

Introduction

As highlighted by Jones *et al.*, (2014); Lord, Bishop and Anderson, (2015) Autism spectrum disorder is a neurodevelopment condition defined by repetitive and restricted habits as well as difficulties with social interaction and communication. Autism spectrum disorder also known as (ASD). It is a condition that develops in childhood and affects a person for the rest of their lives (Christensen and Baio, 2016; Coulter, 2013; Leonard and Smith, 2020).

Within the relatively broad group of Autism spectrum disorders are enduring neuro-physiological abnormalities known as perinatal developmental disorders. According to The National Autistic Society (2024) every diagnosis on the autism spectrum, including high-functioning autism, Asperger syndrome, and classic autism, is referred to as Autism (ASD). As stated by Canavan (2016) ASD children require extensive assistance for the treatment of several co-occurring disorders in addition to the core symptoms of their additional learning needs (Zablotsky and Colleagues, 2015).

Moreover, The National Autistic Society (2024) reports approximately 700,000 adults and children in the UK are affected by Autism, representing more than one in every 100 people (Welsh Government, 2019). According to the Centres for Disease Control and Prevention (2022) Autism spectrum disorder affects one in 68 children and impairs social-emotional abilities as well as the ability to take perspective (Ghanoumi *et al.*, 2018; LaGasse, 2017).

Furthermore, as pointed out by Nah and Tan, (2020) social communication and interaction challenges as well as limited, repetitive patterns of behaviour, interests, and hobbies are the two primary areas of difficulty for children who have been diagnosed with autism spectrum disorder (Chung *et al.*, 2015).



(Source:UWTSDD,2019)

Spectrum Disorder Autism

ECEY6006 2200562



(Source: Trust, 2020)

Diagnosis

According to Xanthopoulou, Kokalia and Drigas (2019) there is no medical diagnosis for Autism spectrum disorder (ASD). As highlighted by Canavan (2016); Hyman, Levy and Myers (2020) a tool used for diagnosing ASD is CHAT Checklist for Autism in toddlers. Close collaboration between parents and experts is necessary for early diagnosis to ensure the child receives the right assistance promptly as they develop, and mature, and their requirements change (Mathieson, 2015). The Diagnosis of ASD requires input from the Multi-Disciplinary Team which consists of:

- A paediatrician,
- An educational psychologist
- A speech and language therapist

The diagnostic criteria for ASD, the proper etiologic examination, and co-occurring behavioural and medical disorders should all be known to primary care providers (Hyman, Levy and Myers, 2020)

Referrals for a diagnosis of ASD come from many different professionals including:

- Health visitors
- School nurses
- Speech therapists
- Paediatricians
- Medical experts (Coulter, 2013; Mathieson, 2015; NHS, 2022)

Referrals are discussed at routine meetings and, where necessary, sent to a consultant paediatrician for additional research. Considering the parents during the evaluation and diagnosis process will have a significant impact on how the diagnosis is accepted (Mathieson, 2015).

Barriers

Sensory processing

As stated by Dr Ayres (1972) the brain mechanism known as sensory processing is responsible for organising feelings from the body and surroundings and enabling efficient body-environment interaction (Galiana-Simal *et al.*, 2020; Suarez, 2012). Children with sensory processing disorder exhibit compromised reactions to the organisation and processing of sensory data, which impacts their ability to engage in activities and routines that are necessary for a functioning daily life (Passarello *et al.*, 2022) Moreover, due to the possibility of simultaneous impairment of one or more of the sensory systems including tactile, auditory, taste, smell, proprioception, and interoception. Sensory processing is particularly challenging to diagnose. The clinical diagnosis of ASD has included sensory processing as a key component Galiana-Simal *et al.*, (2020).

Executive functioning disorder

Naglieri (2014) cited Meltzer (2018) in defined executive functioning as a single phenomenon that includes people's ability to learn and solve problems effectively in a variety of contexts (Meltzer, 2018). According to Najdowski, (2017) every action you to control your own behaviour is part of executive functioning. According to Tse *et al.*, (2021) the cognitive construct of executive function is complex and comprises several interacting but possibly dissociable components, including planning, flexibility working memory, and inhibition. Deficiencies in the executive function components are responsible for a number of behaviours associated with autism, including limited and repetitive behaviour patterns, impaired social interactions, and communication difficulties (Tse *et al.*, 2021).

