



Review Article

Shared presentations in trauma and autism: A systematic review of overlapping clinical features

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ABSTRACT

Trauma-related symptoms and autism spectrum disorder (ASD) have been described as sharing several clinical features, yet their relationship remains only partially explored within trauma-focused research.

This systematic review examined the association between trauma exposure, post-traumatic symptoms, and ASD, with a focus on symptom overlap and clinical implications. English- and Italian-language quantitative and clinically structured empirical studies examining trauma-related symptoms in relation to ASD in children and adolescents were included.

Following PRISMA guidelines and PROSPERO registration (CRD420251062557), literature searches were conducted in PubMed, Scopus and PsycInfo. English- and Italian-language studies examining trauma-related symptoms in relation to ASD in children and adolescents were included. Eleven studies met inclusion criteria, encompassing population-based, clinical, and case-based designs.

Across studies, trauma-related symptoms emerged as a salient and often underrecognized dimension in individuals with ASD. Overlapping features were most consistently observed in domains of emotional and behavioral dysregulation, social withdrawal, anxiety, and repetitive behaviors. Clinical and case-based evidence indicated that trauma-related symptom exacerbation may mimic or obscure core autistic features, contributing to diagnostic uncertainty.

Overall, the available evidence suggests clinically relevant overlap between trauma-related symptomatology and ASD, although direct evidence on symptom-level phenomenological overlap remains limited and heterogeneous.

Systematic assessment of both trauma exposure and neurodevelopmental history is essential to ensure accurate diagnosis and inform tailored clinical interventions.

Introduction

ASD is a neurodevelopmental condition characterised by persistent deficits in social communication and social interaction, alongside restricted and repetitive patterns of behaviour, interests, or activities, including insistence on sameness and atypical sensory responsiveness (APA, 2013, 2022). These features typically emerge in early childhood

and significantly affect functioning across multiple contexts. Individuals with ASD commonly exhibit differences in social communication, non-verbal communicative behaviours, and flexible adaptation to change, although the expression and clinical significance of these characteristics vary substantially across individuals and should be interpreted within contemporary neurodiversity-informed frameworks that recognize the reciprocal and contextual nature of social interaction

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and communication (Consoli et al., 2025; Lage et al., 2024).

According to the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; DSM-5), ASD is conceptualised as a spectrum condition encompassing varying levels of symptom severity, classified into three levels based on the degree of functional impairment and the amount of support required (APA, 2013). Additionally, ASD may present with or without co-occurring intellectual disability and with or without associated language impairments, reflecting the considerable heterogeneity of clinical manifestations observed within the spectrum (APA, 2013). This heterogeneity has important implications for differential diagnosis, as core autistic features may vary widely in their expression and intensity across individuals and developmental stages.

Post-traumatic stress disorder (PTSD) is a trauma-related psychiatric condition that develops following exposure to actual or threatened death, serious injury, or sexual violence, as defined by Criterion A of the DSM-5 (APA, 2013). PTSD is characterised by three core symptomatic domains: intrusive re-experiencing (e.g., involuntary memories, nightmares, flashbacks), avoidance of trauma-related thoughts, emotions, or external reminders, and persistent hyperarousal, including hypervigilance, sleep disturbance, and exaggerated startle response. These clusters reflect the core psychobiological response to trauma and contribute to functional impairment and symptom maintenance over time as identified within the *International Classification of Diseases* (11th ed.; ICD-11). Complex post-traumatic stress disorder (C-PTSD) describes the psychological sequelae of prolonged, repeated, or interpersonal trauma, often occurring during early developmental periods (Brewin et al., 2017; Cloitre, 2020; WHO, 2018). The inclusion of C-PTSD in ICD-11 underscores the relevance of developmental timing and chronicity of trauma exposure in shaping long-term psychological functioning. In addition to the core PTSD symptoms, C-PTSD is characterised by disturbances in self-organisation (DSO), encompassing affect dysregulation, a persistent negative self-concept, and enduring interpersonal difficulties. Together, PTSD and C-PTSD represent distinct but related trauma conditions that reflect differences in trauma exposure and symptom complexity, both leading to pervasive impairments in functioning that may intersect phenomenologically with neurodevelopmental profiles.

ASD and trauma-related disorders thus represent distinct diagnostic constructs, rooted respectively in neurodevelopmental vulnerability and adverse life experiences (Kerns et al., 2015). Nevertheless, both conditions involve alterations in emotional regulation, social functioning, and behavioural adaptation, raising important questions about symptom overlap, diagnostic differentiation, and potential bidirectional influences across development (Cloitre et al., 2013; Mazefsky et al., 2013).

Historically, autism and trauma were sometimes interpreted through relational frameworks that are no longer considered adequate explanations of ASD. Contemporary evidence supports ASD as a neurodevelopmental condition with distinct etiological mechanisms from trauma-related disorders. Nevertheless, despite these different underlying pathways, some clinical manifestations may overlap, creating challenges in differential diagnosis and clinical assessment.

In recent years, increasing attention has been devoted to the complex relationship between ASD and trauma-related disorders, particularly PTSD and C-PTSD (Sarr et al., 2025). Although these conditions arise from distinct developmental and etiological pathways—ASD as a neurodevelopmental disorder and PTSD/C-PTSD as trauma-related psychopathologies—they may present with overlapping clinical features that challenge differential diagnosis and case conceptualisation.

Notwithstanding their distinct etiologies and diagnostic frameworks, the literature reveals meaningful overlaps in presentation (Sarr et al., 2025). For example, individuals with ASD may show rigid behaviour, emotional dysregulation and sensory hyperreactivity, features that are also prominent in C-PTSD and sometimes in PTSD. A Delphi study examining autism, C-PTSD and other relational disorders found that young people with either ASD or C-PTSD share difficulties in emotional awareness, regulation, interpersonal functioning and sensory

processing, though the aetiology and developmental onset differ: sensory problems in ASD emerge neurodevelopmentally, whereas in C-PTSD sensory dysregulation is often secondary to trauma exposure and hyperarousal/hypoarousal states (Sarr et al., 2025). Moreover, research indicates that autistic adults are at increased risk of developing PTSD (or probable PTSD) after exposure to traumatic or non-Criterion A events, with over 40% of one sample reporting probable PTSD, suggesting that autism-related vulnerabilities (e.g., social communication impairments, sensory hyper/hypo-sensitivity) may potentiate trauma responses (Rumball et al., 2020).

Understanding the shared features between ASD and trauma-related conditions—such as difficulties in emotion regulation, interpersonal trust or perceived safety, sensory overload, and chronic relational dysfunction—while simultaneously recognising their distinct developmental pathways is critical for accurate assessment and treatment planning. These conditions diverge in terms of onset (neurodevelopmental versus trauma-triggered), cognitive style (e.g., special interests and insistence on sameness in ASD versus trauma-related re-experiencing in C-PTSD), and core diagnostic features (restricted and repetitive behaviours versus trauma-specific intrusions).

To support this distinction, Table 1 presents a clinical matrix comparing ASD, PTSD, C-PTSD, and dissociation across key domains, including developmental temporality, trauma-specific symptoms, core autistic traits, relational reactions, non-specific dysregulation symptoms, and contextual factors.

Recognition of this phenomenological overlap underscores the importance of trauma-sensitive assessment approaches in neurodevelopmental populations, as well as neurodiversity-informed trauma interventions for individuals with ASD, in order to reduce the risk of misdiagnosis and ensure clinically appropriate care.

A thorough understanding of the psychopathological processes underlying each condition, together with careful consideration of the domains in which their manifestations converge, is therefore essential for improving diagnostic precision and informing tailored intervention strategies.

Despite growing interest in the relationship between ASD and trauma-related psychopathology, there remains a lack of systematic reviews synthesising quantitative and clinically structured empirical evidence on symptom overlap, diagnostic differentiation, and functional convergence.

The present systematic review addresses this gap by synthesising quantitative and clinical empirical studies examining trauma-related symptoms, symptom overlap, and diagnostic differentiation in autistic children and adolescents.

In particular, this review focuses on children and adolescents aged 0–18 years, a critical developmental window during which symptoms may manifest in subtle, atypical, or overlapping ways. During this period, distinguishing between trauma-related responses and autism-related characteristics can be especially challenging, increasing the risk of diagnostic ambiguity.

Clear differentiation between manifestations attributable to trauma exposure and those intrinsic to ASD is therefore essential to avoid clinical misinterpretations and to implement effective, developmentally appropriate interventions tailored to the specific needs of children and adolescents.

Methods

Research questions

Is there a symptom overlap between autism spectrum disorder (ASD) and trauma-related conditions? (RQ1) Specifically, which behavioural, emotional, and cognitive features typically associated with ASD are also reported in individuals exposed to complex trauma or diagnosed with PTSD/C-PTSD?

Is there evidence of diagnostic confusion, misdiagnosis, or co-

Table 1

Clinical matrix distinguishing ASD, PTSD, C-PTSD, and dissociation.

