

Autism Spectrum Disorder (ASD): A Review of Characteristics, Barriers, and Support Systems

By

Uzoamaka Metu

SFHEA (University of Sheffield International College, UK)

<https://www.linkedin.com/in/amaka-metu-ab2748a1/>

<https://amcareerdev.com/>

Tel. +447904803701, Email: ammetu@yahoo.com

Abstract

Autism Spectrum Disorder (ASD) is a complex developmental condition that exists on a continuum, characterised by significant variability in how it affects individuals. In schools, teachers often face challenges in managing students' behaviours and addressing diverse learning needs within the classroom. While educators are trained to embrace differences and apply differentiated teaching strategies, inclusion remains a multifaceted issue that requires deeper understanding. Compounding these challenges, some students may exhibit characteristics of Autism without a formal diagnosis, often due to a lack of parental consent for evaluation or limited awareness. Teachers and classroom support staff are inadequately trained children showing Autism characteristics in the classroom. Recognising and addressing these complexities is essential for fostering an inclusive environment where all students are supported. This review seeks to examine the core features and variability of ASD, the primary barriers to education, socialisation, and employment faced by individuals with Autism, and evaluate the effectiveness of current interventions and support systems. Through a narrative literature review, this study aims to deepen understanding and provide insights into strategies for enhancing the quality of life and educational experiences for individuals with ASD, diagnosed or not.

Keywords: Autism Spectrum Disorder (ASD), inclusion, differentiated teaching strategies, interventions, neurodiversity, individualized education, co-occurring conditions.

Introduction

Autism Spectrum Disorder (ASD), or autism, is a neurodevelopmental condition that affects communication, social interaction, and is characterized by restricted, repetitive behaviours (Hong et al., 2018; Howes et al., 2018; Lord et al., 2018; Hodges, Fealko, & Soares, 2020). According to Mariano et al. (2019), ASD encompasses a heterogeneous range of disorders with an unknown aetiology. Autism exists on a spectrum, with individuals exhibiting varying levels of impairment. At one end of the spectrum are those facing significant challenges, such as limited speech or lower IQ, while at the other end are high-functioning individuals who may demonstrate unusual social behaviours and possess specialized interests.

The diagnosis of autism is primarily based on behavioural criteria, with the Diagnostic and Statistical Manual of Mental Disorders (DSM) serving as the gold standard (Ratajczak, 2011). Since no objective diagnostic tests are currently available, the assessment focuses on

identifying abnormalities in social interaction and communication. Over time, diagnostic approaches have evolved. Lordan, Storni, and Benedictis (2021) noted that ASD diagnosis now incorporates observational tools such as the DSM-5 and the M-CHAT, which evaluate social, cognitive, and developmental behaviors through specific criteria and "yes/no" questions. Nevertheless, debates persist regarding the validity and utility of these diagnostic criteria, as well as the unclear boundaries of autism (Chawner & Owen, 2022).

Understanding ASD and Its Multifaceted Nature

Extensive research underscores the strong genetic basis of Autism Spectrum Disorder (ASD), which likely arises from an interaction between genetic susceptibility and environmental factors (Lord et al., 2018; Sarovic, 2021). Twin studies indicate high heritability (Chawner & Owen, 2022; Gerts & Bernier, 2011; Howes et al., 2018). While specific genetic markers contribute, ASD is thought to result from the complex interplay of multiple genes and environmental influences (Hodges, Fealko, & Soares, 2020; Chawner & Owen, 2022). However, the genetic component does not suggest that ASD is a distinct biological entity that separates autistic individuals from neurotypical variations (Chawner & Owen, 2022).

ASD manifests across a wide spectrum, encompassing diverse cognitive abilities, language skills, and symptom severity (Gerts & Bernier, 2011). There is significant heterogeneity among individuals with autism regarding behavioural symptoms, etiological factors, and co-occurring conditions, including intellectual disabilities and other childhood-onset neurodevelopmental disorders (Hong et al., 2018; Howes et al., 2018; Chawner & Owen, 2022). Although the exact causes of autism remain unknown, Hodges, Fealko, and Soares (2020) highlight a dramatic increase in ASD prevalence over time. Recent estimates indicate an incidence of 1 in 110 children in the United States and 1 in 64 children in the United Kingdom, with similar rates reported globally. This heterogeneity complicates diagnosis and necessitates personalized approaches to care and support (Bartov et al., 2023; Hong et al., 2018; Zhuang et al., 2024). The wide variation in presentations underscores the importance of recognising everyone with ASD as unique, possessing their own strengths and challenges (Bartov et al., 2023).