Strategies

To help children with additional learning needs to communicate is a visual timetable. According to Rutherford *et al.*, (2020) visual timetables are frequently employed to improve communication. As highlighted by Spriggs *et al.*, (2017); Watson and Di Carlo, (2016) visual timetables display the schedule of events for a certain amount of time. It has been shown in research from Foster- Cohen and Mirfin- Veitch, (2017); Knight, Sartini and Spriggs, (2015) how a visual timetable helps children with autism achieve better results by providing clarity and lowering memory demands. Furthermore, children's anxiety, irritation, and attention are lessened when using visual timetables by:

- boosting task completion
- foster peer connection
- facilitate transitions
- foster independence

According to Rutherford *et al.*,(2020); Zimmerman, Ledford and Barton (2017) regular use of visual timetables in settings has been shown to positively improve children's communication abilities. improve engagement, transitions, and recreational behaviour. However, the is limited evidence about the limitations of visual timetables used at home to support children with Autism. Furthermore, the effective use of visual timetables can help improve the development of social skills and address behaviours that hinder children and their peer's learning (Cohen and Demchak, 2018).

Conclusion

The term autism refers to a broad spectrum of difficulties that are characterised by challenges with speech, repetitive activities, and social abilities (Jones *et al.*, 2014). For children to receive the greatest care and intervention a referral from a health professional needs to be made. Parents and medical professionals need to communicate effectively to assist a child to receive early intervention and diagnosis. Children with autism are capable of learning new skills and interacting well with others. They may need more or different types of care to thrive in a school setting (Hood, 2019). Employing suitable strategies to optimally cater to the children's needs would enable them to flourish and overcome some barriers they may come across.

Hello, my name is Chantelle Mathias I have joined this webinar today to talk about an additional learning need known as ASD Autism spectrum disorder which is an interest to me as I currently work with children who have traits of ASD with no diagnosis and I am working with a multi-disciplinary team to support the child's needs and development to help them obtain a medical diagnosis.

To begin I am going to discuss what ASD is. As noted in my academic poster ASD is a developmental condition that impacts a person's capacity to connect and communicate with others (National Autistic Society, 2024). As highlighted by Jones *et al.*, (2014); Lord, Bishop and Anderson (2015); Shaw *et al.*, (2020) repetitive and limited behaviours, along with challenges with social interaction and communication, are characteristics of ASD. According to Balakrishnan and Alias (2017), neurological difficulties affecting a child's capacity to speak, interact socially and emotionally are mostly linked to Autism (ASD). Anderson-Chavarria (2021) mentions that within the medical model, Autism is viewed as a medical condition. It has been mentioned that the model over emphasises what an individual cannot achieve rather than what they are capable of. Moreover, National Autistic Society (2022) states that ASD is linked to three impairments: inability to establish social relationships; challenges with verbal and nonverbal social communication; inability to understand tone of voice, facial expressions, and questions; and challenges with using social imagination to participate in imaginative play. Also noted by Balakrishnan and Alias (2017) children with ASD may also experience social difficulties. However, this does not indicate that they are incapable of learning these abilities. ASD affects people differently, what affects one person will not always affect another (Welsh Government, 2019). Tranter (2022) emphasises that social cognition and communication, information processing and understanding, and sensory integration and processing are the three primary domains of development challenges ASD impacts. They have a significant impact on children's stress, anxiety levels, and their development (Han *et al.*, 2022; Jones *et al.*, 2014; Welsh Government, 2019).

Onto barriers as mentioned in my academic poster sensory processing disorder which I will refer to as SPD is one of the first barriers that emerge when a child is later diagnosed with ASD (Clifford *et al.*, (2013); Thye *et al.*, (2018). As noted by Fernández-Andrés *et al.*, (2015) difficulties with SPD have been highlighted as one of the key symptoms of ASD diagnosis. Galiana-Simal *et al.*, (2020) pointed out the clinical diagnosis of ASD has included SPD as a key component. Sensory dysregulation occurs early in the diagnosis and affects social functioning (Thye *et al.*, 2018). As pointed out in my academic poster Dr Ayres 1972 explains the brain mechanisms of SPD. Expanding on this through tactile, taste, smell, or sound responses, sensory receptors pick up environmental cues from their surroundings (Jones, 2018). The collected input is converted by these receptors into sensory information, which is then sent to the brain for processing, leading to a predetermined motor and behavioural response (Galiana-Simal *et al.*, 2020).