Clinical domain	ASD	PTSD	C-PTSD	Dissociation
Developmental temporality	Early-onset neurodevelopmental condition; core features are present from early childhood, although they may become more evident as social demands increase	Symptoms emerge after an identifiable traumatic event and represent a change from previous functioning	Usually develops following prolonged or repeated trauma, particularly interpersonal trauma, and may emerge gradually over time	May occur during or after overwhelming stress or trauma; can be episodic, persistent, or transdiagnostic
Trauma-specific symptoms	Not intrinsic to ASD	Intrusive re-experiencing, avoidance of trauma-related reminders, and hyperarousal	Core PTSD symptoms plus disturbances in self-organization	May include depersonalization, derealization, amnesia, memory fragmentation, or an altered sense of self
Core autistic traits	Persistent social-communication differences, restricted or repetitive patterns of behaviour, insistence on sameness, circumscribed interests, and sensory sensitivities	Not core features, although withdrawal, rigidity, or safety-seeking behaviours may occur after trauma	Not core features, although chronic avoidance, relational withdrawal, and behavioural rigidity may occur	Not core features; reduced responsiveness or apparent social disengagement may occur during dissociative states
Relational reactions	Longstanding differences in social reciprocity, communication, interpretation of social cues, and regulation of interpersonal closeness	Withdrawal, mistrust, or avoidance linked to trauma reminders, perceived threat, or fear of recurrence	Persistent relational difficulties, avoidance of closeness, distrust, emotional detachment, and difficulty sustaining relationships	Emotional detachment, reduced responsiveness, altered relatedness, or temporary disconnection from others
Non-specific dysregulation symptoms	Emotional dysregulation, irritability, anxiety, sleep difficulties, agitation, and self-injurious behaviour may occur but are not diagnostically specific	Irritability, sleep disturbance, concentration difficulties, exaggerated startle, emotional reactivity, and vigilance	Persistent affect dysregulation, emotional numbing, shame, negative self-concept, and interpersonal instability	Emotional numbing, attentional disruption, fluctuating arousal, confusion, and reduced integration of behaviour or experience
Contextual factors	Developmental history, early onset, persistence across settings, sensory profile, family history, and longstanding neurodevelopmental pattern	Clear temporal relationship with a traumatic event, identifiable triggers, and trauma-related reminders	History of prolonged or repeated trauma, especially interpersonal trauma, together with chronic disturbances in self-organization	Often associated with overwhelming stress, trauma exposure, or other psychiatric conditions; may occur within PTSD or C-PTSD

diagnosis between ASD and trauma-related conditions? (RQ2) Specifically, what clinical factors are reported to contribute to diagnostic uncertainty, overlap, or differential diagnostic challenges between ASD and trauma-related conditions, particularly in individuals with a history of trauma exposure?

Search strategy

This systematic review was conducted in accordance with the PRISMA guidelines (Page et al., 2021) and was prospectively registered in the PROSPERO database (registration number: CRD420251062557, published on June 9, 2025). Literature searches were performed up to June 11, 2026, across four major databases: PubMed, Scopus, PsycArticles and PsycInfo. The review is based only on English and Italian articles. The search strategy employed the following syntax: ("Autism Spectrum Disorder" OR autism OR ASD OR autistic traits) AND ("Post-Traumatic Stress Disorder" OR PTSD OR CPTSD OR complex trauma OR trauma* OR dissociation) AND (child* OR adolescent* OR youth).

The search syntax can be found in Table 2.

Inclusion/exclusion criteria

Studies were included if they met the following criteria: (1) primarily involved children and adolescents (approximately 0–18 years of age); (2) the study involved samples of individuals presenting symptoms consistent with autism spectrum disorder and trauma-related symptomatology (e.g., PTSD, complex trauma, or dissociation). Studies examining trauma exposure alone were excluded, as the review focused on symptom overlap and diagnostic differentiation; and (3) published in English or Italian. Studies were excluded if they were reviews, meta-analyses, dissertations, qualitative studies, or part of the grey literature. Studies including a limited number of participants older than 18 years were retained when the sample predominantly comprised pediatric participants and the findings were directly relevant to the review objectives.

Qualitative studies based primarily on interviews, narratives, or thematic analyses were excluded because the primary aim of the review

Table 2

Search syntax.

Database	Keywords	No. of Articles	Duplicates	Total
PubMed	("Autism Spectrum Disorder" OR autism OR ASD OR autistic traits) AND ("Post-Traumatic Stress Disorder" OR PTSD OR CPTSD OR complex trauma OR trauma* OR dissociation) AND (child* OR adolescent* OR youth)	1336		
Scopus	("Autism Spectrum Disorder" OR autism OR ASD OR autistic traits) AND ("Post-Traumatic Stress Disorder" OR PTSD OR CPTSD OR complex trauma OR trauma* OR dissociation) AND (child* OR adolescent* OR youth)	27		
PsycInfo	("Autism Spectrum Disorder" OR autism OR ASD OR autistic traits) AND ("Post-Traumatic Stress Disorder" OR PTSD OR CPTSD OR complex trauma OR trauma* OR dissociation) AND (child* OR adolescent* OR youth)	1618		
PsycArticles	("Autism Spectrum Disorder" OR autism OR ASD OR autistic traits) AND ("Post-Traumatic Stress Disorder" OR PTSD OR CPTSD OR complex trauma OR trauma* OR dissociation) AND (child* OR adolescent* OR youth)	35		
	TOTAL	3016	649	2367

was to synthesize empirical evidence on symptom overlap and diagnostic differentiation derived from standardized clinical, behavioral, or diagnostic assessments. Including qualitative studies would have broadened the review toward lived experiences and subjective accounts of diagnostic processes, which represent an important but distinct

research question. Case reports and clinical case series were retained when they provided systematic diagnostic information relevant to symptom overlap or differential diagnosis. Accordingly, the present review focuses on quantitative and clinical empirical evidence rather than offering a comprehensive account of the lived phenomenology of overlap between ASD and trauma-related conditions.

Additionally, studies focusing on autistic individuals with co-occurring intellectual disability were excluded to reduce diagnostic and measurement confounding. The identification of trauma-related symptoms often relies on the recognition or reporting of subjective emotional, cognitive, and behavioural experiences, which may be more difficult to assess in individuals with substantial communication or cognitive support needs. In these populations, trauma-related manifestations may also be difficult to distinguish from behaviours associated with intellectual disability, communication difficulties, or other co-occurring conditions. This criterion was therefore adopted to improve comparability across studies and the specificity of the synthesis. However, it substantially limits the generalizability of the findings, particularly to autistic individuals with intellectual disability or limited verbal communication, who may present some of the most complex diagnostic and clinical needs.

Study selection

All records retrieved from the database searches were first imported into Zotero, where duplicate records were identified and removed. The deduplicated records were subsequently imported into Rayyan to

facilitate the screening and study selection process. Two researchers independently screened titles and abstracts according to the predefined inclusion and exclusion criteria. Any disagreements were resolved through discussion, with a third researcher consulted when consensus could not be reached.

Potentially eligible studies subsequently underwent full-text assessment, which was independently conducted by the same three reviewers. Any disagreements regarding study eligibility were resolved through discussion until consensus was reached.

