was high in most of the studies included (8 parallel-group and 15 cross-over trials), and that the overall quality of the evidence ranged from low to very low on most outcomes.

Although amphetamines seem effective at reducing the core symptoms of ADHD in the short term, it should be noted that they have been associated with a number of adverse effects. It is to be hoped that further research provides all the required answers. It is also desirable that future trials have a longer duration (over 12 months), include more psychosocial outcomes (such as quality of life and parent stress), and be transparently reported (Storebo et al., 2015).

There is little likelihood that the complex developmental effects of ADHD will ever be controlled by a single type of intervention. It is far more likely that a combination of biological (e.g. pharmacological) and cognitive-behavioral approaches will be required to mitigate the symptoms of those with ADHD (Auster-

man, 2015). In one study by Wymbs and associates, most parents showed their preference for interventions that would help them to understand and feel more informed about their child's problems (Wymbs et al., 2015). Both forms of intervention will benefit from a better understanding of the underlying biological foundations of ADHD.

Clinical practice guidelines

As observed in the opening section, although there appear to be cultural factors influencing the application of the clinical guidelines in the diagnosis of ADHD, in themselves they are insufficient to account alone for the increase in diagnosis of ADHD in recent decades. Many experts have expressed that this is very likely because ADHD requires multimodal treatment and different experts to tackle it. Our current state of knowledge has yet to identify the "active ingredient" which makes certain treatments more effective than others, and still less the optimal conditions for particular individuals (Murray et al., 2014).

A large number of studies have also identified a range of factors influencing diagnosis, irrespective of the ADHD guidelines used. This suggests that the increase in the number of children and adolescents diagnosed with ADHD might in part be due to the use of different clinical tools or criteria for diagnosis. Supporting these assertions there are some cases where ADHD has been diagnosed when it was manifested only in the school context and not in the family environment, a mode of making a diagnosis contrary to the recommendations of many ADHD experts.

It is also important to note that assessments made on the basis of reported information are highly dependent on the quality of the report, usually provided by someone familiar to the child and in daily contact with them. Given that the child's social limitations may be over- or underestimated this person, whether parent or teacher, the reliability of the information provides needs to be documented. Obviously, this will help mental health providers in making well-informed and evidence-based decisions.

It is often the case that parents seek out professional advice and diagnosis early in their child's development if they have concerns (McKeown et al., 2015). The main purpose in seeking a diagnosis in the case of many parents is to then have access to services. Generally, to reach a diagnosis of ADHD, clinicians measure child observation and parent reports against diagnostic instruments (Zhou et al., 2017). It is important for the clinician to ensure that *Diagnostic and Statistical Manual of Mental Disorder, Fourth Revised Edition* criteria have been met (including documentation of impairment in more than one major setting). At the same time, information should be obtained primarily from reports of parents or guardians, teachers, and other school and mental health clinicians involved in the child's care (AAP, 2011).

From a slightly different angle, a diagnosis of ADHD can be very helpful for clinicians in explaining to parents how the disorder manifests itself in their child's behavior and how intervention can modify this. For instance, a young child with ADHD might exhibit temper tantrums, at least partly as a result of his or her inability to make sense of their surroundings

and to find expression for their frustration. By helping the child to understand their environment and what is expected of them, and by providing them with opportunities to express their preferences, there should be a decline in the frequency of the tantrums.

ADHD and relates comorbidities

Young people who are evaluated for ADHD may at the same time suffer from other behavioral, developmental, and physical conditions. These include, but are not limited to, learning problems, language disorders, disruptive behavior, anxiety, mood disorders, tic disorders, seizures, developmental coordination disorder and sleep disorders (Cortese et al., 2013; Mardomingo Sanz et al., 2019; Davidson et al., 2019). There is a consensus among studies by the American Psychological Association (APA) from the 1990s to the present that the effects of coexisting conditions on ADHD treatment is variable. It may be that the co-occurring condition requires treatment alongside the treatment for ADHD, and while some may be treatable in the primary care setting, others will require referral (AAP, 2011). An important issue of co-occurring conditions is that it can become difficult to identify cases of ADHD when children remain in mainstream education and receive treatment specific to their needs (Erskine et al., 2016).

How then can the use of different tools and criteria for diagnosing and managing ADHD be encouraged? As well as providing information about how treatment will affect their child and their environment, a meaningful diagnosis should also inform families of the changes they can expect in the disorder as their child devel-

ops. Diagnosis of ADHD can also relieve parents from the sense of guilt that they are somehow responsible for their child's problems. Irrespective of this, it is possible for school-age children with ADHD to take tests of their readiness for school without time restrictions, following the appropriate guidelines (AAP, 2011). The assessment and subsequent treatment of children previously unsuspected of having ADHD by both parents and professionals presents new challenges to clinical practice (Clark & Bélanger, 2018). In fact, parents tend to overestimate their children's impairment in comparison with the clinician. Providing guidance to parents on behavioral-observation scales and effective social-educational interventions will be useful in this respect. Education of parents is thus an important factor in the management of children and adolescents with ADHD. From this perspective, parents should recognize ADHD as a chronic condition, and that young people with ADHD should be considered as having special health care needs. This education of parents should include ensuring their cooperation in titrating doses of medication (bearing in mind that they themselves might have the condition) (AAP, 2011).