Additionally, children with SPD have impaired responses to the structuring and processing of sensory input, which affects their capacity to participate in routines and activities required for a functional daily living (Passarello *et al.*, 2022). Moreover, due to the possibility of simultaneous impairment of one or more of the sensory systems sensory processing is particularly challenging to diagnose (Galiana-Simal *et al.*, 2020). As noted by Galiana-Simal *et al.*, (2020) and Jorquera-Cabrera *et al.*, (2017) some of the most popular tools for assessing SPD are the sensory profile, sensory integration and praxis test, and sensory processing measures. According to Crasta *et al.*, (2020) the diagnosis of SPD is made when there are impairments in the detection, modulation or organisation of sensory inputs to the point that these deficiencies affect day-to-day functioning. Therefore, children's difficulties with sensory processing lead to difficulty with meaningful engagement and academic achievement (Crasta *et al.*, 2020; Thye *et al.*, 2018). As stated by Jones (2018) SPD cannot be avoided because experts are unsure of its etiology. It is evident by Passarello *et al.*, (2022) how sensory issues worsen family dynamics and raise parental stress. SPD is linked to long-term health problems and children often have eating disorders. Another known barrier I touched on in my academic poster is executive functioning deficiencies known as EF (Creem *et al.*, 2024; Gardiner and Larocci, 2017). As Demetriou, DeMayo and Guastella (2019) mentions there are a wide range of impairments shown by the executive functioning findings in ASD. Naglieri (2014) cited in Meltzer (2018) defined executive functioning as a single phenomenon that includes people's ability to learn and solve problems effectively in a variety of contexts (Meltzer, 2018).

The three most common difficulties in executive functioning as highlighted by Geurts, Van den Bergh and Ruzzano, (2014); Lai *et al.*, (2016) are working memory, reaction inhibition, and set shifting. It is evident that these deficiencies have an adverse effect on the child's capacity to build deep connections, social success and is responsible for several behaviours associated with ASD, including limited and repetitive behaviour patterns, impaired social interactions, and communication difficulties (Tse *et al.*, 2021). However, the effective teaching of executive functioning abilities has received little investigation (Creem *et al.*, 2024; Gardiner and Larocci, 2017; Tse *et al.*, 2021). Furthermore, when diagnosing and evaluating ASD in its early phases, executive functioning impairment should be considered one of the main indicators (Golshan, Soltani and Afarinesh, 2019). Currently, computer-based cognitive training and strategy-based training are the two main therapy tools used to support children with ASD with their executive function difficulties. However, these kinds of training are time-consuming, complex, and require specialised equipment (Tse *et al.*, 2021).

Moving onto the diagnosis of ASD as earlier mentioned in my academic poster there is no medical diagnostic test (Autism Speaks 2024). To diagnose a child with ASD, qualified medical professionals use screening and diagnostic tools, observe and engage and review the patient's developmental history and behaviour. Most recently behaviour diagnostics and scale evaluations are the main tools used in the clinical diagnosis of ASD. However, little is known about the severity of ASD and the brain processes underlying it (Han *et al.*, 2022). While Hyman *et al.*, (2020) reported that ASD diagnoses can occur as early as 18 months of age, the most recent research found that the average age of diagnosis varies between 38 and 120 months (Hyman, Levy and Myers, 2020; Van't Hof *et al.*, 2020).

However, Xanthopoulou, Kokalia and Drigas (2019) suggest ASD is usually diagnosed clinically between the ages of three and four, and boys are more affected than girls. Some noteworthy factors have been suggested are genetic disorders, older parents, and the child's exposure to certain medicines during pregnancy. Recent research from Hallmayer (2011); Jones *et al.*, (2014) indicates that ASD is somewhat heritable, although the precise etiology of ASD remains unknown (Xanthopoulou, Kokalia and Drigas (2019).

