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Understanding Trauma-Related Mental Health in Autistic and Neurodivergent Young People in the Clinic and the Classroom

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Understanding Trauma-Related Mental Health in Autistic and Neurodivergent Young People in the Clinic and the Classroom

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Abstract

Autistic people experience a high prevalence of traumatic experiences and adversity during childhood. Autistic children experience high rates of bullying and victimisation and have a higher prevalence of mental health conditions when compared to their peers. Together, this suggests autistic children have increased vulnerability to developing trauma-related symptoms. Despite this, we know little about how post-traumatic stress disorder (PTSD) is assessed, diagnosed, and treated in autistic young people, and how best to support trauma-exposed autistic children in education settings.

This PhD thesis uses a mixed methods approach to explore trauma-related mental health and experiences in autistic and neurodivergent young people. Within this thesis, I systematically review existing literature on PTSD in autistic people, utilise longitudinal modelling to demonstrate a relationship between autistic traits in childhood and PTSD in adulthood, and analyse the relationship between peer victimisation, maltreatment and mental health and neurodivergence in a large dataset of UK secondary school students. Qualitatively, I explore how autism practitioners approach differential diagnosis of autism, attachment disorders and complex PTSD using an online survey of clinicians and interviewed teachers about how they support traumatised autistic children in their classrooms.

This research advances understanding of the intersection between autism and trauma, providing evidence to inform better diagnosis and support for trauma-related mental health in autistic and neurodivergent young people in both clinical and educational settings.

Dedication

I would like to dedicate this thesis to all the wonderful teachers, healthcare workers and social care staff who work tirelessly to ensure education and mental health care are accessible for *all* children.

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Over the last ~4 years I've had the pleasure of being a part of the research community at the SGDP Centre, and to have worked with incredible colleagues, friends and students at the Re:Spect Lab. Dorota Ali, Dr Fiona Rattray, Dr David Mason, Alice Ormerod, Lili Bokor – thank you for sharing your perspectives and time with me. My gratitude to Dr Gavin Stewart and Dr Debbie Spain, for your wise words of encouragement, advice and occasional gossip. Thank you, Tom Canning, Amy Tong and Oonagh Coleman, for your camaraderie and for making sure writing-up has been filled with laughter and cups of tea. My thanks also go to Dr Riccardo Di Giorgi for continuing to root for me since the OxSTEP days.

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About this thesis and statement of authorship

This thesis contains chapters that are manuscripts in their published form or currently awaiting peer review, as well as chapters that are original to this thesis that will soon be submitted for publication. Given the wide range of methods and topic explored, each chapter 2-6 contains its own introduction and discussion of findings. A reference list is provided at the end of the thesis for all chapters apart from the published manuscripts of chapters 2 and 3 that have their own reference lists at the end of their chapters. To my knowledge, all the work presented in this thesis is original and has been conducted by me. A breakdown of the authorship of each chapter is detailed below.

Chapter 1: This was written by the author, Alice Mary Grimshaw Quinton (AMGQ) and contains writing original to this thesis. Feedback was provided by supervisors, Prof Francesca Happé (FH), Prof Andrea Danese (AD) and Dr Freya Rumball (FR).

Chapter 2: This chapter contains a manuscript published in the Review Journal of Autism and Developmental Disorders in May 2023. AMGQ, FH, AD and FR contributed to the search strategy. Titles, abstracts and papers were screened by Dorota Ali (DA) and AMGQ. The manuscript was written by AMGQ and all authors provided feedback.

Chapter 3: This chapter contains a manuscript published in the Journal of Child Psychology and Psychiatry in March 2025. Data was collected by the Environmental Risk (E-Risk) Longitudinal Twin Study and the Twins Early Development Study (TEDS). AMGQ, AD and FH conceived the present study, the analysis plan of which was reviewed by Angelica Ronald, Helen Fisher, and Louise Arseneault. AMGQ conducted the analyses and wrote the manuscript under supervision of AD, FH and FR. All authors provided feedback on the final manuscript.

Chapter 4: This chapter contains writing original to this thesis. The design of the present study was conceived by AMGQ, FH, FR and Dr Debbie Spain (DS). AMGQ and Rachel Sarr designed the survey and recruited participants under supervision of FR. Qualitative analysis of the full dataset was conducted by AMGQ, and DS coded a portion of the data. Themes were developed by AMGQ under supervision of DS and FH. The chapter was written by AMGQ and feedback was provided by FH, FR and AD.

Chapter 5: This chapter contains writing original to this thesis. The design of the present study was conceived by AMGQ and FH. The analysis plan was written by AMGQ and received written feedback from FH, Dr Simona Skripkauskaite and Dr Emma Soneson. AMGQ conducted the analysis under supervision of FH. Feedback was received throughout in discussions with the wider OxWell team and Professor Mina Fazel. AMGQ wrote the chapter and received feedback from FH and AD.

Chapter 6: This chapter contains a submitted manuscript that is awaiting peer review at the time of thesis submission (June 2025). The study was conceived by AMGQ, FH and FR. The semi-structured interview schedule was written by AMGQ after consulting a Participant and Public Involvement (PPI) group of teaching staff. Recruitment, interviews and analyses were conducted by AMGQ and Alice Ormerod (AO). Final themes were developed by AMGQ with input from AO and FH. AMGQ wrote the manuscript and received feedback from AO, DA, AD, FR and FH.

Chapter 7: This chapter contains writing original to this thesis and was written by the author, AMGQ. Feedback was provided by supervisors AD, FR and FH.

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Chapter 1: Introduction

1.1 Introduction

Within the thesis, each chapter is either a published or submitted manuscript and therefore contains more detailed introductions to the specific concepts it covers. Here, this chapter provides an overview of autism, trauma and what is currently known about trauma-related mental health outcomes in autistic young people and sets out how the chapters that follow in this thesis contribute to furthering that knowledge.

1.2 Autism

1.2.1 Diagnosis and presentation

To meet the diagnostic threshold of Autism Spectrum Disorder (ASD; henceforth 'Autism'), as per the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), a person must present with difficulties in social communication across contexts and engage in restricted/repetitive behaviour or interests (RRBIs) to the extent that they have a significant impact on their functioning. Initial diagnostic criteria have evolved from the early descriptions of autism, with, for example, more recent additions to the restricted behaviours domain in the DSM-5 that include sensory hypo/hyper-reactivity and sensory interests (American Psychiatric Association, 2013; Grapel et al., 2015).

Autism is a lifelong neurodevelopmental condition, with diagnosis showing stability across the lifespan (Giserman-Kiss & Carter, 2020; Haraguchi et al., 2019). A global estimate approximates that 1 in 100 people are autistic (Zeidan et al., 2022), with the male:female ratio being estimated at 3:1 (Loomes et al., 2017). Autistic traits present dimensionally across the general population (Constantino & Todd, 2003; Posserud et al., 2006). With high heterogeneity (Mottron & Bzdok, 2020), autism presentations and needs differ between people, conceptualised as the 'autism spectrum', or 'constellation' given the putatively orthogonal domains of social communication and RRBI dimensions (Fletcher-Watson & Happé, 2019). Indeed, autistic people's specific strengths and difficulties may change across development or different contexts, for example there is evidence that presentation can change between childhood and adulthood (Elias & Lord, 2022; Zachor & Ben-Itzchak, 2020). Transitions like moving into adolescence or up to secondary school, where there are increases in social demands, may reveal autistic traits that were otherwise unnoticed or masked when demands were lower (Georgiades et al., 2022).

It has been suggested that existing diagnostic tools may not capture the full range of behavioural presentations of autism, leading to under-diagnosis of women and girls (Cook et al., 2024) as well as other under-served groups such as older adults. Having co-occurring learning difficulties or intellectual disability can also introduce variability to how autism is presents and is assessed (Thurm et al., 2019). With the vast majority of research informing the autism diagnostic criteria taking place in high-income western countries, cross-cultural presentations of autism must be considered (de Leeuw et al., 2020). A study using the Autism Quotient (AQ) found that although there were many shared traits across cultures, there were cultural differences associated with some autistic traits (Carruthers et al., 2018).

1.2.2 Both a neurotype and a disability

Cultural and clinical perceptions of autism have changed in the last decade, moving away from the medical model of disability and embracing a more social model of disability as applied to autism. These models are often placed in opposition to each other. It seems that neither model wholly encompasses the vast range of experiences of what it is like to be autistic (Anderson-Chavarria, 2022), and both have attracted critique. The medical model is critiqued for focusing on autism as a medical disorder with “symptoms” and deficits to “cure”, while its proponents argue that it identifies and validates those who are most in need of help. The social model of disability (Oliver, 1983) proposes people are not disabled by their condition, but by barriers in a society that is not set up with them in mind. Thus, being autistic is an identity (not a disorder) and autistic people are disabled by a world built for neurotypical people. This perspective does question if autism should be a diagnosis within manuals for mental ill-health (e.g., DSM or the International Classification of Diseases (ICD)), and if it should be removed from The Mental Health Act (with arguments for (Hollins et al., 2019), and against (Villiers, 2021)). Critics argue this social model does not capture the experience of those with the highest support needs, and that moving the focus from diagnosis of autism to simply an identity people may choose, would have knock-on consequences for access to supports in education, healthcare and government benefits.

The conceptualisation of what it means to be autistic differs from person to person; we need to acknowledge that people's opinions are shaped depending on their own lived understanding of autism and their political and socio-cultural context (Kapp, 2020). We see this in differences in how strongly autistic people from different countries feel about language preferences; UK-based studies find the majority of autistic adults responding to surveys have a preference for identity first language (eg. 'autistic person') (Kenny et al., 2016), whereas studies in the Netherlands have found preference for person-first language (eg. 'person with autism') (Buijsman et al., 2023).

Throughout this thesis I, alongside much of the field in the UK, recognise that a positive autistic identity should be celebrated while also acknowledging the potential disability experienced by autistic people. By moving away from the deficit-focused model to one that can acknowledge both the strengths and challenges of being autistic, we can accommodate individual needs and so produce a more accessible society (Kapp, 2020), which can help to alleviate some of the difficulties autistic people may experience.

1.2.3 Neurodiversity framework

This thesis is positioned within a neurodiversity framework. More detail can be found in the introduction of Chapter 5 where we explore potentially traumatic experiences in neurodivergent young people. In brief, neurodiversity refers to the natural variation in neurocognitive functioning. The sociologist Judy Singer is believed to have first proposed the term in 1998; she defines neurodiversity as a subset of all biodiversity; *"A biological truism that refers to the limitless variability of human nervous systems on the planet, in which no two can ever be exactly alike due to the influence of environmental factors"* (Singer, 2017, 2019). Therefore, neurodiversity encompasses neurodivergent people (those whose neurocognitive functioning deviates from the societal 'norm') and neurotypical people (those whose neurocognitive functioning aligns with societal norms).

Neurodiversity is a helpful term for both the clinic and research (Sonuga-Barke & Thapar, 2021). In line with arguments laid out by Astle and colleagues (2022) for the utility of taking a transdiagnostic approach to neurodevelopmental conditions, neurodivergence or being neurodivergent is often used as an umbrella term for a range of neurodevelopmental diagnoses, including autism, attention-deficit and hyperactivity disorder (ADHD), dyslexia, and dyspraxia, among others. As described above, there is high variability of presentations within groups of people with the same diagnosis and many people have multiple neurodevelopmental diagnoses. Autism has a high co-occurrence with other neurodevelopmental conditions (Saito et al., 2020), for example 30-70% of autistic people also have ADHD (Joshi et al., 2017; Lai et al., 2019) and autistic people are significantly more likely than non-autistic people to report dyspraxia (Cassidy et al., 2016). Additionally, categorical diagnosis often fails to capture the (important but not diagnostic) strengths and needs of young people across domains of their life - social, educational and behavioural – which may be shared across those with different neurodevelopmental diagnoses.

1.2.4 Support available for autistic young people

Receiving a diagnosis of autism is increasingly seen as a means to better understanding of what support and reasonable accommodations a child needs, as well as allowing them access to that support. For young people in the UK, there are services and systems that they rely on to receive this. Since parts of this thesis concern diagnostic and school systems, support is briefly considered here.

Post-diagnostic support in the UK for young people varies in content and in provisions across regions and is generally found to be unsatisfactory by parents (Crane et al., 2016). This can be due to a “postcode lottery”, whereby different local NHS trusts have more or less funding or resources for autism services, and long waiting times for specialist services. There is a mixed evidence base for some forms of post-diagnostic support, however psychoeducation appears the most well-evidenced. For adults diagnosed in adulthood, a systematic review from Norris and colleagues (2025) on the acceptability and feasibility of post-diagnostic support in the UK, found that psychoeducation, peer support and low-level support services were implementable and desired by autistic people. A co-designed Delphi survey identified the post-diagnostic support priorities of autistic adults and highlighted that services should prioritise providing support where they live, training of professionals, help processing the impact of a late diagnosis, use of preferred mode of contact (e.g., online) and creating an individualised support plan (Crowson et al., 2024).

Research on post-diagnostic support co-produced with autistic young people and commissioned by the charity Ambitious About Autism (Redmayne et al., 2023) found that supporting autistic young people to develop a positive autism identity may be beneficial for well-being and mental health. Building on this, they co-designed and piloted an online peer support programme called ‘Understanding You, Discovering You’ which aims to help young adults aged 16-25 embrace their autistic identity and provides practical strategies to cope with the transition to adulthood. It is designed to be delivered by two facilitators, one of whom is autistic (Davies et al., 2024). The programme was found to be acceptable and useful by participants, and future work will comprehensively evaluate its efficacy and potential to fill the post-diagnostic support gap.

For many young people and their parents, the immediate benefit of receiving an autism diagnosis is access to appropriate educational support. By law, every child has the right to a mainstream education and in the UK the majority of autistic children attend mainstream schools (National Autistic Society, 2023). Within mainstream schools, Special Educational Needs Coordinators (SENCO) are teachers who are responsible for the co-ordination of Special Educational Needs (SEN) provision. Each school has a budget for SEN support which may be of benefit to some autistic children, such as specialised Teaching Assistants (TA), extra time in exams, access to a quiet room, and other additional help. Some autistic children may require help beyond this, in which case their SEN will be assessed for an Education, Health and Care Plan (EHCP). This assessment for a EHCP can be requested from the local authority by parents, school or the young person themselves (if over the age of 16). This is a legal document that outlines the educational needs of a child (up to the age of 25) and details how a school should meet those needs. Schools are legally obligated to adhere to this, and the local authority is legally reasonable for a child receiving the support laid out in their EHCP. During the assessment, access to a specialist SEN school can be requested. Across the current literature from the UK there are reports of high levels of dissatisfaction with the EHCP process from different stakeholders; both parents and professionals report feeling it uninformed, concerned about lack of collaboration with health and social care, and that there is little involvement of the child’s views (Ahad et al., 2022; Boesley & Crane, 2018; Cochrane & Soni, 2020).

Some autistic children may learn better in a specialist autism school (Reed et al., 2012) or have more complicated needs that cannot be met within mainstream education (Richards & Crane, 2020). A survey study explored the experiences of 57 parents of autistic children in England choosing a special school, and found that the majority felt they did not have a ’real ’choice (Satherley & Norwich, 2022); such that they only had the option of one school that was ‘good enough’ for their child. Unfortunately, as two-thirds of specialist schools are over-capacity, with availability varying depending on the area of the country (Department of Education, 2024), many children are without the choice of schooling that is most appropriate to meet their needs.

1.2.5 Mental health of autistic young people, with a focus on anxiety

Autistic people experience more psychiatric disorders than their neurotypical peers (Martini et al., 2022), and autistic traits are consistently associated with poorer mental health (Lundström et al., 2011) and wellbeing (Stimpson et al., 2021). A meta-analysis by Lai and colleagues (2019) produced pooled prevalence across 8 categories of co-occurring conditions for autistic individuals across the lifespan. They report estimates for ADHD (28%), anxiety disorders (20%), sleep-wake disorders (13%), conduct disorders (12%), depressive disorders (11%), obsessive-compulsive disorder (OCD) (9%), bipolar disorder (5%) and schizophrenia (4%); these were all significantly higher than general population prevalence estimates. This is echoed by meta-analyses focused on specific conditions and demonstrating the higher prevalence of depression and anxiety (Hollocks et al., 2019), OCD (Aymerich et al., 2024), schizophrenia (Zheng et al., 2018), psychosis and bipolar disorder (Varcin et al., 2022) in autistic adults compared to general population samples. Notably, there is no meta-analysis for trauma-related disorders, and indeed Lai and colleagues (2019) synthesised research descriptively rather than through meta-analysis as they had too few data-points. Chapter 2, which comprises a published updated systematic review, includes a crude prevalence estimate utilising existing literature.

The same co-occurrence of mental health issues has been shown for autistic children and adolescents specifically. Kerns and colleagues (Kerns et al., 2020) utilised information from 42,283 caregivers of children from the 2016 US-population-based National Survey of Children's Health, to show that amongst autistic children almost 78% had at least one caregiver-reported mental health condition, and just under 50% had two or more. Similar rates were found in a study of 112 autistic children from a subsample of the UK-based Special Needs and Autism Project, using the Child and Adolescent Psychiatric Assessment (CAPA) interview with their parents (Simonoff et al., 2008). The findings showed 70% of children met criteria for at least one other psychiatric diagnosis and 41% had two or more. Social anxiety affected 29% of the sample and was the most common disorder. Indeed, anxiety disorders are common amongst autistic young people (White et al., 2009) and adults (Nimmo-Smith et al., 2020), with meta-analytic evidence from community samples suggesting 1 in 5 autistic young people are diagnosed with an anxiety disorder (Thiele-Swift & Dorstyn, 2024).

Previously categorised within anxiety disorders, trauma and stressor-related disorders have received comparatively less research attention but given the high prevalence of anxiety disorders in autistic people, here brief consideration is given to the body of research exploring why anxiety disorders and symptoms are particularly common amongst autistic young people. Autistic traits have consistently shown positive relationships with anxiety symptoms (Hallett et al., 2013; Rieske et al., 2013), prompting researchers to explore how anxiety manifests in autistic children and if it differs from neurotypical children. Certain autistic characteristics have been proposed to mediate the relationship between anxiety and autism or make autistic young people more vulnerable to symptoms of anxiety. Across studies, autistic people's trait anxiety is higher than their non-autistic peers (Jolliffe et al., 2023) which has been connected to, or induces, state anxiety (McEwen & Gianaros, 2011; Villada et al., 2016). There is meta-analytical evidence that autistic children with higher intellectual functioning have higher levels of anxiety (Mingins et al., 2021), noting, however, that the measures of anxiety in these studies were typically not valid for children with intellectual disability. Camouflaging, which is particularly common amongst autistic women and girls, is a significantly associated with internalising symptoms, anxiety and depression in both autistic and non-autistic adolescents (Ross et al., 2023).

Previous studies have shown that anxiety can manifest in similar and dissimilar ways amongst autistic young people compared with their neurotypical peers (Kerns et al., 2014). When Pickard and colleagues (2020) compared autistic and non-autistic adolescents with social anxiety, they found similar correlates of social anxiety in both groups. Dimensionally, the relationship between autistic traits and social anxiety symptoms was found to be mediated by intolerance of uncertainty, alexithymia, and sensory hypersensitivity in adolescents. Stark and colleagues (2021) proposed a theoretical model that incorporates cognitive styles that are commonly found in autistic people that may play a causal role in their anxiety; attenuated top-down predictive processing, intolerance of uncertainty and ‘black and white ’thinking. A systematic review of both qualitative and quantitative research identified binding themes that linked restricted and repetitive behaviours, anxiety and sensory hypersensitivity (Williams et al., 2021). These constructs combined related to how autistic people experience their social environment, how predictable their day-to-day is, and the cognitive coping skills they employ. A network analysis in a sample of 191 autistic children with anxiety disorders found that parent-reported socio-cognitive difficulties associated with being autistic, such as social motivation and theory of mind, may play a particular role in anxiety manifestations in these children (Hunsche et al., 2022). This suggests that similar mechanisms contribute to anxiety in both autistic and non-autistic individuals, though relevant risk factors may be more prevalent in autistic populations.

