

Elliott Charles Walters Honours Project Part 2

by Elliott Walters

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The University of St Mark & St John

**Supporting Children with Attention Deficit
Hyperactivity Disorder:**

**Does Medication, Given to Children with Attention
Deficit Hyperactivity Disorder, Help or Hinder a
Child's Ability at School?**

***The Effects of Psychostimulants on the Developing
Brain and How This May Lead to Behavioural
Inhibition in Further Education Without the Correct
Support.***

Elliott Charles Walters

Dissertation submitted in part fulfilment of BA (Hons) Education Studies and Psychology

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Glossary of Terms:

- **Aetiology** – *The cause or set of causes for a disease or condition. In this case the cause of ADHD.*
- **Amphetamine derivatives** – *When discussing the medication for ADHD. Amphetamines are a stimulant and stimulants are responsible for speeding up the messages travelling between the brain and body. Stimulants are usually prescribed for ADHD and Narcolepsy.*
- **Attention Deficit Hyperactivity Disorder** – *The SpLD that this Honours Project is based around.*
- **Autism Syndrome Disorder (ASD)** – *Also known as: Asperger’s Syndrome is a SpLD that shares similar symptoms to ADHD in some cases. ASD can be debilitating or it can allow a person to be very present.*
- **Behavioural Inhibition** – *The inhibition of certain behaviours and withdrawing from social situations. In this case, deriving as a side effect of medication.*
- **Frontal Lobe** – *Referring to the brain. The frontal region of the brain responsible for inhibiting impulsive actions.*
- **Heritability** – *In terms of genetics, heritability is the passing of a trait throughout a bloodline such as height, looks and traits.*
- **Methylphenidate** – *Most commonly named “Ritalin”. Used to treat ADHD and Narcolepsy.*
- **Narcolepsy** – *A neurological disorder that affects 1 in 2,000 people (around 25% of people worldwide) according to Narcolepsy Network (2013). The symptoms of Narcolepsy include: excessive daytime tiredness and the inability to control sleep-wake cycles.*
- **Neurobehavioral** – *Of or relating to an approach to studying that stresses the importance of nerve and brain function.*
- **Neurotransmitter** – *These are chemicals that enable neurotransmission. Neurotransmission occurs when a neuron is activated and allows us to feel pain for example. Medication used for ADHD will affect the neurotransmitters which allow the brain to function normally whilst inhibiting many of the symptoms of ADHD.*
- **Psychostimulants** – *Mainly used to Treat ADHD and Narcolepsy (see Amphetamine Derivatives and Methylphenidate). Psychostimulants inhibit the urge for impulsive behaviours in ADHD children. Sadly, for some, Psychostimulants can be abused and can cause addiction, dependency and long lasting damage to the brain whether this is prescribed or sourced illegally.*
- **SEN/D** – *“Special Educational Needs/Disability” – Referring to the range of people which are under the category of having a learning difficulty or disability.*
- **SEN/DCos** – *“Special Educational Needs/Disability Coordinator” – A person or persons within an educational institution who is adequately trained in caring and providing support specifically for children with SEN/D.*
- **Treatment-emerged Adverse Effects (TEAEs)** – *These are similar to unwanted side effects yet they are side effects of a course of treatment such as medication (in this case, psychostimulants).*

Statement of Originality

I confirm that I have fully acknowledge all sources of information and help received and that where such acknowledgement is not made the work is my own.

Signature:

A handwritten signature in black ink, appearing to be 'EW', written in a cursive style.

Date: 11.05.2020

Abstract

This desk-based research project aims to bring together a collection of research about the Specific Learning Difficulty (SpLD) known as Attention Deficit Hyperactivity Disorder (ADHD). It aims specifically find a correlation between Behavioural Inhibition (BI) and the medicine that is prescribed for children with ADHD. These medicines are classified under 'psychostimulants' which unexpectedly counter the symptoms of ADHD.

The writing and research finds a link between the medication, BI and a range of other factors and then moves towards a way in which Teachers, Teaching Assistants, SEN/DCos and Parents can work together in finding ways to suitably support a child's education so that they are given equal opportunity and can thrive with their peers at a comfortable pace.

