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# Autism Spectrum Disorder in ICD-11: Diagnostic, Therapeutic and Identity - Related Implications of the Discontinuation of Asperger's Syndrome as a Separate Diagnosis

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# Abstract

The reclassification of Asperger's syndrome within DSM-5 (2013) and ICD-11 (2019) marked a pivotal moment in the diagnostic landscape of neurodevelopmental disorders. After three decades of being recognized as a distinct clinical entity, Asperger's syndrome was merged into the broader autism spectrum disorder (ASD) category, triggering extensive debate over diagnostic precision, social identity, and clinical consequences. This review synthesizes evidence on the evolution of diagnostic criteria, with a focus on historical milestones (Kanner, Asperger, Wing) that shaped the conceptualization of autism and Asperger's syndrome across successive DSM and ICD editions. A structured literature search (PubMed, Scopus, Google Scholar; 2005–2024) identified 92 peer-reviewed articles meeting inclusion criteria (English or Polish language, human studies, and clear reference to diagnostic transitions and their psychosocial or clinical impact). Special attention is given to the effects of reclassification on individuals' identity, the risk of diagnostic loss—especially

in those with mild or atypical profiles—and the evolving terminology debate. Findings indicate that approximately 10–15% of individuals previously diagnosed with Asperger's syndrome no longer meet ASD criteria under DSM-5 and ICD-11, raising concerns about service access and psychological well-being. The review also discusses challenges in distinguishing ASD from personality disorders, the diagnostic implications of camouflaging behaviors, and future research directions aimed at refining assessment tools and supporting neurodivergent identity.

**Keywords** (MeSH): Autism Spectrum Disorder; Asperger Syndrome; Diagnostic and Statistical Manual of Mental Disorders; International Classification of Diseases; Language Development; Personal Identity

## **INTRODUCTION**

Autism spectrum disorders (ASD, Autism Spectrum Disorder) is a group of neurodevelopmental conditions involving persistent difficulties in the area of social interaction and communication, along with restricted, repetitive patterns of behavior, interests, or activities. Over the years, significant shifts have taken place in the diagnostic classification of autism. This is clearly visible in the introduction of DSM-5 in 2013 [1], and subsequently ICD-11 in 2019 [2]. The new versions eliminated formerly distinct diagnostic entities such as Asperger's syndrome, childhood disintegrative disorder, and PDD-NOS, merging them into the single category of autism spectrum disorder. Futhermore, Rett syndrome – which had been listed among the pervasive developmental disorder in DSM-4 – was re-assigned outiside ASD because, unlike polygenic autism, it is driven almost exclusively by a single, highly penetrant MECP2 mutation that produces a characteristic neurodevelopmental trajectory [3].

This change has far-reaching consequences for individuals who, under previous systems— DSM-IV (1994) [4] and ICD-10 (1992) [5]—were diagnosed with Asperger's syndrome. It is estimated that at the time when this diagnosis was still valid, Asperger's syndrome may have affected approximately 0.2–0.3% of the child population [6]. Notably, the diagnosis referred to individuals exhibiting autistic traits alongside average or above-average cognitive development [7].

# 1. The Evolution of the Perception and Classification of Autism Spectrum Disorders – from Early Mentions to the Establishment of Asperger's Syndrome as a Distinct Diagnosis

# 1.1. Early mentions – autism as a symptom of schizophrenia

It is worth noting that until the 1940s, autism was regarded merely as a symptom cluster within schizophrenia. Swiss psychiatrist Eugen Bleuler had even coined the term autismus in 1911 to describe the extreme social withdrawal he observed in dementia praecox (schizophrenia) [8]. It was interpreted as a profound disengagement from social interaction, accompanied by emotional detachment and behavioral rigidity. These features were believed to contribute directly to impairments in interpersonal functioning and overall developmental outcomes [9] [10]. The presence of such traits in early childhood led to the introduction of the diagnosis of childhood schizophrenia (295.8), which was formally included in the second edition of the DSM [11].

DSM-II (1968) classified autism as one of the features of childhood schizophrenia – early onset infantile psychosis. The category encompassed a wide range of symptoms, such as "gross immaturity" or "withdrawn behavior"—which led to significant developmental delay and social withdrawal. It also emphasized the possibility of cognitive difficulties and an increased risk of intellectual disability later in life [11].

# **1.2.** Childhood autism – the turning point marked by Leo Kanner's work

A turning point in the understanding of autism came with the work of Austrian-American psychiatrist Leo Kanner, who in 1943, in the journal \*Nervous Child\*, described 11 children with significantly impaired ability to establish social contact, a strong adherence to routines, and obsessive and rigid behavioral patterns [12]. Parents described these children as being "like in a shell," while their surroundings often perceived them as "unreachable" or "unwilling to engage," and some even referred to them as "idiots." Clinicians, lacking the diagnostic tools available today, frequently interpreted such cases as early-onset schizophrenia [12].