There is, of course, a big difference between supplying a prompt response to parental concern and informing parents of a problem they were unaware of. For such information to be of value to the parent, it first has to make sense, and he or she has to be ready to assimilate it. Nevertheless, simply being made aware that other families are able to manage and treat the condition can offer hope and practical strategies (Wymbs et al., 2015).

It is to be hoped that considerations such as these will have a positive impact on the outcomes, and reduce the anomalies in the data regarding the frequency and intensity of symptoms associated with ADHD. Another positive effect should also be that of reducing the amount of medication required, as parents often find that their involvement is paralleled by a reluctance of their children to take medication. This, of course, depends, on an open and honest dialogue between the parents and professionals at all stages of the process of referral and assessment.

Another critical factor is the tests used to collect data on the prevalence of ADHD. Many researchers have found significant differences in the application of terminology between the American and European tests. The European tests tend to adopt a more restrictive interpretation and consequently identify fewer cases. Accounting for this disparity in diagnosis has led some researchers to address the conceptual framework of the tests, with several questioning whether examination of individuals' behavioral manifestations is capable of drawing a clear psycho(patho)logical distinction between personality and pathology.

The issue of matching tests to the appropriate population has also been explored. Some studies found that tests trialed on adult populations failed to take into account developmental cognitive factors when applied to younger populations. In like fashion, the performance of tests and the interpretation that can be drawn from the results are subject to

socio-cultural factors stemming from the administration and rating of the tests with an Anglophone population (Hinshaw & Scheffler, 2014). It is also important for researchers not to forget that each individual follows a unique developmental trajectory.

There is, too, the question of whether age should be taken into consideration in assessments of the condition, given the aim of treatment is to alleviate the symptomatic expressions in terms of impulses, attention and hyperactivity. If age is not to be considered, then clinicians should consider different symptomatic expressions associated with relatively gross personal, socio-family and educational implications. Evaluative tests could be adapted to take this factor into account when conducting research into this complex syndrome. In recent years, given the typically rapid pace of child development, researchers have sought to establish normative data in the school age population (Klenberg et al., 2016). The chief focus of this research has been on executive functioning (EF) in response to the serious implications of psycho-physiological functions such as anticipation and self-regulation in tasks linked to the coordination of cortical and sub-cortical frontal lobes. The neural substratum and evolutionary patterns of such components have also been analyzed.

Although there remain questions to be researched, children still need to be assessed and treated, so clinical criteria tend to be used for diagnosis. A comparison of the criteria in DSM-IV-R and those in DSM-5 shows that greater significance is accorded to symptoms than to dysfunctions. Further,

Young and Goodman (2016) notes that while clearer diagnostic criteria for adult ADHD have now been made available through publication of DSM-5, there are no comprehensive guidelines for managing the transition of ADHD from pediatric through to adult care. Among the differences between DSM-IV-R and DSM-5 is that while the former required certain symptoms to be linked to the dysfunction before the individual was seven years old (criterion B), in at least two different scenarios (criterion C), the latter raises the required age of onset to twelve, and also introduces reference to the co-presence of symptoms. Another significant difference is that DSM-5 does away with the requirement in DSM-IV-R for clinically significant "clear evidence" of dysfunction observed in academic, occupational and social contexts (criterion D), replacing it with a requirement for symptoms to "interfere with or reduce the quality of" some of these contexts. There is, then, an issue here in determining whether the symptoms represent only an inconvenience to everyday life or a genuine clinical dysfunction, and hence there is a need to be cautious in the application of diagnostic tests. In practice, even when tests have positive predictive value, the decision taken will influence the diagnosis of ADHD, a problem rendered all the more acute by inconsistencies in the application of the scales used for clinical evaluation. For example, poor correspondence has been found between symptoms and dysfunction in both the social and academic ambits, as those required to apply the scales, typically parents and teachers,

fall back on what their subjective notion of a pathological behavior. We must recognize that ADHD is not a straightforward homogeneous condition, and cannot be easily captured by DSM or ICD. It may be that, as many researchers affirm, the application of a categorical as opposed to a dimensional system presupposes a false demarcation between normal and abnormal. Further, some studies have found that the ADHD subtypes (hyperactive-impulsive, non-attentive, and combinations of both) show significant variation in terms of performance in cognitive operations, resulting in a marked heterogeneity across the subtypes with respect to the deterioration associated with each. Although it is very difficult to determine the scope of this hypothesis, it has been tested with individuals with ADHD (Gorlin et al., 2016). In addition, researchers corroborate the existence of different types of individual patterns linked to the attentive, impulsive and excessive motor arousal. In fact, at least two types of attention have been found, one selective and more characteristic of the inattentive subtype of ADHD and the other joint and characteristic of the combined type of ADHD. In line with these individual differences, researchers have drawn a distinction between manifestations of impulsivity, identifying on the one hand cognitive impulsivity, concerning individuals' performance in tasks and their general learning style, and on the other motor impulsivity, concerning a lack of motor control, and which is observed more predominantly in children with a combined type of ADHD.