1.3 Trauma

1.3.1 Defining trauma

Many have tried to define psychological trauma, and the word has gone through many clinical and cultural definitions. In medicine, “trauma” is where injuries are serious and life-threatening, however in psychological contexts there has been ongoing debate around narrowing or broadening of the concept as the exact meaning of trauma has evolved and expanded (Weathers & Keane, 2007). Psychologists, psychiatrists and philosophers have long debated definitions of trauma, and the conversation around what events can and cannot constitute trauma has dominated media and, increasingly, social media in recent years.

What is considered a traumatic event may differ subjectively from person to person. Traditional perspectives, particularly in medical models and law, consider trauma primarily as an event itself rather than its psychological aftermath. In the clinic, many definitions focus on a standardised list of potentially traumatic events, that are adverse for all and that may lead to prolonged psychological suffering for some people. When diagnosing post-traumatic stress disorder (PTSD), or Complex

PTSD (CPTSD), it must be established that a patient has experienced a traumatic event, to then ascertain that subsequent symptoms experienced are associated with trauma. PTSD is only diagnosable when trauma exposure has been established. More or less specific types of qualifying events are laid out in the diagnostic manuals ICD-11 (published in 2018) and DSM-5 (American Psychiatric Association, 2013), which differ in how prescriptive they are (see Table 1.1). These definitions have attracted critique, particularly the DSM-5 Criterion A that has been criticised as being both too broad (Weathers & Keane, 2007) and too narrow (Hoge et al., 2016; Holmes et al., 2016; Brewin et al., 2019).

The nomenclature surrounding trauma is expanding to the point where it can be ambiguous and can result in synonymous use of phrases; with some arguing that trauma is purely the subjective experience (Blehm, 2024), and that psychopathology symptoms should be totally disaggregated from the external event (Levin-Aspenson & Greene, 2024). "Concept creep" refers to gradual semantic expansion whereby harm-related concepts, for example, expand to include milder, less severe phenomena, such that non-life threatening events are considered traumatic (Haslam et al., 2020). Haslam and colleagues (2020) argue there are positive and negative implications of this. Negative implications of broadening what qualifies as trauma have been echoed more broadly across youth mental health (Fergusson et al., 2023; Foulkes & Andrews, 2023; Underhill & Foulkes, 2024). Implications include pathologising 'normal' responses to negative life events, as well as dismissal of the impact of more severe traumatic experiences. There is concern that young people conceptualising their experiences as traumatic may become a self-fulfilling prophecy that exacerbates trauma/stressor-related symptoms and also have wider impacts on their identity and self-concept. However, the benefit of broadening the concept of trauma is that it is more inclusive so more people can seek help for negative psychological impacts of experiences, and attention is drawn to potential psychological harms that may have been overlooked. Some have argued that to be inclusive of vulnerable groups, we need to ensure our clinical definition of trauma captures the full range of events that people may experience as traumatic, such as oppression of historically marginalised people (Gradus & Galea, 2022; Holmes et al., 2016).

In this thesis, trauma is defined broadly in line with ICD-11; I take a relatively broad approach to trauma and will explore events that do and do not meet the DSM-5 Criterion A definition. This thesis will also consider other forms of adversity and victimisation as relevant to neurodivergent young people. This is in line with research demonstrating that post-traumatic stress can follow traumatic events that do not qualify the DSM-5 definition (Hyland et al., 2021); thus supporting a broader view of what constitutes a trauma.

Table 1.1 *Diagnostic manual trauma definitions in the context of diagnosing post-traumatic stress disorder (PTSD) and complex PTSD (CPTSD)*

Source	**Trauma Definition**
DSM-5 'Criterion A' for PTSD	Exposed to actual or threatened death, serious injury, or sexual violence, in one (or more) of the following ways: 1) Directly experiencing the traumatic event(s). 2) Witnessing, in person, the event(s) as it occurred to others. 3) Learning that the traumatic event(s) occurred to a close family member or close friend, the event(s) must have been violent or accidental. 4) Experiencing repeated or extreme exposure to aversive details of the traumatic event(s) (e.g., first responders collecting human remains; police officers repeatedly exposed to details of child abuse).
ICD-11 for PTSD	Exposure to an event or situation (either short- or long-lasting) of an extremely threatening or horrific nature. Such events include, but are not limited to, directly experiencing natural or human-made disasters, combat, serious accidents, torture, sexual violence, terrorism, assault or acute life-threatening illness (e.g., a heart attack); witnessing the threatened or actual injury or death of others in a sudden, unexpected, or violent manner; and learning about the sudden, unexpected or violent death of a loved one.
ICD-11 for CPTSD	Exposure to an event or series of events of an extremely threatening or horrific nature, most commonly prolonged or repetitive events from which escape is difficult or impossible. Such events include, but are not limited to, torture, concentration camps, slavery, genocide campaigns and other forms of organised violence, prolonged domestic violence, and repeated childhood sexual or physical abuse.

ICD = International Centre of Diseases; DSM = Diagnostic and Statistical Manual of Mental Disorders; PTSD = Post traumatic stress disorder; CPTSD = Complex PTSD

1.3.2 Measuring childhood trauma and adversity

Measurement of adversity in childhood has largely been achieved through the Adverse Childhood Experiences (ACEs) framework (Kim & Royle, 2025). This is a definitive list of different negative life events that occur before the age of 18 years, including emotional, physical and sexual abuse, physical and emotional neglect, domestic violence, parental divorce, and mental illness, substance misuse or incarceration of a member of the household. Danese et al's (2024) review of ACE screening in healthcare settings critiques the ACEs framework as it is built on the assumption that a diverse range of events can lead to the same pathophysiological outcomes. All items are given equal weight as an adversity; for example, 'parental divorce' has equal weight as 'sexual abuse'. New versions of the ACEs framework have been proposed to account for various domains of a person's life – at home, in their community and in a socio-political context – taking a more holistic approach to co-produce a meaningful list of ACEs (Meléndez Guevara et al., 2024).

Traditionally, studies on ACEs use retrospective report. Interestingly, as identified by Coleman and colleagues '(2024) narrative review, different measures of childhood maltreatment show different relationships with psychopathology. Studies utilising retrospective accounts of childhood trauma show strong associations with mental ill-health, whereas those with only prospective reports (with no retrospective reports of ACEs) do not show the same strength of association. The effect of retrospective reporting points to the importance of the subjective appraisal of/memory of maltreatment for trauma-related mental health outcomes. Subjectively reporting/experiencing childhood maltreatment as traumatic is a major risk factor for PTSD (Danese & Widom, 2020).

1.3.3 Life outcomes related to trauma and adversity

Childhood trauma is associated with negative health and life outcomes, impacting functioning in several domains of young people's lives; education (Romano et al., 2015), employment (Copeland et al., 2018; Hardcastle et al., 2018; Venter et al., 2020), romantic relationships (Cao et al., 2022; Quan et al., 2025), friendships (Pigeon et al., 2025; Wang et al., 2024), substance misuse (Grummitt et al., 2022; Sebalo et al., 2023), and homelessness (Liu et al., 2021). An umbrella meta-analysis of 99 meta-analyses found that ACEs impacted multiple outcomes, including mental and physical health, biological system dysregulation, neuropsychological impairments, social and behavioural challenges, and criminal justice involvement (Kim & Royle, 2025). McKay and colleagues (2021) collated longitudinal studies and found some evidence of a dose-depended relationship between childhood maltreatment and mental ill-health in adulthood, such that experiencing multiple forms of maltreatment meant being up to three times more likely to have a psychiatric disorder. A previous systematic review and meta-analysis found childhood maltreatment had weak to moderate associations with physical inactivity, obesity, diabetes, smoking, heavy alcohol use, poor self-rated health, cancer, heart disease, and respiratory disease (Hughes et al., 2017).

1.3.4 Trauma-related psychopathology

Although many people have traumatic experiences, the vast majority of people do not develop PTSD or trauma-related psychopathology (Kilpatrick et al., 2013; Sayed et al., 2015). PTSD is defined by specific symptom clusters (see below) as well as the presumed cause (the trauma). Initial descriptions were by psychiatrists working with World War I veterans experiencing what was then referred to as "shell shock" or "combat fatigue". These men experienced difficulties with reintegrating into civilian life, and were described as having severe psychological distress, tremors, nightmares and emotional withdrawal.

Further research in the 1970s and 80s onwards established these trauma-related symptoms across different populations including those who had experienced sexual assault (Burgess & Holmstrom, 1974; Dworkin et al., 2017; Sutherland & Scherl, 1970), the holocaust (Barak & Szor, 2000), or natural disasters (Neria et al., 2008). This led to recognition of long-term psychological effects of traumatic events as a psychiatric condition. In 1980, the DSM-III introduced PTSD as a new diagnosis under anxiety disorders. The diagnostic criteria continued to be refined and formalised, with research exploring the mechanistic aetiology of the disorder and its impact on mood. In 2013, in the latest DSM-5, PTSD was recognised as distinct from anxiety disorders and moved into its own category (American Psychiatric Association, 2013). To receive a diagnosis of PTSD, the current criteria include experiencing symptoms within the domains of intrusions, avoidance, negative cognitions, and alterations in arousal and reactivity after experiencing a ‘Criterion-A’ event (see full criteria summarised briefly in Table 1.2).

Table 1.2 *A summary of the Diagnostic and Statistical Manual of Mental Disorders - Fifth Edition (DSM-5) criteria for post-traumatic stress disorder (PTSD).*

PTSD (DSM-5)
A. Exposure to actual or threatened death, serious injury, or sexual violence
B. Intrusion symptoms related to the traumatic event(s) • Recurrent, involuntary, and intrusive distressing memories • Recurrent distressing dreams • Dissociative reactions (e.g., flashbacks)

• Marked physiological reactions and, intense or prolonged psychological distress at exposure to internal or external cues that symbolise or resemble an aspect of the traumatic event(s)
C. Persistent avoidance of stimuli associated with the traumatic event(s): • Avoidance of distressing memories, thoughts, or feelings about or closely associated with the traumatic event(s). • Avoidance of or efforts to avoid external reminders that arouse distressing memories, thoughts, or feelings about or closely associated with the traumatic event(s).
D. Negative alterations in cognitions and mood associated with the traumatic event(s) • Inability to remember an important aspect of the traumatic event(s) • Persistent and exaggerated negative beliefs or expectations about oneself, others, or the world • Persistent, distorted cognitions about consequence or cause of the event, leading to blame of oneself or others • Persistent negative emotional state • Markedly diminished interest or participation in significant activities. • Feelings of detachment or estrangement from others • Persistent inability to experience positive emotions
E. Marked alterations in arousal and reactivity associated with the traumatic event(s) • Irritable behaviour and reactivity (with little or no provocation) • Reckless or self-destructive behaviour • Hypervigilance • Exaggerated startle response • Problems with concentration • Sleep disturbances
F. Duration of the disturbance (Criteria B, C, D and E) is more than 1 month.
G. Disturbances cause clinically significant distress or impairment in social, occupational, or other important areas of functioning
H. Disturbance is not attributable to the physiological effects of a substance (e.g., medication, alcohol) or another medical condition

In parallel, clinicians working with victims of prolonged, sustained interpersonal trauma such as domestic violence or child abuse, were observing distress that was not fully captured by PTSD linked to a single incident. In 1988, psychiatrist Judith Herman proposed Complex PTSD (CPTSD) as a distinct disorder resulting from long-term trauma with broader issues in self-percept and emotional regulation. The DSM-IV (APA, 1994) attempted to acknowledged symptoms of chronic trauma by including Disorders of Extreme Stress Not Otherwise Specified (DESNOS), but the diagnosis was not widely utilised or accepted. To date, CPTSD is not considered a distinct disorder from PTSD in the DSM, with the DSM instead expanding its PTSD diagnostic criteria to be more inclusive of complex trauma and adding a dissociative subtype of PTSD with additional symptoms of depersonalization and/or derealization. In 2018, the World Health Organisation's International Classification of Diseases (ICD-11) recognised CPTSD as a distinct disorder. CPTSD diagnosis requires the presence of PTSD symptoms of re-experiencing, avoidance, and hyperarousal, as well as additional symptoms (collectively referred to as ‘disturbances in self-organisation’) of negative self-concept, affective dysregulation and interpersonal difficulties. As such, CPTSD is a subtype of PTSD in ICD-11.

Epidemiological estimates for the prevalence of PTSD vary across country, income and socio-political context (Atwoli et al., 2015), however a cross-national lifetime prevalence of PTSD is reported at almost 4% using World Health Organisation World Mental Health Surveys of ~70,000 people across 24 countries (Koenen et al., 2017). Women are more likely to have PTSD than men even when level of trauma is accounted for (Ghafoori et al., 2013). As CPTSD has relatively recently been adopted as a new diagnosis, there are very few studies with prevalence based on clinical diagnoses rather than self-report, where estimates range from 1-8% (Maercker et al., 2022). A systematic review on the assessment of CPTSD identified that dissociation (when a person disconnects from their identity, thoughts and/or feelings) was consistently higher in patients with CPTSD compared to PTSD, as well as being more broadly impaired (Sarr et al., 2024).

Beyond the specific presentation of PTSD/CPTSD, traumatic and adverse experiences can have broader negative impacts on mental health or manifest in sub-clinical trauma-related symptoms. Poor mental health, including psychosis (Varese et al., 2012), depression and anxiety (Li et al., 2016; Nanni et al., 2012; Nelson et al., 2017; Vibhakar et al., 2019), is associated with trauma in childhood (Hughes et al., 2017). Lewis and colleagues (2021) used longitudinal cohort data and found young people exposed to complex trauma (multiple incidences of interpersonal threat) experienced more psychopathology than those exposed to non-complex trauma and no trauma. Additionally, PTSD can be heterogeneous (Galatzer-Levy & Bryant, 2013), and the norm is for mental health issues – particularly depression - to co-occur; in deed, a dimensional, transdiagnostic approach has been proposed (Levin-Aspenson & Greene, 2024) where trauma is a risk factor for psychopathology across psychiatric disorders.

1.3.5 Social risk factors for trauma-related symptoms in young people

Several studies have attempted to capture risk and protective factors for post-traumatic stress in children, and have identified that social support from families, schools and peers may be protective for mental health. A meta-analysis of 64 studies found that, among other peri- and post- traumatic risk factors, low social support and poor family functioning were related to PTSD in children and adolescents (Trickey et al., 2012). Indeed, having a warm and supportive adult in childhood may be protective against psychopathology after adversity, and has been associated with reduced mental health issues in adolescence in 1,439 twins who had experienced ACEs in the Environmental Risk (E-Risk) Longitudinal Twin Study (Stock et al., 2025). Herd and colleagues (2023) utilised a machine learning approach (growth mixture modelling) to identify individual and social risk/protective factors for PTSD symptoms in a sample of adolescent girls, around half of whom had been maltreated and half had not. They used prospective data collected at multiple time points until the girls were aged 19. Alongside various forms of abuse and trauma, they identified that parental depression, a child's difficulties regulating emotion, and relationships with peers that engage in risky behaviours (e.g., substance abuse) were risk factors for PTSD symptoms.

Indeed, the role of peers is particularly interesting given the importance of peer relationships in social cognitive development and mental health during adolescence (Andrews et al., 2021; Butler et al., 2022; Foulkes & Blakemore, 2021). Cross-sectional studies in adults have suggested that social support could have a protective effect against trauma-related psychopathology (Sheikh, 2018), in men and women (Fares-Otero et al., 2024). A meta-analysis of longitudinal studies suggested PTSD has a bidirectional relationship with social support; such that having more social support is associated with fewer trauma-related symptoms, and having more trauma-related psychopathology is associated with less reported social support (Wang et al., 2021). However, this meta-analysis included studies of all age groups, with most of the studies being on adults, and that did not conduct a subgroup analysis of the studies on children. Interestingly, this bi-directional effect of friendship quality (i.e., social support) was not seen in a cohort of adolescents who had experienced adversity when using a multi-modal composite score for psychosocial functioning between ages 14 and 17 years (van Harmelen et al., 2021). This study found that greater psychosocial resilience was associated longitudinally with greater friendship quality, but not the reverse. However, there was a bi-directional relationship between the change within both measures from age 14 to 17, suggesting that changes in friendship quality and resilience in adolescence are intertwined. Allen and colleagues (2021) synthesised the child literature, where all studies were cross-sectional, and reported a small protective effect of social support, with the strongest effect being for teacher-provided support. The role of social support also ranged by trauma type; it appeared play a greater role for children experiencing abuse, but less so for those exposed to war or natural disasters where social networks are likely more disrupted.

This suggests that networks of social support, particularly school-based, could be a viable area of focus to contribute to protecting young people from trauma-related symptoms, yet it is only a small part of the bigger picture. Some positive findings from literature on social prescribing to improve in young people's mental health and well-being highlight that the socialising element is key (eg. social activities involving arts and culture and physical activity) for building relationships and support networks (Muhl et al., 2025).

1.3.6 Treatment for trauma-related symptoms

The primary evidence-based treatment as recommended by the National Institute for Health and Care Excellence (NICE) for children and adolescents who are experiencing acute distress disorder or clinically significant trauma-related symptoms is Trauma-Focused Cognitive Behavioural Therapy (TF-CBT). If children and young people do not respond to TF-CBT, NICE treatment guidelines recommend using Eye Movement Desensitization and Reprocessing (EMDR) (NICE, 2018).

TF-CBT is delivered in a structured format and combines cognitive behavioural principles with interventions that focus on encouraging the child to develop a trauma narrative (e.g., gradually discussing the traumatic events, or by drawing or using toys). When delivered with children it generally actively involves caregivers in the therapeutic process, participating in parallel and conjoint sessions to process and elaborate on the trauma memory together, engage in psychoeducation, safety plan and learn coping mechanisms and skills that can be implemented at home. EMDR involves similar cognitive re-structuring and exposure to the trauma memory, with the main feature being the bilateral stimulation while focusing on the trauma memory to reduce distress (Shapiro, 1989).

TF-CBT has the largest evidence base for use in children and adolescents (Leenarts et al., 2013), and meta-analysis of existing studies shows stability of treatment effects at 12-month follow up (Thielemann et al., 2024). Across randomised controlled trials (RCTS) comparing TF-CBT to both active controls and treatment as usual (TAU), TF-CBT is shown to be the most effective at reducing trauma-related psychopathology (Bennett et al., 2021; Haan et al., 2024; Leenarts et al., 2013).

Group effect sizes range from small to moderate, and studies varied in the background of the children, culture, and setting in which the study was conducted. When comparing evidence-based therapies to TAU there are several confounds to consider, such as clinical confidence, as well as time and attention given to the patient. To address this, Hultmann and colleagues (2023) conducted an RCT comparing TF-CBT to enhanced TAU – where the therapist choose multiple manualised (eg. EMDR) and non-manualised (eg. tactile massage) interventions in collaboration with the participant, and caseload was matched between groups – and found no significant group difference in improving trauma-related mental health.

For children and adolescents, a meta-analysis of studies found that TF-CBT and EMDR are both effective at treating trauma-related symptoms, however TF-CBT was marginally more effective in both the short- and long-term (Hoppen et al., 2025). Large scale studies on the short- and long-term efficacy of EMDR in children are lacking, but existing research has shown some initial promise (Raissouni et al., 2023). EMDR has previously been shown to be more effective at treating post-traumatic stress in adults, when compared to TF-CBT in RCTs (Khan et al., 2018). However, a more recent review of eight RCTs in adults that evaluated EMDR compared to other psychological therapies, including TF-CBT amongst others (eg. relaxation therapy), found that EMDR showed no significant difference versus other interventions in reducing PTSD symptoms or other treatment outcomes (Wright et al., 2024).

Syntheses of evidence for non-manualised therapies for treating trauma-related symptoms have shown some promise but generally have lower quality of evidence, including art-based therapies (Morison et al., 2022), animal-assisted therapies (Hediger et al., 2021), play therapy (Parker et al., 2021), Child Parent Psychotherapy (CPP) (Mavranezouli et al., 2020; Norlén et al., 2025) and family-based therapeutic modalities (Mak & Wieling, 2022).