Among the 11 children Kanner described, eight learned to speak – either within the expected developmental window or with only slight delay. The remaining three, although they could produce sounds and isolated words (e.g., "take it," "chocolate"), did not use language functionally or in a socially appropriate way. Their speech was often echolalic, monotone, and lacking natural intonation. The children could memorize long sequences of numbers, the alphabet, difficult words or names, but did not engage in spontaneous speech or social

dialogue [12].

Despite their socially atypical behaviors, the children demonstrated good cognitive abilities and achieved high scores on intelligence tests such as the Sequin Form Board. This contrasted with the common label of "idiots" often assigned to them due to their social and communicative difficulties, which were not rooted in true cognitive deficits [12].

Kanner emphasized that although the children he observed displayed features such as obsessive behaviors, stereotypies, or echolalia—also typical for schizophrenia—the nature and progression of these traits were markedly different. In schizophrenia, social withdrawal tends to emerge gradually over time. In contrast, the autistic symptoms Kanner observed were present from birth. He highlighted that these children had "come into the world with an innate inability to form ordinary, biologically determined emotional connections with other people". In his view, autism was not an early form of schizophrenia, but rather a separate, congenital developmental disorder [9][13].Later clinical analyses by Kolvin (1971) and Rutter (1972) empirically corroborated Kanner's original contention that early-onset autism represents a neurodevelopmental syndrome distinct from childhood- onset schizophrenia, thereby consolidating the nosological separation of the two conditions [14,15].

Finally, those research contributed to the distinction of juvenile autism as a separate diagnostic entity—first in ICD-9 (1978), and later in DSM-III (1980). The diagnostic criteria pointed to an early onset of symptoms, typically within the first 30 months of life, including marked disturbances in social interactions and communication, and restricted or repetitive behavior. This redefinition of autism initiated a shift in psychiatric and neurodevelopmental thinking—from considering autism as part of psychotic disorders to recognizing it as a neurodevelopmental condition [16,17].

This shift also influenced therapeutic approaches: moving from pharmacological treatments toward behavioral interventions such as ABA therapy, speech and communication therapies, and social skills training [18,19]. It is important to note, however, that this transition was gradual. Evidence of the transitional nature of this redefinition can be seen in the fact that although DSM-III (1980) relocated it to a newly created category - Pervasive Developmental Disorders 9thereby removing it from the psychotic disorders chapter), infantile autism remained coded under "Psychoses with origin specific to childhood" in ICD-9. [16,17].

# 1.3. Lorna Wing and Hans Asperger – early mentions of Asperger's syndrome, the concept of neurodiversity

Another major turning point in the understanding of autism was the work of British

psychiatrist and researcher Lorna Wing, published in 1981 [20] .Wing had worked for many years with children with developmental disorders, and her clinical experience significantly shaped the modern understanding of the autism spectrum. In her publication, she referred to the little-known work of Austrian psychiatrist Hans Asperger, who in 1943 described a group of 34 boys exhibiting social difficulties, restricted and specific interests, rigid behaviors, and communication problems that did not meet all the criteria for childhood autism as defined by Leo Kanner [21].

Asperger noted that these children developed relatively typically in early life—they showed no delays in speech, which often developed earlier than walking. He referred to them as "little professors" due to their eloquence, rich vocabulary, and detailed knowledge in narrow, specialized fields. According to Asperger, although these children displayed autistic traits, such as social interaction difficulties and behavioral rigidity, they were able to function within specific social and educational structures if these were properly adapted to their needs.

At the time, however, existing diagnostic criteria—both in ICD-9 and later in DSM-III required that symptoms of autism manifest before 30 months of age, including impairments in social functioning, language delays, and communication abnormalities [12,13]. This distinction was intended to differentiate autism from childhood schizophrenia, which could initially present with seemingly typical development.

Wing questioned Asperger's claim that these children developed typically in early childhood and exhibited no signs of abnormality [20]. She pointed out that in her clinical practice, documented through the description of her own case studies, nearly half of the children diagnosed with Asperger's syndrome had significant speech delays. Moreover, the seemingly "rich" vocabulary of many of these children was often the result of echolalia—repetition of memorized phrases without understanding or communicative intent. Wing also observed frequent deficits in the quality and quantity of vocalizations, problems with symbolic play, and a reluctance to initiate social interactions [20].

In Wing's view, Asperger's description did not represent a separate nosological entity, but rather a clinical type marked by dominant impairments in nonverbal communication—such as lack of eye contact, restricted facial expressions, or monotone intonation. She emphasized the importance of individualized diagnostic approaches and environmental support—such as adapted education, teacher guidance, and communication therapies tailored to be understandable and accessible to the child [20].