On the other hand, the concept of neurodiversity views atypical neurological development, including autism, as a normal variation of human diversity (Jaarsma & Welin, 2011). The neurodiversity movement emphasizes the strengths and talents associated with such conditions, focusing on acceptance and appreciation rather than seeking a "cure" (Sonuga-Barke et al., 2021). Within the autism community, there is a similarly positive perspective on autism. However, concerns have been raised regarding the representation of severe autism within the neurodiversity movement, particularly in the context of the social model (Chawner & Owen, 2022).

The absence of objective biological markers for ASD has led to reliance on behavioural observations and subjective reports for diagnosis. This diagnostic ambiguity presents challenges, especially for individuals whose symptoms do not fit stereotypical presentations

or overlap with other conditions (Bartov et al., 2023). Nevertheless, Frye et al. (2019) argue that potential biological markers for autism include physiological, neurological, behavioural, genetic, and gastrointestinal factors, such as neuroimmune and metabolic abnormalities, atypical brain structures, and differences in visual attention development—some of which may be detectable before birth.

Individuals with ASD frequently experience co-occurring conditions, such as intellectual disabilities, language delays, anxiety, and epilepsy (Bartov et al., 2023; Gerts & Bernier, 2011). These additional challenges often have a greater impact on daily functioning and quality of life than the core symptoms of autism. In a study grounded in the Theory of Mind (ToM)—the ability to understand the thoughts and feelings of others—Santini et al. (2024) found that performance on ToM tasks (e.g., interpreting others' thoughts or emotions) could effectively differentiate many autistic children without intellectual disabilities (autistic WoID) from neurotypical (NT) children. Such differences significantly influence the education of autistic children in general education settings, highlighting the need for tailored support.

A comprehensive evaluation that considers both core and co-occurring factors is essential for providing appropriate care and interventions (Zhuang et al., 2024). The rising prevalence of ASD calls for greater societal awareness and understanding (Lord et al., 2018). Creating inclusive environments in education, employment, and community settings is vital to empower individuals with ASD to thrive and contribute their unique talents (Chawner & Owen, 2022; Hong et al., 2018).

Challenges

There is widespread misunderstanding about the relationship between ASD and intelligence. A common misconception is that autism is inherently associated with low intelligence. However, it is now known that only a third of the autistic population has a learning disability, while two-thirds demonstrate average or above-average intellectual abilities (Costis, 2021). Wolff et al. (2022) argue that the interactions between age, IQ, and ASD diagnosis are highly complex, contributing to the heterogeneity of individuals with ASD. Furthermore, focusing solely on labels and diagnoses can lead to stereotyping. For instance, there is an assumption that verbal children on the autism spectrum have uniform abilities across all developmental areas, or that less verbal or preverbal children lack strengths, abilities, or potential (Autism Education Trust, 2019).

The perception of autism as solely a medical model of disability limits the potential for autistic individuals to thrive and poses challenges to the future of ASD research. The traditional view of autism as a disorder defined by deficits inherent to the individual has been challenged with the growing acceptance of the neurodiversity perspective (Happé & Frith, 2020). Neurodiversity frames autism not as a deficit but as a difference that constitutes a disability primarily in the context of neurotypical societal expectations (Happé & Frith, 2020). This perspective has been strongly advocated by autistic voices, emphasizing the

importance of including the diverse experiences within the autism spectrum, including those with intellectual or language disabilities, to ensure that all perspectives are represented.