The subject matter: SpLDs and Medication used to treat people's mental and psychological wellbeing interests me personally hence writing about the topics within this project. I have experience working with children with a range of SpLDs predominantly being ADHD and Dyslexia. Having wrote this I have been able to understand these in more depth and have grown professionally.

Introduction:

Within this project I have chosen to research how the medication, used to treat pupils with Attention Deficit Hyperactivity Disorder (ADHD), affects a child's ability in an educational institution (in particular, regular state schools) and whether or not there is a solid link between psychostimulants and Behavioural Inhibition (BI). As the reader will discover, the link between these two is commonly more prominent in both higher education and in later life concerning social aspects and becoming opportunistic. The research also starts to reveal how specific genders are affected differently in terms of the symptoms for ADHD, BI and how the medication interferes/affects this. In terms of school life and a pupil's ability, I will cover the possible academic factors such as attentiveness and the ability to apply oneself to learning. It will also cover the social and emotional progress made by said pupils.

By choosing desk-based research I have not limited the amount of intimate research I have been able to make as there are a plethora of unique and varying studies that already exist surrounding the main topic. This allows my research to be rigorous and I can take my time to decipher a range of different journals and academic reading, giving the research a holistic and rounded view. Therefore, I will be covering a range of sub-topics that strongly link and allow me to conclude.

These Chapters will include:

Chapter 1: An Introduction to ADHD - A Brief History and Where We are Now

In this chapter, ADHD is introduced, and its brief history is explained. This allows the reader to better understand the origin of this Specific Learning Difficulty (SpLD) and the reasons why ADHD has recently become a more frequently noticeable neurobehavioral trait in children.

As the discussion of ADHD in this chapter starts to become more recent and relevant, the definition of ADHD changes in terms of research and how it is now understood. Statistics accompany and support the reading which allows: the SpLD to be broken down, and the

reader to have a more complex understanding of traits, symptoms and who is more susceptible to this condition.

Chapter 2: The Issues of Diagnoses and Prescribing Children Medication:

This chapter critically discusses how the diagnosis of ADHD can be difficult, in several ways, for behavioural specialists, parents and the pupil:

- For behavioural specialists, the factors which create difficulties lie within making the right choices in defining behavioural traits and deciding whether or not to help a child receive a label, theoretically get more support and whether to allow a parent the option to medicate their child. Another factor for behavioural specialists, that is more commonly found in further education, is students feigning the behavioural traits/symptoms to receive medication and acquire an academic advantage over others.
- For parents, it may be difficult to understand the idea of there being something potentially abnormal about their child. This chapter consoles this idea and finds surprising yet reassuring statistics about ADHD and its prevalence.
- For the child, they may find it difficult to understand what having this SpLD means for them. If a child has received a label and this has negative repercussions, the child can feel inept in school or feel as though they have an excuse for not applying themselves to learning, showing their full potential, and/or achieving.

Withing the sub-chapter, titled "Medication", the various medications are discussed. This chapter contains arguments for and against the medication. Whilst some studies have found there to be virtually no side effects associated with ADHD medication, this is where the reader sees a glimpse of why Behavioural Inhibition is linked to the administration of psychostimulants and how they can negatively affect the developing brain.

Chapter 3: What is Behavioural Inhibition and How is it Linked to Attention Deficit Hyperactivity Disorder?

After the reader is informed about the pros and cons of the medication, behavioural inhibition is explained and linked within social situations. Symptoms of behavioural

inhibition are also found within the subchapter “The link between Behavioural Inhibition and children with ADHD” and explains why females are more likely to adopt traits of behavioural inhibition as they will go unnoticed due to the nature of their withdrawn and unorthodox ADHD symptoms.

Chapter 4: Supporting Children with ADHD in the Classroom: Effective Pedagogy, Essential Resources and The Role of Teaching Assistants.

Supporting all children, with and without Special Educational Needs and Disability (SEN/D) is crucial when fulfilling the role of an educator; a Teacher, Teaching Assistant or Special Educational Needs and Disability Coordinator (SEN/D Co), for example. Supporting your children as a parent is also crucial to ensure that the pupils develop socially, emotionally, and academically. In this chapter I will critically analyse different support strategies based on their effectiveness and begin to conclude how children with ADHD can be correctly supported. The reader find why it is important for a teacher not to give all of the responsibility of SEN/D pupils to Teaching Assistants.

