

USER'S GUIDE TO THE BRAIN: IN THE CLASSROOM

Understanding and supporting children with ADHD.

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Introduction

This leaflet is designed to help teachers understand what is meant by ADHD and to tackle the common misconceptions that they often withhold about the disorder. First, the leaflet will explain what is meant by ADHD and then go on to discuss research which will help guide teachers in adjusting their classroom environment to better support those who meet the DSM-5 ADHD criteria. It is hoped that after reading this leaflet teachers will feel more comfortable in providing the appropriate support for these pupils so that they can fulfil their potential alongside the rest of their peers.

Teacher's attitudes and perspectives.

Research conducted by Batzle, Weyandt, Janusis & Devietti (2010) found that teachers tended to view students with ADHD less favourably in terms of their ability and the expectations they withhold about them and this effected the way in which they were taught. Labelling further contributes to this as it directs ones beliefs about an individual and therefore brings bias and negative stereotypes based on this individual (Koonce et al., 2004). Thus by formally educating teachers about special educational need disorders such as ADHD it will bring awareness and understanding to help them in supporting these pupils.

What is ADHD?

Attention deficit hyperactivity disorder (ADHD) is a mental disorder that is characterised by symptoms such as "inattention (not being able to keep focus), hyperactivity (excess movement that is not fitting to the setting) and impulsivity (hasty acts that occur in the moment without thought)" (American Psychiatric Association [APA], 2009, para 1).

Biology of ADHD

It has been evidenced in research that children with ADHD are frequently found to have smaller cerebral volumes in all four lobes, with the decrease being predominant in the prefrontal cortex region resulting in under-function (Castellanos, Lee & Sharp et al., 2002; Mostofsky, Cooper & Kates et al., 2005). The prefrontal cortex has an important role in carrying out executive function which involves higher-level cognitive processing. Some of its roles include regulating emotional responses, decision-making, inhibiting impulses and controlling attention (Millichap, 2011; Kim & Lee, 2011). All of which are pinnacle to some of the challenges children with ADHD face.

What is meant by attention and what impact does it have on a child with ADHD?

Attention "is the taking possession by the mind, in clear and vivid form, of one out of what seem several simultaneously possible objects or trains of thought. Focalisation, concentration, of

consciousness are of its essence. It implies withdrawal from some things in order to deal effectively with others" (James, 1890, p. 403-404).

Attention is shown in many ways. For example, in maintaining attention, redirecting attention and separating attention. This can be more demanding for children with ADHD especially when they are required to focus their attention on a task e.g. classwork for long periods of time or if there are distractors in the environment (Fabio, Castriciano & Rondanini, 2015).

Does a child in my classroom have ADHD?

When assessing whether a child in your classroom has ADHD it is important to use the DSM-5 criteria as a guide. There are several behaviours that could be presented by a child with ADHD with regards to demonstrating inattention. However, a child must only show six or more for at least 6 months to be diagnosed. Here are the criteria that the DSM-5 provide for behaviours related to inattention:

- Often does not give close attention to details or makes careless mistakes in schoolwork, work, or other activities.
- Often has trouble keeping attention on tasks or play activities.
- Often does not seem to listen when spoken to directly.
- Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (loses focus, gets side-tracked).
- Often has trouble organizing activities.
- Often avoids, dislikes, or doesn't want to do things that take a lot of mental effort for a long period of time (such as schoolwork or homework).
- Often loses things needed for tasks and activities (e.g. toys, school assignments, pencils, books, or tools).
- Is often easily distracted.
- Is often forgetful in daily activities.

(Centres for Disease Control and Prevention, 2019)

Go to this website for more details: <https://www.cdc.gov/ncbddd/adhd/diagnosis.html>

Stroop Test

The Stroop test (Stroop, 1935) is an interference test whereby an individuals read aloud the observed ink colour of conflicting names of colours (Ikeda, Okuzumi, & Kokubun, 2013). This creates a situation in which the brain is required to process competing information at the same time and therefore relies on selective attention (Leung et al., 2000). This requires the brain to demonstrate high levels of inhibitory control which involves suppressing the primary

response that is dominant and automatic and instead elicit the weaker competing response (Friedman & Miyake, 2004). Due to the reduced ability in children with ADHD to carry out executive functions, the Stroop test which requires high attentional demands can be a difficult task for these children to complete. In a study a correlation was found between children with ADHD ratings and Stroop interference performance (Ikeda, Okuzumi, & Kokubun, 2013).

Key Research: Optimal Stimulation Theory (Zentall, 1975)

Zentall (1975) proposed that children with ADHD show signs of distractibility and hyperactivity as a way of increasing the inadequate levels of stimulation that they are receiving from their surround environment. In short, Optimal Stimulation Theory is grounded on the idea that behaviour in children with ADHD acts as a homeostatic regulator (Douglas, 1974).