1.4 Trauma and autistic young people

1.4.1 Experience of adversity and trauma

Autistic people are at increased risk of adverse childhood experiences (Hartley et al., 2024; Stewart et al., 2022), including bullying (Hwang et al., 2018), sexual abuse (Webb et al., 2024), victimisation (Paul et al., 2018) and maltreatment (McDonnell et al., 2019). Vulnerability for this exposure is likely multi-faceted, with autistic young people having increased incidences of risk factors for adversity, such as stigma and discrimination (Turnock et al., 2022), as well as lower educational attainment and worse employment outcomes (Toft et al., 2021). In research comparing autistic and non-autistic adults, cumulative trauma and memory deficits mediated the association between being autistic and experiencing trauma or PTSD (Rumball, Brook, et al., 2021). The cumulative effect of trauma on PTSD symptoms was seen in the autistic group alone.

As outlined above, the subjective appraisal of a negative event is associated with psychopathology. Subjective experience is impacted by cognition, culture, society, development, and past experiences (LeDoux & Brown, 2017; LeDoux & Hofmann, 2018); elements that are influenced and shaped by being autistic. Thus, autism may impact which life events are perceived as traumatic (Kerns et al., 2015). Findings from a large study using longitudinal twin data showed that polygenic scores for both autism and PTSD are associated with retrospective recall of childhood trauma, even when controlling for environmental adversity (Peel et al., 2022). This suggests that individuals genetically liable to autism may be sensitive to experiencing a given event as traumatic, perhaps placing them at greater risk of PTSD development.

1.4.2 Expanding definitions of trauma for autistic individuals

How trauma is defined clinically (see Table 1.1) may not be inclusive of the autistic experience. Previous studies in autistic adults have shown that PTSD symptoms can develop after a negative event that is not defined as a 'trauma’ according to the DSM-5 Criterion A (Rumball et al., 2020). Rumball and colleagues asked 59 autistic adults about events *they* considered to be traumatic. Participants completed the Life Event Checklist to assess traumatic experiences that were within the DSM-5 definition (Table 1.1), which were reported by 33 of the participants. They were asked if there was any other event that “felt like an extremely unpleasant, stressful or traumatic experience”, “caused you to have nightmares about it or think about it when you did not want to”, or “subsequently tried hard not to think about or go out of your way to avoid situations that remind you of it”. If they answered in the affirmative to any of those three points, they were asked to describe the event. If the described event did not align with the DSM-5 Criterion A they were termed “Non-DMS-5 trauma”, as reported by 35 of the autistic adults. The most common experiences of this type were bullying, events relating to their own mental ill-health, and bereavement. A PTSD symptom checklist, the PCL-5, was used to assess self-reported PTSD symptoms. There were similar rates (c.45%) of participants meeting the cut-off for possible PTSD in both the DSM-5 and non-DSM-5 trauma groups.

The same design has not been repeated with children, however Kerns and colleagues (2022) did explore sources of trauma outside the standard measures qualitatively with autistic adults and caregivers of autistic children. Participants completed a standard Trauma History Questionnaire (THQ), indicating traditional traumas like maltreatment, physical and emotional abuse. Qualitative interviews indicated that a wide range of experiences could be sources of trauma for autistic adults and children. All the participants described sources of trauma that would not be included on standardised measures; with many being specific to autism and environment fit, which refers to the mismatch between autistic children’s sensory processing, social preferences and executive function with the demands of the environment around them. These included sensory sensitivities that make routine activities (eg. a haircut) very upsetting, and difficulties in understanding social dynamics which lead to self-blame and feeling alienated, as well as being bullied and left out. Transitions and changes in routine, such as transitioning up through the year groups of school or moving schools completely, were reported as particularly distressing. Like the findings from Rumball and colleagues, social exclusion, such as bullying, isolation and stigma, were commonly described sources of trauma. A UK-based qualitative study with 30 neurodivergent young people also highlighted sensory difficulties, uncertainty and social challenges with peers, such as bullying, as key factors contributing to their experience of distress at school (Fielding et al., 2025). The majority of these students were autistic, had ADHD or had co-occurring autism/ADHD with another neurodivergent diagnosis.

These studies demonstrate that developing measures of trauma exposure that are inclusive of what autistic young people experience as traumatic is essential, as well as taking a broader approach to what is considered traumatic. Educational settings, where children spend the majority of their time, must consider that the school environment may be distressing or even traumatic for these children. To explore these experiences further, in Chapter 4 we broaden our investigation to examine adverse experiences of peer victimisation and maltreatment in neurodivergent secondary school students (including autism, ADHD and learning difficulties), using the OxWell Student Survey. In Chapter 6, we report results from interviews with teachers about working with traumatised autistic children and, based on this prior research and consultation with a PPI group of teachers, we deliberately did not use a narrow definition for traumatic experiences.

1.4.3 Trauma-related symptomatology and autistic young people

Autistic adults experience higher rates of mental health symptoms (e.g., anxiety, depression) traditionally associated with trauma exposure, when compared to non-autistic individuals (Rumball et al., 2021a). Studies using self-report measures show that older adults with high autistic traits show higher PTSD symptomatology (Stewart et al., 2020) and PTSD symptoms have been shown to be positively associated with autistic traits in 103 college students (Haruvi-Lamdan et al., 2019).

A previous review by Rumball (2019), systematically reviewed the literature published up to 2017 on PTSD in autistic people. With regards to prevalence of PTSD in autistic children, there are no epidemiological estimates however the review found that mean PTSD prevalence was higher than prevalences reported elsewhere for non-autistic children. Rumball concluded that PTSD appeared to present similarly in autistic children, with papers reporting additional symptoms like angry outbursts and oppositional behaviour. Traditional PTSD assessment tools, such as the Anxiety Disorders Interview Schedule for Children and Parents (ADIS C/P), have been used to diagnose PTSD in autistic children, however there is a need for tools specifically validated for use in autistic children. There were no well-controlled studies on PTSD in autistic children, and the review emphasised the importance of validating PTSD assessment tools and treatments specifically for autistic populations. Since then, there has been a controlled study in children; when compared to non-autistic children, autistic children experience more traumatic experiences and certain PTSD symptoms, namely flashbacks, avoidance, concentration problems, social isolation, insomnia and hypervigilance (Paul et al., 2018). Chapter 2 updates this systematic review (Quinton et al., 2024), exploring the recent literature on the assessment and treatment of PTSD in autistic adults and children. Since that review, there has been growing interest in this topic (eg. Di Marco et al., 2025) and several other studies have been published. A large population study utilising a national insurance database in Taiwan found that over a 15-year period autistic adults were more likely to be diagnosed with PTSD than their non-autistic peers (Li et al., 2024). Another used a nationally representative US-based cohort of over 600 people who completed online measures of trauma exposure and PTSD symptoms, and found the autistic adults reported higher rates of PTSD symptom clusters than the non-autistic control group (Andrzejewski et al., 2024). The same research group identified lower rates of exposure to motor accidents amongst autistic people, but higher levels of PTSD symptoms compared to non-autistic people when they had experienced such accidents (McDonnell et al., 2024). In the clinic, there is some evidence that trauma-related symptoms may go missed in autistic youth: a US study comparing a cohort of young people who experienced emergency psychiatric evaluations found autistic youth were 42% less likely to receive a trauma diagnosis than non-autistic young people (Junewicz et al., 2024).

1.4.4 Individual differences in vulnerability to trauma-related psychopathology/PTSD

Higher risk of adversity (Hartley et al., 2024) and mental health problems (Kerns et al., 2020) compared to non-autistic children likely contribute to increased risk of trauma-related symptomatology in autistic young people. It has also been postulated that specific characteristics of autism may impact how a negative or traumatic event is processed and perceived, increasing the risk of PTSD development and trauma-related psychopathology.

In the general population, research has identified cognitive, environmental and genetics factors that impact a person’s susceptibility to develop/maintain PTSD symptomatology. Dahoun and colleagues (2024) conducted a meta-analysis of 21 studies, and found that the level of influence genes and environment had on risk of PTSD development depended on the reporter of child victimisation, the type of victimisation and how old a child was at the time of the victimisation. Genetic heritability accounted for 36-40% of the variance in childhood victimisation

(Dahoun et al., 2024), trauma and negative life experiences (Kendler & Baker, 2007). Heritable cognitive features may also contribute to the appraisal, formation of memories and reporting of events as victimisation. For example, individual differences in executive function are partially heritable, and may contribute to the ability to supress unwanted memories and play a role in maladaptive avoidance strategies.

Theoretical models of PTSD include fear conditioning (Careaga et al., 2016), neo-conditioning theories (Mineka & Zinbarg, 2006), the Ehlers and Clark cognitive model (Ehlers & Clark, 2000), and dual representation theory (Brewin & Ehlers, 2023). The latter two complementary cognitive models of PTSD are illustrated in Figure 1.1 and highlight cognitive vulnerabilities to developing and maintaining PTSD symptoms (Brewin et al., 1996; Ehlers & Clark, 2000).

The Ehlers and Clark model (Figure 1.1A) describes how characteristics of trauma, individual differences before a trauma, coping and cognitive processing during the trauma contribute to the development of PTSD. Brewin and colleagues' (1996) dual processing model (Figure 1.1B) offers a complementary model and describes how trauma memories are stored as both verbally and situationally accessible memories. Together they suggest that peri-traumatic processing influences how trauma memories are encoded and appraised, which in turn shapes the emotional and sensory nature of the trauma memory and its associated triggers. Verbally accessible memories are consciously retrievable and give rise to negative appraisals (e.g., rumination) which contributes to the feelings of current threat associated with the memory. Situationally accessible memories contain the emotional and sensory information about the trauma that are automatically triggered by stimuli associated with the event. When the memory is triggered, both negative appraisals and re-experiencing of sensory and emotional elements of the trauma contributes to feelings of current threat and prompt maladaptive coping strategies to avoid or control these feelings. It is hypothesised to be this interplay between memory formation, memory appraisals, current threat perception, and control strategies that contributes to the development and maintenance of symptoms.

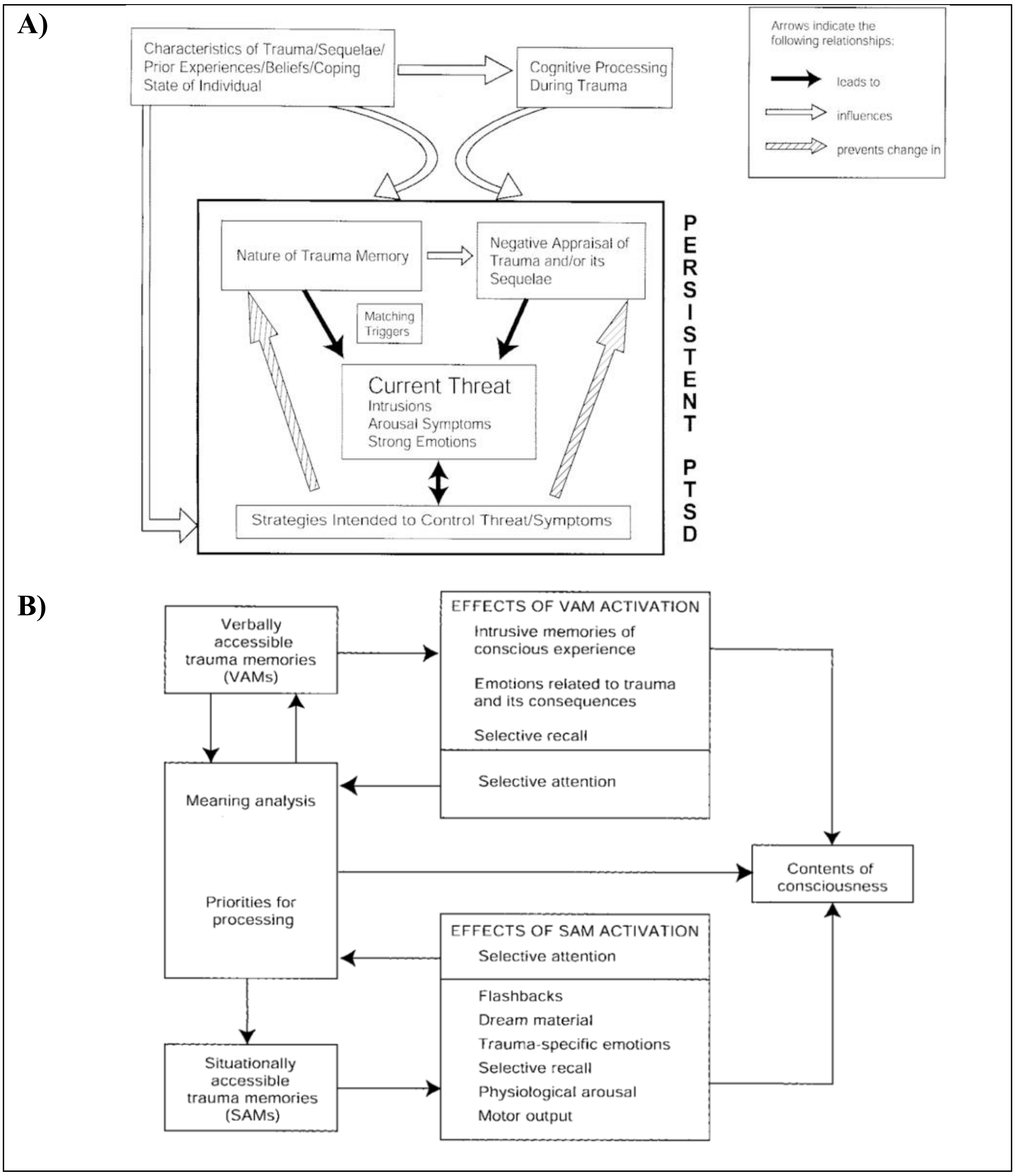

Figure 1.1 *Cognitive models of PTSD. (A) The Ehler's and Clarke Model (2000), and (B) Brewin's (1996) dual representation theory.*

A meta-analytic review identified several cognitive or emotional processes or experiences that occur during or immediately after the trauma, including subjective feelings of threat, dissociation and data-driven processing, that are peritraumatic risk factors for PTSD in children and adolescents (Memarzia et al., 2021). Interestingly, there was no moderation effect of the type of trauma (interpersonal versus not interpersonal). Similarly, a study of children (age 10 to 18 years) in out-of-home care, by Hiller and colleagues (2021), identified that while cognitive processes (maladaptive appraisals of memories, memory quality and coping, which measured rumination and avoidance) had moderate to strong associations with PTSD or

CPTSD symptoms at baseline and at a year follow up, the severity of the maltreatment when they entered into care was not associated with PTSD/CPTSD. Together these findings suggest that these cognitive risk factors may drive PTSD symptoms regardless of trauma type or severity. Similarly, when examining a broader population sample of longitudinal data from the Adolescent Brain Cognitive Development (ABCD) study, Vendechkina and Holmes (2024) found that different forms of adversity were generally not related to distinct cognitive profiles in 10 to 12 year old children. This study used a data-driven approach to investigate the mental health impact of retrospective reports of adversity and performance on cognitive tasks measuring aspects of memory, verbal and non-verbal reasoning, reward processing, cognitive flexibility and emotional processing. They found cognitive measures were able to predict with good accuracy if a child had been exposed to moderate-to-severe adversity, and that children who experienced early adversity had worse mental health and lower cognitive abilities than children who had not. However, somewhat counter to cognitive models, there was no evidence that their cognitive differences were linked to their mental health difficulties. However, in children with no adversity, there was a link between cognitive differences and mental health. Potentially adversity was strongly associated with mental health difficulties, which may have decreased the variability within the adversity exposed children and overshadowed the potential impact of cognitive factors. These mixed findings highlight the complexity of trauma-related mental health across different populations and developmental stages.

However, there is a growing body of research pointing to the presence of these cognitive risk factors in autistic people being associated with PSTD symptomatology, or autistic traits themselves driving the development of PTSD. Indeed, cognitive risk factors for PTSD have been shown to be related to symptomatology in autistic people, including everyday and working memory deficits (Rumball, Brook, et al., 2021), poor verbal working memory (Wang et al., 2017), sensory sensitivities (Weiland et al., 2020), brooding rumination (Golan et al., 2022), emotional dysregulation (Mazefsky et al., 2014), thought suppression (Rumball et al., 2021a) and social withdrawal (Brosnan & Gavin, 2023). It has been proposed that such factors may represent a vulnerability pre-, peri and post-trauma, in autistic children and those with high autistic traits, towards the development of PTSD (Haruvi-Lamdan et al., 2020; Kerns et al., 2015; Rumball et al., 2021b). More data is needed to establish what specific pre-, peri- and post- trauma risk factors impact PTSD development in autistic young people, and if the social-emotional-behavioral profiles of PTSD presentation differ from those seen in trauma-exposed non-autistic children.

Lim and young (2025) explored the perceptions of 50 autistic young adults on the ways that autism and experiencing trauma interacts, using a qualitative survey. The authors report that the autistic people felt that that autism can amplify the impact of stressful life events, as well as the barriers to support, and that autistic behaviour can contributes to how one copes, in both healthy and unhealthy ways. Cross-sectional studies online (Stewart et al., 2020) and in clinical settings (Dell'Osso et al., 2024) with adults with high autistic traits show that they self-report more childhood trauma and PTSD symptoms than those in low trait comparison groups. Dell'Osso and colleagues (2024) found that certain autistic traits - rigidity, sensory sensitivity, non-verbal communication difficulties and rumination - were associated with trauma and trauma-related symptomatology. These autistic traits may make autistic people susceptible to developing trauma-related symptoms, or the overlap may reflect shared underlying constructs rather than distinct phenomena. There is a significant gap in our understanding of how autistic traits in childhood specifically may relate to trauma exposure and psychological outcomes across development. Chapter 3 explores if autistic traits in children, which likely reflect autistic-like cognitive styles, are related to later trauma exposure, PTSD, psychopathology and functioning.

1.4.5 Overlapping symptoms and diagnostic overshadowing

Recognizing risk and vulnerabilities only has utility if it can be implemented into clinical practice. Mental healthcare of autistic children faces several barriers (Sapiets, 2020) including differential presentation, difficulties with communicating emotions, and diagnostic overshadowing. There are features of autism that overlap with PTSD presentation, such as sensory sensitivity, sleep problems and repetitive play, which may lead to different presentations of PTSD symptoms (Al-Attar & Worthington, 2024; Stavropoulos et al., 2018). Behavioral trauma-related symptoms and autistic characteristics can appear similar in young children; which creates difficulties in differentiating between the developmental profiles of children who have experienced trauma, autistic children and autistic children with trauma histories. Mehtar and Mukadde (2011) found that 18 of 69 young people at an autism outpatient clinic had experienced trauma. Following traumatic experiences, these children exhibited changes including significantly decreased communicative ability and self-care skills, and significantly increased stereotypic behaviour, aggression, distractibility, sleep disorders and self-injury. Severe attachment issues and autism also have overlapping symptoms of social, emotional and communication difficulties (May et al., 2021; Moran, 2010). As these symptoms overlap with common autism presentations, there is risk of clinicians misattributing these trauma-related behavioural changes to the child's autism, potentially leading to missed or misdiagnosis.

This overlap can make diagnosis difficult, and trauma-related symptoms hard to recognise in this population. This thesis explores clinicians' (Chapter 4) and teachers' (Chapter 6) perspectives on this. Clinicians were specifically asked about differential diagnosis, and the relevant literature is reviewed in more detail in Chapter 4.

1.4.6 Support and treatment of PTSD in autistic people

The systematic review in Chapter 2 (Quinton et al., 2024), was only able to identify one study of PTSD treatment in autistic people; Eye Movement Desensitization and Reprocessing (EMDR) showed promise as an 'add on' therapy in 21 autistic adults, reducing PTSD symptoms (Lobregt-van Buuren et al., 2019). No treatment studies were identified for children and young people in Chapter 2. A systematic review of controlled trials showed that trauma focused cognitive behavioural therapy (TF-CBT) is the best supported PTSD treatment for maltreated non-autistic children and adolescents (Bennett et al., 2020). Although autism specific adaptations for TF-CBT have been proposed in areas of emotion regulation, graduated exposure, cognitive restructuring, and psychoeducation (Stack & Lucyshyn, 2019), these have not been empirically tested in children. There has been a recent proof-of-concept study for telehealth-based TF-CBT with 17 autistic young people aged 10-17 years. This was shown to significantly reduce PTSD symptoms up to a month follow-up (McDonnell et al., 2025).