This chapter also shows how for some children, with the correct support, can become more confident and support the slower onset of BI.

Conclusion and Recommendations

Here I will bring the points made throughout my research together and explain what I have personally learnt from engaging in this project. I will also give my personal thoughts on the points I have included. These will purely be theories of my own and are not referenced as they are educated opinions.

Chapter 1

An Introduction to ADHD. A Brief History and Where We are Now

Attention-Deficit Hyperactivity Disorder (ADHD) has circulated education for a long time and is not a new SpLD (Specific Learning Difficulty) despite the SpLD's significant increase in recent years (Xu, Strathearn, & Liu, 2018). The increase over the past 8 years (at time of reference: 2007-2015) has gone up by 42% according to Healthline (2015). This SpLD has received a variety of names throughout history. In the 1930s, it was labelled as a minimal brain dysfunction and since received names such as ADD (Attention Deficit Disorder), ADHD (Attention Deficit Hyperactivity Disorder) or Hyperkinetic Disorder (HKD). It is considered a dysfunction of executive functioning and predominantly activates within the frontal lobe of the brain (later explained in "Medication").

"The aetiology of ADHD is complex; with evidence existing for the association between ADHD and possible structural, functional and neurotransmitter alterations in various regions of the brain in children, adolescents and adults with ADHD" (Ellison-Wright, Ellison-Wright, & Bullmore, 2013). With a heritability estimated to be up to 76% (Larsson, Chang, D'Onofrio, & Lichtenstein, 2013) this condition is not uncommon but will still often go unnoticed and therefore untreated. Despite the heritability being rather high, it is estimated that around 5-8% of children and 2.5-4% of adults worldwide are affected by ADHD (Polanczyk, Willcutt, Salum, Kieling, & Rohde, 2014). The cause behind adults having a smaller percentage can be down to several factors. According to Sudre *et al.* (2018), with ongoing cognitive development, children may start to "grow out of" their symptoms throughout their teens into adulthood. Another reason concludes that children are often more impulsive than adults as they have not learned to fully control, maintain or suppress certain behaviours. For example, if an adult were to act impulsively or show behaviours that they should typically refrain from, they may be labelled as 'childish'.

The number of children with this condition seemed to increase after the 1950s when schooling became more standardised. Some suggest that the reason for an increase in diagnoses over the more recent years is due to a growing understanding of the SpLD (Magnus, Nazir, Anilkumar, & Shaban., 2019) and how we are more efficient at identifying behavioural traits that associate with ADHD. Diagnoses can be achieved over a period of

thorough assessment and data analysis with a behaviour specialist although, having this general growing understanding with a range of SpLDs allows Teachers and Teaching Assistants a greater opportunity to identify and support children's specific needs in school sooner.

From the 1970s into the late 1990s, ADHD was viewed as comprising three primary symptoms, these being: poor sustained attention, impulsiveness and hyperactivity and a child may be diagnosed appropriately with either having ADD, ADHD or HKD depending on their symptoms (American Psychiatric Association [APA], 1980-1987; Barkley *et al.* cited in Barkley, 1997). In more recent studies and practice, these three separate diagnoses have been merged into one collective disorder, predominantly taking the form as 'ADHD', but instead of having three subcategorised names, it now consists of three subcategorised behavioural traits (Magnus, Nazir, Anilkumar, & Shaban., 2019):

- predominantly inattentive
- predominantly hyperactive
- inattentiveness/hyperactivity - combined type

This is where the complexities of ADHD diagnosis arise which makes it difficult for doctors to decide whether or not to acquire further support and, if further support is needed, difficult for behavioural specialists to make an accurate and discrete diagnosis. Theoretically, hyperactivity may not be a prominent symptom or appear as a problem in some pupils, yet some children may be very intelligent but show strong signs of inattentiveness. Another child's inattentiveness may derive from their hyperactivity.