Asperger saw his patients as individuals who functioned differently- immersed in their inner

worlds, sensitive, often creative. He emphasized that their difficulties did not stem from a lack of intelligence, but rather from the inability to simultaneously navigate the internal and external worlds [21]. Wing agreed, noting that many individuals with autistic traits can function well socially if provided with appropriate conditions. She also highlighted that such traits vary in intensity and may appear among neurotypical individuals—especially in professions requiring high levels of focus, analytical thinking, and repetition. This line of reasoning contributed to the development of the modern concept of the autism spectrum as a continuum of traits, rather than a narrowly defined diagnostic category [20,22].

#### 1.4. ICD-10 and DSM-IV – Asperger's Syndrome as a Separate Diagnostic Entity

ICD-10 (1992) and DSM-IV (1994) were the first to introduce Asperger's syndrome as a distinct diagnostic entity [4, 5].Both classifications were based on a categorical approach to developmental disorders and followed the assumptions proposed by Lorna Wing, but with some modifications. ICD-10 and DSM-IV assumed that Asperger's syndrome was characterized by significant difficulties in social interaction, repetitive stereotyped behavior patterns, and specific interests, while simultaneously lacking clinically significant delays in speech development and cognitive functions [23].

Both ICD-10 (1992) and DSM-IV (1994) introduced Asperger's Syndrome / Disorder as a separate diagnostic entity within the broader category of pervasive developmental disorders. However, the systems diverged subtly in their formal criteria and even more noticeably in clinical interpretation [4, 23]. In ICD-10, Asperger's Syndrome (F84.5) was defined by qualitative impairments in social interaction and a restricted, stereotyped repertoire of behaviours, explicitly excluding any clinically significant delay in language or cognitive development [4]. In contrast, DSM-IV required two symptoms from the domain of social interaction and one from restricted behaviours for Asperger's Disorder, again mandating no significant language or cognitive delay, but providing specific developmental benchmarks (e.g., single words by 24 months; two-word phrases by 36 months) [2].

Despite the theoretical similarity, ICD-10 adopted a more rigid linguistic standard, requiring fully typical early language development. As a result, children who exhibited even minor deviations—such as first words slightly after 24 months or unusual patterns like persistent echolalia—were often excluded from an Asperger diagnosis and instead classified under atypical autism (F84.1) [24,25]. In contrast, DSM-IV's operationalisation, by specifying concrete age thresholds, allowed greater flexibility, meaning that some children who would have been excluded under ICD-10 were diagnosed with Asperger's Disorder under DSM-IV criteria [24].

In both classifications, Asperger's syndrome was presented as a pervasive developmental disorder differing from classic autism, and the exclusion of clinical features typical of autism was emphasized. DSM-IV placed more emphasis on differential diagnosis and the absence of comorbid conditions, as well as impairments in social, occupational, or other important areas of functioning.

Differences between these classifications, especially in terms of specific diagnostic criteria and the approach to diagnosis, contributed to further discussions about the advisability of maintaining Asperger's syndrome as a separate diagnostic entity, which ultimately led to changes in DSM-5 and ICD-11 [24,25,26]

Criterion	ICD-10	DSM-IV
Name of the entity	Asperger's Syndrome	Asperger's Disorder
	(F84.5)	
Diagnostic category	Pervasive Developmental	Pervasive Developmental
	Disorders (PDD)	Disorders
Description of social	Present	Present
difficulties		
Speech development	No significant delays	Comprehensible speech before
		age 2, phrases before age 3
Cognitive development	Generally appropriate	No delays
Style of description	Descriptive, flexible	Detailed, quantitative
Exclusion of childhood	Not always required	Mandatory
autism		

Table: Comparison of ICD-10 and DSM-IV Criteria for Asperger's Syndrome

# 2. Asperger's Syndrome in Culture, Media, and Public Awareness

The growing recognition of Asperger's syndrome diagnosis has contributed to the emergence of numerous support groups and broader representation within the social sphere [27]. A key role in this process has been played by the internet, particularly platforms created by individuals with Asperger's syndrome (AS), such as Wrong Planet (founded by Alex Plank, person with ASD ), which became spaces for mutual understanding, exchange of experiences, and the development of identity among neurodivergent individuals. In Poland, organizations such as the JiM Foundation, the "Dalej Razem" Association, and numerous local support groups are active in this field.

Furthermore, the features characteristic of Asperger's syndrome have increasingly been portrayed in film and television, reflecting a growing interest in the topic of neurodiversity [28]. Notable examples include:

- Dr. Shaun Murphy from "The Good Doctor" (2017–),

- Sam Gardner from "Atypical" (Netflix, 2017–2021),

- Sheldon Cooper from "The Big Bang Theory" (although no formal diagnosis is stated),

- Raymond Babbitt from "Rain Man" (1988),

- Christopher Boone from the novel \*The Curious Incident of the Dog in the Night-Time\* by Mark Haddon.