1.5 Thesis Overview

1.5.1 Aims

In this thesis I aim to explore trauma experiences and trauma-related mental health outcomes in autistic young people, and how we support them in educational and clinical contexts. Broadly, this thesis aims to:

Chapter 2: update the work by Rumball (2019) to provide a current systematic review of PTSD in autistic people;

Chapter 3: investigate if higher autistic traits in childhood predispose individuals to trauma exposure, PTSD and worse general psychopathology, as well as greater functional impairment by age 18 years;

Chapter 4: develop a better understanding of how autism experts approach the complexities of differential diagnosis of autism from CPTSD and attachment difficulties;

Chapter 5: explore rates of peer victimisation, maltreatment and poor mental health in neurodivergent adolescents;

Chapter 6: explore teachers' perspectives on how they support traumatised autistic students in the classroom.

1.5.2 Chapter overview

To set the scene for the subsequent empirical studies, Chapter 2 presents a systematic review (published as Quinton et al., 2024) of recent literature on assessment and treatment of PTSD in autistic people. Chapter 3 presents work (published as Quinton et al., 2025) utilising longitudinal data from 1,501 young people who were part of two overlapping twin datasets to assess autistic traits' relationship with PTSD diagnosis, trauma exposure, psychopathology and function. Chapter 4 delves into the challenge of overlapping presentations and co-occurrence in the clinic and qualitatively explores how autism practitioners' approach diagnosing complex PTSD, attachment difficulties and autism using a framework analysis of data from an online Delphi survey. To explore trauma exposure in schools, in Chapter 5 we investigated if being neurodivergent is associated with increased peer victimisation and maltreatment in 11,083 secondary school students who completed the OxWell Student Survey in 2023. Here, we also explore if being neurodivergent has a moderating effect on the relationship between peer victimisation and mental health outcomes. Fifteen teachers from both mainstream and SEN schools were interviewed for Chapter 6, where I present their perspectives on teaching and supporting traumatised autistic pupils, from reflexive thematic analysis. Finally, Chapter 7 will synthesise and discuss the main findings of this thesis, overarching implications and how they relate to existing research. Possible future directions will also be explored.

Chapter 2: The assessment and treatment of post-traumatic stress disorder in autistic people: a systematic review

2.1 Published manuscript

This chapter contains the following published manuscript:

Quinton, A. M. G., Ali, D., Danese, A., Happé, F., & Rumball, F. (2024). The assessment and treatment of post-traumatic stress disorder in autistic people: a systematic review. *Review Journal of Autism and Developmental Disorders*. https://doi.org/10.1007/s40489-024-00430-9

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REVIEW PAPER

The Assessment and Treatment of Post-traumatic Stress Disorder in Autistic People: A Systematic Review

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Abstract

Adverse life events and mental health conditions are unfortunately common amongst autistic adults and children; this may present a vulnerability to developing post-traumatic stress disorder (PTSD). This systematic review provides an update of Rumball's (*Review Journal of Autism and Developmental Disorders*, *6*, 294–324, 2019) systematic review of PTSD in autistic individuals and identifies 18 new studies published from 2017 to 2022, reflecting increased research interest in PTSD in autistic populations. Included literature suggests that autistic adults and children experience more severe PTSD symptoms compared to their non-autistic peers, with at least comparable rates of occurrence. We provide a comprehensive overview of this emerging field and identify the need for future research to validate PTSD symptom assessment tools and treatment strategies and investigate unique manifestations of trauma-related symptoms in autistic individuals.

Keywords Autism · Autism spectrum · Trauma · Post-traumatic stress disorder · Trauma treatment

Autism spectrum disorder (ASD) is defined by difficulties with social communication, repetitive behaviours, and restricted interests (American Psychiatric Association, 2013). Autistic children and adults have higher prevalence of mental health conditions when compared to non-autistic peers (Kerns et al., 2020a, b), with particularly high rates of anxiety disorders. Formerly classified as an anxiety disorder, post-traumatic stress disorder (PTSD) is a psychiatric disorder that can develop after experiencing a traumatic event. PTSD is characterised by persistent re-experiencing of the traumatic event, such as flashbacks and intrusive memories, as well as avoidance, negative appraisal, and hypervigilance to threat (Smith et al., 2019). If untreated, PTSD can have a detrimental impact on a person's life, work, and relationships. It is therefore essential that clinicians, researchers, and society have clarity on the conceptualisation, prevalence, assessment, and support for PTSD in neurodiverse populations.

Autistic people are at heightened risk of experiencing traumatic events, adverse childhood experiences (ACES), bullying (Hoover & Kaufman, 2018; Kerns et al., 2015), stigma, and discrimination (Han et al., 2022; Turnock et al., 2022). Because of the greater exposure to triggering events, autistic people could also have a greater likelihood of developing trauma-related symptoms compared to non-autistic people (Kerns et al., 2015). Until recently, PTSD has arguably been neglected in studies of mental health in autistic populations, despite multiple factors that may contribute to autistic people's likelihood of developing the disorder. Alongside considering societal factors and trauma exposure risk, it is possible that some cognitive and sensory characteristics associated with, but not necessarily inherent to, being autistic, such as alexithymia (difficulty identifying own emotions) and cognitive inflexibility, may make autistic people more susceptible to trauma-related symptoms or their maintenance. Despite this, research on autism-specific expressions of post-traumatic stress, and treatment adaptations for post-traumatic stress psychopathology, is lacking (Peterson et al., 2019).

Publications on PTSD within autistic groups recently increased, and several narrative reviews have been conducted (Haruvi-Lamdan et al., 2018; Hoover, 2020; Lobregt-van Buuren et al., 2021; Peterson et al., 2019). These reviews highlight the overlap of pathways that potentially might

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connect autism and PTSD, in particular, emotion regulation and sensory sensitivities, and propose that autism may lead to 'diagnostic overshadowing' of PTSD symptoms in clinical contexts—when all difficulties experienced by an autistic person are attributed to autism leading to missed PTSD diagnoses.

A previous systematic review of studies of PTSD in autism between 1980 and 2017 (Rumball, 2019) called for large-scale, well-controlled, gender-balanced studies using multi-informant and epidemiological data to assess the effects of trauma and the prevalence and risk of PTSD in autistic individuals compared to the general population. The review collated available data to produce estimates of PTSD prevalence in autistic adults and children, which were the same or higher in autistic people than in the general population. However, to date, there is no epidemiological population-based estimate for prevalence of PTSD in the autistic population. The review identified a need for investigations into different presentations of PTSD in autistic children and adults and the unique impact of trauma and PTSD on core autistic traits. Rumball (2019) concluded that for PTSD diagnosis and treatment, assessment tools are needed that can appropriately distinguish between characteristics of autism and symptoms of PTSD, and that validation of PTSD treatments in autistic people is crucial.

Here, we have sought to update the work by Rumball (2019) to provide a systematic overview of this emerging field.

Methods

Search

This systematic review was registered with PROSPERO (ref: CRD42021293550) and conducted in accordance with PRISMA guidelines (Page et al., 2021). The search for studies published in the English language since the termination of Rumball's (2019) systematic review search (May 2017), up until January 2023, was conducted in PubMed, Web of Science, Embase, Scopus, Cochrane Library, PILOTS, PsychInfo, and Medline.

We followed the inclusion and exclusion criteria described in Rumball (2019). The following search terms were used: 'autis*', 'asperger*', 'Pervasive developmental disorder', 'PDD-NOS', 'childhood disintegrative disorder', in combination with: 'posttraumatic stress disorder', 'post-traumatic stress disorder', 'post traumatic stress disorder', 'PTSD', 'acute stress disorder', 'acute stress reaction', or 'trauma*'. Publications were considered for inclusion in the full-text analysis if they reported primary data pertaining to PTSD assessment, prevalence, or treatment in one or more individuals of any age with a diagnosis of ASD. We included studies with cross-sectional, longitudinal, experimental, case series, and randomised controlled trial designs. We excluded reviews, meta-analyses, theoretical articles, and grey literature (e.g., conference abstracts, theses, and book chapters). Studies that did not use a formal diagnosis of PTSD or a clinically significant score on a standardised diagnostic scale for PTSD were excluded. We excluded any study that did not include individuals with a confirmed diagnosis of an ASD, which included Asperger's disorder/syndrome, autistic disorder, childhood autism, atypical autism, pervasive developmental disorder not otherwise specified (PDD-NOS), and childhood disintegrative disorder.

All titles and abstracts were first imported into Endnote, duplicates were then removed, and an initial screening of titles and abstracts was conducted. The entire search and screening process was conducted independently by AQ and DA. Any disagreements over eligibility were discussed and resolved between the reviewers and FR.

Data Extraction

Data on sample characteristics, assessment, prevalence, presentation of PTSD (method of PTSD diagnosis, proportion of PTSD cases in the autistic sample, outcome of the assessment, symptom presentation, and/or comparisons across groups), and PTSD treatment (treatment method, treatment outcome measure, time points for outcome measurement, and outcome of treatment) were extracted for group studies (e.g., cohort or case–control studies) and case studies. Extraction was conducted by both AQ and DA, and narrative synthesis was conducted by AQ.

To collate data on PTSD prevalence, studies were classified as reporting current or lifetime PTSD in children and adolescents (under 18 years of age) or in adults (18 years and older). If the study included a range of ages, the mean age was used to classify it. Within these age groups, studies were collated separately according to their method of PTSD assessment, collating together those that reported rates of diagnosis given by a clinician or diagnostic interview and those that used questionnaire cut-off thresholds (e.g., PCL-5).

Quality Assessment

Observational cohort and case–control studies were assessed using a modified version of the Newcastle–Ottawa Scale (Wells et al., 2012), and cross-sectional studies were assessed using Joanna Briggs Institute (JBI) checklists (https://jbi.global/critical-appraisal-tools). Where available, we assessed and reported the method of autism and/or PTSD diagnosis in all studies. Any disagreement in quality assessment was discussed by AQ and DA. If no resolution was reached, FR and FH were consulted. Studies were not excluded from synthesis on the basis of the quality assessment.

Results

Study Selection

The search returned 3241 publications, 1730 of which were duplicates, leaving 1511 papers for title and abstract screening. At the stage of title and abstract screening, 1668 papers were excluded (here, the inter-rater reliability was 72.5%), leaving 40 papers for full-text screening. The excluded papers at the title and abstract screening stage were either not the desired publication type (reviews, grey literature, letters to the editor, and conference posters), not in populations with professionally diagnosed autism (for example, participants were parents or professionals working with autistic people), did not concern the assessment of PTSD in autistic individuals, or were not in English. From the remaining 40 papers that were retrieved for full-text screening, 18 studies met the inclusion criteria (inter-rater reliability was 86.5%). Full details of study selection can be seen in the PRISMA flow diagram (Fig. 1), and study characteristics for the final 18 papers are detailed in Table 1. Results are described below, split into assessment, rates, and treatment of PTSD in autistic people.

Assessment of PTSD in Autistic People

All 18 studies reported information on the assessment of PTSD in autistic people, 10 were cross-sectional group studies (Bitsika & Sharpley, 2021; Brenner et al., 2018; Hoch & Youssef, 2020; Hoover & Romero, 2019; Kupferstein, 2018, 2020; Reuben et al., 2021, 2022; Rumball et al., 2020, 2021a), four were case–control studies (Golan et al., 2022; Haruvi-Lamdan et al., 2020; Paul et al., 2018; Rumball et al., 2021b), three were case studies (Carmassi et al., 2019;

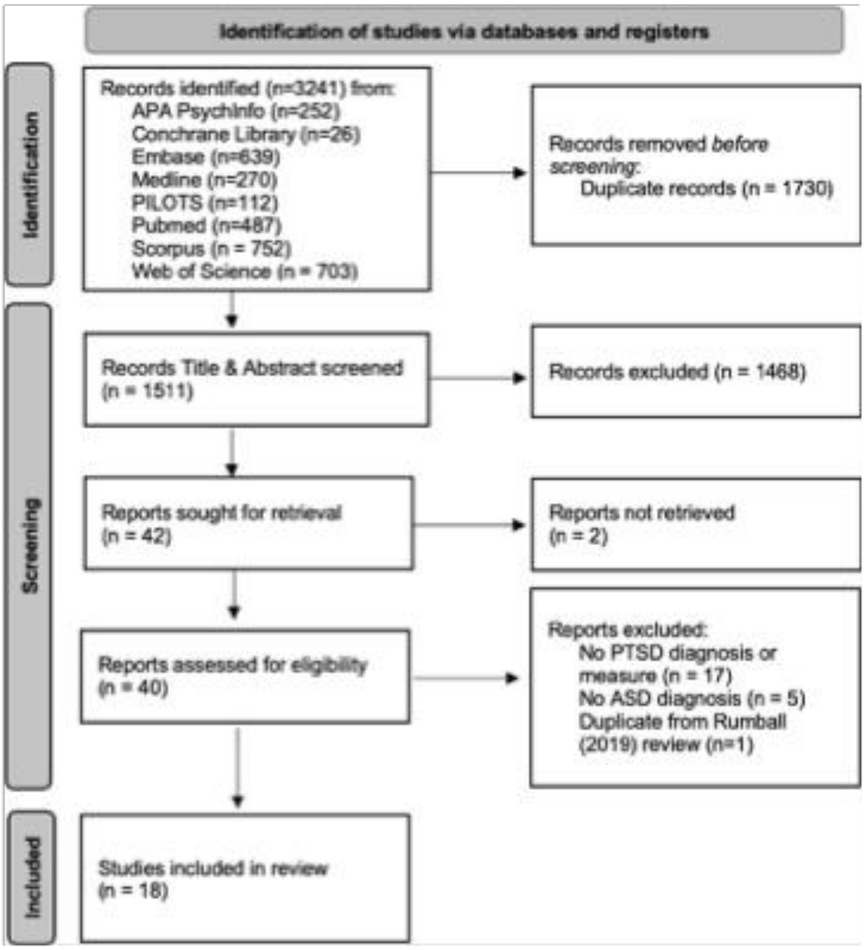

Fig. 1 PRISMA flow diagram for systematic reviews

Table 1 Study Characteristics

Author (year)	Title	Location	Study type	Reason for referral (case reports) or sampling technique (group studies)	*N* ASD participants	*N* comparison group	Age group	Mean age in years (range)	Female % or sex or gender	ASD method of diagnosis	IQ level	Trauma types
Bitsika and Sharpley (2021)	Direct and inverse correlates of post-traumatic stress disorder among school-age autistic boys	Australia	Survey	Recruited via calls for participation made to parent organisations. Parents were not restricted to mothers	71	0	C&A	11.63 (7–18)	Male	Formal diagnosis from psychiatrist confirmed by psychologist	IQ at least 70 (assessed by Wechsler individualised test)	Bullying
Brenner et al. (2018)	Behavioural Symptoms of Reported Abuse in Children and Adolescents with Autism Spectrum Disorder in Inpatient Settings	USA	Clinical sample with and without abuse histories	Recruited via six psychiatric hospitals as part of the autism inpatient collection study	350	None; within ASD group compared those with abuse histories ($N=99$) to those with no reported abuse ($N=251$)	C&A	All: 12.9 (4–21) Reported abuse ($N=99$): 12.89 No reported abuse ($N=251$): 12:88	All: 21% Reported abuse: 26.3% No reported abuse: 19.5%	SCQ (score > 12) or were referred by clinical team. All participants did ADOS-2	42% of sample fell below IQ cut-off of 70 for ID, and 32% had very low verbal ability as measured by ADOS-2 (Module 2)	Physical, sexual, or emotional abuse *Of those ($N=99$) with reported abuse histories: 13% physical abuse, 12% emotional abuse, 8% sexual abuse, 1% sexual & physical, 1% sexual & emotional, 16% physical & emotional*

Table 1 (continued)

Author (year)	Title	Location	Study type	Reason for referral (case reports) or sampling technique (group studies)	*N* ASD participants	*N* comparison group	Age group	Mean age in years (range)	Female % or sex or gender	ASD method of diagnosis	IQ level	Trauma types
Carmassi et al. (2019)	Is There a Major Role for Undetected Autism Spectrum Disorder with Childhood Trauma in a Patient with a Diagnosis of Bipolar Disorder, Self-Injuring, and Multiple Comorbidities?	Italy	Case report	Admitted as inpatient to psychiatric unit with depressive symptomology, rumination, anxiety, alteration in neurovegetative pattern and suicidal ideation. Diagnosis of ASD and childhood trauma emerged during this hospitalisation. Comorbidities included Type II bipolar, binge eating, and panic disorder	1	0	Adult	35	Female	AQ (38/50), RAADS-R (146/240), AdAS Spectrum (99/160)	Average/above average IQ	Sexual abuse (Repeated childhood); loss of work, family and pet deaths, victim of a crime

Table 1 (continued)

Author (year)	Title	Location	Study type	Reason for referral (case reports) or sampling technique (group studies)	*N* ASD participants	*N* comparison group	Age group	Mean age in years (range)	Female % or sex or gender	ASD method of diagnosis	IQ level	Trauma types
Fazel et al. (2020)	Five Applications of Narrative Exposure Therapy for Children and Adolescents Presenting With Post-Traumatic Stress Disorders	UK	Case report	In-patient at adolescent psychiatric unit presenting with psychosis. PTSD was determined to be the main driver behind her psychotic symptoms	1	0	C&A	15	Female	Not reported	Borderline ID with difficulties with expressive and receptive language	Physical and sexual abuse
Golan et al. (2022)	The comorbidity between autism spectrum disorder and post-traumatic stress disorder is mediated by brooding rumination	Israel	Case control study	Recruited via internet forums, social networks, and community programmes for autistic adults	34	66	Adult	Autistic group = 23.29; non-autistic group = 23.02	Autistic group = 41.2%; non-autistic group = 43.9%	DSM diagnosis assessed by psychiatrist or clinical psychologist, confirmed by research team using DSM checklist. AQ used to screen comparison group	Average intellectual ability	In autistic group: 45.6% social, 14.7% physical assault, 10.3% sexual assault, 5.9 serious medical condition, 3.1% each for unexpected death, domestic violence, and other stressful life events
Haruvi-Lamdan et al. (2020)	Autism spectrum disorder and post-traumatic stress disorder: an unexplored co-occurrence of conditions	Israel	Case control study	Recruited via internet forums and social networks, and NGOs operating community programmes for autistic adults. In control group, 12% had ADHD and 4% dep/anx	25	25	Adult	Autistic group = 22.88; non-autistic group = 22.76. Whole sample = 22.82 (18–35)	40% females in each group	Formal diagnosis from psychiatrist or clinical psychologist	Excluded ID	Range of traumas assessed using the LEC-5; sexual assault, exposure to war, serious accident, life-threatening illness, bullying

Table 1 (continued)

Author (year)	Title	Location	Study type	Reason for referral (case reports) or sampling technique (group studies)	*N* ASD participants	*N* comparison group	Age group	Mean age in years (range)	Female % or sex or gender	ASD method of diagnosis	IQ level	Trauma types
Hoch and Youssef (2020)	Predictors of Trauma Exposure and Trauma Diagnoses for Children with Autism and Developmental Disorders Served in a Community Mental Health Clinic	USA	Community sample	Recruited from provider of community services for autism, developmental disorders, and mental illness ($N = 7695$)	3744	Trauma exposed children with developmental disorders ($N = 95$) and children with mental health issues ($N = 1261$)	C&A	7.46 (0.6–17.83)	22.94%	Diagnostic assessments conducted by psychologist or mental health professional using observations and ADOS2	Not reported for autistic group	Criteria A type traumas
Hoover and Romero (2019)	The Interactive Trauma Scale: A Web-Based Measure for Children with Autism	USA	Diagnosis	Recruited from outpatient behavioural treatment centres	20	0	C&A	11 (8–14)	43%	Documented medical diagnosis of ASD	PVT—mean score: 97.3. No specific verbal level was used for inclusion	≥1 potentially traumatic event reported in clinic. Child maltreatment or other violence, peer victimisation, witnessing interpersonal violence, or traumatic loss

Table 1 (continued)