By having this small spectrum of subtypes, ADHD now falls into a similar category as autism but on a much smaller scale. Autism or Autistic Syndrome Disorder (ASD) being an extremely complex learning difficulty that affects those who have it, differently from one another. This could potentially affect one person's ability to identify other people's emotions including body language, facial expression, and speech. For another person, they may be highly intelligent in specific areas, have a photographic memory or find it hard to suppress their intense feelings for something or someone. A lot of the symptoms of ASD often correlate or coexist with ADHD (NHS, 2020) which are detailed later in the project.

ADHD is strictly diagnosed under *behavioural* diagnosis which requires a professional to identify a spectrum of different symptoms and behavioural traits. This may also be a

reason for the significant increase in ADHD diagnoses as the number of symptoms and behavioural traits have widened due to the growing understanding of the SpLD.

According to Cordier et al (2018), ADHD can affect children in many ways which can cause them to present deficits in the following: problem solving, planning, flexibly, orienting, response inhibition, sustained attention and working memory. "They also experience affective difficulties, such as motivation delay and mood dysregulation" (Cordier et al, 2018). These symptoms (or attributes) associated with ADHD start to form the basis of the social problems that children with ADHD encounter (Landau & Moore, 2019).

When a child has ADHD, the condition is likely to present a list of coexisting conditions that can affect its severity. These conditions can negatively impact social situations and school making them more challenging for the pupil. According to Healthline (2015), ADHD does not increase a person's risk for other conditions or diseases. However, some people with ADHD (especially children) are more likely to experience a range of coexisting conditions.

Some possible coexisting conditions include:

- Specific Learning Disabilities (which are already present).
- Conduct disorders and difficulties, including antisocial behaviour, fighting, and oppositional defiant disorder (problems with resisting urges of impulsive behaviour)
- Anxiety Disorder
- Depression
- Bipolar Disorder
- Tourette's Syndrome
- Substance Abuse
- Bed-wetting Problems
- Sleep Disorders

These coexisting conditions can also affect the severity of a child's ADHD symptoms or make it more challenging for a specialist to make the correct decisions during diagnosis.

Chapter 2

The Issues of Diagnosing ADHD and The Issues with Medicating a Patient

Issues of Diagnosis

Children are usually diagnosed with ADHD around the ages of 6-12 years, when their symptoms mature and become more prominent (NHS, Attention Deficit Hyperactivity Disorder (ADHD), 2018). The most common age being 7 years old (Healthline, 2015). Of these 6-12 Year-Olds, males will be diagnosed more often than females. In comparison, using Male:Female, the ratio can range anywhere from 3:1 to 9:1, "depending on whether those results are population based or are retrieved from a clinical sample" (Ford-Jones, 2015). There is no evidence that proves that boys are more likely to develop ADHD but the symptoms in both genders appear differently which often makes it complex to assess (Legg, 2012). The differentiation in symptoms also make it clearer as to why males are often diagnosed first or more commonly in comparison to females.

Smith (2019) states that whilst boys are more likely to be diagnosed with ADHD, girls are at a higher risk of developing behavioural inhibition and especially depression with ADHD. Along with females, people with the inattentive subtype of ADHD are also at higher risk for depression compared to those with the hyperactive-impulsive subtype (UCM, 2010). In Chapter 3, when discussing the link between BI and ADHD, more of the symptoms for ADHD are shown and the reason for BI being more commonly shown in females becomes clearer.

Diagnosis is difficult for specialists and it can take time to fully assess the symptoms and provide a good outcome for parents and their child. From here a parent can learn more clearly how to support their child at home and work with teachers to ensure their child is getting the correct help in school. Another dilemma that parents face when at this post-diagnosis stage will be whether to use medication for their child. Not being a parent myself, I can only assume that using medication for your own child would be a last resort as there are many support options available to help suppress ADHD symptoms before concluding that medication will 'fix' a child. These support strategies stem from school.

Another issue with diagnosis is the feigning of symptoms in order to retrieve medication for academic advantage. Although this mostly occurs in further education, it is still an issue and needs to be addressed as there is obviously a flaw in diagnosis if this is able to happen. The medication associated with ADHD has desired effects such as alertness and focus although failure to use the substances correctly can lead to unwanted, long-term effects.