These portrayals have played a significant role in disseminating knowledge but, at the same time, in reinforcing certain stereotypes about individuals with AS. On the one hand, they have helped to present the autism spectrum as a phenomenon observable in everyday life and functioning within society; on the other hand, they have sometimes perpetuated an oversimplified image of individuals with Asperger's syndrome, such as the stereotype of the "genius without empathy "[29].

The greatest benefit resulting from the increased public awareness has been associated with the neurodiversity movement, which promotes the acceptance of neurodivergent individuals as part of the normal range of human behaviors. Persons with AS have increasingly become active voices within the public sphere, advocating for recognition and understanding of their community, and striving for greater awareness and inclusion.

# 3. Prerequisites for the departure from the diagnosis of Aspeger's syndrome

# 3.1. Diagnostic Difficulties – Two Centers, Two Diagnoses

Asperger's syndrome was long perceived as a milder, better-functioning, and more socially acceptable form of autism. In contrast to the classical forms of childhood autism, individuals diagnosed with Asperger's syndrome often demonstrated cognitive and linguistic development within the normal range, which was reflected in narratives about "high functioning". Such characterization made the diagnosis more readily accepted both individually—by people on the spectrum—and socially. Asperger's syndrome began to be perceived not only as a disorder but also as a "neurotype," contributing to its popularization and the evolving image of the autism spectrum [29].

Although formal ICD-10 and DSM-IV criteria existed, in day-to-day practice Asperger's syndrome was rarely diagnosed directly from those manuals. Most teams used the Autism

Diagnostic Interview – Revised (ADI-R) and the Autism Diagnostic Observation Schedule (ADOS)—instruments calibrated on classic autism rather than on Asperger cases. To "make them fit", centres lowered the ADI-R/ADOS cut-off scores or created local rules (e.g. "ADOS  $\geq 7 =$  Asperger"), none of which were formally validated. Multi-site field work for DSM-IV showed that, when identical ADI-R and ADOS data were scored under both manuals, as many as one-third of children met DSM-IV Asperger criteria yet fell into ICD-10 atypical autism because even a minor early speech delay breached the ICD-10 requirement of "completely normal language development" [30].

.In clinical practice, Asperger's syndrome was often confused with the informal diagnosis of high-functioning autism (HFA) [33]. Both labels referred to individuals who satisfied core autism criteria before the age of three and displayed preserved intellectual abilities (IQ  $\geq$  70); the only formal divider was "clinically-significant" early language delay. Because centres applied different cut-offs for what counted as delayed speech (e.g. words by 24 vs 30 months), the same child could be classified as AS in one clinic and HFA in another. Follow-up studies have found no reliable differences in later cognitive, adaptive, or psychiatric outcome between the two groups [31], whereas neuro-imaging work has demonstrated only subtle, group-level effects in brain structure and function [34]. Given that HFA has never been an official ICD or DSM category, and that outcome and neurobiological data fail to justify a clear boundary, this distinction proved insufficient to maintain AS as a separate diagnostic entity.

# 3.2. Social Problems – "Better" and "Worse" Autism?

An important and distinct issue was the growing gap in the social perception of Asperger's syndrome and other forms of autism. The introduction of AS into diagnostic systems often implied that other forms of autism were less functional or more "impaired." [34, 35]. Many patients, as well as their caregivers, reported a strong sense of stigmatization due to the "autism" label, while the term "Asperger's" evoked fewer negative associations and was socially more acceptable. Some authors have suggested that such distinctions might artificially deepen internal divisions within the autism spectrum and contribute to the exclusion of individuals diagnosed with classical autism, even though their developmental potentials were not fundamentally different

# 3.3. Nomenclature Issues – Hans Asperger: A Deserving or Controversial Figure? Doubts Surrounding the Diagnostic Eponym

In recent years, controversies have also arisen regarding Hans Asperger himself. New historical research has shown that during World War II, Asperger was involved in the healthcare system of the Third Reich, which supported Nazi ideology. Asperger was associated with programs aimed at selecting children deemed "abnormal" and referring them to centers where they were subjected to forced euthanasia. Although some of his works concerning children with traits of the autism spectrum were considered pioneering for their time, the historical context raises serious ethical concerns regarding the appropriateness of maintaining his name as the eponym of a diagnostic entity [35]. Consequently, some researchers and patient organizations have advocated for abandoning the use of the term "Asperger's syndrome."

# 4. Loss of Asperger's Syndrome Diagnosis – Significance and Consequences

# 4.1. Statistics

The removal of Asperger's syndrome as a separate diagnostic entity in DSM-5 (2013) and ICD-11 (2019) marked a breakthrough in the approach to diagnosing autism spectrum disorders (ASD). The primary aim of this change was to simplify diagnostics and unify criteria across clinical practice. However, the transition also brought significant challenges.