Considering this, it is important for teachers to adjust the learning environment to maximise stimulation opportunities and minimise the risk of inattention from their pupils with ADHD.

Key Research: Delay Aversion Hypothesis

Fundamental to the Delay Aversion Hypothesis is the motivational drive behind it which acts to delay the temporality of situations which those with ADHD find themselves in to make the delay for an award appear less than it is (Van Dessel et al., 2018; Chronaki et al., 2019). To minimise delay children with ADHD will begin to change the environment around them and in doing this they become distracted or begin to distract others (Sonuga-Barke et al., 1992). Therefore it is beneficial for teachers to remove the temporality of situations and reduce the amount of times a child with ADHD is left in situations of delay as this can be frustrating for them.

Behavioural Interventions: Supporting a child with ADHD in the classroom.

Many of the following behaviour interventions are antecedent-based strategies which are "interventions that involve manipulation of events that precede target behaviour in an attempt to prevent problematic behaviour from occurring" (DuPaul & Weyandt, 2006, p.163). In this case the problematic behaviour being inattention and distractibility.

Zentall and Zentall (1983) demonstrate the wide attentional bias that children with ADHD have and point out that for these children to pay attention and therefore learn, novel stimuli need to be introduced. This helps to keep the classroom environment interesting and more stimulating for these pupils. For example

teachers should refrain from repetitive tasks for these children because they are not very stimulating as they have been done before.

Another aspect of this boredom is the duration of the task which they are being asked to complete. DuPaul and Stoner (2014) advocate that teachers should focus on the positive behaviours they want to see from the child with ADHD rather than attending to removing the negative such as disruptive behaviour. They can incorporate this by giving smaller tasks to these children and rewarding them when they complete them. Over time teachers can increase the demands and duration of the task with reward along the way to relieve the demands of the task from the beginning (DuPaul & Stoner, 2014; DuPaul, Weyandt & Janusis, 2011). This way the child with ADHD is less likely to get bored and cause distractions due to inattentiveness.

Rules are important guidelines for all members of the class to follow. Many researchers point out that rules should be unambiguous, positive in manner and clear to see for children with ADHD (Cooper & O'Regan, 2002; DuPaul, Weyandt & Janusis, 2011). For example the rules could be presented as pictures. Rewards and reinforcers are a great way to shape the behaviour of children with ADHD. Millichap (2011) gives some examples of classroom reinforcers: "individualised attention, immediate and frequent praise for work and responsibilities and rewards for special tasks" (p.103). By giving the child with ADHD individualised attention the teacher is stimulating the child and therefore preventing them from distracting others or seeking attention by other less productive means. Awards should be smaller and received immediately rather than larger and delayed as supported by delay aversion hypothesis (Sonuga-Barke, 2002). Furthermore, when the behaviour that a teacher wishes to see is praised the child internalises this and is more likely to repeat that behaviour (Skinner, 1938, 2019).

Academic interventions: CWPT

A method that has proved to be successful in increasing students attentiveness in the classroom is ClassWide Peer Tutoring (CWPT). CWPT is a form of peer tutoring that teachers can use to direct attention to individual groups and allow pupils to become actively engaged in their education (Greenwood, Delquadri, & Carta, 1988). A study found that when CWPT was implemented in a class the engagement of students with ADHD significantly improved from an average of 21.6% to 82.3% (Greenwood, Delquadri, & Carta, 1988).

Children with ADHD and peer relationships.

Forming peer relationships can be challenging for children with ADHD, especially during early years when their impulsivity can lead to frustration in situations such as sharing toys and waiting turns (DuPaul & Stoner, 2014). As a result of their inability to sustain attention, children with ADHD often disrupt their classmates learning when they try to increase stimulation from the environment e.g. by

walking around the classroom (DuPaul & Stoner, 2014). Furthermore, it is common for children with ADHD and attentional difficulties to not pay attention to or interrupt their peers when they are talking to them (DuPaul & Weyandt, 2006). Peers can begin to feel annoyed and frustrated with the child with ADHD and possibly begin to withdraw themselves from them, rejecting them or viewing them as less liked in the classroom (Hoza et al., 2005). If a child with ADHD in your classroom has poor peer relationships it is advised that a scheme such as the Tough Kids Social Skills programme is incorporated into the teaching environment as part of PSHE lessons to help improve skills such as controlling emotions and maintaining conversations with others (Sheridan 1995).

Final thoughts

This guide to understanding and supporting children with ADHD should have provided teachers with the basic knowledge of the disorder, alongside the biology behind it and presented to them ways in which they can help manage these pupils in their classroom. This leaflet will hopefully facilitate teachers in delivering the best possible opportunities in class to enable these children with ADHD to succeed in education alongside the rest of their peers.

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