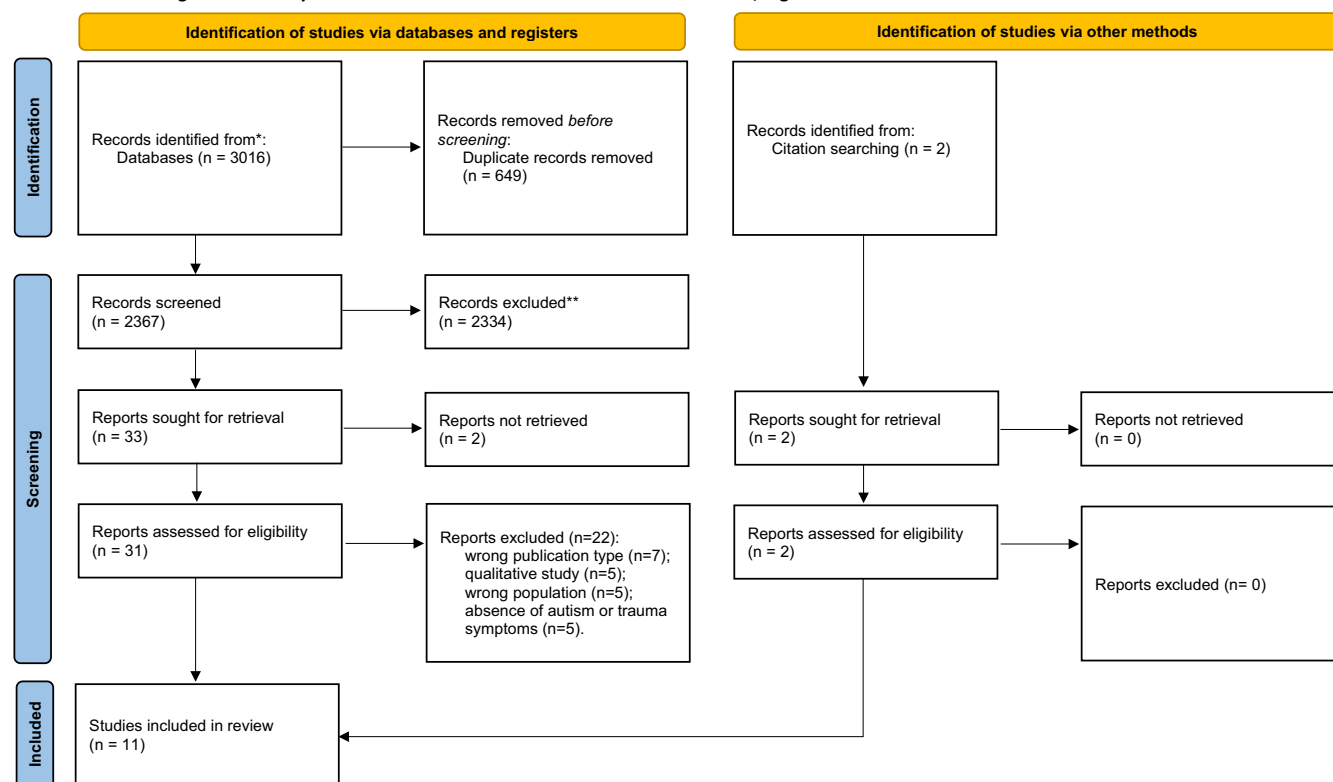
Data extraction

Data extraction was performed using a standardized extraction form specifically developed for this review. The extracted information included study characteristics (authors, year of publication, country, and study design), participant characteristics, autism- and trauma-related measures, primary outcomes, and key findings relevant to the review objectives. The extracted data were independently cross-checked by the reviewers to ensure accuracy and completeness before synthesis.

Study selection results

Following title and abstract screening, 35 studies were considered eligible for full-text assessment. Following full-text review, 11 studies met the inclusion criteria and were retained for the final synthesis, whereas 24 studies were excluded for the following reasons: incorrect publication type ($n = 7$), qualitative study ($n = 5$), wrong population ($n = 5$), absence of autism- or trauma-related outcomes ($n = 5$), and full

PRISMA 2020 flow diagram for new systematic reviews which included searches of databases, registers and other sources



*Consider, if feasible to do so, reporting the number of records identified from each database or register searched (rather than the total number across all databases/registers).

**If automation tools were used, indicate how many records were excluded by a human and how many were excluded by automation tools.

Source: Page MJ, et al. BMJ 2021;372:n71. doi: 10.1136/bmj.n71.

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Fig. 1. *Consider, if feasible to do so, reporting the number of records identified from each database or register searched (rather than the total number across all databases/registers).

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text not retrievable ($n = 2$). The study selection process is presented in the PRISMA 2020 flow diagram (Fig. 1) (Page et al., 2021).

Quality assessment

The methodological quality of the included studies was assessed according to the study design. Observational studies, including cross-sectional, case-control, and cohort studies, were evaluated using the Newcastle–Ottawa Quality Assessment Scale adapted for cross-sectional studies (Modesti et al., 2016). The scale evaluates three domains: selection, comparability, and outcome, with total scores ranging from 0 to 10. Case reports were appraised using the Joanna Briggs Institute (JBI) Critical Appraisal Checklist for Case Reports, which evaluates key methodological aspects including patient demographic characteristics, clinical history, diagnostic assessment, intervention, post-intervention outcomes, adverse events, and the overall clarity and completeness of reporting (Munn et al., 2020). For descriptive purposes, studies were categorized as low quality (0–4), moderate quality (5–6), or high quality (7–10). The results of the methodological quality assessment are presented in Table 3a for observational studies assessed with the Newcastle–Ottawa Scale and in Table 3b for case reports assessed using the JBI Critical Appraisal Checklist.

As summarized in Table 3a and 3b, the risk-of-bias assessment revealed moderate methodological heterogeneity across the included studies. Although most studies were judged to be of acceptable methodological quality, several methodological limitations should be considered when interpreting the findings. In particular, many of the clinical investigations relied on relatively small samples (e.g., Dincel & Karayagmurlu, 2025; Lau-Zhu et al., 2026; Mehtar & Motavalli Mukaddes, 2011), reducing statistical power and limiting the generalizability of the results. Furthermore, the predominance of observational and cross-sectional designs precluded causal inference regarding the relationship between trauma-related symptomatology and ASD (e.g., Dinkler et al., 2017; Davidsson et al., 2025). Additional sources of potential bias included heterogeneous approaches to the assessment of trauma exposure, PTSD symptoms, and autism characteristics, as well as variability in participant recruitment and diagnostic procedures across studies. Finally, the inclusion of case reports and case-based clinical observations (e.g., Cook et al., 1993; Stavropoulos et al., 2018), while providing valuable insights into complex clinical presentations, inherently limits external validity. Consequently, the findings should be interpreted with appropriate caution. Nevertheless, the consistency of the overall pattern of results across studies with different designs provides preliminary support for the existence of clinically meaningful overlap between ASD and trauma-related symptomatology. Future research employing larger, prospectively recruited samples, longitudinal designs, standardized trauma assessment protocols, and multimodal diagnostic procedures will be essential to strengthen the evidence base and improve causal inference.

Table 3a
Methodological quality assessment of observational studies using the Newcastle–Ottawa quality assessment scale (adapted for cross-sectional studies).

Study	Representativeness	Sample Size	Non-Respondents	Exposure Assessment	Comparability	Outcome Assessment	Statistical Test	Total
Davidsson et al., 2025	*	—	—	**	*	*	*	6/10
Dinkler et al., 2017	*	—	*	**	**	*	*	8/10
Li et al., 2024	*	*	*	**	**	**	*	10/10
Mehtar & Mukaddes, 2011	—	—	—	**	—	*	*	4/10
Odachowska-Rogalska, 2023	—	—	—	**	—	**	*	5/10
Brenner et al., 2018	—	—	—	*	**	*	*	5/10
Dincel & Karayagmurlu, 2025	—	—	—	**	*	*	*	5/10
Lau-Zhu et al., 2026	*	—	—	**	**	*	*	7/10

Note. Newcastle–Ottawa Quality Assessment Scale adapted for cross-sectional studies (Modesti et al., 2016).

Note. ** = maximum score awarded for that domain (where applicable); — = criterion not met or not reported. Higher total scores indicate better methodological quality (maximum = 10).

Results

Study selection and characteristics

Eleven studies met the inclusion criteria. These comprised one population-based retrospective cohort study conducted in Taiwan (Li et al., 2024), one population-based twin cohort study from Sweden (Dinkler et al., 2017), seven cross-sectional, clinical observational, survey, family, or comparative studies conducted in the USA, Sweden, Turkey, Poland, Australia, and the UK (Bitsika & Sharpley, 2021; Brenner et al., 2018; Davidsson et al., 2025; Dincel & Karayagmurlu, 2025; Lau-Zhu et al., 2026; Mehtar & Motavalli Mukaddes, 2011; Odachowska-Rogalska, 2023), and two case-based reports from the United States (Cook et al., 1993; Stavropoulos et al., 2018).

Country and setting

One study was conducted in Taiwan using nationwide administrative health-insurance data (Li et al., 2024). Two studies were conducted in Sweden, including a population-based twin cohort (Dinkler et al., 2017) and a clinical family sample recruited from neuropsychiatric and child psychiatric services (Davidsson et al., 2025). Two studies were conducted in Turkey in child and adolescent psychiatry/autism follow-up settings (Dincel & Karayagmurlu, 2025; Mehtar & Motavalli Mukaddes, 2011). Clinical samples were also drawn from a pediatric psychiatric inpatient ward in Poland (Odachowska-Rogalska, 2023), an Australian community sample recruited via parent organisations (Bitsika & Sharpley, 2021), and a UK online adolescent-caregiver sample recruited through healthcare, social care, and community sources (Lau-Zhu et al., 2026). Three studies were conducted in the United States, including six specialty psychiatric inpatient units participating in the Autism Inpatient Collection (Brenner et al., 2018), a university-based autism clinic (Stavropoulos et al., 2018), and a university child psychiatry/residential-school case context (Cook et al., 1993).

Study design

One retrospective cohort study used registry-based data to examine the onset of acute stress disorder or PTSD among individuals with ASD compared with matched controls (Li et al., 2024). A co-twin control design was employed in a Swedish population-based twin cohort (Dinkler et al., 2017). Cross-sectional or observational designs were used in clinical and community samples, including a secondary analysis of a multi-site inpatient ASD sample (Brenner et al., 2018), clinical ASD samples from Turkey and Poland (Dincel & Karayagmurlu, 2025; Mehtar & Motavalli Mukaddes, 2011; Odachowska-Rogalska, 2023), an Australian survey of autistic boys and their mothers (Bitsika & Sharpley, 2021), a Swedish clinical family study report on intergenerational

Table 3b
Methodological quality assessment of case reports using the JBI critical appraisal checklist.