Both retrospective clinical file reviews and simulation-base analyses consistently indicate that approximately 10–15% of individuals who previously met the diagnostic criteria for Asperger's syndrome no longer qualify for an ASD diagnosis under DSM-5 [36, 37, 38]. In practice, this translates to a group of individuals who, despite experiencing real difficulties, lose formal diagnostic access to psychological, educational, and social support services. Importantly, this occurs despite evidence that individuals on the spectrum continue to demonstrate significant functional impairments and remain at elevated risk for comorbid conditions such as depression and anxiety [39].

# 4.2. Diagnostic and Social Implications

For many individuals, a diagnosis of Asperger's syndrome was a crucial component of personal identity, facilitating a better understanding of their difficulties and enabling greater social participation. Qualitative research and analyses of online communities show that the loss of diagnosis is often perceived as a form of "invalidation" — both personally and socially [38].

Moreover, individuals who previously identified with the label Asperger's syndrome may now feel marginalized within the broader ASD category, which may not fully reflect the nuances of their experience [35].

From a clinical perspective, attention has also been drawn to the limited sensitivity of the new criteria in detecting individuals with subtle, atypical profiles. Volkmar and Reichow [40] added caution that if the criteria are applied rigidly, some individuals may be missed during the diagnostic process. They emphasize the necessity of individualizing the diagnostic approach, considering not only formal criteria but also the person's real-world difficulties in social, emotional, and communicative functioning.

## 4.3. What Changed in the New Classification?

The transition from DSM-IV to DSM-5 – and, in parallel, from ICD-10 to ICD-11 – brought fundamental structural changes to the definition of autism-spectrum conditions:

# DSM- 4 -> DSM-5

In DSM-4 diagnosis was formerly based on three domains (social interaction, communication, restricted/repetitive behaviours) that required a minimum symptom count in each. DSM-5 collapsed these into two domains (social communication + restricted/repetitive behaviours. Anindividual must now meet all three sub-criteria in the social-communication domain and at least two of four in the restricted-behaviour domain; failure to meet any required sub-criterion – especially in social communication – precludes an ASD diagnosis, thereby tightening specificity.

## $ICD-10 \rightarrow ICD-11$

ICD-10 listed four separate pervasive developmental disorders (childhood autism, atypical autism, Asperger's syndrome, other PDD).

ICD-11, like DSM-5, merges these categories into a single diagnosis, "Autism-Spectrum Disorder (6A02)", reflecting a continuum rather than discrete subtypes [2].

Instead of symptom counts, ICD-11 uses functional specifiers (with/without intellectual impairment, with/without language impairment, with/without catatonia, level of support needs) that map onto daily-life impact. The strict age-of-onset wording from ICD-10 (onset < 3 yrs) is replaced by the requirement that symptoms "begin during the developmental period", acknowledging late-identified or camouflaged presentations.

While both DSM-5 and ICD-11 adopt a more descriptive, dimensional approach, their higher diagnostic thresholds – meeting every required social-communication item in DSM-5 and demonstrating clinically significant functional impact in ICD-1- mean that some individuals

with milder or atypical profiles who previously qualified (e.g., under DSM-IV Asperger's Disorder or ICD-10 Asperger's Syndrome) no longer meet ASD criteria.

# 4.4. Clinical Case

Below is a clinical example illustrating how the reclassification can result in a loss of diagnosis:

A) DSM-IV Criteria — Diagnosis: Asperger's Syndrome

Karolina (name changed) was diagnosed at age 10. She exhibited significant social difficulties, such as social withdrawal, misunderstanding of social norms, and problems with interpreting others' emotions. Despite these challenges, her language development was normal and even advanced, though formal and inflexible. She also displayed intense and unusual interests (e.g., metro system maps) and rigidity in daily routines.

Karolina met the DSM-IV criteria:

- Impairment in social interaction (minimum 2 symptoms) — fulfilled.

- Restricted, repetitive patterns of behavior (minimum 1 symptom) — fulfilled.

- No significant language or cognitive delays — fulfilled.

 $\rightarrow$  Diagnosis: Asperger's syndrome according to DSM-IV.

B) DSM-5 Criteria — Observation Based on ASD Diagnostic Requirements

In DSM-5, a diagnosis requires the fulfillment of all conditions:

Domain A – Deficits in social communication and interaction (all 3 must be fulfilled)

- A1: Deficits in social-emotional reciprocity — fulfilled.

- A2: Deficits in nonverbal communicative behaviors — not fulfilled (symptom severity too mild).

- A3: Difficulties in developing and maintaining relationships — fulfilled.

 $\rightarrow$  Not all three conditions fulfilled — criterion not met.

Domain B – Restricted, repetitive behaviors (minimum 2 out of 4 must be fulfilled)

- B1: Stereotyped movements — absent.

- B2: Insistence on sameness — present.

- B3: Highly restricted interests — present.

- B4: Sensory abnormalities — absent.

 $\rightarrow$  2 out of 4 conditions fulfilled — criterion met.

