

Understanding Attention Deficit Hyperactivity Disorder

Introduction Attention deficit hyperactivity disorder is a neurodevelopmental disorder that presents itself in early childhood and it can impact behaviour through hyperactivity and impulsivity as well as inattentiveness and social difficulties (Young *et al.* 2020). It is genetic although it can also be as a result of brain damage pre or post birth, maternal drug and alcohol dependence during pregnancy and premature birth (NHS, 2021). The variant gene impedes the production of chemicals thus limiting networking in the parts of the brain tasked with mental flexibility making it difficult to adapt to changes in the environment and inhibiting executive function tasks(NHS, 2021; Curran, 2021; Barkley, 2016; Brown, 2019a). ADHD cannot be cured but it can be managed.

Identification and Diagnosis
According to the ADHD Foundation, (2022a) there are three types of ADHD, inattentive, hyperactive/impulsive and a combination of the two. Hyperactivity lessons with age but attentiveness and organisational skills as well as emotional regulation are challenged by biological changes, and social and environmental expectations that adolescence and adulthood bring (Barkley, 2016).
Symptoms Children have difficulty finishing tasks or even getting started, following instructions, taking turns and display impulsive behaviour all of which leads to frustration and behavioural difficulties that form a barrier to learning (NHS, 2021; Barkley, 2016).
Diagnosis This is based on a presentation of at least 6 traits in either inattentive or hyperactive/impulsive or 12 for a combined presentation in two separate locations (Barkley, 2016; Brown, 2019b). The traits must be displayed for a minimum of 6 months and must occur between the ages of 5 and 12 years of age. A detailed interview is carried out with the family and school, together with a questionnaire such as SNAP to identify the ADHD subset (TDMHSAS, 2013).
Early Years Diagnosis Between 3 and 5 years naturally emerging behaviours could be misinterpreted as ADHD traits and an underdevelopment of certain cognitive skills such as speech and language skills make assessment difficult. In contrast research into measurements of head circumference in infants of 18 months has shown that a decreasing head circumference percentile could be an early indicator of ADHD alongside a smaller brain volume, however these measurements are the primary indicator, monitoring of speech and language development would confirm the validity of this method (Gurevitz *et al.* 2014)
Irregular sleep patterns can also be an indicator of ADHD and research in this area for preschool children shows that monitoring sleep patterns has produced positive results, however the limitations of this are that sleep was only monitored during the night whereas most infants will have daytime naps and the possible bias of the parental reports does throw up some inaccuracies (Bundgaard *et al.* 2018).

Barriers
The diverse diagnostic criteria of ADHD and how this is presented is unique to each child therefore there is a requirement for flexibility and differentiation to learning that may also require the need to be dynamic, changing the support strategies in the moment (ADHD foundation, 2022a).
However, a high percentage of teaching staff feel that having children with ADHD in the class creates extra work, and that there is a tendency for over diagnosis (Greenway and Rees Edwards, 2021). There is an emphasis towards structure and discipline rather than the individual's needs.
This medical model view limits the potential of the child and is contradictory to the ethos of current policy regarding inclusion where provision should be accessible by all children (Alliance for Inclusive Education, 2022; Central South Consortium, 2021). In contrast, research in Spain involving the content of Initial Teacher Training found positive attitudes to adapting classrooms for children with ALN where aspects of professional development and collaboration with other professionals were responsible for these attitudes (Castillo and Fernandez, 2015).
In the UK, teaching staff and assistants unanimously agree that they would like to know more about ADHD and that in depth and detailed information as part of professional development and education for all staff would not only relieve the feelings of frustration but give staff the confidence to implement strategies for children with ADHD into lessons (Anderson, Watt and Shanley, 2017; Greenway and Rees Edwards, 2020; Ward, Kovshoff and Kreppner, 2021). This agrees with Kurniawati *et al.* 2016 p.23 in that it is *‘the teacher who must adjust to the diversity of the classroom and not the students with SEN to the teacher or the curriculum.’* This social model approach places the responsibility on society to adapt the environment and practises so that diversities of any kind access learning (SCOPE, no date).

Strategies
Organising learning should be individual to that child’s diagnosis criteria (ADHD Foundation 2022b; Barkley, 2016). The following strategies will advise on how to incorporate the attentional and physical difficulties that children with ADHD experience into their routine.
Plan sessions so that learning is chunked into smaller sections and introduce a timer to mark the end of the session (ADHD Foundation 2022b; Barkley, 2016). By setting smaller goals, a child with ADHD is more likely to stay on task especially if they know in advance that they will have a mental or physical break after completion. This acts as an immediate reward system and encourages the child to set goals and keep attention during the task (DuPaul and Stoner, 2014).
Make the sessions interesting (ADHD Foundation 2022b; Barkley, 2016). Children can stay focused on a subject if it is of great interest to them so incorporate novelty into the sessions. Use tactile resources and if possible, include interactive and physical elements. This will support executive function tasks such as short-term memory and attention and can help to regulate the necessity to move around or lose interest. In contrast mundane repetitive tasks such as worksheets will not engage a child with ADHD and is likely to encourage their focus and attention to lapse (DuPaul and Stoner, 2014).
Large class sizes and inefficient deployment of teaching assistants can result in a lack of effective differentiation due to insufficient time and lack of knowledge for a particular ALN (Blatchford and Russell, 2020; Bekker, Griffiths and Leballo, 2021) However the Edinburgh Psychoeducation Intervention for Children and Young People© (EPIC) (2022) explain that neurodiversity strategies can be applied to all children.

Conclusion
ADHD can cause a delay in executive function tasks but children with ADHD are still capable of learning providing any barriers are removed. Adapting classroom activities and adjusting timetables allow for this learning to take place however for this to successful there is a requirement for knowledgeable staff who can identify the symptoms and put in place strategies at the earliest opportunity (ADHD Foundation,

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