Each person will respond differently to these various stimulant medications. Some will show clear improvement, others will show negative repercussions (some of the common side effects associated with stimulant medications will be present) and some children will show neither positive nor negative effects.

Post diagnosis, a child can be truly labelled as having ADHD and can then, in theory, receive the correct support, time and effort from their teachers, teaching assistants and SEN/DCos etc. It is strictly the school's responsibility to provide the correct and most suited support for a child. It is also the parent's choice as to whether or not they should administer medication to their child.

Medication

The medication for ADHD belongs under 'stimulants' which, at a first glance, seems counterproductive but it is in fact stimulants which work within the brain to counter the symptoms of ADHD by increasing levels of dopamine. Dopamine is a neurotransmitter associated with motivation, attention and movement which subsequently reduces hyperactive and impulsive behaviours. There are pros and cons of using this medication which will be discussed within this sub chapter.

Due to the medication working differently within the ADHD brain, a study finds that the medication, which is classified as a 'psychostimulant' can unexpectedly reduce playfulness in juvenile rats and can be 'interfering' to the brain over time. Although no negative damage is necessarily done to a child's brain when taking the psychostimulants, the frontal lobe of their brain is slightly changed. This is the part of the brain that regulates a child's ability to inhibit impulsive urges; stop, look, listen and feel; and allow a child to self-reflect and partake in creative play (Panksepp, 2007). Someone who, for any reason has

damaged their frontal lobe may, as a result, forget to look before crossing a road for example. Every brain is unique and the way in which a child's brain metabolises the drug's effects is different from child to child. This is where the stimulant effects work incredibly well during the day but, for many, can be counter-productive during the evening, disallowing the child to sleep as effectively as they would without them (Drugs.com, 2019). Drugs.com (2019) also states that most medication used to treat ADHD also treats Narcolepsy and this can be the reason for unwanted alertness at night time. When a child is struggling with sleep, their education will undoubtedly suffer. When their sleep is not adequately fulfilled, they will be tired throughout the school day making it harder to concentrate and apply themselves to learning.

Aagaard & Hansen (2011) state that medications used for the treatment of ADHD are well-established and effective, and generally safe and well-tolerated and medication discontinuations (due to any adverse effects deriving *from* the medication) for ADHD have always been generally low. Martinez-Raga (2017) discuss the possible side effects of using methylphenidate formulations and amphetamine derivatives. They refer to what are typically known as unwanted side effects as 'Treatment Emerged Adverse Effects' or 'TEAEs'. If there were to be any TEAEs, the most common include difficulty falling asleep, decreased appetite, gastrointestinal pain, headache and dizziness (Wolraich, 2007). These TEAEs subside once a subject has withdrawn from taking the medication with no further reoccurring symptoms. Difficulty falling asleep and other restlessness is not only a TEAE but a symptom of ADHD. It is the combination of medicine and the way the child's brain responds that will decide whether this problem betters or worsens.

Although many sources agree that ADHD stimulants do not cause any long-term effects nor do they interfere too much with the developing brain, other sources argue that they do. Long term effects usually occur when the substance is being abused by students in further education who have either fraudulently retrieved the medication from a doctor or illegally from a peer. This is because they have not been prescribed the medication and do not know the correct dosage for themselves. There is no controlled method of intake.

Below, taken from McCarthy (2010), are some of the major symptoms of stimulant substance abuse associated with ADHD medication:

- Behavioural changes
- Problems in school, failure to complete homework
- Change in activities or friends
- Heightened attention, long periods of sleeplessness or not eating
- Unusual behaviours, including secrecy and isolation, unexplained spending
- Legal problems.