Study	Demographic Characteristics	Patient History as Timeline	Current Clinical Condition	Diagnostic Assessment and Results	Intervention / Treatment	Post-Intervention Condition	Adverse / Unanticipated Events	Takeaway Lessons	Total
Carpita et al., 2024	Yes	Yes	Yes	Yes	Unclear	Unclear	No	Yes	5/8
Kildahl et al., 2024	Yes	Yes	Yes	Yes	Yes	Yes	Unclear	Yes	7/8
Cook et al., 1993	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8/8
Stavropoulos et al., 2018	Yes	Yes	Yes	Yes	Not applicable	Not applicable	Unclear	Yes	5/6

Note. Yes = criterion clearly met; No = criterion not met; Unclear = insufficiently reported; Not applicable = criterion not applicable to the purpose or design of the case report. Total scores indicate the number of “Yes” ratings across applicable criteria. Higher scores indicate more complete reporting according to the JBI Critical Appraisal Checklist for Case Reports.

adverse childhood experiences (Davidsson et al., 2025), and a preliminary comparative UK study of autistic, typically developing, and maltreatment-exposed adolescents (Lau-Zhu et al., 2026). Case-based designs included one single-case report of autistic disorder and PTSD (Cook et al., 1993) and one two-case pediatric clinical series focused on the differential diagnosis of ASD and PTSD (Stavropoulos et al., 2018).

Sample size

Sample sizes ranged from one individual to large national cohorts. The largest study included 15,200 individuals with ASD and 45,600 matched controls (Li et al., 2024), while the Swedish twin study included 8184 children (Dinkler et al., 2017). The largest clinical ASD sample included 350 autistic children and adolescents from inpatient psychiatric units (Brenner et al., 2018). Other clinical or observational samples included 110 children (Odachowska-Rogalska, 2023), 97 families (Davidsson et al., 2025), 87 adolescents across three comparison groups (Lau-Zhu et al., 2026), 71 autistic boys (Bitsika & Sharpley, 2021), 69 children and adolescents with ASD (Mehtar & Motavalli Mukaddes, 2011), and 59 autistic adolescents (Dincel & Karayagmurlu, 2025). Case-based studies described either one autistic adolescent (Cook et al., 1993) or two children referred for possible ASD (Stavropoulos et al., 2018).

Participants age

Participants were mainly children and adolescents, although age ranges varied across study designs and settings. The registry cohort reported a mean age of 6.37 years (Li et al., 2024), while the Swedish twin study included nine-year-old children (Dinkler et al., 2017). The inpatient ASD sample in Brenner et al. (2018) had a mean age of 12.9 years and included participants aged 4–21 years. Other pediatric samples included children aged 2–10 years (Odachowska-Rogalska, 2023), 6–18 years (Mehtar & Motavalli Mukaddes, 2011), 7–18 years (Bitsika & Sharpley, 2021), 8–18 years (Davidsson et al., 2025), 10–16 years (Lau-Zhu et al., 2026), and 12–18 years (Dincel & Karayagmurlu, 2025). The single case described by Cook et al. (1993) involved a 12-year-old autistic boy, while the U.S. two-case series involved children aged 6 and 7 years (Stavropoulos et al., 2018).

Biological sex

Biological sex distribution varied considerably across studies. The Taiwanese registry cohort included 18.68% females (Li et al., 2024), while the Swedish twin cohort included 49% females (Dinkler et al., 2017). Clinical ASD samples were predominantly male, with females comprising 21% of the inpatient ASD sample (Brenner et al., 2018), 23.2% of the Turkish ASD clinic sample (Mehtar & Motavalli Mukaddes, 2011), 26.4% of the Polish inpatient sample (Odachowska-Rogalska,

2023), and 20.3% of the autistic adolescent sample in Dincel and Karayagmurlu (2025). Davidsson et al. (2025) reported 42% girls among children with neurodevelopmental disorders. The Australian survey included boys only (Bitsika & Sharpley, 2021), and the single case report also described a male adolescent (Cook et al., 1993). In Lau-Zhu et al. (2026), females represented 47% of the autism group, 61% of the maltreatment-exposed group, and 52% of the typically developing group. The pediatric case series by Stavropoulos et al. (2018) included one boy and one girl.

Instruments used

Registry-based research relied on ICD-coded diagnoses and administrative indices such as the Injury Severity Scale and Charlson Comorbidity Index (Li et al., 2024). Autism-related instruments included the Autism-Tics, ADHD, and other Comorbidities inventory (A-TAC; Dinkler et al., 2017), the Social Communication Questionnaire and Autism Diagnostic Observation Schedule, Second Edition (SCQ; ADOS-2; Brenner et al., 2018), the Childhood Autism Rating Scale (CARS; Cook et al., 1993; Dincel & Karayagmurlu, 2025; Mehtar & Motavalli Mukaddes, 2011), Autism Spectrum Rating Scales and OSD/Assess Your Child (Odachowska-Rogalska, 2023), and the Social Communication Questionnaire-Current Form (Lau-Zhu et al., 2026). Trauma-, PTSD-, and dissociation-related measures included the Life Stressor Checklist-Revised (Dinkler et al., 2017), Adverse Childhood Experiences Questionnaire (Davidsson et al., 2025), CASI-4R PTSD subscale (Bitsika & Sharpley, 2021), CASI-5 PTSD-related items (Brenner et al., 2018), K-SADS-PL PTSD module and Trauma Symptoms Investigation Form in ASD (Mehtar & Motavalli Mukaddes, 2011), Essener Trauma Inventory for Children and Adolescents (Odachowska-Rogalska, 2023), Childhood Trauma Questionnaire, Adolescent Dissociative Experiences Scale, Child-Adolescent Bullying Screen, and Child Posttraumatic Stress Reaction Index (Dincel & Karayagmurlu, 2025), and the Child and Adolescent Trauma Screen and Children’s Revised Impact of Event Scale (Lau-Zhu et al., 2026). Additional cognitive, adaptive, and behavioural measures included the Leiter-3, Vineland Adaptive Behavior Scales, Aberrant Behavior Checklist, Wechsler scales, Raven matrices, Dysexecutive Questionnaire-Children, and Plymouth Sensory Imagery Questionnaire.

Outcomes measured

Primary outcomes varied across studies but consistently included ASD diagnoses or traits, trauma exposure, trauma-related symptoms or diagnoses, and differential diagnostic issues. Registry-based work measured the onset of acute stress disorder or PTSD in children and adolescents with ASD compared with non-autistic controls (Li et al., 2024). The Swedish twin cohort assessed neurodevelopmental disorder traits, including ASD and ADHD, in relation to childhood

maltreatment exposure (Dinkler et al., 2017), while the Swedish family study measured parental and child adverse childhood experiences, parental neurodevelopmental traits, and child emotional and behavioural problems (Davidsson et al., 2025). Cross-sectional and clinical studies evaluated bullying exposure and PTSD symptoms (Bitsika & Sharpley, 2021), caregiver-reported abuse and behavioural manifestations of trauma in ASD inpatient settings (Brenner et al., 2018), PTSD diagnosis and symptomatology in ASD (Mehtar & Motavalli Mukaddes, 2011), diagnostic accuracy and overlap across ASD, ADHD, and PTSD tools (Odachowska-Rogalska, 2023), dissociative symptoms and their associations with childhood trauma, bullying, and PTSD symptoms in autistic adolescents (Dincel & Karayagmurlu, 2025), and DSM-5 versus non-DSM-5 trauma exposure with caregiver- and self-reported PTSD symptoms in autistic adolescents (Lau-Zhu et al., 2026). Case-based studies focused on PTSD after physical abuse in a previously diagnosed autistic adolescent (Cook et al., 1993) and on distinguishing trauma-related presentations from ASD in children referred for possible autism (Stavropoulos et al., 2018).

Findings

Overall, the included studies indicated that autistic children and adolescents may be vulnerable to trauma-related symptoms and diagnoses, and that trauma can complicate the clinical interpretation of ASD-like behaviours. In a Taiwanese population-based cohort, children and adolescents with ASD showed a substantially increased risk of developing acute stress disorder or PTSD compared with matched non-autistic controls (Li et al., 2024). In a Swedish population-based twin cohort, exposure to childhood maltreatment was associated with higher neurodevelopmental disorder traits, although co-twin analyses suggested that much of this association was attributable to shared familial or genetic factors (Dinkler et al., 2017). Intergenerational patterns of adversity were highlighted in a Swedish family study, in which higher maternal ACE scores were associated with more pronounced maternal neurodevelopmental traits and with emotional and behavioural difficulties in children with neurodevelopmental disorders (Davidsson et al., 2025). Clinical studies reported trauma-related symptoms across autistic samples. In a multi-site inpatient ASD sample, 28.3% had caregiver-reported abuse; abused youth showed higher intrusive thoughts, distressing memories, loss of interest, irritability, and lethargy, while ASD severity and adaptive functioning did not significantly differ by abuse status (Brenner et al., 2018). In a Turkish ASD clinic sample, 26.1% of participants had experienced traumatic events and 17.4% met criteria for PTSD, with PTSD linked to increased behavioural problems (Mehtar & Motavalli Mukaddes, 2011). In a Polish inpatient child psychiatric sample, traumatic and crisis-related experiences intensified ASD- and ADHD-like symptom severity, while PTSD symptoms were frequently underdiagnosed in clinical records (Odachowska-Rogalska, 2023). In autistic adolescents, dissociative symptoms were associated with childhood trauma and PTSD symptom scores; 12.5% of participants scored above the dissociative-disorder threshold and 15.2% met probable PTSD criteria, with childhood trauma and age emerging as significant predictors of dissociation (Dincel & Karayagmurlu, 2025). In the Australian survey, bullying was highly prevalent among autistic boys and was associated with higher PTSD symptom scores (Bitsika & Sharpley, 2021). In the UK comparative adolescent study, autistic adolescents showed higher PTSD symptom severity and probable PTSD rates than typically developing adolescents; importantly, the index events in autistic adolescents often did not meet DSM-5 trauma Criterion A, suggesting the need for flexible assessment of subjectively traumatic experiences (Lau-Zhu et al., 2026). Case-based evidence further illustrated diagnostic complexity: Cook et al. (1993) described PTSD after reported physical abuse in an autistic adolescent, including symbolic anxiety, avoidance, re-enactment, sleep disturbance, and loss of interest, while Stavropoulos

et al. (2018) described two children referred for possible ASD who instead met criteria for PTSD, showing how trauma-related symptoms can mimic core ASD features.