Karolina fulfills the requirements for restricted and repetitive behaviors (domain B), but does not meet all three necessary criteria in the domain of social communication and interaction (domain A). Therefore, under DSM-5, a diagnosis of ASD cannot be established.

This case demonstrates how the changes in diagnostic criteria may lead to the loss of a previously established diagnosis, even though real-world functional difficulties may persist.

# **5. Directions for Further Research**

# 5.1. Camouflaging

An increasing body of evidence indicates that a subset of individuals— particularly women— who exhibit behaviours typical of Asperger syndrome do not receive a diagnosis because they employ so-called camouflaging strategies. These persons, either consciously or subconsciously, imitate neurotypical behaviour, masking their social-communicative difficulties. Although such strategies may allow them to function in society, they often entail a considerable psychological cost, leading to exhaustion, depression, anxiety and delay in diagnosis. Hull et al. (2017) demonstrated that camouflaging occurs especially frequently in women and may result in the misattribution of symptoms to other diagnostic entities, including personality disorders [41] Future research should prioritise developing sensitive diagnostic tools that reliably detect camouflaging—particularly in girls and women to mitigate the long-term psychological costs associated with this strategy.

# 5.2. ASD and/or personality disorders?

Concurrently, a growing body of evidence warns that clinicians should exercise particular caution when co-diagnosing personality pathology in autistic people. Before the dimensional reconceptualisation of autism, adults-especially women who camouflage-were frequently given personality-disorder labels such as "borderline" when their core autistic features (e.g., social aloofness, literal communication, restricted interests, camouflaging-related emotional exhaustion) were misinterpreted as personality traits [42-45]. ICD-11 mitigates this risk by abolishing the old sub-types (e.g., "schizoid", "borderline") and replacing them with a single diagnosis of Personality Disorder qualified only by trait domains and severity, a structure that mirrors its spectrum view of autism [46]. DSM-5, by contrast, still lists ten categorical personality disorders in its main text; only the Alternative Model for Personality Disorders (Section III) offers a trait-severity approach. Several comparative and empirical papers argue that adopting a dimensional framework in DSM-5 would reduce misclassification and bring it closer to ICD-11-particularly for autistic females, who remain disproportionately assigned personality-disorder labels when ASD is recognised late in life [47, 48]. Further research is needed to determine how best to differentiate autistic presentation from personality pathology and to develop screening tools that minimise diagnostic overshadowing.

## 5.3. Memantine in the treatment of autism

Another promising research avenue concerns the efficacy of pharmacotherapy for autistic symptoms. In this context, memantine— an NMDA-receptor antagonist best known for its use in Alzheimer's dementia— has attracted increasing interest. Preliminary studies suggest that memantine may be effective in reducing irritability, stereotypies and social-functioning difficulties in individuals with ASD [49]. Although the findings are encouraging, further randomised clinical trials with greater statistical power are required to establish its efficacy and safety unequivocally.

## 6. Conlusions

The evolution of the perception of autism spectrum disorders, particularly Asperger's syndrome, reflects not only changes in classification systems but also a profound transformation in thinking about the nature of autism itself. From the earliest descriptions by Kanner and Asperger, through the inclusion of Asperger's syndrome in the ICD-10 and DSM-IV classifications, to its removal in newer guidelines (ICD-11, DSM-5), we observe a paradigm shift — from categorizing and isolating subtypes to a dimensional and individualized approach.

Although the decision to remove Asperger's syndrome as a distinct diagnosis sparked considerable controversy, particularly in the context of identity among individuals previously diagnosed with the condition, this change can also be seen as moving towards a more consistent and less stigmatizing concept of neurodevelopmental diversity. Paradoxically, removing the nosological category from classification systems may bring us closer to the vision first proposed by Lorna Wing, who emphasized that autistic traits occur along a spectrum across the general population, with functional adaptation to the environment being more critical than rigid diagnostic labeling.

The contemporary approach to autism increasingly moves away from the search for "normalization," instead supporting autonomy, communication, and quality of life — regardless of the level of functioning or history of speech development. Growing public awareness, reflection on the historical context of classification, and the emergence of new diagnostic tools that account for phenomena such as social camouflaging enable the identification of individuals previously overlooked - particularly women and individuals with atypical presentations.

The conclusions drawn from this analysis highlight the need for further interdisciplinary research, the development of diagnostic, support, and therapeutic standards, and the necessity of ongoing dialogue between the scientific community, individuals on the spectrum, and policymakers. Only through such efforts will the real implementation of the idea of neurodiversity be possible - not as a fashionable slogan, but as a genuine foundation for systemic support.

# Disclosure

# **Author Contributions**

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# **Conflict of interest**

The authors declare no conflict of interest

# References

American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders,
5th ed. Washington, DC: American Psychiatric Publishing; 2013.

 World Health Organization. International Classification of Diseases 11th Revision (ICD-11). Geneva: WHO; 2019.