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Kildahl and Jørstad (2022)	Post-traumatic stress disorder symptom manifestations in an autistic man with severe intellectual disability following coercion and scalding	Norway	Case report	Referred for assessment of problematic avoidance and 'challenging' behaviour	1	0	Adult	50 s	Male	Diagnosed as a toddler, previously thoroughly assessed	Severe ID (Vineland Adaptive Behaviour Scale results were in line with this diagnosis)	Physical coercion into undergoing medical examination, caregiver negligence—second degree burns from hot shower
Kupferstein (2018)	Evidence of increased PTSD symptoms in autistics exposed to applied behaviour analysis	USA	Survey	Half of participants Interactive Autism Network (IAN) Research database, the rest recruited through social media, gatherings, social skills groups, and support groups	460 (243 autistic adults; 217 children reported by caregivers)	Within-group comparison—between applied behaviour analysis and other interventions	All ages	1–73	55% female adults; 21% female children	Self or parent report of formal diagnosis or self-diagnosis	Not reported	Therapeutic intervention; applied behavioural analysis

Table 1 (continued)

Author (year)	Title	Location	Study type	Reason for referral (case reports) or sampling technique (group studies)	*N* ASD participants	*N* comparison group	Age group	Mean age in years (range)	Female % or sex or gender	ASD method of diagnosis	IQ level	Trauma types
Kupferstein (2020)	Why caregivers discontinue applied behavior analysis (ABA) and choose communication-based autism interventions	USA	Online Survey	Recruited from the Interactive Autism Network (IAN) Research database, social media, gatherings, social skills groups, and support groups	460 (218 caregivers of children and 242 autistic adults)	0	All ages	Not reported	Not reported	Self or parent report of formal diagnosis or self-diagnosis	Not reported	Therapeutic intervention; applied behavioural analysis
Lobregt-van Buuren et al. (2019)	Eye Movement Desensitization and Reprocessing (EMDR) Therapy as a Feasible and Potential Effective Treatment for Adults with Autism Spectrum Disorder (ASD) and a History of Adverse Events	Netherlands	Non-randomised add-on study	Recruited from outpatient service of mental health institutes sand ASD specialist clinics	21	N/A	Adult	34.48	38.10%	DSM-IV diagnosis by experienced clinician, using interviews, ADI-R, and information from schools and other psychiatric services	Estimated IQ > 80 (based on education)	Physical or sexual abuse from a family member, witnessing violence between parents, death of a relative, suicide attempt of a parent, suicide attempt as a child, assault/rape, bullying, divorce (parents or partner), adultery of mother, adverse treatment at a hospital as a child, experiencing a crime, and 'emotional mismatch of parents and child'

Table 1 (continued)

Author (year)	Title	Location	Study type	Reason for referral (case reports) or sampling technique (group studies)	*N* ASD participants	*N* comparison group	Age group	Mean age in years (range)	Female % or sex or gender	ASD method of diagnosis	IQ level	Trauma types
Paul et al. (2018)	Victimisation in a French population of children and youths with autism spectrum disorder: A case control study	France	Case control study	Recruited from a specialised diagnostic centre	39	53	C&A	Autistic group = 13.23 (8–18); non-autistic group = 12.82 (7.6–18)	Autistic group = 15.4%; non-autistic = 15.1%	Does not report. Recruited from a specialist diagnostic centre, so assumed professional	Average/above average IQ	Maltreatment, 'conventional crime', sexual, relational, witnessed as measured by JVQ
Reuben et al. (2021)	Interpersonal Trauma and Posttraumatic Stress in Autistic Adults	USA	Online survey	Autistic adults—self reported medical or suspected diagnosis and > 65 score on RAADS-R—recruited from online communities frequented by autistic individuals	687		Adult	Ages: < 18 years old 18 to 21–28% 22 to 30–36% 31 to 40–22% 41 + –12%	37% cis women 2% trans women 35% cis men 6% trans men19% non-binary or other	Self-identified formal or suspected diagnosis. Scored above ≥ 65 on RAADS-R screener. 66% self-reported professional diagnosis	Not reported	Range of traumas assessed using the LEC-5. 72% has experienced physical, sexual, or other unwanted sexual experience. On average, participants are exposed to 8.05 types of trauma
Reuben et al. (2022)	PTSD in autistic adults: Correlates of meeting DSM-5 criteria and predictors of professional diagnosis	USA	Online survey		677	0	Adult	39 (19–67) < 18 years old	37% cis women 2% trans women 35% cis men 6% trans men 19% non-binary or other	Autistic adults self-reported medical or suspected diagnosis and scored > 65 score on RAADS-R Recruited from online communities frequented by autistic people	Not reported	Range of traumas assessed using the LEC-5. In those self-reporting, a formal PTSD diagnosis (*N* = 134), traumas reported included interpersonal trauma (94%), physical assault (80%), sexual assault (68%), and other unwanted sexual experience (86%)

Table 1 (continued)

Author (year)	Title	Location	Study type	Reason for referral (case reports) or sampling technique (group studies)	*N* ASD participants	*N* comparison group	Age group	Mean age in years (range)	Female % or sex or gender	ASD method of diagnosis	IQ level	Trauma types
Rumball et al. (2020)	Experience of Trauma and PTSD Symptoms in Autistic Adults: Risk of PTSD Development Following DSM-5 and Non-DSM-5 Traumatic Life Events	UK	Online survey	Recruited via researchers and clinicians in NHS adult autism and mental health services, university participant databases, and wider advertising	59	0	Adult	39 (19–67)	61.02%	Self-identified formal diagnosis (DSM or ICD criteria). This was additionally confirmed using NHS record in 48/59 cases	Average/above average; ID excluded	Range of traumas assessed using the LEC-5. DSM-5 Criterion A events ($N = 18$) and non-DSM-5 life events ($N = 20$), or both ($N = 15$)
Rumball et al., (2021a)	Co-occurring mental health symptoms and cognitive processes in trauma-exposed ASD adults	UK	Online Survey	Recruited from NHS clinic, ASD recruitment lists, online and via local charities and activity centres. Conducted online ($n = 55$), by post ($n = 3$) or in person ($n = 1$)	59	0	Adult	39 (19–67)	61.02%	Self-identified as having formal diagnosis (DSM or ICD criteria). This was additionally confirmed using NHS records in 48/59 cases	Average/above average. ID excluded; level of functioning was not formally assessed	LEC-5 and ASD-specific trauma questions. Qualitative reports showed worst trauma was a DSM-5 criteria A event ($N = 33$) or not ($N = 35$)

Table 1 (continued)

Author (year)	Title	Location	Study type	Reason for referral (case reports) or sampling technique (group studies)	*N* ASD participants	*N* comparison group	Age group	Mean age in years (range)	Female % or sex or gender	ASD method of diagnosis	IQ level	Trauma types
Rumball et al., (2021b)	Heightened risk of post-traumatic stress disorder in adults with autism spectrum disorder: The role of cumulative trauma and memory deficits	UK	Case control study	Recruited via social media, ASD charities, activity centres and research participant lists	38	44	Adult	Autistic group = 32.9 (18–68); non-autistic group = 31.4 (19–57)	Autistic group = 57.9%; non-autistic group = (autistic group); 70.5% (non-autistic group)	Self-reported formal clinical diagnosis of ASD	Not reported	Range of traumas assessed using the LEC-5, and asked about 'other' trauma

AdAS Spectrum, Adult Autism Subthreshold Spectrum; *ADHD*, attention deficit hyperactivity disorder; *ADOS-2*, Autism Diagnostic Observation Schedule-Second Edition; *AQ*, autism quotient; *ASD*, autism spectrum disorder; *C&A*, child and adolescent; *dep/anx*, depression and/or anxiety; *DSM*, Diagnostic and Statistical Manual of Mental Disorders; *ICD*, World Health Organization's International Classification of Diseases; *ID*, intellectual disability; *JVQ*, Juvenile Victimisation Questionnaire; *LEC-5*, Life Events Checklist for DSM-5; *NGO*, nongovernmental organisation

Fazel et al., 2020; Kildahl & Jørstad, 2022), and one was a non-randomised add-on study where participants were their own controls (Lobregt-van Buuren et al., 2019). Details of each study are shown in Table 2.

Group Studies

The 15 group studies reported assessment of PTSD in a total of 5607 autistic people. Of these studies, eight reported on a total of 923 adults (Golan et al., 2022; Haruvi-Lamdan et al., 2020; Lobregt-van Buuren et al., 2019; Reuben et al., 2021, 2022; Rumball et al., 2020, 2021a, b), five reported on 4224 children (Bitsika & Sharpley, 2021; Brenner et al., 2018; Hoch & Youssef, 2020; Hoover & Romero, 2019; Paul et al., 2018), and two studies reported on the same population of 460 respondents of mixed ages (Kupferstein, 2018, 2020). All but one study (Bitsika & Sharpley, 2021), which recruited only boys, included mixed genders. Of the mixed studies, the proportion of women/girls ranged from 15.4% (Paul et al., 2018) to 61.02% (Rumball et al., 2020, 2021a).

Group Studies: Assessing Trauma Exposure in Autistic People

Ten of the group studies assessed participants for trauma exposure using questionnaires that were comparable with DSM-5 criteria A type traumas; six used the Life Events Checklist for DSM-5 (LEC-5) (Haruvi-Lamdan et al., 2020; Reuben et al., 2021, 2022; Rumball et al., 2020, 2021a, b), one used the Juvenile Victimisation Questionnaire (JVQ) (Paul et al., 2018), and two used similarly comprehensive lists of clinically significant traumatic life events (Golan et al., 2022; Hoover & Romero, 2019). In one study, doctors used an unstructured interview that reported negative life events as 'stressors' in the EMR (Hoch & Youssef, 2020); here, the trauma types listed are compatible with DSM-5 criterion A type traumas. Of these ten studies, three also assessed non-DSM-5 traumas, using the qualitative response in the LEC-5 to record 'other' traumatic events (Rumball et al., 2021b) or enquiring if any other event felt traumatic, caused avoidance or intrusions (Rumball et al., 2020, 2021a). One of these studies gives full details of non-DSM-5 events reported (Rumball et al., 2020), the most common of which were bullying, bereavement, and events linked to other mental health problems (e.g. 'breakdowns'). Stress related to difficulties socialising, as well as abonnement by significant others, were also reported by multiple people. Three group studies focused on assessing post-traumatic stress as a result of a specific traumatic experience; bullying (Bitsika & Sharpley, 2021), physical, sexual, or emotional abuse (Brenner et al., 2018), and an autism intervention (Kupferstein, 2018, 2020).

In the case–control studies, autistic groups had significantly higher trauma exposure than the non-autistic groups (Haruvi-Lamdan et al., 2020; Rumball et al., 2021b), had significantly higher lifetime victimisation JVQ scores and victimisation by peers and siblings (Paul et al., 2018), and reported higher numbers of negative social events (Golan et al., 2022; Haruvi-Lamdan et al., 2020).

Group Studies: Assessing PTSD Symptoms in Autistic People

The studies assessed PTSD using different measurement tools. The most commonly used in studies with autistic adults was the PCL-5, which was used by eight studies to assess PTSD symptoms to indicate likely PTSD (Golan et al., 2022; Haruvi-Lamdan et al., 2020; Paul et al., 2018; Reuben et al., 2021, 2022; Rumball et al., 2020, 2021a, b). One study used the Impact of Event Scale-Revised (IES-R) and the Adapted Anxiety Disorders Interview Schedule (ADIS-C) PTSD section version for adults with mild to borderline ID (Lobregt-van Buuren et al., 2019). Two studies also asked for participants to self-report professional psychiatric diagnoses, including PTSD (Reuben et al., 2022; Rumball et al., 2021a). The five studies with autistic children used versions of the PTSD-specific items from Child and Adolescent Symptom Inventory (CASI) (Bitsika & Sharpley, 2021; Brenner et al., 2018), the UCLA post-traumatic stress disorder reaction index for DSM-5 (Hoover & Romero, 2019), and diagnostic information from clinicians either from inpatient treatment team (Brenner et al., 2018) or electronic medical records (Hoch & Youssef, 2020).

Four case–control studies assessed PTSD in groups of both autistic and non-autistic children and adults (Golan et al., 2022; Haruvi-Lamdan et al., 2020; Paul et al., 2018; Rumball et al., 2021b). These case-controlled studies found that the PTSD Checklist for DSM-5 (PCL-5) scores were significantly higher in autistic children (Paul et al., 2018) and adults (Golan et al., 2022; Haruvi-Lamdan et al., 2019; Rumball et al., 2021b) when compared to non-autistic control groups. These group differences could be biased by confounding. However, of these case–control studies, one matched the groups for sex and age (Paul et al., 2018) and three stated the control groups did not significantly differ for age, gender (Golan et al., 2022; Haruvi-Lamdan et al., 2020; Rumball et al., 2021b) or socioeconomic status (Haruvi-Lamdan et al., 2020). Two studies controlled in their analysis for significantly higher education in the non-autistic group (Golan et al., 2022; Haruvi-Lamdan et al., 2020), one of which also controlled for existing psychiatric diagnosis as this was higher in their autistic group (Golan et al., 2022). These case–control studies did not recruit on the bases of trauma exposure or match groups for level of trauma exposure (which was higher in the autistic groups).

Table 2 Outcomes for the included studies

Study		Assessment, prevalence, and presentation of PTSD				Treatment of PTSD			
Author	Title	PTSD method of diagnosis (interview or questionnaire)	No. autistic participants (n)	Proportion of PTSD cases in autistic sample (%)	Outcome of assessment: symptom presentation/ comparisons across groups	PTSD treatment method (n sessions)	Treatment outcome measure	Treatment outcome assessed at	Outcome of treatment
Bitsika and Sharpley (2021)	Direct and inverse correlates of post-traumatic stress disorder amongst school-age autistic boys	CASI-4R PTSD Subscale—an indication of PTSD rather than a formal diagnosis of PTSD	71	N/A	Parents rating of son's difficulty socialising correlated with CASI-4R PTSD Scores Significant correlation between PTSD symptoms and experience of bullying (80% of sample have been bullied); bullied boys had significantly higher CASI-4R PTSD scores than those who were not	N/A	N/A	N/A	N/A
Brenner et al. (2018)	Behavioural Symptoms of Reported Abuse in Children and Adolescents with Autism Spectrum Disorder in Inpatient Settings	PTSD diagnosis from inpatient treatment team. PTSD-specific items from CASI-5, with additional items selected by lead authors based on the DSM-5 criterion. If > 1 item represented a DSM-5 criterion, the items were averaged. Caregivers were also asked if child had history of abuse	350	7 (2%)	Comparing participants with clinical PTSD diagnosis to those with caregiver-reported abuse histories without a clinical PTSD diagnosis; participants with PTSD had more intrusive thoughts, distressing memories, persistent fear, and temper tantrums	N/A	N/A	N/A	N/A

Table 2 (continued)

Study		Assessment, prevalence, and presentation of PTSD				Treatment of PTSD			
Author	Title	PTSD method of diagnosis (interview or questionnaire)	No. autistic participants (*n*)	Proportion of PTSD cases in autistic sample (%)	Outcome of assessment: symptom presentation/comparisons across groups	PTSD treatment method (*n* sessions)	Treatment outcome measure	Treatment outcome assessed at	Outcome of treatment
Carmassi et al. (2019)	Is There a Major Role for Undetected Autism Spectrum Disorder with Childhood Trauma in a Patient with a Diagnosis of Bipolar Disorder, Self-Injuring, and Multiple Comorbidities?	TALS-SR and RRS	1	1 (100%)	Lifetime post-traumatic stress symptoms; particularly re-experiencing and maladaptive coping. They suggest ruminations link ASD and PTSD; as prevents processing of traumatic experience	Tailored CBT psychotherapy focused on trauma elaboration *Medications:* Lithium mood stabiliser, sertraline 50 mg antidepressant, aripiprazole 5 mg for 'behavioural disturbances'	N/A	N/A	Showed significant clinical global improvement after sertraline and aripiprazole in hospital. Does not report outcome of trauma-focused therapy
Fazel et al. (2020)	Five Applications of Narrative Exposure Therapy for Children and Adolescents Presenting With Post-Traumatic Stress Disorders	Not reported, diagnosis made in psychiatric hospital	1	1 (100%)	Difficulty with social interactions had contributed to multiple traumas (majority at school). She struggled to see different perspectives about events and had poor recall and recognition difficulties. Low ability for new learning was believed to contribute to poor encoding of event	Narrative exposure therapy (NET) (9–10 sessions)	Observation/reports by staff on the ward		Reduction in self-harm, aggressive incidents, and relieving symptoms
Golan et al. (2022)	The comorbidity between autism spectrum disorder and post-traumatic stress disorder is mediated by brooding rumination	PCL-5 (cut off >38); RRS	34	11 (32.40%)	Compared to non-autistic group, the autistic group had significantly higher proportion of participants with above threshold scores (>38) on the PCL-5 and significantly higher PTSD and brooding rumination scores	N/A	N/A	N/A	N/A

Table 2 (continued)

Study		Assessment, prevalence, and presentation of PTSD				Treatment of PTSD			
Author	Title	PTSD method of diagnosis (interview or questionnaire)	No. autistic participants (n)	Proportion of PTSD cases in autistic sample (%)	Outcome of assessment: symptom presentation/comparisons across groups	PTSD treatment method (n sessions)	Treatment outcome measure	Treatment outcome assessed at	Outcome of treatment
Haruvi-Lamdan et al. (2020)	Autism spectrum disorder and post-traumatic stress disorder: an unexplored co-occurrence of conditions	LEC-5, PCL-5 cut off score ≥33; RRS	25	8 (32%)	Compared to non-autistic group ($n = 1$ met cut-off score), autistic individuals had significantly higher post-traumatic stress symptoms, re-experiencing and hyperarousal, and negative mood alterations	N/A	N/A	N/A	N/A
Hoch and Youssef (2020)	Predictors of Trauma Exposure and Trauma Diagnoses for Children with Autism and Developmental Disorders Served in a Community Mental Health Clinic	Diagnosis of PTSD (ICD or DSM) extracted from electronic medical record system	3744	159 (4.25%)	Diagnostic regression showed autistic children least likely to have a trauma diagnosis when compared to children with developmental disorder (14.83%) and mental health problems (29.81%)	N/A	N/A	N/A	N/A

Table 2 (continued)

Study		Assessment, prevalence, and presentation of PTSD				Treatment of PTSD			
Author	Title	PTSD method of diagnosis (interview or questionnaire)	No. autistic participants (n)	Proportion of PTSD cases in autistic sample (%)	Outcome of assessment: symptom presentation/ comparisons across groups	PTSD treatment method (n sessions)	Treatment outcome measure	Treatment outcome assessed at	Outcome of treatment
Hoover and Romero (2019)	The Interactive Trauma Scale: A Web-Based Measure for Children with Autism	ITS prototype development; UCLA post-traumatic stress disorder reaction index for DSM-5. ITS was written to assess five DSM-5 PTSD domains and showed convergent validity with child self-report (SR) and parent report (PR) versions of the UCLA. Post-traumatic stress disorder reaction index for DSM-5	20	5 (25%)	Participants who screened positive for PTSD on ITS had significantly more trauma exposures than those who did not. 3/5 also screen positive for PTSD on UCLA-SR and 4/5 for UCLA-PR	N/A	N/A	N/A	N/A
Kildahl and Jørstad (2022)	Post-traumatic stress disorder symptom manifestations in an autistic man with severe intellectual disability following coercion and scalding	Outpatient assessment by three experienced mental health professionals (clinical psychologist, psychiatrist, and ID nurse)	1	1 (100%)	Continuously anxious, hyperarousal, hypervigilance, panic attacks, avoidance of cars or buses or bathrooms, negative cognitions/mood, triggered by hospital wear and running water, sleep difficulties, and suspected nightmares. Hitting and kicking when made to do activities outside his apartment. Difficult to ascertain re-experiencing due to limited verbal ability	Exposure-based intervention (placing desirable objects in place associated with trauma). Trauma-informed care (sensitivity to man's communication style and focus on autonomy, safety, empowerment, and validation)	Observations		Discontinued due to it exacerbating symptoms. Reduction of distress, problematic avoidance, panic attacks

Table 2 (continued)