Symptomatic overlap

The included studies addressed two related but distinct research questions: the presence of symptom overlap between ASD and trauma-related conditions (RQ1), and the clinical factors contributing to diagnostic confusion, misdiagnosis, co-diagnosis, and differential diagnostic challenges (RQ2). The findings are therefore organized according to these two questions rather than treated as a single undifferentiated body of evidence.

Regarding RQ1, the available studies identified several behavioural, emotional, and cognitive features that may occur in both ASD and trauma-related conditions. These included social withdrawal, reduced interpersonal engagement, social-communication difficulties, sleep disturbance, irritability, aggression or agitation, emotional dysregulation, repetitive behaviours, reduced interest in activities, anxiety, and dissociative manifestations. However, the strength and directness of the evidence varied across studies. Registry- and population-based investigations (Dinkler et al., 2017; Li et al., 2024) documented associations between autism-related characteristics and trauma-related diagnoses or psychopathology, but did not directly compare symptom phenomenology. Similarly, Bitsika and Sharpley (2021) found that bullying exposure, coping style, and autism-related social difficulties were associated with higher PTSD symptoms, while Dincel and Karayagmurlu (2025) identified dissociation as a trauma-associated correlate in autistic adolescents. Lau-Zhu et al. (2026) further showed that autistic adolescents may experience clinically significant PTSD symptoms following subjectively traumatic events that do not necessarily meet DSM-5 Criterion A. These studies support the clinical relevance of trauma-related psychopathology in autistic populations, but provide indirect rather than definitive evidence of symptom-level overlap.

More direct evidence for RQ1 was provided by clinical and case-based studies examining the presentation of trauma-related symptoms in relation to autistic features (Brenner et al., 2018; Cook et al., 1993; Mehtar & Motavalli Mukaddes, 2011; Odachowska-Rogalska, 2023; Stavropoulos et al., 2018). Odachowska-Rogalska (2023), in particular, examined overlap among ASD, ADHD, and PTSD, with attention to the role of early relational and traumatic experiences in shaping clinical presentation. The study reported that trauma- and crisis-related experiences may intensify ASD- and ADHD-like symptoms and discussed how early separation, disrupted bonding, traumatic birth, and other adverse relational experiences may contribute to behavioural patterns resembling or exacerbating neurodevelopmental features. These interpretations were presented as possible explanations of symptom expression and diagnostic complexity, rather than as evidence that trauma causes ASD.

Regarding RQ2, the studies directly addressing differential diagnosis identified several clinical factors that may help distinguish ASD from trauma-related conditions. Features more suggestive of PTSD or C-PTSD included symptom onset or marked worsening after an identifiable traumatic event, intrusive memories, trauma-related avoidance, symbolic anxiety, trauma-themed play or behavioural re-enactment, regression or functional decline, fearfulness, hyperarousal, and loss of previously acquired interests or abilities. Conversely, features more consistent with ASD included a longstanding developmental history of social-communication differences, restricted or repetitive behaviours predating trauma exposure, persistent sensory sensitivities, and evidence of an established neurodevelopmental profile.

Diagnostic confusion appeared particularly likely when developmental history was incomplete, trauma exposure was not systematically assessed, or overlapping behaviours were interpreted without considering their onset, function, and relational context. Trauma-related social

withdrawal, rigidity, repetitive behaviour, irritability, and emotional dysregulation could be misattributed to ASD, while pre-existing autistic characteristics could obscure the recognition of PTSD or dissociation. The available evidence therefore suggests that the same observable behaviour may reflect different underlying processes, making temporal sequence, trauma specificity, developmental onset, and functional meaning central to differential diagnosis.

Table 4 summarizes the symptom domains relevant to RQ1 and the distinguishing clinical indicators relevant to RQ2. Overall, the findings support clinically meaningful overlap in observable presentation, while also showing that direct evidence on phenomenological equivalence remains limited. The search strategy was intentionally designed to identify studies assessing ASD together with PTSD, C-PTSD, trauma-related symptomatology, complex trauma, or dissociation in pediatric populations; studies examining trauma exposure alone without evaluating trauma-related psychopathology were outside the primary scope of the review.

Discussion

This review set out to examine the bidirectional relationship between ASD and trauma exposure across clinical, population-based, and case study designs. A consistent finding across these lines of evidence is that individuals with ASD display increased vulnerability to stress-related psychopathology, including PTSD and C-PTSD, particularly in the aftermath of trauma (Li et al., 2024).

This vulnerability has been documented for more than three decades. One of the earliest clinical reports described the emergence of PTSD in an adolescent with autistic disorder following physical abuse within a residential care setting, highlighting the presence of intrusive traumatic recollections, symbolic anxiety, and trauma-related repetitive behaviours (Cook et al., 1993). This seminal case report emphasized that PTSD should be systematically considered in autistic individuals exposed to abuse, challenging the historical tendency to attribute trauma-related manifestations exclusively to autism.

Clinical observations have similarly reported elevated trauma exposure and clinically significant PTSD symptoms among autistic individuals, with associated increases in emotional dysregulation and behavioral difficulties (Mehtar & Motavalli Mukaddes, 2011; Odachowska-Rogalska, 2023). More recently, Brenner et al. (2018) found that autistic youth with caregiver-reported histories of physical, sexual, or emotional abuse exhibited significantly higher levels of intrusive memories, distress associated with traumatic experiences, irritability, lethargy, and loss of interest compared with autistic youth without maltreatment histories. Importantly, when autistic youth with a history of abuse but without a PTSD diagnosis were compared with those who met diagnostic criteria for PTSD, the latter displayed significantly greater fearful behaviour and temper tantrums, suggesting that these externalizing manifestations may represent clinically relevant indicators of PTSD within autistic populations. Furthermore, individuals meeting criteria for PTSD showed even greater symptom severity and more pronounced externalizing behaviours, underscoring the clinical importance of routine trauma screening in ASD services. Whereas more internalizing symptoms—such as intrusive memories, distress associated with traumatic experiences, loss of interest, and lethargy—were already evident in abused autistic youth irrespective of a PTSD diagnosis. These findings suggest that clinicians should not rely solely on overt behavioural dysregulation when assessing trauma in ASD but should also actively explore more subtle trauma-related symptoms, as they may otherwise remain unrecognized. Collectively, these findings underscore the clinical importance of routine, trauma-informed screening in ASD services and highlight the need for comprehensive assessments capable of identifying both externalizing and internalizing manifestations of trauma. Importantly, these trauma-related manifestations often go underrecognized or underdiagnosed in clinical settings, despite being detectable via standardized assessment tools (Davidsson et al., 2025;

Stavropoulos et al., 2018).

The diagnostic underrecognition of trauma in autistic populations may in part stem from overlapping symptom profiles. Certain trauma-related manifestations may contribute to clinical presentations that resemble aspects of ASD, thereby increasing diagnostic complexity. For example, trauma-related avoidance may result in social withdrawal and reduced interpersonal engagement, which can superficially resemble difficulties in social interaction, although the underlying mechanisms differ. Similarly, hyperarousal and heightened threat monitoring may promote rigid behavioural patterns or safety-seeking routines that may be mistaken for insistence on sameness, while sensory hypervigilance following trauma may resemble sensory sensitivities frequently reported in autistic individuals. Furthermore, dissociative symptoms, when present, may affect emotional responsiveness, attention, and social engagement, potentially complicating clinical assessment. These similarities should not be interpreted as evidence of equivalent symptomatology but rather as examples of how distinct developmental and psychological processes may produce overlapping behavioural presentations. The risk of misattribution is especially pronounced in populations with high levels of emotional masking, such as autistic women, or in trauma-exposed children whose developmental history is poorly documented (Carpita et al., 2024; Kildahl et al., 2024).

Recent evidence further suggests that dissociation represents an additional trauma-related process deserving greater clinical attention in ASD. Dincel and Karayagmurlu (2025) reported clinically significant dissociative symptoms in a subgroup of autistic adolescents, with dissociation being significantly associated with childhood trauma exposure and increasing age. These findings support the view that dissociative phenomena should not be regarded solely as features of severe psychiatric disorders but also as potential indicators of trauma-related psychopathology in autistic populations, further complicating differential diagnosis.

Beyond these clinical observations, research has increasingly explored how adversity may shape the emergence or exacerbation of neurodevelopmental traits across the lifespan.