3. Neul JL, Kaufmann WE, Glaze DG, et al. Rett syndrome: revised diagnostic criteria and nomenclature. Ann Neurol. 2010;68(6):944-950.

4. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders.4th ed. Washington (DC): American Psychiatric Association; 1994.

5. World Health Organization. The ICD-10 Classification of Mental and Behavioural Disorders: Clinical Descriptions and Diagnostic Guidelines. Geneva: World Health Organization; 1992.

6. Mattila ML, Kielinen M, Jussila K, et al. An epidemiological and diagnostic study of Asperger syndrome according to four sets of diagnostic criteria. J Am Acad Child Adolesc Psychiatry. 2007;46(5):636–646.

7. Attwood T. The Complete Guide to Asperger's Syndrome. London: Jessica Kingsley Publishers; 2007.

8. Bleuler E. Dementia Praecox or the Group of Schizophrenias. New York: International Universities Press; 1950. Originally published in 1911.

9. Wolff S. The history of autism. Eur Child Adolesc Psychiatry. 2004;13(4):201-208. DOI: 10.1007/s00787-004-0363-5.

10. Baker JP. Autism at 70 — redrawing the boundaries. N Engl J Med. 2013;369(12):1089-1091. DOI: 10.1056/NEJMp1306380.

American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders,
2nd ed. Washington, DC: APA; 1968.

12. Kanner, L. (1943). Autistic Disturbances of Affective Contact. Nervous Child, 2, 217–250.

Harris J, Piven J. Leo Kanner: The Physician and Pioneer of Autism. Int Rev Psychiatry.
2018;30(1):3–17. doi:10.1080/09540261.2018.1455646.

14. Kolvin I. Studies in the childhood psychoses. I. Diagnostic criteria and classification. Br J Psychiatry. 1971;118(545):381-384. doi:10.1192/bjp.118.545.381

15. Rutter M. Childhood schizophrenia reconsidered. J Autism Child Schizophr. 1972;2(4):315-337. doi:10.1007/BF01537622

16. World Health Organization. Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death. Ninth Revision (ICD-9). Geneva: WHO; 1977

17.American Psychiatric Association. (1980). Diagnostic and Statistical Manual of Mental Disorders (3rd ed.). Washington, DC: APA.

18. Lovaas, O. I. (1987). Behavioral treatment and normal educational and intellectual functioning in young autistic children. Journal of Consulting and Clinical Psychology, 55

19. Rutter, M., & Bartak, L. (1973). Special educational treatment of autistic children: A comparative study: II. Follow-up findings and implications for services. Child Psychology & Psychiatry & Allied Disciplines, 14(4), 241–270. https://doi.org/10.1111/j.1469-7610.1973.tb01193.x

20. Wing L. Asperger's syndrome: a clinical account. Psychol Med. 1981 Feb;11(1):115-29. doi: 10.1017/s0033291700053332. PMID: 7208735.

 Asperger H. Die "Autistischen Psychopathen" im Kindesalter. Arch Psychiatr Nervenkr. 1944;117:76-136.

22. Wing L, Gould J. Severe impairments of social interaction and associated abnormalities in children... J Autism Dev Disord. 1979;9:11-29. PMID: 155684

23. Volkmar FR, Klin A, Siegel B, et al. Field trial for autistic disorder in DSM-IV. Am J Psychiatry. 1994;151(9):1361–1367. <u>https://doi.org/10.1176/ajp.151.9.1361</u>

24. Väisänen R, Oosterling I, Klin A, et al. Asperger's syndrome: a comparison of clinical diagnoses and those according to ICD-10 and DSM-IV. J Autism Dev Disord.

25. Wing L, Potter D. Changing criteria of autistic disorders: a comparison of the ICD-10 research criteria and DSM-IV with DSM-III-R, CARS and ABC. Eur Child Adolesc Psychiatry. 1996;5(3):147-162.

26. Sponheim E. Changing criteria of autistic disorders: a comparison of the ICD-10 research criteria and DSM-IV with DSM-III-R, CARS, and ABC. J Autism Dev Disord. 1996 Oct;26(5):513-25. doi: 10.1007/BF02172273. PMID: 8906453.

27. Brownlow C, O'Dell L. Constructing autism – online. Disabil Soc. 2006;21(2):115-129. doi:10.1080/09687590500498158

28. McKeown J, Miller J, Gallagher B. Fictional portrayals of autism spectrum disorder: a systematic scoping review. J Autism Dev Disord. 2022;52(9):4030-4049. doi:10.1007/s10803-021-05389-6

29. Allred S. Reframing Asperger syndrome: lessons from other challenges to the DSM and ICD. Disabil Soc. 2009;24(3):345-358. doi:10.1080/09687590902789445

30. Volkmar FR, Klin A. Issues in the classification of autism and related conditions. J Autism Dev Disord. 2005;35(3):247-255. doi:10.1007/s10803-005-3294-x

31.Baron-Cohen S, Scott FJ, Allison C, et al. Early language delay and its relationship to adult outcome in autism and Asperger syndrome. Dev Psychopathol. 2009;21(2):431-446. doi:10.1017/S095457940900023X

32. Volkmar FR, Klin A, Siegel B, Szatmari P, Lord C, Campbell M, et al. Field trial for autistic disorder in DSM-IV. Am J Psychiatry. 1994;151(9):1361-7.