Along with the standard factors above, students may appear to have physical changes or consequences such as:

- Memory lapses, fatigue, and depression
- Heart problems and seizures
- Psychological difficulties including confusion and delusions
- Unusual behaviours, including secrecy and isolation
- Aggressiveness, irritability, mood swings
- Hyperactivity, euphoria
- Weight loss
- Dilated pupils, dry mouth, and nose

Panksepp (2007) states, "The diagnosis of attention deficit hyperactivity disorders (ADHD) has been increasing at an alarming rate, paralleled by the prescription of highly effective psychostimulants whose developmental effects on growing brains remain inadequately characterised". As mentioned in Chapter 1, since schools became more standardised in the 1950s and officials have become increasingly more aware of the SpLD's behavioural aspects (Larsson et al., 2013). Countering this argument, Panksepp (2007) later suggests that the reason for an increasing number of children diagnosed, may be due to the lack of opportunity for pre-school children to engage in natural self-generated social play as most pre-school learning is explorative yet still heavily supervised (Panksepp, 2007).

Although the medication used to treat ADHD have not shown to give any major side effects other than the given TEAEs that were previously discussed, some studies show that there is a link between the medication and the development of behavioural inhibition. Especially in females.

Low (2019) suggest this suitable analogy “Taking stimulants is not like taking an antibiotic to cure an infection, it is like wearing glasses so you can see, though the glasses do not cure your vision problems.”.

Chapter 3

What is Behavioural Inhibition and How is it Linked to Attention Deficit Hyperactivity Disorder?

What does Behavioural Inhibition mean?

Behavioural inhibition (BI) is a well-studied personality style, or temperament, that relates to the tendency to 1) feel distress or fear, and 2) to withdraw when faced with novel environments, situations, or people. Children showing behavioural inhibition tend to be afraid, anxious, or uncomfortable in unfamiliar situations, and tend to stop playing and withdraw when around unfamiliar people. These children tend to be very vigilant of their surroundings during these unfamiliar situations. They do not tend to approach new people, situations, or objects (Fox, Henderson, Marshall, Nichols, & Ghera, 2005). Fox *et al.* (2005) continue that young children with BI also display heightened sensitivity to auditory and visual stimuli.

BI is a temperament that has been linked to the development of Social Anxiety Disorder (SAD) and individuals with BI are at higher risk of later developing SAD (Henderson, Pine, & Fox, 2014) but before concluding that this is the only truth, Henderson *et al.*, 2014 suggest that many children will not develop anything more sinister throughout their lives. BI relates to the tendency to experience distress and withdraw from unfamiliar situations that include social interaction with people and being in new environments therefore when linking this condition into education, a pupil or student may limit themselves from experiences and opportunities that would prove beneficial for many aspects of self-development.

The link between Behavioural Inhibition and children with ADHD

There is no solid evidence for a link between BI and ADHD although research does show that there may be a connection. As previously discussed, there is a stronger connection between females with ADHD and behavioural inhibition than males. When closely comparing the symptoms of ADHD in males and females there is a clear difference.

This is something that should be noted as behavioural inhibition may not be a side effect of the medication but more a symptom of the condition itself.

A relevant argument which adds more context to the relationship between BI and ADHD, found in a majority of reading, is how males and females show symptoms of ADHD differently. For an educator, it is important to recognise the dissimilarity in behaviours (for boys and girls) in order to understand the condition more thoroughly. Research found in journals or on websites about the ADHD gender debate is theoretical but often true in outcome. There is simply no clear evidence for one gender or the other behaving the way they do although the results show that there are clear differences.

Boys tend to display externalised symptoms that are most commonly thought of when discussing ADHD, including:

- Impulsivity or acting out
- Hyperactivity (standing up out of their chair, running and/or jumping)
- Lack of focus (inattentiveness)

Whereas for girls, it is often easy to overlook the symptoms as the behaviours shown are not 'typical' behaviours associated with the condition. These symptoms include:

- Being withdrawn
- Low-self esteem
- Anxiety
- Impairment in attention that may lead to difficulties in academic achievement
- Inattentiveness or tendency to daydream
- Verbal aggression from frustration such as teasing, taunting, name calling etc.

Listing the differences in symptoms for both genders is crucial for the conclusiveness of this research because when behavioural inhibition is later discussed

Due to ADHD being predominantly seen as a 'bad' thing in the eyes of education. The pupil may grow to realise that they are being treated differently to their peers. This not only affects the child's day at school but can also affect their mental wellbeing in terms of anxiety in fear of doing something wrong. This can lead a child to inhibit certain behaviours due to a lack in self-confidence.