Prenatal exposure to trauma, particularly during the third trimester, has been associated with an increased risk of ASD diagnosis in offspring (Chang et al., 2025). Although Chang et al. (2025) was not included among the studies synthesized in this systematic review, it was considered as complementary evidence because it specifically examined the association between adverse prenatal experiences and neurodevelopmental outcomes. As the study did not investigate symptom overlap, trauma-related psychopathology, or differential diagnosis between ASD and trauma-related conditions, its findings should be interpreted as providing contextual support for the broader relationship between prenatal adversity and neurodevelopment, rather than as direct evidence addressing the clinical overlap examined in the present review.

Likewise, population-level data have shown dimensional increases in ASD and ADHD traits in relation to childhood maltreatment, suggesting that early environmental stressors may contribute to the expression of neurodevelopmental vulnerability (Dinkler et al., 2017). However, genetically informed co-twin control studies caution against interpreting such associations as directly causal, as shared familial and genetic factors may partially account for the observed links (Dinkler et al., 2017).

An additional finding emerging from recent research concerns the definition of potentially traumatic experiences in autism. Lau-Zhu et al. (2026) reported that autistic adolescents exhibited PTSD symptom severity comparable to that observed in maltreated non-autistic adolescents, despite the index traumatic events often involving experiences such as bullying, bereavement, or other highly distressing situations that did not necessarily meet DSM-5 Criterion A. These findings suggest that conventional trauma definitions may underestimate clinically meaningful traumatic experiences in autistic individuals and support the adoption of more flexible, developmentally informed approaches to trauma assessment that consider subjective experience alongside objective event characteristics.

Table 4

Symptom overlap and differences between autism and trauma.

Study	Study design / sample	Overlapping features	Indicators more compatible with trauma-related conditions	Indicators more compatible with AUTISM/NDD	Evidence level note	Evidence Classification
Bitsika & Sharpley, 2021	Cross-sectional questionnaire survey of 71 autistic boys (7–18 years).	Not a trauma-vs-ASD symptom-mapping study; reports PTSD screening symptoms in autistic boys experiencing bullying, which may overlap with ASD-associated distress/dysregulation.	Bullying exposure (frequency) and higher CASI-4R PTSD subscale scores (2-item screen: being bothered by an upsetting event; distressing memories/dreams); coping strategies examined in relation to bullying/PTSD screen.	ASD established as a prior neurodevelopmental diagnosis; parent ratings of ASD core domains (socialising/communicating/repetitive behaviours) and social interaction difficulties included as correlates.	Questionnaire-based, cross-sectional; PTSD assessed via brief screening (not diagnostic) and bullying/coping via study-specific items; does not provide clinical differential between trauma-related conditions and autism.	Indirect evidence
Brenner et al., 2018	Multi-site inpatient clinical sample from the Autism Inpatient Collection: 350 autistic youth (4–21 years) with ADOS-2-confirmed ASD; ANCOVA comparing caregiver-reported abuse vs no reported abuse and PTSD discharge diagnosis.	DSM-5 overlap explicitly noted: repetitive behaviours/play, sensory reactivity/physiological reactions, social detachment/reciprocity difficulties, sleep problems, withdrawal/avoidance, irritability, mood lability and perseveration.	Caregiver-reported physical/sexual/emotional abuse; higher intrusive thoughts, distressing memories and loss of interest in the abuse group; PTSD-diagnosed subgroup showed more severe intrusive thoughts, distressing memories, fear and tantrums.	ASD confirmed independently; core ASD severity did not differ between abuse and no-abuse groups, supporting the need to distinguish baseline ASD traits from trauma-linked change.	Large inpatient ASD sample with adjusted group comparisons, but abuse history and symptoms were caregiver/instrument based; PTSD diagnoses were few (7/99 with reported abuse), so differential implications are cautious.	Direct evidence
Cook et al., 1993	Single case study of a 12-year-old boy with DSM-III-R autistic disorder who developed PTSD after reported physical abuse in a residential school.	Agitation, fearfulness, increased rocking/stereotypy, crying spells, sleep disruption, withdrawal/loss of interest and behavioural dysregulation could be misread as autism-related behavioural worsening.	Clear temporal onset after abuse; symbolic anxiety/avoidance of school-related cues, repetition/re-enactment of hitting, flashback-like traumatic memories, anniversary reactions and fear of returning.	Autistic disorder preceded the trauma and was documented by developmental history, severe language/social delays, echolalia, stereotyped behaviours and standardized diagnostic tools.	Early illustrative case; clinically useful for differential reasoning and trauma vigilance in ASD, but not quantitative or generalisable.	Direct evidence
Davidsson et al., 2025	Clinical/family study on adverse childhood experiences (ACEs) and neurodevelopmental disorders (familial/intergenerational context).	Not a symptom-by-symptom paper; discusses co-occurrence of ACEs and NDD and possible associated emotional/behavioural difficulties.	ACEs linked in the literature to internalising/externalising difficulties and dysregulation; the study does not attribute specific individual symptoms to trauma.	NDD conceptualised as dimensional and with familial/genetic components; familial confounding may contribute to observed associations.	Primarily conceptual/clinical framing; should not be presented as a trauma-vs-ASD symptom differential study.	Contextual evidence
Dincel & Karayagmurlu, 2025	Cross-sectional single-centre study of 59 autistic adolescents (12–18 years; IQ ≥ 70), assessing dissociation, childhood trauma, bullying and PTSD symptoms (ADES, CTQ, CABS-9, CPTS-RI, CARS).	Not a direct ASD-vs-trauma symptom-mapping study; highlights that dissociative symptoms (amnesia, absorption, passive influence, depersonalisation/derealisation) may be difficult to identify in ASD due to communication and sensory features.	12.5% of ADES completers scored above dissociative-disorder threshold; childhood trauma scores correlated with dissociation and predicted ADES scores; CPTS-RI indicated probable PTSD in 15.2%.	ASD confirmed by DSM-5-TR board review and CARS; CARS/autism-characteristics scores were not the main predictor of dissociation, whereas CTQ and age remained significant.	Cross-sectional, small clinical sample; self-report scales were not ASD-specific and 19 participants could not complete the ADES, so findings are preliminary and not causal.	Indirect evidence
Dinkler et al., 2017	Population twin cohort (maltreatment and NDD traits/symptoms).	Associations with higher ASD/ADHD traits and social difficulties in population analyses; markedly attenuated in co-twin control analyses.	Maltreatment associated with greater NDD problems at population level; interpretation should be cautious due to shared familial/genetic confounding	ASD/ADHD traits largely explained by shared genetic/familial liability; small residual effects remain possible.	Associational evidence with strong control for familial confounding; not a clinical symptom-level trauma-vs-ASD differential.	Contextual evidence

(continued on next page)

Table 4 (continued)

Study	Study design / sample	Overlapping features	Indicators more compatible with trauma-related conditions	Indicators more compatible with AUTISM/NDD	Evidence level note	Evidence Classification
Lau-Zhu et al., 2026	Comparative preliminary study during COVID-19: autistic adolescents without maltreatment history (n = 30; 10–16 years) vs TD controls (n = 29) and maltreatment-exposed non-autistic adolescents (n = 28); caregiver and self-report PTSD measures.	PTSD symptom domains in autistic adolescents included intrusion, avoidance, negative mood/cognition and hyperarousal; tic/stereotypy-like responses were explored as possible autism-specific trauma manifestations.	(no direct clinical differentiation). Caregivers often identified non-DSM-5 events (bullying, bereavement, change/uncertainty) as traumatic; probable PTSD rates were high (43% caregiver; 57% self-report) and mostly linked to non-DSM-5 index events in the autism group.	Autism diagnosis pre-existing and verified; symptom levels were comparable to the maltreatment group despite different trauma-event type, suggesting autistic meaning-making/processing may shape trauma response.	Small, preliminary, community/clinical comparative sample with multi-informant data; supports flexible trauma assessment in autistic adolescents but requires replication and validated ASD-sensitive PTSD tools.	Direct evidence
Li et al., 2024	National registry cohort (ASD as exposure; outcomes = acute stress disorder/PTSD diagnoses).	Symptoms not measured; includes theoretical description of PTSD clusters, but analysed outcomes are recorded diagnoses.	Acute stress disorder/PTSD diagnoses in registries; PTSD symptom clusters are background theory, not measured variables in the study.	ASD treated as pre-existing neurodevelopmental condition; no symptom-level trauma-vs-ASD comparison.	PRISMA-friendly: clarify this is a registry risk/diagnosis study, not a symptom-overlap analysis.	Indirect evidence
Mehtar & Mukaddes, 2011	Clinical cross-sectional ASD outpatient sample. Focus: impact of traumatic events on functioning/behaviours.	Post-event deterioration/regression; communication decline; increased stereotypies; aggression; agitation; sleep problems; self-injury; loss of self-care skills.	Temporally linked changes after trauma/stressor; risk of misinterpreting worsening as ASD exacerbation.	Baseline socio-communication impairments consistent with ASD; developmental history helps distinguish baseline from post-trauma change.	Clinically described symptoms; useful to distinguish baseline ASD from temporally linked post-trauma changes.	Direct evidence
Odachowska-Rogalska, 2023	Cross-sectional inpatient/psychiatric setting. Focus: differential ASD/ADHD/PTSD and performance/discordance of diagnostic tools.	Clinical overlap among ASD-ADHD-PTSD discussed; main results concern tool reliability/discordance rather than systematic symptom mapping.	PTSD/crisis and stress may amplify symptoms and confound presentation; need to integrate trauma history and clinical context.	ASD as neurodevelopmental condition; distinction supported by tools when trauma effects are accounted for, with limitations.	PRISMA-friendly: avoid listing symptoms as outcomes; clarify primary focus is diagnostics/tools and diagnosis discordance.	Direct evidence
Stavropoulos et al., 2018	Case series (2 children). Focus: diagnostic difficulty and differential ASD vs PTSD.	Social withdrawal; repetitive behaviours; emotion dysregulation; anxiety; sleep problems; aggression; fearfulness.	Trauma-themed repetitive play; avoidance; regression; loss of previously acquired social skills after trauma (clinical reasoning).	Longstanding ASD patterns; stereotypies not trauma-linked; developmental onset prior to the event.	Case series: clinically useful description for differential diagnosis; not quantitative evidence.	Direct evidence