33.Howlin P, Magiati I. Autism spectrum disorder: predictors of transition to adulthood. Curr Opin Psychiatry. 2017;30(2):95-102. doi:10.1097/YCO.000000000000308

34. Giles DC. "Why do you want to know?" The reluctant disclosure of Asperger's diagnosis on on-line support forums. J Autism Dev Disord. 2014;44(9):2359-2371. doi:10.1007/s10803-014-2100-1

35. Kapp SK, Gillespie-Lynch K, Sherman LE, Hutman T. Deficit, difference, or both? Autism and neurodiversity. Dev Psychol. 2013;49(1):59-71. doi:10.1037/a0028353

36. Lai MC, Lombardo MV, Baron-Cohen S. Autism. Lancet. 2014;383(9920):896–910. https://doi.org/10.1016/S0140-6736(14)61133-1

37. Maenner MJ, Rice CE, Arneson CL, Cunniff C, Schieve LA, Carpenter LA, et al. Potential impact of DSM-5 criteria on autism spectrum disorder prevalence estimates. Pediatrics. 2014;133(4):e994–1001. <u>https://doi.org/10.1542/peds.2013-2081</u>

38. Gibbs V, Aldridge F, Chandler F, Witzlsperger C, Smith K. An exploratory study comparing diagnostic outcomes for autism spectrum disorders under DSM-IV-TR with the proposed DSM-5 criteria. J Autism Dev Disord. 2012;42(8):1750–6. https://doi.org/10.1007/s10803-012-1573-0

39. Hollocks MJ, Lerh JW, Magiati I, Meiser-Stedman R, Brugha TS. Anxiety and depression in adults with autism spectrum disorder: a systematic review and meta-analysis. Psychol Med. 2019;49(4):559–72. <u>https://doi.org/10.1017/S0033291718002283</u>

40.Volkmar FR, Reichow B. Autism in DSM-5: progress and challenges. Mol Autism. 2013;4(1):13. https://doi.org/10.1186/2040-2392-4-13

41. Hull, L., Petrides, K. V., Allison, C., Smith, P., Baron-Cohen, S., Lai, M.-C., & Mandy, W. (2017). "Putting on My Best Normal": Social Camouflaging in Adults with Autism Spectrum Conditions. Journal of Autism and Developmental Disorders, 47, 2519–2534. https://link.springer.com/content/pdf/10.1007/s10803-017-3166-5.pdf

42. Kentrou V, Osadtsiek M, Scheboaa AM, Beaeen S. Stability of co-occurring psychiatric diagnoses in autistic men and women. Res Autism Spectr Disord. 2021;62:101736. doi:10.1016/j.rasd.2019.101736.

43. Spain D, Happé F. How to optimise diagnosis of autism spectrum disorder in adults. Pract Neurol. 2020;20(3):181-189. <u>https://doi.org/10.1136/practneurol-2019-002439</u>

44. Bach B, Vestergaard M. Differential diagnosis of ICD-11 Personality Disorder and Autism Spectrum Disorder in adolescents. Children. 2023;10(6):992. https://doi.org/10.3390/children10060992

45. Dell'Osso L, Dalle Luche R, Muti D, et al. Adult autism spectrum as a transnosographic dimension. CNS Spectr. 2018;23(2):165-173. https://doi.org/10.1017/S1092852917000324

46. Herpertz SC, Huprich SK, Bohus M, Sachse R. The ICD-11 classification of personality disorders: a European perspective. Eur Arch Psychiatry Clin Neurosci. 2023;273(1):1-15. https://doi.org/10.1007/s00406-022-01487-0

47. Johansson M, Bölte S. Autism spectrum disorder and the ICD-11 personality disorder model: overlapping and discriminant features. Curr Opin Psychiatry. 2020;33(2):91-96. https://doi.org/10.1097/YCO.000000000000581

48. Williamson P, Charman T, Slaughter K. Autism spectrum disorder and personality disorders: a systematic review and meta-analysis. Autism Res. 2022;15(3):389-412. https://doi.org/10.1002/aur.2633

49. Chez, M.G., Burton, Q., Dowling, T., Chang, M., Khanna, P., & Kramer, C. (2007). Memantine as Adjunctive Therapy in Children Diagnosed With Autistic Spectrum Disorders: An Observation of Initial Clinical Response and Maintenance Tolerability. Journal of Child Neurology, 22(5), 574–579. https://pubmed.ncbi.nlm.nih.gov/17690064/