An interesting support strategy for a child labelled with ADHD is for the teacher to educate fellow pupils in the classroom about the condition (Collier, 2017). Not only is it important for a teacher to educate the class about the SpLD but it is crucial that this information is talked about positively and explained in a way that normalises the condition. Collier (2017), explains that “this reduces potential cases of bullying” and it also decreases the chances of said child feeling the need to inhibit certain behaviours. There are a variety of support strategies and methods of teaching that influence greatly on children with ADHD. The next chapter discusses and analyses some support strategies that are deemed effective.

Chapter 4

Supporting Children with ADHD in the Classroom: Effective Pedagogy, Essential Resources and The Role of Teaching Assistants

Having mentioned the previous support strategy of educating the remaining classroom about a child or children with existing ADHD in order to neutralise any stigmas surrounding ADHD, for the child with ADHD, having the rest of the classroom know this may not suit their individual needs and could be considered overwhelming to them. This is where another support strategy comes naturally. A quiet area. This should be promoted as a place where the child can go if the work or learning environment becomes overwhelming. Collier (2017) suggests that this area should be “multi-functional” which ideally means that they can use it for a selection of things; sitting still (for being reflective and calm), moving around (if they are being especially hyper active and/or struggling to focus) and bringing work to and from (if they are uncomfortable working in a classroom or typical learning environment for a certain task).

As for the teacher, in order to fully support a child’s learning it is firstly important to have a meticulous understanding of the child’s needs. To fulfil the duty of care requirements within the professional role of a teacher it is important to firstly address the teaching standards. In this chapter, the teachers’ standards 2, 4, 5, 7 and 8 will inform the writing to give a clearer view (DfE, 2011). These five teachers’ standards include: promoting good progress and outcomes (TS2), planning and teaching well structured lessons (TS4), adapting teaching to respond to the needs of all children (TS5), managing behaviour well (TS7) and fulfilling wider responsibilities (TS8).

Diagnosing a child early can make school life considerably more suitable for them and with receiving a label, a child is able to receive more support than a child without one. This is crucial for the child to develop in a way that suits and is comfortable for them because they may not be able to develop and progress as naturally as a child who neither classify as SEN/D or have a label.

Before covering the appropriate teachers’, standards and incorporating them into a supportive learning environment, it is important, especially for children with SpLDs that their

fundamental needs are covered. The image to the right shows a simplified version of Maslow's Hierarchy of Needs (Maslow, 2013). All five of the categories of needs are important and must be covered by staff in a school. When discussing my own personal philosophy of teaching, I always use this model to express how important I think these five categories of needs are.



When studying Maslow's Hierarchy of Needs it is necessary for a teacher to apply all five of the needs into their teaching and fulfil the requirements of all children they encounter in their career. For children with ADHD, who require more support than the average pupil, will also especially require some of the more basic needs before supporting their learning needs. It is important that a child feels comfortable and safe in the learning environment along with being confident in their learning and trusts the teacher's judgements in their ability to produce good outcomes and progress (DfE, 2011).

As previously stated, diagnosing a child early and getting suitable support quickly is ideal although the negative repercussions of diagnosing a child early are that children can often be impressionable and feel as though they must live up to their diagnosis and newly found condition. This may include exaggerated behaviours (both impulsive and deliberate), such as not achieving, feeling as though they do not have to put as much effort into their work or behaving in a certain way that they would not have if they were not diagnosed and labelled. If the class have also been educated into knowing about a pupil with ADHD, they will consider their behaviours normal and possibly become disruptive alongside the labelled pupil.

Dendy (2020) suggests concise support strategies, that are tailored to ADHD children are also used for children with other specific needs. These support strategies include:

- **Encouraging hands on learning:** It is important to encourage *any* child to learn first-hand and experiment whether this be Science, Maths, Literacy, Drama, Physical Education (PE) or Art. Having any opportunity to really be a part of something is intriguing and interesting to most children. Team-building exercises must also be encouraged within this, to aid the active process of social development. Any

opportunity for a task to be made interactive can serve a better purpose for a child with ADHD (Collier, 2017).