Evidence classification. *Direct evidence* refers to studies explicitly examining symptom-level overlap or differential diagnosis between ASD and trauma-related conditions. *Indirect evidence* refers to studies investigating trauma-related psychopathology in autistic individuals without directly comparing trauma and ASD symptom profiles. *Contextual evidence* refers to studies providing background information on the association between trauma exposure and ASD or neurodevelopmental outcomes without examining phenomenological overlap.

The findings of the present review are also consistent with the Delphi consensus study by Sarr and colleagues (2025), which specifically examined the differential diagnosis between autism spectrum disorder, attachment disorders, complex post-traumatic stress disorder, and emotionally unstable personality disorder. Their work highlighted the substantial clinical overlap that may occur across these conditions and emphasized the importance of comprehensive developmental histories, trauma assessments, longitudinal symptom evaluation, and multidisciplinary clinical judgment when conducting differential diagnosis.

Importantly, Sarr et al. (2025) noted that overlapping difficulties in emotional regulation, interpersonal functioning, social communication, and behavioral adaptation may contribute to diagnostic overshadowing and clinical uncertainty. These observations closely align with the evidence synthesized in the present review, which suggests that trauma-related presentations may share several behavioral and socio-emotional characteristics with ASD. Rather than supporting

etiological equivalence between these conditions, the available evidence underscores the need for careful assessment procedures capable of distinguishing neurodevelopmental characteristics from trauma-related adaptations and comorbid presentations.

An important consideration is that the term “trauma-related conditions” encompasses a heterogeneous group of clinical constructs that should not be considered interchangeable. PTSD is characterized by trauma-specific symptoms, including intrusive re-experiencing, avoidance, and hyperarousal. C-PTSD includes these features but additionally involves disturbances in self-organization, such as affect dysregulation, negative self-concept, and interpersonal difficulties. Dissociation may occur across multiple psychiatric conditions and can be conceptualized as a transdiagnostic process rather than a distinct trauma-related disorder. Attachment disorders, in contrast, represent a separate clinical framework focused on disruptions in early caregiving relationships and relational functioning.

Although these conditions may share certain behavioral and socio-emotional manifestations with ASD, the mechanisms underlying such similarities are likely to differ. Therefore, overlap should not be interpreted as evidence of etiological equivalence. Rather, careful attention should be paid to developmental history, symptom onset, trauma exposure, relational context, and the presence of trauma-specific symptoms when conducting differential diagnosis.

A particularly underexamined area highlighted by the reviewed studies is the intergenerational transmission of risk. Evidence from clinical family studies indicates that higher maternal adverse childhood experience (ACE) scores are associated not only with greater expression of maternal neurodevelopmental traits but also with increased behavioral difficulties in offspring with ASD (Davidsson et al., 2025). This aligns with cumulative risk and developmental cascade models, which propose that genetic susceptibility, early trauma, and relational adversity interact over time to shape neurodevelopmental trajectories. In refugee and migrant populations, these dynamics may be further compounded by contextual stressors such as displacement, acculturative pressure, and systemic marginalization (Flanagan et al., 2020). Parental trauma may thus exert its effects through a range of interrelated pathways—including disorganized attachment, impaired caregiving, and emotional unavailability—creating developmental conditions that may contribute to socio-emotional and regulatory difficulties that can be clinically confused with, or exacerbate, autistic presentations in some children.

Potential mechanisms for future research

Recent interest in epigenetic mechanisms—such as DNA methylation, histone modification, and micro-RNA regulation—has provided a potential framework for understanding how environmental adversity may influence neurodevelopmental outcomes. While previous literature suggests that these processes may modulate stress-response systems (Beversdorf et al., 2021; Eshraghi et al., 2018), the studies included in the present review did not directly investigate epigenetic mechanisms, and therefore no mechanistic conclusions can be drawn from the current synthesis.

The potential role of epigenetic processes in the relationship between trauma exposure and autism-related phenotypes remains largely hypothetical and was not supported by direct evidence within the reviewed studies. Although epigenetic alterations have been proposed as one pathway through which environmental experiences may influence developmental trajectories, the extent to which such mechanisms contribute to the emergence, expression, or modulation of core ASD characteristics remains unclear.

Given the complex and predominantly neurodevelopmental nature of ASD, any proposed link between trauma exposure, epigenetic modification, and autism-related presentations should be interpreted cautiously. Future longitudinal and mechanistic studies will be necessary to determine whether these biological processes contribute meaningfully to the clinical overlap observed between ASD and trauma-related conditions.

Symptoms overlaps and diagnostic specificity

A substantial overlap between autism-related and trauma-related symptoms has been described in clinical and case-based literature, with significant implications for clinical assessment and diagnostic accuracy. Case-based evidence highlights that emotional dysregulation, social withdrawal, anxiety, self-injurious behavior, and repetitive motor or verbal patterns may either mask longstanding autistic traits or lead to false-positive autism diagnoses in trauma-exposed children when developmental history and age of symptom onset are not carefully considered (Stavropoulos et al., 2018).

This diagnostic challenge has been recognized for several decades. One of the earliest case reports described an adolescent with autistic

disorder who developed PTSD following physical abuse in a residential facility. The patient presented with intrusive traumatic recollections, symbolic anxiety, and repetitive reenactment of the traumatic experience, emphasizing that trauma-related symptoms may easily be misattributed to autism when abuse history is overlooked (Cook et al., 1993). The authors consequently stressed that PTSD should always be considered in autistic individuals exposed to physical or sexual abuse.

Evidence also suggests that ASD in females is frequently under-diagnosed due to a distinct female autistic phenotype, including camouflaging behaviours and subtler symptom expression, which contributes to missed diagnoses and increased psychopathological vulnerability (Carpita et al., 2024). Importantly, additional evidence—particularly those focusing on adult women—indicates that the overlap between autism characteristics and trauma-related symptoms may contribute to diagnostic overshadowing; however, when detailed developmental histories and comprehensive, multi-informant and multidisciplinary assessments are conducted, it becomes possible to disentangle autism-related features from trauma-related psychopathology and to appropriately identify co-occurring or interacting conditions (Kildahl et al., 2024).

Clinical observations further indicate that trauma exposure in autistic individuals can exacerbate behavioral dysregulation, anxiety, stereotypes, and a loss of adaptive functioning, increasing the risk that trauma-related deterioration is misinterpreted as a progression of core ASD symptoms rather than as potentially reversible trauma sequelae (Mehtar & Motavalli Mukaddes, 2011; Odachowska-Rogalska, 2023). Consistent with these observations, Brenner et al. (2018) found that autistic youth with documented histories of physical, sexual, or emotional abuse exhibited significantly higher levels of intrusive thoughts, distressing trauma memories, irritability, lethargy, and loss of interest than autistic peers without maltreatment histories. Moreover, participants who met diagnostic criteria for PTSD showed even greater symptom severity and more pronounced externalizing behaviours, highlighting that trauma-related psychopathology in ASD may extend beyond the core features of autism and reinforcing the need for routine trauma screening within neurodevelopmental services.

However, important distinctions also exist. Certain symptoms are more characteristic of post-traumatic stress—especially in its complex form as defined by ICD-11. These symptoms include intrusive re-experiencing of the trauma, avoidance of trauma-related cues, hypervigilance, as well as disturbances in self-organization (DSO) such as persistent negative self-concept, emotional numbing, and relational detachment (Cloitre et al., 2020). These features are not part of the core symptomatology of autism and may serve as key clinical markers in differential diagnosis. Conversely, features such as atypical social reciprocity, early developmental onset of communication difficulties, restricted and circumscribed interests, and atypical sensory processing are hallmark traits of ASD and are typically absent in trauma-related disorders unless mimicked by reactive behaviors.

In addition, emerging evidence suggests that dissociation may represent another clinically relevant dimension of trauma-related psychopathology in autistic individuals. Dincel and Karayagmurlu (2025) reported that approximately one in eight autistic adolescents scored above the clinical threshold for dissociative disorders and that dissociative symptom severity was significantly associated with childhood trauma exposure and increasing age. These findings indicate that dissociation may constitute an important, yet often overlooked, consequence of trauma in ASD, further complicating differential diagnosis because alterations in attention, emotional responsiveness, and social engagement may overlap with core autistic presentations.