Children diagnosed with ASD face an increased risk of social exclusion, bullying, and poor mental health, which often lead to lifelong challenges, such as unemployment. Data shows that up to 46% of children on the autism spectrum aged 3 to 16 years have at least one co-occurring mental health condition (Autism Education Trust, 2019). Among those aged 10 to 14 years, this rate increases to 70%. Furthermore, only 16% of autistic adults in the UK are in full-time paid employment, and just 32% are engaged in some form of paid work (Autism Education Trust, 2019). These statistics underscore the importance of promoting inclusive teaching and learning environments that equip children and young people (CYP) with the knowledge and skills needed to prepare them for future opportunities, responsibilities, and life experiences. Without such support, individuals with ASD face significant barriers to living full, meaningful lives. It is crucial that the autism community plays an active role in setting research agendas and priorities to address these challenges.

A narrow focus on core symptoms in research settings fails to account for how different aspects of autism interact and affect individuals over time (Bartov et al., 2023). For example, restricted and repetitive behaviours (RRBs) can help autistic individuals regulate anxiety, while sensory sensitivities may lead to phobias. However, these factors are often excluded from research definitions of autism severity (Bartov et al., 2023). Additionally, there is ongoing debate about whether attention disorders should be considered a core component of autism. While some scholars advocate for its inclusion, others remain uncertain (Association for Psychological Science, 2013).

The tools currently used to evaluate autism severity have notable limitations, even when they account for factors such as age and language level. For instance, the Calibrated Severity Score (CSS), derived from the Autism Diagnostic Observation Schedule (ADOS), measures only the severity of core autism symptoms, neglecting other behavioural and emotional challenges (Bartov et al., 2023). This means that two autistic individuals could receive different CSS scores yet experience similar levels of difficulty in their everyday lives. Irwanto (2019) highlights the potential of using tools like the Child Behaviour Checklist for Ages 1½–5 (CBCL/1½–5) to measure emotional and behavioural problems in young children, including those with ASD.

Social Challenges in ASD

Social difficulties often create significant challenges in daily life for individuals with ASD (Centres for Disease Control and Prevention, 2024). These social issues extend beyond mere shyness, arising from difficulties in recognizing and responding to social cues. Qualitative research by Yates (2008) identified commonly recommended social supports, which include external aids (e.g., shared-interest activities, structured social interactions, and small groups), communication assistance (e.g., alternative communication methods, clear instructions, and

social cue training), and self-directed strategies for managing social anxiety (e.g., creative outlets, exercise, spirituality, and alone time).

Challenges in Diagnosing ASD in Adults

Diagnosing ASD, particularly in adults, presents unique challenges. One major difficulty is the lack of a detailed developmental history, which is a key component of ASD diagnosis (Howes et al., 2018). This is often hard to obtain from caregivers of adults, especially when childhood milestones have not been documented comprehensively. Additionally, many adults with ASD have developed strategies to mask or compensate for their symptoms in social situations, further complicating the diagnostic process (Lord et al., 2018).

To overcome these barriers, it is essential to move beyond a core-symptom-focused approach to autism and instead consider the individual's broader experiences, including their unique strengths and challenges. This shift requires the development of more comprehensive assessment tools capable of capturing the full spectrum of autistic experiences (Bartov et al., 2023). Additionally, raising awareness about the diverse manifestations of autism and promoting equitable access to support services are critical steps toward fostering inclusion and understanding.

Support Systems and Interventions for ASD

A variety of support systems and interventions are available for individuals with autism spectrum disorder (ASD), all aiming to minimize core symptoms, facilitate learning and development, promote socialization, reduce maladaptive behaviours, and provide education and support for families (Meyers and Johnson, 2015). Effective interventions are those that are individualized, developmentally appropriate, intensive, and use performance data to evaluate and adjust treatment as needed (Hayman et al., 2020).

Early intervention is particularly critical, as evidence shows it can significantly improve outcomes for children with ASD (Hayman et al., 2020). The American Academy of Paediatrics (AAP) recommends routine ASD screening for all children, incorporating developmental surveillance at all visits and standardized autism-specific screening tools at 18 and 24 months of age (Hayman et al., 2020). Early intervention services are often provided through public or not-for-profit agencies, schools, and dedicated early intervention programs (Hayman et al., 2020). Interventions for ASD are delivered through educational practices, developmental therapies, and behavioural approaches (Hayman et al., 2020). Two commonly utilised strategies are Applied Behaviour Analysis (ABA) and Developmental models.