- **Making sure the work is appropriate and at the correct skill set:** If the work is too difficult or too long, children with ADHD will try to avoid it, states Dendy (2020). From experience I have found it challenging to form lesson plans for children who give up easily. The reason I find this particularly hard is because I see potential in the majority of children I meet whether that be from placement, outside of school and within family. I feel it is important to challenge children and find their working 'threshold' as I like to refer to it as. During placement I have found that most children are very able, and their potential is blatantly more than they exude. Persistence for both pupil and teacher is key to progress.
- **Offering a choice or compromise:** With ADHD children it can be effective to allow the child to feel in control of their learning, even if this requires them to continue with another subject whilst the class progresses onto the next. A child who appears to make little progress may be making large steps forward to themselves and therefore a teacher should reward them for these 'small' developments when applicable.
- **Providing visual help and reminders:** Visual reminders provide more than one thing for the child. They first, obviously, remind the child of what they need to do throughout the day or within a lesson, but they also teach the child to be self-sufficient, organised, and be able to independently manage their own time. From experience in schools, this links in seamlessly with '**Offering a Choice or Compromise**' as using visual reminders acts as a way to almost reverse psychology and allow the child to be in control of their own learning though this does not mean a child can simply decide not to participate in their own learning.

Support strategies for ADHD can be similar to those used for other SpLDs like Autism and Dyslexia. A good teacher must keep in regular contact with the parents of the child and maintain a strong working relationship with them (Collier, 2017). Once this strong relationship is established, parent-teacher meetings will become a regular occurrence, and it is important for a teacher to make sure their questioning is concise and gives a useful and proactive outcome. "A teacher may want to ask questions surrounding the child's strengths, weaknesses, interests, and achievements outside of school." (Collier, 2017). Not only can

teacher-parent meeting help a child progress in education but also progress at home making the outcomes more widespread.

It is often thought that a Teaching Assistant will spend more time with SEN/D children as the teacher is often busy planning lessons for the rest of the class. This should never be the case because a teaching assistant may not be fully qualified or able to support a child fully in some cases. It is the teacher's responsibility to care for all of their pupils and utilise a teaching assistant strategically when needed. Teaching Assistants who are constantly pushed to work with children with SpLDs often have to work with children who show violence and other challenging behaviours (Harris, 2019).

Conclusion and Recommendations

After spending the time researching the various links between ADHD, medication, behavioural inhibition, and education, it is hard to conclude whether or not the link between these is explicitly true. Although there is a lot of relevant evidence for the links to exist from studies, there is no concrete evidence that proves a yes or no. There is not enough information to support these speculations of the medication causing these long-term effects although there is evidence that it can. The common TEAEs and coexisting conditions that stem from ADHD and its medication.

I feel I grown a lot by writing this essay as I was not very well informed about ADHD, Diagnosis of SpLDs and the category of medication within this realm. I have learnt a lot of useful information in the writing of this project that I can apply in my future career. I specifically want to work with children who have learning difficulties, therefore the reading that informed my work has been intriguing and helped me gain more understanding of the issues surrounding SpLDs along with the correct strategies to approach when approaching and tackling children's behaviour etc.

I have also learned a great deal about the medication prescribed to people with ADHD and how it affects the brain uniquely in different people. Not only have I learned the effects of correct use and misuse of these treatments but now understand that it can be morally hard for a parent to decide whether to treat their child with pharmaceuticals. I have found a lot of information regarding methylphenidate (branded as Ritalin) and other amphetamines as I know people who use these for ADHD but never understood the complex details of what they do.

Personally, I agree with the evidence for the link between BI and ADHD Medication and also agree that because of the way in which girls exhibit their ADHD symptoms is a clear sign as to why they will go unnoticed or mislabelled as shy or withdrawn. I also feel strongly that any form of medication (especially psychostimulants) affect people differently and that is the reason for either a positive or negative outcome. Everyone's brain works uniquely.

My theory and advice would be to try the medication on your child without telling them what the medication does and observe for further improvements. If you tell an impressionable child what the medicine will do to them, they may play into it or rebel against it giving the parent a convoluted result.

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