It is evident from Jones *et al.*, (2014) ASD is characterised by qualitative communication impairments. These include delayed spoken language with no alternative forms of communication, difficulty initiating social interactions, repetitive language use, and a lack of naturally occurring pretend play. Xanthopoulou, Kokalia, and Drigas (2019) explain the significance of promptly diagnosing ASD to offer early intervention and make every effort to improve the child's health. According to Marlow, Servili, and Tomlinson (2019) the World Health Organisation suggests using developmental monitoring to identify developmental difficulties as early as possible. According to Bivarchi, Kehyayan, and Al-Kohji (2021) early intervention can be beneficial for children. Paediatricians recommend that to provide children and their families with ongoing care, screening, diagnosis, and referrals need to be made as soon as possible. Studies have indicated for children to receive evidence based therapies aimed at enhancing their developmental performance, early diagnosis of ASD is imperative (Bivarchi, Kehyayan, and Al-Kohji, 2021). The reason for this is that young children's brains have a large capacity for formation and neuroplasticity due to their ongoing growth. Early skill and behaviour development helps children with ASD become less reliant on carers and medical professionals (Fein, Barton and Dumont-Mathieu, 2017).

However, despite the availability of several clinical techniques, the intricacy and variety of ASD can make diagnosis challenging. Most of these methods need careful inspection and ongoing supervision by medical professionals (Hus and Segal, 2021; Thabitah and Peebles, 2019). While the diagnosis of ASD is limited to medical professionals, various screening techniques can alert professionals and parents to potential symptoms. These include the Modified Checklist for Autism in Toddlers (M-CHAT-R), the Social Challenges Screening Questionnaire (SCSQ), and the Social Attentions and Communication Surveillance (SACS-R) (Autism Speaks, 2024). Furthermore, to increase the precision and dependability of ASD diagnosis, numerous researchers have created pre-diagnosis screening techniques that aid in the early detection of autistic behaviours, expedite the process of referring patients for clinical diagnosis, and enhance the comprehension of ASD among various stakeholders, including family members and professionals.

However, depending on the research study, the effectiveness and dependability of such screening measures vary, and some have remained questionable (Thabtah and Peebles, 2019). It is also evident how social stigma can prevent early diagnosis from occurring too soon due to causing feelings of rejection and isolation. Kamau's (2017) study revealed that parents endured several difficulties and suffered in silence (Bivarchi, Kehyayan and Al-Kohji, 2021; Kamau, 2017).

The Diagnosis of ASD requires input from the Multi-Disciplinary Team which consists of a paediatrician, an educational psychologist, and a speech therapist (Hyman, Levy and Myers, 2020). There is an average 2- to 3-year wait between parents seeking assistance for the first time and receiving a diagnosis (Crane *et al.*, 2015). However, once a diagnosis has been confirmed the process of a parent accepting their child's diagnosis is an ongoing emotional challenge (Holland and Pell, 2018). The child and their family's life can significantly be impacted upon receiving an ASD diagnosis, although a positive diagnosis experience is linked to higher levels of acceptance, lower levels of stress, and more efficient coping mechanisms (Crane *et al.*, 2015).

Moreover, early diagnosis and intervention treatments for children with ASD are not available in many developing countries due to professional shortages and the high cost of extended therapy. However, according to 1.20 of the SEN code of practice, it is an essential duty of local authorities to ensure that the needs of children with SEN now known as ALN are recognised and assessed early to offer appropriate care and support (Dauncey, 2016).

However, understanding the expenses related to ASD is necessary for effective policy decisions. An accurate epidemiological description of ASD is necessary to inform public health, plan for education, and facilitate the provision of support (Baxter *et al.*, 2015). Section 1.19 of the SEN code of practice states local authorities, in collaboration with schools, should prioritise their statutory obligation to promote good educational standards for all children, including those with special needs (Dauncey, 2016). The school's ethos and principles should promote diversity and inclusiveness to create an environment that is welcoming to all children (Autism Education Trust, 2021).