Study		Assessment, prevalence, and presentation of PTSD				Treatment of PTSD			
Author	Title	PTSD method of diagnosis (interview or questionnaire)	No. autistic participants (n)	Proportion of PTSD cases in autistic sample (%)	Outcome of assessment: symptom presentation/comparisons across groups	PTSD treatment method (n sessions)	Treatment outcome measure	Treatment outcome assessed at	Outcome of treatment
Kupferstein (2018)	Evidence of increased PTSD symptoms in autistics exposed to applied behaviour analysis	26-question survey modelled on PCL-5 with intervention-related questions. CAPS-5 severity conventions were used to score survey responses	460	212 (46% of the ABA-exposed respondents met the diagnostic threshold for PTSD)	Extreme levels of severity of PTSS were recorded in 47% of the ABA-affected subgroup	N/A	N/A	N/A	N/A
Kupferstein (2020)	Why caregivers discontinue applied behaviour analysis (ABA) and choose communication-based autism interventions	Online questionnaire (26-questions) modelled on PCL-5. Severity of symptoms was scored by individual symptom clusters, and classified by thresholds of moderate, severe, or extreme	460	193 (42% of those exposed to ABA had PTSS)	PTSS was higher in ABA that ACC interventions or no intervention at all	N/A	N/A	N/A	N/A
Lobregt-van Buuren et al., 2019	Eye Movement Desensitization and Reprocessing (EMDR) Therapy as a Feasible and Potential Effective Treatment for Adults with Autism Spectrum Disorder (ASD) and a History of Adverse Events	IES-R	21	14 (66.6%)		Eye Movement Desensitisation and Reprocessing (EMDR) ($n = 8$). Added to treatment as usual which included psychoeducation, counselling, pharmacotherapy, job coaching, housekeeping help, or case management	Adapted Anxiety Disorders Interview Schedule-Children (ADIS-C) section PTSD, the Impact of Events Scale-Revised (IES-R), BSI, and SRS-A	T1: Baseline T2: After 6–8 weeks of TAU T3: After 8 sessions of EMDR T4: Follow up at 6–8 weeks	ADIS-C and IES-R score decreased significantly after EMDR sessions and remained stable at 6–8 weeks follow up

Table 2 (continued)

Study		Assessment, prevalence, and presentation of PTSD				Treatment of PTSD			
Author	Title	PTSD method of diagnosis (interview or questionnaire)	No. autistic participants (n)	Proportion of PTSD cases in autistic sample (%)	Outcome of assessment: symptom presentation/ comparisons across groups	PTSD treatment method (n sessions)	Treatment outcome measure	Treatment outcome assessed at	Outcome of treatment
Paul et al. (2018)	Victimisation in a French population of children and youths with autism spectrum disorder: A case control study	Interview; questionnaire—JVQ; PCL-S cut off score ≥33	39	3 (7.7%)	For subjects victimised at least once in their lifetime, PCL-S scores were significantly higher in autistic young people	N/A	N/A	N/A	N/A
Reuben et al. (2021)	Interpersonal Trauma and Posttraumatic Stress in Autistic Adults	PCL-5 with cut-off > 33	687	297 (43.23%)	Odds of meeting PTSD criteria and levels of dissociation were higher for those who experienced interpersonal trauma. Cisgender women and gender minorities more likely to experience trauma and meet criteria for PTSD. There was no significant difference between self-diagnosis and professional diagnosis for interpersonal trauma or PTSD	N/A	N/A	N/A	N/A

Table 2 (continued)

Study		Assessment, prevalence, and presentation of PTSD				Treatment of PTSD			
Author	Title	PTSD method of diagnosis (interview or questionnaire)	No. autistic participants (*n*)	Proportion of PTSD cases in autistic sample (%)	Outcome of assessment: symptom presentation/ comparisons across groups	PTSD treatment method (*n* sessions)	Treatment outcome measure	Treatment outcome assessed at	Outcome of treatment
Reuben et al. (2022)	PTSD in autistic adults: Correlates of meeting DSM-5 criteria and predictors of professional diagnosis	Self-reported professional diagnosis of PTSD and the PCL-5 cut-off > 33	677	134 (20%) self report 297 (44%) PCL-5 > 33	Participants who met PCL-% cut off; worse mental health, increased impairment and lower employment. Those with PTSD diagnosis scored higher on autistic traits, mental health symptoms, and functional impairment compared to those with no diagnosis. In those who scored > 35 on PCL-5, increased post-traumatic stress and higher number of co-occurring disorders predicted professional diagnosis, whereas functional impairment negatively predicted	N/A	N/A	N/A	N/A
Rumball et al. (2020)	Experience of Trauma and PTSD Symptoms in Autistic Adults: Risk of PTSD Development Following DSM-5 and Non-DSM-5 Traumatic Life Events	PCL-5 (cut-off > 33) completed in relation to event that participant considered their worse trauma	59	28 (47%) (any trauma)	Sexual and physical abuse most common typical traumas and breakdowns were most common non-DSM5. 45% with DSM-5 trauma and 43% with non-DSM trauma met probable PTSD cut-off	N/A	N/A	N/A	N/A

Table 2 (continued)

Study		Assessment, prevalence, and presentation of PTSD				Treatment of PTSD			
Author	Title	PTSD method of diagnosis (interview or questionnaire)	No. autistic participants (*n*)	Proportion of PTSD cases in autistic sample (%)	Outcome of assessment: symptom presentation/comparisons across groups	PTSD treatment method (*n* sessions)	Treatment outcome measure	Treatment outcome assessed at	Outcome of treatment
Rumball et al., (2021a)	Co-occurring mental health symptoms and cognitive processes in trauma-exposed ASD adults	PCL-5 cut-off > 33. Rates of reported lifetime mental health diagnoses made in health services by a clinician, self-reported by participant	59	27 (45%) met PCL-5 cut-off and 6 (10.17%) had lifetime diagnosis of PTSD	Probable PTSD had high co-occurring mental illness and was not isolated to DSM-5 Criterion A events. Perseverative thinking and thought suppression positively correlated with PTSD anxiety and depression	N/A	N/A	N/A	N/A
Rumball et al., (2021b)	Heightened risk of posttraumatic stress disorder in adults with autism spectrum disorder: The role of cumulative trauma and memory deficits	PCL-5 (cut off > 50). Completed a PCL-5 for each LEC	38	17 (45%)	PTSD symptoms were significantly higher in autistic group; this group was also (9 times) more likely to have probable PTSD for a non-DSM trauma. PTSD at 45% in autistic group vs. 4.5% in non-autistic group	N/A	N/A	N/A	N/A

ABA, applied behaviour analysis; *ACC*, augmentative and alternative communication; *ASD*, autism spectrum disorder; *BSI*, Brief Symptom Inventory; *CAPS-5*, Clinician-Administered PTSD Scale for DSM-5; *CASI*, Child and Adolescent Symptom Inventory; *DSM*, Diagnostic and Statistical Manual of Mental Disorders; *ICD*, World Health Organization's International Classification of Diseases; *ID*, intellectual disability; *JVQ*, Juvenile Victimisation Questionnaire; *LEC-5*, Life Events Checklist for DSM-5; *PCL-5*, PTSD Checklist for DSM-5; *PTSS*, post-traumatic stress symptoms; *RRS*, rumination response scale; *SRS-A*, Social Responsiveness Scale for adults; *TALS-SR*, Trauma and Loss Spectrum – Self Reported; *UCLA-SR/PR*, UCLA post-traumatic stress disorder reaction index for DSM-5 – self-report/parent report

Three studies directly compared specific PTSD symptom domains between autistic and non-autistic groups (Golan et al., 2022; Haruvi-Lamdan et al., 2020; Paul et al., 2018). None of these studies actively recruited for trauma exposure. Table 3 details which core PTSD symptoms significantly differed and which did not across these studies.

Group Studies: Influence of Sex or Gender on PTSD Symptoms in Autistic People

Seven studies examined the influence of sex or gender on PTSD symptoms. Three studies showed no effect of gender on symptom severity scores (Paul et al., 2018; Rumball et al., 2020, 2021b), and one reported no significant gender difference in the small number of PTSD cases ($N=7$ (2%)) (Brenner et al., 2018). Three papers reported significantly more PTSD symptoms in women (Haruvi-Lamdan et al., 2020; Reuben et al., 2021, 2022); one study (Haruvi-Lamdan et al., 2020) reported that overall symptom severity and hyperarousal symptoms were significantly higher in autistic females than non-autistic females, a pattern not seen in the males in this study. Only two papers from Reuben and colleagues (Reuben et al. 2021, 2022) reported more detailed gender identity demographics and found that cisgender women and gender minorities were more likely to meet PCL-5 cut-off than cisgender men.

Case Studies

Three papers reported case studies of PTSD in autistic people; two case studies of autistic adults (one woman and one man) and one of an adolescent girl. The autistic man was severely intellectually disabled (ID), the adolescent girl had borderline ID, and the adult woman had average/above

Table 3 Core PTSD symptoms that were compared in autistic and non-autistic participants in case–control studies

Core PTSD Symptom from DSM-5 (*Symptom name as described in paper*)	Study comparing autistic vs. non-autistic groups		
	Golan et al. (2022)	Haruvi-Lamdan et al. (2020)	Paul et al. (2018)*
Criterion B: Presence of intrusion symptoms associated with the traumatic event			
Recurrent, involuntary, and intrusive distressing memories of the traumatic event ('*Intrusions*', '*Putting back into action in games or activities*')	A = N		A = N
Recurrent distressing dreams ('*Nightmares*')			A = N
Dissociative reactions where individual feels the trauma is reoccurring. ('*Re-experiencing*', '*Flashbacks*')		A > N	A > N
Marked physiological reactions to internal or external cues that symbolise or resemble an aspect of the traumatic event ('*Hyper-arousal*')	A > N	A > N	
Criterion C: Persistent avoidance of stimuli associated with the traumatic event			
Avoidance of or efforts to avoid distressing memories, thoughts, or feelings, and external reminders	A = N	A = N	A > N
Criterion D: Negative alterations in cognitions and mood associated with the traumatic event			
Inability to remember an important aspect of the traumatic event ('*Selective amnesia of facts*')			A = N
Persistent negative emotional state ('*Negative alterations in mood and cognition*' (both Golan et al. (2022) & Haruvi-Lamdan et al., (2020), '*sadness*' (Paul et al. (2018))	A > N	A > N	A = N
Persistent inability to experience positive emotions ('*Emotional anaesthesia*')			A = N
Persistent and exaggerated negative beliefs or expectations about oneself, others, or the world ('*Brooding rumination*', '*Pessimism*')	A > N		A = N
Markedly diminished interest or participation in significant activities ('*Anhedonia*')			A = N
Feelings of detachment or estrangement from others ('*Social isolation*')			A > N
Criterion E: Marked alterations in arousal and reactivity associated with the traumatic event			
Irritable behaviour			A = N
Problems with concentration			A > N
Sleep disturbances ('*Insomnia*')			A > N
Hypervigilance			A > N

This table outlines which of the DSM-5's diagnostic criteria for PTSD were assessed by the studies comparing autistic (A) and non-autistic (N) children (Paul et al., 2018) and adults (Golan et al., 2022; Haruvi-Lamdan et al., 2020; Paul et al., 2018). Where symptoms were described using different language, or could be used as a proxy, these are included in brackets in the order the studies appear in the table. 'A > N' indicates that symptoms were found at higher prevalence in the autistic group compared to non-autistic group, whereas 'A = N' indicates no significant difference between groups. *Children average IQ. Both the autistic woman and the autistic girl were inpatients at psychiatric units, presenting with other psychiatric difficulties; the autistic girl was admitted with psychosis (Fazel et al., 2020), and the autistic woman with type II bipolar, binge eating, and panic disorder (Carmassi et al., 2019). PTSD was described to be the main driver behind the young girl's psychotic symptoms (Fazel et al., 2020). For the autistic woman, her childhood trauma and autism diagnosis were only detected during her hospitalisation for other mental health difficulties (Carmassi et al., 2019). The middle-aged man was referred to outpatient assessment for 'problematic avoidance' and 'challenging behaviour' (Kildahl & Jørstad, 2022).

Sexual abuse, amongst other traumas, had been experienced by the two autistic female participants (see Table 1) (Carmassi et al., 2019; Fazel et al., 2020). In both cases, the young girl and the adult woman were able to report their own traumas. The autistic man with ID's traumas was reported by other informants (Kildahl & Jørstad, 2022). This was due to the man's verbal communication skills; he did not use alternative communication strategies to communicated with caregivers using objects and some limited language (20–30 words which included names and 'regularly used idiosyncrasies'). The man's difficulties, such as refusing to go to the bathroom, were assessed as avoidant symptoms connected to the caregiver neglect he was reported to have experienced. This abuse included getting burnt in the shower; thus, it was presumed that his avoidance had generalised to the whole bathroom.

In terms of PTSD assessment, the case studies varied. One detailed the symptom assessment scales used to assess PTSD (Carmassi et al., 2019), one detailed that outpatient assessment was completed by three experienced mental health professionals (clinical psychologist, psychiatrist, and ID nurse) (Kildahl & Jørstad, 2022), and one did not detail how an assessment was made (Fazel et al., 2020). Given the latter participant was an inpatient at a psychiatric hospital, it may be assumed that a professional diagnosis was made. None of the studies specified if DSM or ICD diagnostic guidelines were used. PTSD symptom presentation was detailed for each patient and followed similar profiles to PTSD in the general population. Symptoms included re-experiencing and maladaptive coping (Carmassi et al., 2019), avoidance of environments linked to trauma (Fazel et al., 2020; Kildahl & Jørstad, 2022), continuous hyperarousal, negative cognitions, hypervigilance, panic attacks, sleep difficulties, and suspected nightmares (the autistic man was unable to report these himself) (Kildahl & Jørstad, 2022).

All the case studies discussed how autistic traits impacted the assessment of PTSD symptoms. For example, as the autistic man was unable to communicate verbally, the authors noted that re-experiencing symptoms and nightmares was hard to assess (Kildahl & Jørstad, 2022). Autistic difficulties that were suggested to have impacted the patient's encoding and subsequent processing of their traumatic experience included poor memory recall, struggles seeing different perspectives, low ability for new learning (Fazel et al., 2020), and rumination (Carmassi et al., 2019).

Rates of PTSD Diagnoses in Autistic Populations

Of the studies included, 12 studies reported incidences of PTSD; nine of these studies used symptom scales to assess if people met cut-off for probable PTSD (Golan et al., 2022; Haruvi-Lamdan et al., 2020; Hoover & Romero, 2019; Lobregt-van Buuren et al., 2019; Paul et al., 2018; Reuben et al., 2022; Rumball et al., 2020, 2021a, b), two studies had people self-report if they had a current PTSD diagnosis (Reuben et al., 2022; Rumball et al., 2021a), and two used diagnoses made by mental health professionals (Brenner et al., 2018; Hoch & Youssef, 2020). The mean sample size of the studies was 427. However, one study (Hoch & Youssef, 2020) had significantly larger numbers ($N = 3744$), as the children were recruited from a large community sample through community services for autism, developmental disorders, and mental illness. When this large sample was removed, the mean sample size was 125. Reported rates of PTSD ranged from 2 to 66.67%. The type of clinical settings the participants were seen at influenced how routinely someone was assessed for PTSD. The two studies with the lowest rates of PTSD in autistic samples were the only group studies to measure PTSD using clinician diagnosis (Brenner et al., 2018; Hoch & Youssef, 2020) and did so for children/adolescents. One of the studies used diagnostic information from an inpatient treatment team (2%) (Brenner et al., 2018) and the other used electronic medical records (4%) (Hoch & Youssef, 2020). The study with the highest proportion of PTSD diagnoses (66.67%) (Lobregt-van Buuren et al., 2019) was recruiting trauma-exposed participants to treat trauma-related symptoms with Eye Movement Desensitisation and Reprocessing (EMDR) therapy.

These 12 studies reported a total of 611 PTSD cases out of a sample of 5076 autistic individuals (41.72% female). Table 4 reports the percentage of PTSD cases when study samples are pooled and grouped by PTSD assessment method. As there were studies that selectively recruited trauma-exposed participants or those with anxiety disorders, these were subsequently removed to assess their weighting.

For studies reporting those who met the cut-off for PTSD on symptom questionnaires, seven studies reported PTSD in 399 of 907 (43.99%, range 32–66.67%) autistic adults, and two studies reported PTSD in 8 of 59 (13.23%, range 7.69–25%) autistic children. For studies reporting professional PTSD diagnoses, two studies

Table 4 Estimated rates of PTSD in autistic adults and children

Papers included	Review(s) scope	PTSD assessment method	Study recruitment inclusion criteria (trauma exposure, anxiety disorder, and autism only)	*N* ASD sample	*N* cases of PTSD	% rate of PTSD	Mean age	Min age	Max age
Children studies: Current PTSD									
Brenner et al. (2018); Hoch and Youssef (2020)	2017–2023	Professional/diagnostic interview	Autism only	4094	218	5.32%	10.18	0.60	21.00
Hoover and Romero (2019); Paul et al. (2018)	2017–2023	Questionnaire cut-off	All studies	59	8	13.56%	12.12	8	18
Hoover and Romero (2019)	2017–2023	Questionnaire cut-off	Trauma exposure	20	5	25.00%	11	8	14
Paul et al. (2018)	2017–2023	Questionnaire cut-off	Autism only	39	3	7.69%	13.23	8	18
Brenner et al. (2018); Hoch and Youssef (2020); Hollocks et al. (2016); McConachie et al. (2014); Reinvall et al. (2016); Storch et al. (2013); White et al. (2012, 2013); Wood et al. (2009, 2015)	1980–2023	Professional/diagnostic interview	All studies	4476	230	5.14%	11.60	0.60	21
McConachie et al. (2014); Storch et al. (2013); White et al. (2012, 2013) Wood et al. (2009, 2015)	1980–2023	Professional/diagnostic interview	Trauma exposure and anxiety disorders	267	11	4.12%	12.07	7	17
Brenner et al. (2018); Hoch and Youssef (2020); Hollocks et al. (2016); Reinvall et al. (2016)	1980–2023	Professional/diagnostic interview	Autism only	4209	219	5.20%	10.65	0.60	21
Children studies: Lifetime (including current) PTSD									
Brenner et al. (2018); de Bruin et al. (2007); Hoch and Youssef (2020); Hollocks et al. (2016); McConachie et al. (2014); Mehtar and Mukaddes (2011); Reinvall et al. (2016); Storch et al. (2013); White et al. (2012, 2013); Wood et al. (2009, 2015)	1980–2023	Professional/diagnostic interview	All studies	4639	242	5.22%	11.34	0.60	21

Table 4 (continued)

Papers included	Review(s) scope	PTSD assessment method	Study recruitment inclusion criteria (trauma exposure, anxiety disorder, and autism only)	*N* ASD sample	*N* cases of PTSD	% rate of PTSD	Mean age	Min age	Max age
Brenner et al. (2018); de Bruin et al. (2007); Hoch and Youssef (2020); Hollocks et al. (2016); Mehtar and Mukaddes (2011); Reinvall et al. (2016)	1980–2023	Professional/diagnostic interview	Autism only	4372	231	5.28%	10.43	0.60	21
Adult studies: Current PTSD									
Golan et al. (2022); Haruvi-Lamdan et al. (2020); Lobregt-van Buuren et al. (2019); Reuben et al. (2022); Rumball et al., (2020, 2021a, b)	2017–2023	Questionnaire cut-off	All studies	907	399	43.99%	32.93	18.00	67.00
Golan et al. (2022); Haruvi-Lamdan et al. (2020); Reuben et al. (2022); Rumball et al., (2021b)	2017–2023	Questionnaire cut-off	Autism only	774	333	43.02%	29.50	18.00	67.00
Lobregt-van Buuren et al. (2019) Rumball et al., (2020, 2021a, b)	2017–2023	Questionnaire cut-off	Trauma exposure	133	66	49.62%	37.49	19	67
Adult Studies: Lifetime (Including current) PTSD									
Rumball et al., (2021a)	2017–2023	Professional/diagnostic interview	Trauma exposure	59	6	10.17%	39	19	67
Hofvander et al. (2009); Reuben et al. (2022); Rumball et al., (2021a); Taylor and Gotham (2016)	1980–2023	Professional/diagnostic interview	All	894	142	15.88%	31.43	16.00	67
Hofvander et al. (2009); Reuben et al. (2022); Taylor and Gotham (2016)	1980–2023	Professional/diagnostic interview	Autism only	835	136	25.00%	28.90	16.00	67

reported a total of 218 of 4094 children (5.32%, range 2–4.25%) had a current PTSD diagnosis, and two studies reported 140 of 736 autistic adults (19.02%, range 10.17–19.79%) had a PTSD diagnosis in their lifetime. There were 4 studies altogether that selectively recruited trauma-exposed participants (Hoover & Romero, 2019; Lobregt-van Buuren et al., 2019; Rumball et al., 2020, 2021a). This sampling strategy naturally inflated the rates of PTSD, and these studies had higher rates of people meeting PTSD cut-offs (49.62% in adults, range 45.28–66.67%; 25% in one study in children) compared to those who recruited based on autism diagnosis alone (43.02% in adults, range 32–44.74%; 7.69% in one study in children). Collating the data from these studies from 2017 onwards with those included in Rumball's (2019) review from 1980 to 2017 (see Table 4) gives estimated rates for autistic children and adolescents reporting current (5.14%, range 0–5.88%) and lifetime (5.22%, range 0–17.39%) PTSD diagnoses and rate of autistic adults with a diagnosis of PTSD in their lifetime (15.88%, range 0–19.79%).