ABA is a learning-based intervention aimed at modifying behaviour and achieving measurable improvements (Hayman et al., 2020). It is highly effective for children with ASD, particularly in improving adaptive behaviours, language skills, and, to some extent, verbal IQ (Ashworth, 2014). ABA is widely regarded as the most evidence-based intervention for managing challenging behaviours associated with ASD (Ashworth, 2014). Developmental

models focus on how caregiver responsiveness influences a child's social communication development (Hayman et al., 2020). These approaches enhance social skills by encouraging adults to respond to child-initiated play using techniques such as imitation, expansion, or engagement. This method targets core ASD symptoms, including joint attention, imitation, and social interaction, fostering meaningful developmental progress (Ashworth, 2014).

Educational Interventions

For school-aged children, interventions often take place in educational settings, where behavioural and developmental therapies are integrated to promote skill development (Hayman et al., 2020). Most students with ASD benefit from individualized education plans, typically guided by an Individualized Education Program (IEP) developed collaboratively by a school multidisciplinary team and the family (Hayman et al., 2020).

It is essential that children with ASD receive support in areas beyond the standard curriculum. These include communication skills, such as learning to communicate effectively in social situations, and the ability to develop and maintain relationships. Support should also focus on helping children predict and manage changes in routines, access the curriculum to achieve educational outcomes, adapt to and manage sensory processing challenges, regulate emotions, and understand their diagnosis. Paediatricians play a critical role in advocating for children with ASD to ensure they receive access to a free and appropriate public education, as required by law (Autism Education Trust, 2019).

In addition to educational interventions, many individuals with ASD benefit from therapeutic services such as speech and language therapy to enhance communication, occupational therapy to support daily living and sensory integration, physical therapy to improve motor coordination and strength, and social skills training to foster meaningful interpersonal connections (Meyers and Johnson, 2015). Families play a pivotal role in the success of interventions for children with ASD. Clinicians and educators must involve and educate families, empowering them to implement behavioural and developmental strategies at home and in community settings (Hayman et al., 2020). The impact of raising a child with ASD on families can be significant, as parents often experience higher levels of stress and financial strain compared to those without children on the spectrum (Hayman et al., 2020).

It is essential for clinicians to encourage families to build strong support networks by connecting with extended family members, neighbours, religious institutions, friends, and community support groups. These networks provide essential resources such as training, respite care, social events, and recreational activities, which can help alleviate stress and foster a sense of belonging. Ultimately, a wide range of support systems and interventions exist to help individuals with ASD lead fulfilling and meaningful lives. The key lies in identifying the right combination of supports tailored to the unique needs of each individual and their family.

Conclusion

This review has explored the complexities of ASD, emphasizing its diverse presentations and the challenges faced by individuals on the spectrum. The heterogeneity of ASD highlights the need for personalized support systems that address the unique strengths and difficulties of everyone. The neurodiversity movement has fostered greater acceptance of autism, though concerns remain about the representation of severe autism within this perspective.

Key challenges for individuals with ASD include widespread misconceptions, social exclusion, mental health struggles, and limited diagnostic tools, which hinder access to meaningful support. Early intervention and individualized approaches, such as Applied Behaviour Analysis (ABA), developmental models, and educational strategies, are critical for fostering skill development and improving outcomes.

Family involvement and strong support networks are equally vital, not only for successful interventions but also for the well-being of families navigating the challenges of ASD. Creating inclusive environments in education and society is essential for individuals with ASD to thrive and contribute their talents. Future research must adopt a holistic approach, integrating the lived experiences of autistic individuals to promote understanding, inclusion, and equity.

Recommendations

To foster inclusivity and enhance the well-being of individuals with ASD, several recommendations emerge. Early and routine screening for ASD is crucial, allowing for timely intervention and support. Interventions should adopt a holistic approach, addressing not only core symptoms but also co-occurring conditions and individual strengths. Educational settings should prioritize individualized learning plans, providing support beyond academics to encompass communication skills, emotional regulation, and sensory processing challenges. Empowering families through education and active involvement in intervention strategies is essential. Furthermore, building strong support networks for families can alleviate stress and foster a sense of belonging. Finally, future research should strive for a comprehensive understanding of ASD, considering the diverse experiences of autistic individuals and their families to ensure that interventions and support systems cater to their unique needs.

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