Moving onto strategies as mentioned in my academic poster visual timetables are an effective strategy used in schools and at home to support communication. They are created from a collection of images that represent important parts of the day to support children to comprehend what's going on now and what will happen next. Visual timetable can help children in adjusting to change and prepare them for transitions (Tranter, 2022). Furthermore, when it comes to anticipating how long an activity will take and knowing when it is over, children with ASD may struggle. Visual timetables encourage good functioning both inside and outside of the classroom and direct acceptable conduct (Pawlett, 2017; Yussif, 2023).

According to Balakrishnan and Alias, 2017; Heward (2013) children with ASD frequently find it difficult to go about their daily lives because of their social difficulties. Therefore, one of the most important therapies for children with ASD is social interaction intervention. According to Welsh Government (2019) communication techniques are centred on an individual's capacity to convey needs, wants, choices, and feelings (Welsh Government, 2019). Therefore, a visual timetable provides children with stimuli to aid in concentration and task completion with less guidance from peers or experts and reduces anxiety levels (Cohen and Demchak, 2018).

According to research ASD is a complicated neurological disorder that may affect young children and it currently has no medical cure. To assist children overcome some of the obstacles they may be facing, parents and teachers can employ helpful practices that promote children's growth in both the home and school. Early intervention minimises the primary symptoms and has been shown to improve language and cognitive functioning in later life (Rogers *et al.*, 2014; van 't Hof *et al.*, 2020).

Thankyou for your time today. Does anybody have any questions?

Imogen Question 1 – Why is SEN special educational needs now known as ALN additional learning needs

In May 2014, the Welsh government released a white paper outlining it's ideas for new laws on meeting ALN in Wales. The ideas sought to replace the current statutory definition of special educational needs with a more adaptable and inclusive legal notion of additional learning needs and replacing statements of sen with individual development plans known as IDPs as the foundation for satisfying the children's needs (Dauncey, 2016; Welsh Government, 2020). The Welsh government stated in the white paper that the change it proposed would bring together law and statutory definitions for children under the age of 16 who were classed as having SEN, learning challenges, or a disability. An ALN law would therefore strive to increase collaboration across education, health, and social services, as well as enhance families' rights and experiences when seeking for assistance (Dauncey, 2016). Furthermore, Snap Cymru who assists families of children with ALN, claims that the present SEN code of practice is not all-inclusive. Families frequently feel left out of procedures that they perceive to be unaccountable and ineffective (Dauncey, 2016).

In Wales, the SEN system and the system for assisting young people with additional learning needs are being replaced by the additional Learning Needs (ALN) system, which provides support to children from ages 0 to 25. The Additional Learning Needs and Education Tribunal Wales Act 2018, the Additional Learning Needs Code for Wales 2021, and the rules enacted under the act form the basis for additional learning needs law. By establishing a unified legislative framework to support all children with ALN, an integrated, collaborative process for assessment, planning, and monitoring of the support for ALN, and a transparent system for information and advice, the Welsh government will ensure that all learners with ALN are support to achieve their full potential (Welsh Government, 2020). I hope this answers your question!

Jess Questions 2 - What strategies are there to support children with ASD to develop their social skills?

An effective strategy to help children with ASD to improve social skills is social stories (Balakrishnan and Alias, 2017). Social stories were developed by Carol Gray in 1990. They are important strategies for teaching behaviours and abilities to children with ASD who struggle with socialisation (Sani Bozkurt and Vuran 2014). According to Heward (2013) and Schneider and Goldstein (2010) social stories are important to gain independence and a better grasp of social settings. They differ from other instructional stories in that they are written from the children's perspective in the first person and are shorter than other stories (Sani Bozkurt and Vuran, 2014). Furthermore, according to O'Hara, 2010 Social stories are a behavioural intervention to improve children's social skills through a combination of visual and verbal cues (Amirrudin *et al.*, 2019). They are still a staple of moral and ethical education, serving as a basis for lessons on values while also teaching moral principles and stimulating the imagination. Social stories prepare children for life by fostering understanding, forming suitable responses to everyday experiences, and preparing them for sensory demands (Amirrudin *et al.*, 2019). As highlighted by Alhwaiti, (2022) social stories aim to give autistic children authentic knowledge in a meaningful and safe way, facilitating a better comprehension of expectations and occurrences rather than trying to change their behaviour.

I hope this answers your question! Thank you all for your contributions today.

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