Treatment of PTSD in Autistic People

Four studies investigated PTSD treatment in autistic people. Of these, three were case studies and one was a group study that utilised a non-randomised add-on design, where participants first received sessions of treatment as usual (TAU) and then received additional sessions of EMDR therapy (Lobregt-van Buuren et al., 2019).

Group Study

Only one study empirically tested PTSD treatment in a group of autistic people. Lobregt-van Buuren and colleagues (Lobregt-van Buuren et al., 2019) assessed the efficacy of using EMDR as an add-on therapy in a group of 21 autistic adults. The participants were recruited by clinicians if they had suspected PTSD. Inclusion criteria included a score of 4 or higher on a 'thermometer card' that is included in the PTSD section of the Adapted Anxiety Disorders Interview Schedule-Children (ADIS-C). This indicated participants had PTSD symptoms that were related to an adverse event. In this study, the participants were treated as their own controls: after 6–8 weeks of TAU, 8 EMDR sessions were added to TAU. PTSD symptoms were assessed at four time points. The study found that PTSD symptoms did not significantly improve after TAU but did significantly improve after 8 sessions of EMDR and remained stable at 6- to 8-week follow-up, as reflected in both the ADIS-C and IES-R scores.

Case Studies

Autistic people's experience of PTSD treatment was reported in three case studies, with ages ranging from adolescence to middle age (Carmassi et al., 2019; Fazel et al., 2020; Kildahl & Jørstad, 2022). A form of psychological therapy was used in all case studies. Narrative exposure therapy (NET) (Fazel et al., 2020), adapted CBT (Carmassi et al., 2019) and trauma-informed care (Kildahl & Jørstad, 2022) were reported to be successful, while an exposure-based intervention was reported to worsen avoidance symptoms (Kildahl & Jørstad, 2022). Two studies reported the outcome of PTSD treatment on PTSD symptoms. NET resulted in reduced aggression, self-harm, and reliving symptoms after 9–10 sessions (Fazel et al., 2020). An exposure-based intervention, involving placing objects the man liked in the place he was avoiding due to the traumatic experience, was discontinued as it was reported to exacerbate his distress (Kildahl & Jørstad, 2022). Only one case study reported medication use: mood stabilisers and antidepressants were given for other psychiatric comorbidities alongside CBT for trauma elaboration and resulted in global clinical improvement (Carmassi et al., 2019). The outcome of the adapted CBT was not reported. The patient was also given aripiprazole for reported autism-related 'behavioural disturbances'.

Two of the case studies described autism-specific adaptations made to interventions. These included taking more time with each component of the therapy process, repeated explanations of the rationale for the therapy, written prompts, conducting the sessions while walking—which provided sensory coping mechanisms and reduced dissociation (Fazel et al., 2020), and increasing staff sensitivity to specific forms of non-verbal communication (Kildahl & Jørstad, 2022).

Quality Assessment

Case–control studies were assessed using the Newcastle–Ottawa Scale (NOS) (Wells et al., 2012), and the Joanna Briggs Institute (JBI, 2016) critical appraisal tool was used for cross-sectional studies (https://jbi.global/critical-appraisal-tools). Both scales had eight items, with a maximum score of eight (stars for NOS, 'yes' answers for JBI). The study ratings are presented in Table 5 and 6.

The majority of the studies were of good quality, scoring 5 or above. Brenner et al. (2018) and (Hoch & Youssef, 2020) were the strongest-rated studies. Both used diagnoses from clinicians, the latter using electronic health records. In terms of the latter, it should be noted that there are sometimes inaccuracies in record keeping. Other studies used validated questionnaires and scales to measure PTSD symptoms or severity; however, the majority of these were self-report so were subject to possible self-report bias. Two papers, a

Table 5 Quality assessment of methodology of case–control studies using Newcastle–Ottawa Scale (NOS) (Wells et al., 2012)

Study	Adequate definition of case	Representativeness of the cases	Selection of controls	Definition of controls	Comparability of cases and controls on the basis of the design or analysis	Ascertainment of exposure	Same method of ascertainment for cases and controls	Adequacy of follow-up of cohorts	Total score (max = 8)
Haruvi-Lamdan et al. (2020)	*	*	*	*	*		*		6
Rumball et al., (2021b)			*	*	*		*		4
Golan et al. (2022)	*	*	*	*	*		*		6
Paul et al. (2018)	*	*	*	*	*		*		6

*Indicates study meets that quality criterion

primary and secondary analysis of the same data set, did not score well (score of 2) and scored low on analysis clarity and presentation of statistical results (Kupferstein, 2018, 2020).

With regards to selection bias, all of the studies recruited based on whether the participants had an autism diagnosis, with four studies having an additional criterion that participants had to be trauma exposed (Hoover & Romero, 2019; Lobregt-van Buuren et al., 2019; Rumball et al., 2020, 2021a). For the studies that did not stipulate trauma exposure, thus capturing a more representative autistic population, five attempted to prevent selection bias by not using the word 'trauma' in recruitment materials (Rumball et al., 2021b) or deliberately focusing recruitment advertisements around topics other than trauma, such as dissociation (Reuben et al., 2021, 2022) or 'life events' (Golan et al., 2022; Haruvi-Lamdan et al., 2020).

Five studies recruited exclusively from clinical services (Brenner et al., 2018; Hoover & Romero, 2019; Lobregt-van Buuren et al., 2019), two of which were limited to a specific centre: a community mental health provider in Midwest USA (Hoch & Youssef, 2020), and an ASD expert centre in Bordeaux, France (Paul et al., 2018). The rest of the studies used more than one mode of recruitment, including autism charities, clinics, activity centres, recruitment lists, social media, and online and off-line community adverts.

One group study recruited young boys only (Bitsika & Sharpley, 2021), the rest had mixed-sex samples. All studies that took place online had majority female samples, where those with in-person testing were majority male. The majority of the studies did not distinguish between sex and gender and use these terms interchangeably: only two studies by the same author considered both sex and gender identity and investigated PTSD in non-binary autistic people (Reuben et al., 2021, 2022).

Included group studies were generally biased towards verbal autistic participants that had average to above average IQ. Only one study stated that IQ level was not grounds for exclusion (Brenner et al., 2018); 42% of their sample had an IQ lower than 70 (the cut-off for ID). Six studies excluded (or did not include) those with ID (Bitsika & Sharpley, 2021; Golan et al., 2022; Haruvi-Lamdan et al., 2020; Lobregt-van Buuren et al., 2019; Paul et al., 2018; Rumball et al., 2020) and seven did not report if ID or IQ level was part of the exclusion criteria (Bitsika & Sharpley, 2021; Hoch & Youssef, 2020; Hoover & Romero, 2019; Kupferstein, 2018, 2020; Reuben et al., 2021, 2022; Rumball et al., 2021b). Hoover and Romero (2019) do not report IQ, but do state that specific verbal ability was not used as an inclusion criterion.

None of the included studies report co-production or co-design with autistic people. Only one study protocol was reviewed by people with lived-experience of mental health problems in the NIHR Feasibility and Acceptability Support Team for Researchers (FAST-R) (Rumball et al., 2020), and their suggestions were implemented into the study design.

Discussion

This systematic review updated and expanded on the original review by Rumball (2019) which summarised studies published up until 2017. The present review highlights an increase in research interest in PTSD in autistic populations in the last 6 years, as illustrated by the number of included studies reporting PTSD symptoms in autistic individuals. Since Rumball's (2019) review, there has been a general reconceptualization of PTSD away from the anxiety disorder classification and into a 'trauma and stressor-related

Table 6 Quality assessment of methodology of cross-sectional studies using Joanna Briggs Institute (JBI) critical appraisal tool Checklist for Analytical Cross-Sectional Studies (https://jbi.global/critical-appraisal-tools.html)

Study:	Were the criteria for inclusion in the sample clearly defined?	Were the study subjects and the setting described in detail?	Was the exposure measured in a valid and reliable way?	Were objective, standard criteria used for measurement of the condition?	Were confounding factors identified?	Were strategies to deal with confounding factors stated?	Were the outcomes measured in a valid and reliable way?	Was appropriate statistical analysis used?	Total Score (max = 8)
Brenner et al. (2018)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8
Hoch and Youssef (2020)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8
Hoover and Romero (2019)	Yes	Yes	Yes	No	No	No	Yes	Yes	5
Lobregt-van Buuren et al. (2019)	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	7
Rumball et al. (2020)	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	7
Rumball et al., (2021a)	Yes	Yes	Yes	No	No	No	Yes	Yes	5
Kupferstein (2018)	yes	Yes	No	No	No	No	No	Unclear	2
Kupferstein (2020)	Yes	Yes	No	No	No	No	No	No	2
Bitsika and Sharpley (2021)	*Yes*	Yes	Yes	No	Yes	Yes	Yes	Yes	7
Reuben et al. (2021)	No	Yes	Yes	No	Yes	Yes	Yes	Yes	5
Reuben et al. (2022)	No	Yes	Yes	No	Yes	Yes	Yes	Yes	5

disorder' category in the DSM-5. All but one (Hoch & Youssef, 2020) of the currently included studies reported use of PTSD symptom measures, in contrast to (Rumball, 2019) review, in which no studies did this. Our findings suggest that, when compared to their non-autistic peers, trauma-exposed autistic adults and children had more PTSD symptoms, and our estimates suggest that PTSD occurs at comparable rates in autistic individuals compared to the general population rates. We also include the first pilot study to investigate the efficacy of a PTSD treatment (EMDR therapy) in autistic people.

The literature reviewed suggests that autistic people are vulnerable to developing PTSD symptoms, potentially with higher severity than their non-autistic peers. First, the synthesis of case–control studies showed PTSD symptoms were higher in autistic adults and children when compared to non-autistic individuals and suggested certain PTSD symptom domains, such as some intrusion symptoms and negative cognitions, were higher in autistic groups (see Table 3). Higher PTSD symptoms could be impacted by the higher trauma exposure found in the autistic participants, as the case–control groups were not matched for levels of trauma exposure. Therefore, it remains untested if differences in PTSD symptom severity in the autistic people were due to increased vulnerability to PTSD or simply higher levels of trauma exposure in the autistic groups. There were also symptom domains where autistic groups showed no significant difference from non-autistic groups (Table 3). This bears clinical relevance as, for example, no significant difference in the presence of reflective rumination (Golan et al., 2022) suggests that reflective abilities are an equally meaningful resilience mechanism for autistic adults and may be a viable skill to teach or enhance during trauma-focused therapy.

Rumball and colleagues (Rumball et al. 2021a, b) have suggested that features of cognitive style in autistic people may predispose to or alter the development of PTSD symptoms. Cognitive models of PTSD suggest that cognitive processing during the traumatic event, as well as negative appraisals, disjointed memories, and maladaptive coping strategies, leads to the development and maintenance of PTSD symptoms in the general population (Ehlers & Clark, 2000). Thus, specific cognitive styles and sensory memory encoding, alongside predisposition for emotional dysregulation and sensory arousal, may impact the formation of trauma memories and present a risk pathway to traumatic sequelae to which autistic people may be especially prone. Included studies suggested that specific cognitive features that are known risk factors for PTSD in the general population may also augment PTSD symptomology in autistic adults. Observational group studies showed autistic adults had higher brooding rumination and poorer working and everyday memory than non-autistic groups, which significantly mediated the co-occurrence of autism and PTSD symptoms (Golan et al., 2022; Rumball et al., 2021b). Thought suppression was also associated with higher PTSD symptom score in autistic individuals (Rumball et al., 2021a). These findings are from modest-scale observational studies (sample size ranging from 34 to 59), so only provide initial estimates. However, they are echoed anecdotally by case studies that highlighted excessive rumination, poor recall, and being non-speaking as factors that impacted the presentation of PTSD in some autistic people (Carmassi et al., 2019; Fazel et al., 2020; Kildahl & Jørstad, 2022). Controlled studies recruiting trauma exposed autistic people with and without PTSD and non-autistic comparison groups are needed to understand how characteristics of autism interact with trauma experience and PTSD development. It has been suggested that certain cognitive tasks performed during or after a potential trauma may impact memory consolidation and thus reduce involuntary nature of subsequent intrusive thoughts (Holmes et al., 2009). There are autistic characteristics that may prove similarly protective or present alternative coping strategies that may currently be interpreted negatively in deficit-based frameworks of autism, such as self-regulating behaviours (e.g. stimming and visual-based special interests) (Ng-Cordell et al., 2022). To identify those most at risk and effectively manage post-traumatic stress in autistic people, we need to further understand specific cognitive strengths and vulnerabilities that autistic people have in relation to the development and maintenance of PTSD.

There has not, to date, been an epidemiological exploration of the prevalence of PTSD in autistic people in population-representative samples. In its absence, our estimated rates from the current literature suggest that autistic adults and children experience PTSD at, at least, similar rates to non-autistic population estimates. We collated autistic samples from existing literature using the results from both the present and Rumball's (2019) review to calculate estimates of the percentage of autistic children and adults reporting PTSD diagnosis at any point in their lifetime (c. 5% and 16%, respectively) and rate of children (c. 14%) and adults (c. 44%) meeting PTSD symptom questionnaire cut-offs at the time of the studies. It is crucial to consider these results as a preliminary estimate, as the generalisability of these estimated rates is constrained to the populations that took part in the current available literature, which is not reflective of the diversity of people within the autistic community. These collated estimates, and the rates reported in individual studies, are comparable to those for non-autistic populations, which also vary significantly from study to study (Schein et al., 2021). In the UK, a large nationally representative birth cohort of 2232 twins at age 18 years showed that 4.4% had experienced PTSD in the past 12 months, and 7.8% had experienced PTSD at some point (Lewis et al., 2019). A systematic review synthesised 38 recent (2015–2019) studies on PTSD in US populations and found lifetime prevalence for adult civilians varied significantly and ranged from 3.4 to 26.9% (Schein et al., 2021). Rates of PTSD in studies using professional diagnosis were far lower than those using symptom questionnaire cut-offs (such as the PCL-5). In the current review, the two studies that included both PCL-5 scores and self-reported professional diagnosis for their participants also showed that the number of participants meeting PCL-5 cut-off for PTSD was approximately double that of those with a professional diagnosis (Reuben et al., 2022; Rumball et al., 2021a). This raises two concerns; first, autistic people with trauma-related symptoms are going unrecognised and untreated. Second, given the potential overlap in presentations of ASD and PTSD (Stavropoulos et al., 2018), existing assessment tools may be overly sensitive for this population; perhaps 'picking up' autistic traits instead of trauma symptoms.

Since Rumball's (2019) review, there has been little progress in validating existing symptom scales to ensure they are fit for purpose in autistic people. In a recent Delphi study, less than 20% of experts endorsed accuracy of trauma measures for use in autistic young people (Kerns et al., 2022). All of the studies included here that reported on PTSD in adults used the PCL-5, a highly validated 20-item self-report checklist based on the DSM-5 criteria, with strong internal consistency, test-rest reliability, and convergent and discriminant validity (Blevins et al., 2015; Bovin et al., 2016). However, the PCL-5 has never been validated in autistic individuals. Although preliminary psychometric analyses of the interactive trauma scale, which was piloted with 20 autistic children, suggest convergent validity with the child self-report and parent-report forms of the UCLA PTSD-RI (Hoover & Romero, 2019), there are no validated, clinically available PTSD scales for use with autistic people. Furthermore, the symptoms investigated in the included studies were confined to those used to diagnose PTSD in neurotypical people. Future research is needed to investigate if there are autism-specific presentations of PTSD that fall outside of the established symptomology, as well as ensuring there are validated diagnostic tools that can assess and discriminate PTSD symptoms from characteristics of autism.

Clinicians may be overlooking trauma-related symptoms in response to events experienced by autistic people as traumas, which otherwise fall outside of traditional definitions. Increasingly, literature supports the importance of subjective experience of traumatic events in developing PTSD and other types of psychopathologies (Brewin et al., 2019; Danese & Widom, 2020) and the importance of exploring the role of autistic perception and experience on what is found to be traumatising (Kerns et al., 2015). PTSD symptoms can and do arise from events that do not qualify as traumatic according to the DSM-5 definition, and several included studies by Rumball and colleagues explored this in autistic adults and found no difference in risk of PTSD associated with DSM-5 and non-DSM-5 qualifying traumas (Rumball et al., 2020). It has been hypothesised that rates of trauma exposure could be exacerbated by autistic people experiencing a wider range of events as traumatic, although when compared to non-autistic adults, the frequency of these DSM and non-DSM traumas did not differ between the groups (Rumball et al., 2021b). Complex PTSD following repeated exposure to circumstances experienced as traumatic has yet to be empirically explored in autistic children or adults, as revealed by the present review. Given the reported impact of more consistent day-to-day difficulties (e.g. stigma) on the mental health of autistic people (Ghanouni & Quirke, 2023), this warrants investigation. There are also experiences that are specific to autistic people that may not be considered when trauma is conceptualised in neurotypical populations. Applied behavioural analysis (ABA), an autism intervention, and its relationship to PTSD symptoms were explored by Kupferstein (2018, 2020) in two papers from the same study. Some autism advocates have raised concerns about the safety of ABA (Wilkenfeld & McCarthy, 2020). In this study, it was suggested that the therapy that set out to help autistic children learn adaptive behaviours, as designed and delivered by neurotypical clinicians, resulted in post-traumatic stress and adverse effects. However, caution must be taken when drawing conclusions about ABA's relationship to PTSD from this study, due to significant methodological flaws (e.g. poor analysis clarity), as discussed by Leaf et al. (2018). More generally, adopting a wide definition of trauma and focusing on individuals' perception of, and PTSD-like responses to, experiences, would appear to be most fruitful for the study of PTSD symptoms in autistic people.

In terms of treatment of PTSD (symptoms), this review highlights that there is still a scarcity of research on how best to approach PTSD treatment in autistic people. To date, only one evidence-based treatment for PTSD—EMDR—has been empirically tested and shown to significantly reduce PTSD symptom severity in autistic individuals (Lobregt-van Buuren et al., 2019), and there are no investigations into how being autistic may impact the success of PTSD treatments. EMDR has been suggested to be adaptable for autistic clients (Fisher et al., 2022), and its successful use as an add-on therapy in a relatively small sample indicates its therapeutic promise (Lobregt-van Buuren et al., 2019). However, well-powered randomised controlled trials are still needed to assess if the quality and effectiveness of EMDR surpasses TAU in autistic people diagnosed with PTSD. Likewise, trauma-focused

CBT (TF-CBT) is the first-line treatment for PTSD in the general population and shows high efficacy across ages (Kar, 2011) but remains to be systematically investigated in relation to PTSD in autistic individuals. Autism-specific adaptations of TF-CBT have been theoretically proposed in areas of emotion regulation, graduated exposure, cognitive restructuring, and psychoeducation (Stack & Lucyshyn, 2019), and randomised controlled trials have shown efficacy of adapting CBT to treat depression in autistic adults (Russell et al., 2019a) and anxiety in autistic adolescents (Storch et al., 2015). For psychotherapies, more generally, the person-environment fit is an essential consideration and specific adaptations should be considered when a patient is autistic (Brook, 2023; Mazurek et al., 2023). Anecdotal reports highlight the importance of careful consideration of the individual needs of an autistic person suffering from PTSD for successful use of psychological therapies, including narrative exposure therapy (NET) (Fazel et al., 2020) and adapted CBT (Carmassi et al., 2019), and use of trauma-informed care to manage symptoms (Kildahl & Jørstad, 2022). There is a clinical need to empirically assess the efficacy of adaptations of evidence-based PTSD treatment in autistic populations, particularly first-line treatment employing TF-CBT.