Yet, even these distinguishing features should be interpreted with caution: behavioral differences may reflect not only categorical diagnostic boundaries but also reactive adaptations to environmental adversity, relational trauma, or chronic misattunement—particularly in early development. As such, some observed symptom patterns may be better conceptualized as context-dependent expressions of distress

rather than discrete disorders. Supporting this view, experimental research on survivors of interpersonal violence has shown that traumatic exposure can impair core components of social perception and emotional evaluation. For instance, [Silvestri et al. \(2025\)](#) found that women with a history of intimate partner violence demonstrated reduced accuracy in judging trustworthiness and in recognizing fear in male facial expressions compared to non-traumatized controls. These findings emphasize how trauma can alter socio-emotional processing in ways that may superficially resemble traits of neurodevelopmental conditions.

Recent evidence also suggests that conventional conceptualizations of trauma may underestimate clinically significant traumatic experiences in autism. [Lau-Zhu et al. \(2026\)](#) reported that autistic adolescents showed PTSD symptom severity and rates of probable PTSD comparable to those observed in maltreated non-autistic adolescents, despite the index events frequently involving experiences such as bullying, bereavement, or other highly distressing situations that did not necessarily meet DSM-5 Criterion A. These findings support adopting a more flexible, developmentally informed approach to trauma assessment in ASD that takes into account subjective experience and autism-related differences in sensory and emotional processing, rather than relying exclusively on traditional trauma definitions.

Beyond individual symptomatology, the effects of trauma may extend to the relational environment in which development unfolds. A parent's unresolved trauma history has been consistently linked to disruptions in emotional attunement, co-regulation, and attachment processes, with downstream effects on offspring socio-emotional development.

Empirical evidence indicates that parental trauma exposure is associated with poorer parenting behaviours and an increased likelihood of insecure or disorganised attachment in children, even in the absence of direct trauma exposure in the child ([Riser et al., 2025](#); [Schechter & Willheim, 2009](#)). These relational disruptions may manifest in children as impaired emotion regulation, heightened anxiety, and behavioural dysregulation—outcomes that are also observed in neurodevelopmental conditions, albeit arising through distinct mechanisms linked to early relational adversity (e.g., maternal trauma predicting internalising symptoms in preschoolers; [Riser et al., 2025](#)).

Moreover, trauma-related dysregulation in caregivers may shape interpretations of child cues, leading to inconsistent, withdrawn, or intrusive caregiving patterns that undermine secure attachment formation ([Schechter & Willheim, 2009](#)). The developmental impact of such early misattunement is supported by theoretical and empirical work demonstrating that disruptions in caregiver–child interactions can alter attachment representations and emotion regulation capacities across the lifespan ([Bakermans-Kranenburg & van IJzendoorn, 2009](#); [Farina et al., 2019](#)).

Attachment disorganisation, in particular, has been repeatedly shown to predict later difficulties in stress regulation and interpersonal functioning, highlighting how early relational contexts shaped by caregiver trauma may give rise to developmental trajectories distinct from typical neurodevelopmental pathways ([Cyr et al., 2010](#); [Fearon et al., 2010](#); [van IJzendoorn et al., 1999](#)).

Taken together, these findings suggest that trauma can influence the relational and emotional scaffolding on which social and communicative skills are built. In some children, this may result in behavioural patterns—such as social withdrawal, affective dysregulation, and atypical communication—that superficially resemble autistic traits but emerge from different etiological processes.

Accordingly, the evidence underscores the risk of misdiagnosis and highlights the need for nuanced, integrative, trauma-informed assessment strategies within neurodevelopmental populations. Clinicians should attend not only to overlapping symptom domains, but also to developmental timing, contextual meaning, and functional impact of behaviours when formulating diagnoses and intervention plans.

Taken together, such considerations call for trauma-informed

assessment frameworks capable of capturing not only individual symptom expression but also the dyadic and relational processes through which trauma impacts development.

Longitudinal and family-based research designs are essential to disentangle causal pathways, identify sensitive windows of neurodevelopmental risk, and clarify how intergenerational adversity shapes developmental trajectories that may blur traditional diagnostic boundaries—particularly in contexts where neurodevelopmental vulnerabilities and environmental adversity interact in complex, dynamic, and bidirectional ways.

Limitation

This review has several limitations. First, the restriction to English- and Italian-language publications may have introduced language bias and led to the omission of relevant studies. Second, although multiple major databases were searched, the relatively broad search strategy and the absence of controlled vocabulary terms may have limited retrieval sensitivity, while the use of child- and adolescent-focused search terms may have resulted in underrepresentation of adult populations. Third, the included literature was highly heterogeneous, encompassing population-based cohorts, clinical observational studies, and case reports, which precluded quantitative synthesis and limited comparability across studies. Moreover, the small number of studies meeting inclusion criteria ($n = 11$) further limits the strength and generalizability of the conclusions, indicating that the available evidence remains preliminary and should be interpreted with caution. Most evidence was observational, restricting causal inference and leaving findings vulnerable to residual confounding by shared genetic, familial, and environmental factors.

An additional limitation is the exclusion of qualitative studies. Although this decision maintained the focus on quantitative and clinically structured empirical evidence, it may have reduced the ability of the review to capture nuanced lived experiences related to diagnostic uncertainty, masking, diagnostic overshadowing, and symptom temporality. Case reports were retained because they provided clinically structured diagnostic information, although their limited generalizability means that their findings should be considered hypothesis-generating. Future mixed-methods reviews may offer a more comprehensive account of the phenomenological and experiential dimensions of diagnostic overlap.

The exclusion of autistic individuals with co-occurring intellectual disability represents a further important limitation. Although this criterion was adopted to reduce diagnostic and measurement confounding, it likely resulted in a synthesis focused predominantly on more verbally able and questionnaire-accessible autistic profiles. The findings should therefore not be generalized to the entire autism spectrum, particularly to individuals with intellectual disability, limited verbal communication, or higher support needs. Future studies should develop and validate trauma-assessment approaches that incorporate behavioural indicators, caregiver reports, clinical observation, and adapted communication methods for these populations.

Additionally, trauma exposure and PTSD were assessed using heterogeneous definitions and instruments, and clinical samples were subject to referral and ascertainment biases. Diagnostic overlap and underrecognition of trauma-related disorders in autistic individuals further complicate interpretation. Finally, case-based evidence, while clinically informative, has limited generalizability and should be considered hypothesis-generating rather than confirmatory.

Therefore, the present findings should be interpreted as a preliminary synthesis of the available evidence rather than as a definitive mapping of the phenomenological overlap between ASD and trauma-related conditions. Further methodologically rigorous and symptom-focused studies are needed to clarify the nature and extent of this overlap.

Future research and clinical application

These findings have important implications for both future research and clinical practice. The phenomenological overlap between trauma-related and autism-related symptoms underscores the critical importance of accurate differential diagnosis to guide the development of specific, timely, and age-appropriate interventions.

Clarifying whether emotional dysregulation, social withdrawal, behavioural disturbances, or repetitive behaviours primarily reflect trauma-related psychopathology, core neurodevelopmental features, or their interaction across development is essential for guiding treatment selection. Failure to differentiate these symptom domains may result in suboptimal or even counterproductive treatment strategies and may negatively influence the longitudinal course and evolution of symptoms. Clinically, systematic trauma screening should be routinely incorporated into assessments of autistic individuals, while developmental history and autism-specific features should be carefully evaluated in trauma-exposed populations.

Although refugee and forcibly displaced women were not included among the populations examined in this review, future studies may explore trauma-exposed adult populations presenting with autism-like characteristics in the context of complex and cumulative trauma. Particular attention should be given to determining whether features such as social withdrawal, emotional dysregulation, sensory sensitivities, and interpersonal difficulties reflect trauma-related adaptations, neurodevelopmental traits, or their co-occurrence. Early identification of autism-like characteristics in high-risk and marginalized populations may also represent a potential protective factor by facilitating timely support and reducing vulnerability to adverse experiences. Importantly, the present review provides no direct evidence regarding refugee populations, adult women, or intergenerational mechanisms; therefore, these topics should be considered hypothesis-generating directions for future longitudinal and cross-cultural research rather than conclusions supported by the current findings.

Declaration of generative AI and AI-assisted technologies in the writing process

I confirm that ChatGPT (version 5) was used solely for the purpose of reviewing and enhancing the English language in this manuscript, specifically to improve the clarity of the text. After using this tool, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

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Federica Visco-Comandini: Writing – review & editing, Writing – original draft, Supervision, Data curation, Conceptualization, Investigation, Methodology. **Giulia Marselli:** Writing – review & editing, Writing – original draft, Methodology, Data curation, Investigation. **Carolina Papa:** Writing – review & editing, Writing – original draft, Supervision, Data curation, Conceptualization, Investigation, Methodology. **Allison Uvelli:** Investigation, Methodology. **Alessandra Cipriani:** Investigation. **Erica Pugliese:** Supervision, Conceptualization, Writing – original draft.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Data availability

Not applicable.

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