Looking ahead: Some lessons learnt in relation to the learning disabilities

In this section, I will draw my attention on school closure and how it affected to individuals diagnosed with ADHD, and by extent, to their families and educators during the COVID-19 pandemic if it is compared to pre-pandemic times. First, school closure forced toward a different model of learning and teaching, one based on homeschooling and remote learning (Davoody et al., 2022). In this context, it became a priority the need of thinking on which were the best educational measures to be implemented, for learning disabilities are very common among children and adolescents with ADHD (Saline, 2021). In line with this, parents of individuals with ADHD reported negatively of a serious worsening on how facing to daily routines following confinement restrictions and the shift to online schooling (Zhang et al., 2020). In attempting to ameliorate this difficult situation, it was important to help parents in having a set of emotional, educational skills, for many of them felt enough unprepared to provide adequate academic support to their children at home (Becker et al., 2020). Second, there is available evidence on the benefits derived from homeschooling, among which are mentioned increasing children's wellbeing (Thorell et al., 2022), as well as the improvement of their academic performance in mathematics, reading and writing (Shah et al., 2021). Linked to this, it is also said that because of using remote learning at home the school-related stressors (i.e., exam pressure, contact with peers and more rigid timeline for managing schoolwork) were reduced in individuals with

ADHD, who regularly experience social difficulties and poor academic achievement within a more traditional educational model (Bobo et al., 2020; Sciberras et al., 2020).

What lessons have been learnt from this pandemic in relation to learning disabilities? The first and foremost lesson is that school, as an important institution addressed to educate and form good persons for the future, must keep the children and adolescents with ADHD in focus, collaborating closely with their parents and families in facilitating its normalization, integration and academic-emotional learning within the educational context. Consistently, school-based interventions represent an essential tool for work in this area. Bearing all this in mind, in my view, it is still useful as heuristic for research in ADHD the ecological model of Bronfenbrenner (1979), according to which school, family and other institutions should work coordinately, doing so that difficulties immersed in identifying, assessing and treating to young individuals with ADHD be easier. The future challenges are yet many, but the growing literature at hand and the efforts of educators, parents and researchers will do work more satisfactory for all parts in it implied.

Concluding Remarks

As has been earlier corroborated, children and adolescents diagnosed with ADHD should be considered as having special health care needs. However, one limitation of the literature I reviewed is that there is still not sufficient evidence for confident recommendations for treating ADHD to be made. In my opinion, the likely explanation is that ADHD requires mul-

timodal treatment, implying it that there is a range of factors influencing diagnosis, and hence are used different clinical tools or criteria for diagnosis, assessment and treatment.

Advances in diagnostic methods might maybe in the future make it possible for professionals to screen more individuals with ADHD, and thus reduce the time required by clinicians. There remain clinical and socio-educational issues relating to the diagnosis of ADHD that require further research ADHD (Shah, Grover & Avasthi, 2019). A systematic and accurate means of screening children, identifying which are more likely to develop ADHD, would allow those most at risk to be referred to a clinician for diagnostic assessment. In addition, better information for parents and teachers on ADHD could be expected to overcome stigma and create better informed referrals.

At present, no single approach can meet the needs of all those with ADHD, and it is necessary to individualize treatment in order to attain the best outcome for each individual (Zwi et al., 2011). Even at specialist level, clinicians without special ADHD training need to be able to rely on empirical supported guidelines, something which would be easier to achieve if treatment manuals and curricula were more readily available.

On another level, if the most important therapeutic goal in the treatment of children and adolescents with ADHD is the reduction of the problems relating to attention, impulses, and hyperactivity, might one ask whether or not the age of individuals matters in the early diagnosis of this condition? If it does, it is important to note the determination of

the optimal schedule for monitoring children and adolescents with ADHD, including factors for adjusting that schedule according to age, symptom, severity, and progress reports. Going deeper, neither DSM nor ICD capture the complex heterogeneity of ADHD, which many researchers attribute to the use of a categorical rather than a dimensional system (Balbuena, 2016).

With all, the social abilities of children with ADHD can be improved through cognitive-behavioral techniques, which parents and educators can learn with good degrees of effectiveness, even in cases where it is chiefly the parents applying the intervention. The successful diagnosis of child and adult ADHD requires consideration of many factors, including prior medical history and comorbid conditions, alongside individualized, evidence-based treatment. That being so, the next steps required to sustain appropriate treatments and achieve successful long-term outcomes still remain a challenge.

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