All but one of the studies in this review required active recruitment of autistic people, affecting the generalisability of these findings as these studies were biased towards autistic people with an official diagnosis who had the ability and motivation to volunteer for these studies. As in Rumball (2019) review, autistic people with co-occurring ID continue to be under-represented in the studies identified in this review and in the autism research field more widely (Jack & Pelphrey, 2017; Russell et al., 2019a, b). Low IQ has been associated with PTSD development in neurotypical populations (Breslau et al., 2006). Given that a population study showed around a third of autistic adults also report ID (Rydzewska et al., 2018), co-occurring ID may increase risk of PTSD development and make identification of PTSD more difficult in some autistic people (Borghus et al., 2018; Mevissen & de Jongh, 2010). ID may also bring specific barriers to an autistic person's ability to self-advocate and access care for PTSD. Therefore, it is important to understand how trauma symptoms manifest in this population. Autistic individuals with ID are more likely to have specific care needs (Cooper et al., 2006; Hewitt et al., 2017), and reliance on disability services may make them vulnerable to new, or maintain existing, traumatising situations. There is a push towards promoting a trauma-informed care model in these services (Rich et al., 2021). This is exemplified by the case study describing PTSD symptoms of an autistic man traumatised by scalding from being washed by his carer (Kildahl & Jørstad, 2022). In this case, a trauma-informed care model was effective in managing PTSD symptoms after an exposure-based intervention had made the individual's avoidance symptoms worse. This highlights the importance of considering the individual's perception of treatment and thus their subsequent feelings of safety. In a qualitative investigation of clinicians' perspectives on the ways PTSD may be overlooked in autistic patients with ID, Kildhahl and colleagues (2020) highlighted that for these patients, avoidance symptoms appeared less specific to stimuli associated with the trauma, and avoidance was less planned (more reactionary). The clinicians highlighted that this more generalised response may make PTSD symptoms less recognisable and patients more vulnerable to upsetting (triggering) stimuli. As the majority of included studies excluded participants with ID, there is a fundamental gap in the literature and a pressing need for studies taking a more inclusive approach to empirically investigate trauma-related symptoms in autistic people with co-occurring ID.

On the issue of recruiting gender-diverse samples; some progress has been made with the majority of the studies including autistic women and girls, who have, historically, been under-represented in autism research. This is particularly important to the study of PTSD, which in the general population is more common amongst women (Olff, 2017). Additionally, research shows that transgender people are at the high risk of PTSD (Marchi et al., 2023; Reisner et al., 2016). A large population study showed higher numbers of transgender and gender diverse people are autistic when compared to cisgender people (Warrier et al., 2020). Only two included studies by the same researchers explicitly asked about and compared people on a basis of gender identity (Reuben et al., 2021, 2022). Future work should not only explore the distinction between how sex and gender identity impact PTSD risk and presentation but also ensure that this critical information is not erased by binary demographic data. Additionally, efforts should be made to specifically recruit autistic individuals from marginalised populations to explore intersectionality of PTSD risk.

Limitations

This review systematically identified literature pertaining to the assessment, prevalence, and treatment of PTSD in autistic people, since the termination of Rumball's (2019) search in 2017. This systematic review is limited by its inclusion criteria, which only considered studies using standardised PTSD scales and diagnoses, and studies pertaining to those with an official autism diagnosis. This will exclude those who self-identify as autistic and introduce a bias towards studies with those who have the means to access an autism diagnosis. Additionally, given the hypothesis that diagnostic overshadowing may lead to missed PTSD diagnosis in autistic people, excluded papers investigating the impact of adverse childhood experiences and bullying on autistic people's mental health, as well as studies demonstrating the association between ASD traits and trauma exposure or PTSD risk in adults (Haruvi-Lamdan et al., 2019; Stewart et al., 2022), could provide valuable information on the unrecognised trauma-related symptoms experienced by autistic individuals. Qualitative studies involving medical professionals and community service providers were also excluded, yet provide important insights into the assessment, diagnosis, and treatment of PTSD in autistic individuals. Our quality assessment rated studies that used clinical diagnoses of PTSD as the highest quality papers, and some studies were penalised for using self-report questionnaire cut-offs, which were not deemed objective methods of measurement by quality assessment tools. This was, in part, due to these PTSD questionnaires being subject to self-report bias. However, self-report measures can also be a valuable mode of mental health assessment, allowing insight into the perspectives of the patient and avoiding possible clinician bias. This may be of particular importance for autistic people, for whom interacting with mental healthcare professionals may be particularly difficult (Au-Yeung et al., 2019; Brede et al., 2022).

Conclusion

Untreated, PTSD has a profound impact on an individual's psychological wellbeing. This systematic review highlights that, when compared to their non-autistic peers, trauma-exposed autistic individuals display more severe PTSD symptoms, with at least comparable rates of occurrence. Despite there being promising research exploring PTSD in autistic adults and children since Rumball's (2019) review, it is crucial that future research validates PTSD symptom assessment tools, explores unique challenges and manifestations of trauma-related symptoms in autistic individuals, and involves the autistic community to understand research priorities and views around experiencing PTSD as an autistic person. This will ultimately lead to effective ways to diagnose and address PTSD in autistic children and adults.

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Declarations

Conflict of interest The authors declare no competing interests.

References

*Systematically reviewed

American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders (DSM-5®)* (5th ed.). American Psychiatric Pub.

Au-Yeung, S. K., Bradley, L., Robertson, A. E., Shaw, R., Baron-Cohen, S., & Cassidy, S. (2019). Experience of mental health diagnosis and perceived misdiagnosis in autistic, possibly autistic and non-autistic adults. *Autism, 23*(6), 1508–1518. https://doi.org/10.1177/1362361318818167

*Bitsika, V., & Sharpley, C. F. (2021). Direct and inverse correlates of post-traumatic stress disorder among school-age autistic boys. *International Journal of Environmental Research and Public Health., 18*(10), 5285. https://doi.org/10.3390/ijerph18105285

Blevins, C. A., Weathers, F. W., Davis, M. T., Witte, T. K., & Domino, J. L. (2015). The Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5): Development and initial psychometric evaluation. *Journal of Traumatic Stress, 28*(6), 489–498. https://doi.org/10.1002/jts.22059

Borghus, A., Dokkedahl, S., & Elklit, A. (2018). Pilot study: Undetected post-traumatic stress disorder symptoms among intellectually disabled. *International Journal of Developmental Disabilities, 66*(1), 36–45. https://doi.org/10.1080/20473869.2018.1475539

Bovin, M. J., Marx, B. P., Weathers, F. W., Gallagher, M. W., Rodriguez, P., Schnurr, P. P., & Keane, T. M. (2016). Psychometric properties of the PTSD checklist for diagnostic and statistical manual of mental disorders-fifth edition (PCL-5) in veterans. *Psychological Assessment, 28*(11), 1379–1391. https://doi.org/10.1037/pas0000254

Brede, J., Cage, E., Trott, J., Palmer, L., Smith, A., Serpell, L., Mandy, W., & Russell, A. (2022). "We Have to Try to Find a Way, a Clinical Bridge" - autistic adults' experience of accessing and receiving support for mental health difficulties: A systematic review and thematic meta-synthesis. *Clinical Psychology Review, 93*, 102131. https://doi.org/10.1016/j.cpr.2022.102131

*Brenner, J., Pan, Z., Mazefsky, C., et al. (2018). Behavioral symptoms of reported abuse in children and adolescents with autism spectrum disorder in inpatient settings. *Journal of Autism and Developmental Disorders, 48*, 3727–3735. https://doi.org/10.1007/s10803-017-3183-4

Breslau, N., Lucia, V. C., & Alvarado, G. F. (2006). Intelligence and other predisposing factors in exposure to trauma and posttraumatic stress disorder: A follow-up study at age 17 years. *Archives of*

General Psychiatry, 63(11), 1238–1245. https://doi.org/10.1001/archpsyc.63.11.1238

Brewin, C. R., Rumball, F., & Happé, F. (2019). Neglected causes of post-traumatic stress disorder. *BMJ, 365*, l2372. https://doi.org/10.1136/bmj.l2372

Brook, Y. (2023). How talking therapists experience working with adult clients who have autism. *Counselling and Psychotherapy Research, 23*(1), 235–246. https://doi.org/10.1002/capr.12591

*Carmassi, C., Bertelloni, C. A., Salarpi, G., Diadema, E., Avella, M. T., Dell'Oste, V., & Dell'Osso, L. (2019). Is there a major role for undetected autism spectrum disorder with childhood trauma in a patient with a diagnosis of bipolar disorder, self-injuring, and multiple comorbidities? *Case Reports in Psychiatry, 2019*, 4703795. https://doi.org/10.1155/2019/4703795

Cooper, S.-A., Morrison, J., Melville, C., Finlayson, J., Allan, L., Martin, G., & Robinson, N. (2006). Improving the health of people with intellectual disabilities: outcomes of a health screening programme after 1 year. *Journal of Intellectual Disability Research, 50*, 667–677. https://doi.org/10.1111/j.1365-2788.2006.00824.x

Danese, A., & Widom, C. S. (2020). Objective and subjective experiences of child maltreatment and their relationships with psychopathology. *Nature Human Behaviour, 4*(8), 811–818. https://doi.org/10.1038/s41562-020-0880-3

de Bruin, E. I., Ferdinand, R. F., Meester, S., de Nijs, P. F., & Verheij, F. (2007). High rates of psychiatric comorbidity in PDD-NOS. *Journal of Autism and Developmental Disorders, 37*(5), 877–886.

Ehlers, A., & Clark, D. M. (2000). A cognitive model of posttraumatic stress disorder. *Behaviour Research and Therapy, 38*(4), 319–345.

*Fazel, M., Stratford, H. J., Rowsell, E., Chan, C., Griffiths, H., & Robjant, K. (2020). Five applications of narrative exposure therapy for children and adolescents presenting with post-traumatic stress disorders. *Frontiers in Psychiatry, 11*, 19. https://doi.org/10.3389/fpsyt.2020.00019

Fisher, N., van Diest, C., Leoni, M., & Spain, D. (2022). Using EMDR with autistic individuals: A Delphi survey with EMDR therapists. *Autism*, 13623613221080254. https://doi.org/10.1177/13623613221080254

Ghanouni, P., & Quirke, S. (2023). Resilience and coping strategies in adults with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 53*, 456–467. https://doi.org/10.1007/s10803-022-05436-y

*Golan, O., Haruvi-Lamdan, N., Laor, N., & Horesh, D. (2022). The comorbidity between autism spectrum disorder and post-traumatic stress disorder is mediated by brooding rumination. *Autism, 26*(2), 538–544. https://doi.org/10.1177/13623613211035240

Han, E., Scior, K., Avramides, K., & Crane, L. (2022). A systematic review on autistic people's experiences of stigma and coping strategies. *Autism Research, 15*(1), 12–26. https://doi.org/10.1002/aur.2652

Haruvi-Lamdan, N., Horesh, D., & Golan, O. (2018). PTSD and autism spectrum disorder: Co-morbidity, gaps in research, and potential shared mechanisms. *Psychological Trauma: Theory, Research, Practice, and Policy, 10*(3), 290. https://doi.org/10.1037/tra0000298

*Haruvi-Lamdan, N., Horesh, D., Zohar, S., Kraus, M., & Golan, O. (2020). Autism spectrum disorder and post-traumatic stress disorder: An unexplored co-occurrence of conditions. *Autism, 24*(4), 884–898. https://doi.org/10.1177/1362361320912143

Haruvi-Lamdan, N., Lebendiger, S., Golan, O., & Horesh, D. (2019). Are PTSD and autistic traits related? An examination among typically developing Israeli adults. *Comprehensive Psychiatry, 89*, 22–27. https://doi.org/10.1016/j.comppsych.2018.11.004

Hewitt, A. S., Stancliffe, R. J., Hall-Lande, J., Nord, D., Pettingell, S. L., Hamre, K., & Hallas-Muchow, L. (2017). Characteristics of adults with autism spectrum disorder who use residential services and supports through adult developmental disability services in the United States. *Research in Autism Spectrum Disorders, 34*, 1–9. https://doi.org/10.1016/j.rasd.2016.11.007

*Hoch, J. D., & Youssef, A. M. (2020). Predictors of trauma exposure and trauma diagnoses for children with autism and developmental disorders served in a community mental health clinic. *Journal of Autism and Developmental Disorders, 50*(2), 634–649. https://doi.org/10.1007/s10803-019-04331-3

Hofvander, B., Delorme, R., Chaste, P., Nydén, A., Wentz, E., Ståhlberg, O., et al. (2009). Psychiatric and psychosocial problems in adults with normal-intelligence autism spectrum disorders. *BMC Psychiatry, 9*(1), 35.

Hollocks, M. J., Pickles, A., Howlin, P., & Simonoff, E. (2016). Dual cognitive and biological correlates of anxiety in autism spectrum disorders. *Journal of Autism and Developmental Disorders, 46*(10), 3295–3307.

Holmes, E. A., James, E. L., Coode-Bate, T., & Deeprose, C. (2009). Can playing the computer game "Tetris" reduce the build-up of flashbacks for trauma? A proposal from cognitive science. *PLoS ONE, 4*(1), e4153. https://doi.org/10.1371/journal.pone.0004153

Hoover, D. W. (2020). Trauma in children with neurodevelopmental disorders: Autism, intellectual disability, and attention-deficit/hyperactivity disorder. In G. Spalletta, D. Janiri, F. Piras, & G. Sani (Eds.), *Childhood trauma in mental disorders: A comprehensive approach* (pp. 367–383). Springer International Publishing. https://doi.org/10.1007/978-3-030-49414-8_17

Hoover, D. W., & Kaufman, J. (2018). Adverse childhood experiences in children with autism spectrum disorder. *Current Opinion in Psychiatry, 31*(2), 128–132. https://doi.org/10.1097/yco.0000000000000390

*Hoover, D. W., & Romero, E. M. (2019). The interactive trauma scale: A web-based measure for children with autism. *Journal of Autism and Developmental Disorders, 49*(4), 1686–1692. https://doi.org/10.1007/s10803-018-03864-3

Jack, A., & Pelphrey, K. A. (2017). Annual research review: Understudied populations within the autism spectrum – current trends and future directions in neuroimaging research. *J Child Psychol Psychiatr, 58*, 411–435. https://doi.org/10.1111/jcpp.12687

Kar, N. (2011). Cognitive behavioral therapy for the treatment of post-traumatic stress disorder: A review. *Neuropsychiatric Disease and Treatment, 7*, 167–181. https://doi.org/10.2147/ndt.S10389

Kerns, C. M., Berkowitz, S. J., Moskowitz, L. J., Drahota, A., Lerner, M. D., & Newschaffer, C. J. (2020a). Screening and treatment of trauma-related symptoms in youth with autism spectrum disorder among community providers in the United States. *Autism, 24*(2), 515–525. https://doi.org/10.1177/1362361319847908

Kerns, C. M., Newschaffer, C. J., & Berkowitz, S. J. (2015). Traumatic childhood events and autism spectrum disorder. *Journal of Autism and Developmental Disorders, 45*(11), 3475–3486. https://doi.org/10.1007/s10803-015-2392-y

Kerns, C. M., Rast, J. E., & Shattuck, P. T. (2020b). Prevalence and correlates of caregiver-reported mental health conditions in youth with autism spectrum disorder in the United States. *The Journal of Clinical Psychiatry*, *82*(1). https://doi.org/10.4088/JCP.20m13242

Kerns, C. M., Robins, D. L., Shattuck, P. T., Newschaffer, C. J., & Berkowitz, S. J. (2022). Expert consensus regarding indicators of a traumatic reaction in autistic youth: A Delphi survey. *Journal of Child Psychology and Psychiatry*. https://doi.org/10.1111/jcpp.13666

Kildahl, A. N., Helverschou, S. B., Bakken, T. L., & Oddli, H. W. (2020). "Driven and tense, stressed out and anxious": Clinicians' perceptions of post-traumatic stress disorder symptom expressions in adults with autism and intellectual disability [Article]. *Journal of Mental Health Research in Intellectual Disabilities, 13*(3), 201–230. https://doi.org/10.1080/19315864.2020.1760972

*Kildahl, A. N., & Jørstad, I. (2022). Post-traumatic stress disorder symptom manifestations in an autistic man with severe intellectual disability following coercion and scalding. *Journal of Intellectual*

& Developmental Disability, 47(2), 190–194. https://doi.org/10.3109/13668250.2021.1995930

*Kupferstein, H. (2018). Evidence of increased PTSD symptoms in autistics exposed to applied behavior analysis [Article]. *Advances in Autism, 4*(1), 19–29. https://doi.org/10.1108/AIA-08-2017-0016

*Kupferstein, H. (2020). Why caregivers discontinue applied behavior analysis (ABA) and choose communication-based autism interventions [Article]. *Advances in Autism, 6*(1), 72–80. https://doi.org/10.1108/AIA-02-2019-0004

Leaf, J. B., Ross, R. K., Cihon, J. H., & Weiss, M. J. (2018). Evaluating Kupferstein's claims of the relationship of behavioral intervention to PTSS for individuals with autism. *Advances in Autism, 4*(3), 122–129. https://doi.org/10.1108/AIA-02-2018-0007

Lewis, S. J., Arseneault, L., Caspi, A., Fisher, H. L., Matthews, T., Moffitt, T. E., Odgers, C. L., Stahl, D., Teng, J. Y., & Danese, A. (2019). The epidemiology of trauma and post-traumatic stress disorder in a representative cohort of young people in England and Wales. *Lancet Psychiatry, 6*(3), 247–256. https://doi.org/10.1016/s2215-0366(19)30031-8

Lobregt-van Buuren, E., Hoekert, M., & Sizoo, B. (2021). Autism, adverse events, and trauma. In A. M. Grabrucker (Ed.), *Autism Spectrum Disorders*. Exon Publications.

*Lobregt-van Buuren, E., Sizoo, B., Mevissen, L., & de Jongh, A. (2019). Eye movement desensitization and reprocessing (EMDR) therapy as a feasible and potential effective treatment for adults with autism spectrum disorder (ASD) and a history of adverse events. *Journal of Autism and Developmental Disorders, 49*(1), 151–164.

Marchi, M., Travascio, A., Uberti, D., De Micheli, E., Grenzi, P., Arcolin, E., Pingani, L., Ferrari, S., & Galeazzi, G. M. (2023). Post-traumatic stress disorder among LGBTQ people: A systematic review and meta-analysis. *Epidemiology and Psychiatric Sciences, 32*, e44. https://doi.org/10.1017/S2045796023000586

Mazurek, M. O., Pappagianopoulos, J., Brunt, S., Sadikova, E., Nevill, R., Menezes, M., & Harkins, C. (2023). A mixed methods study of autistic adults' mental health therapy experiences. *Clinical Psychology & Psychotherapy, 30*(4), 767–779. https://doi.org/10.1002/cpp.2835

Mcconachie, H., McLaughlin, E., Grahame, V., Taylor, H., Honey, E., Tavernor, L., et al. (2014). Group therapy for anxiety in children with autism spectrum disorder. *Autism, 18*(6), 723–732.

Mehtar, M., & Mukaddes, N. M. (2011). Posttraumatic stress disorder in individuals with diagnosis of autistic spectrum disorders. *Research in Autism Spectrum Disorders, 5*(1), 539–546.

Mevissen, L., & de Jongh, A. (2010). PTSD and its treatment in people with intellectual disabilities: A review of the literature. *Clinical Psychology Review, 30*(3), 308–316. https://doi.org/10.1016/j.cpr.2009.12.005

Ng-Cordell, E., Rai, A., Peracha, H., Garfield, T., Lankenau, S. E., Robins, D. L., Berkowitz, S. J., Newschaffer, C., & Kerns, C. M. (2022). A qualitative study of self and caregiver perspectives on how autistic individuals cope with trauma. *Frontiers in Psychiatry, 13*, 825008. https://doi.org/10.3389/fpsyt.2022.825008

Olff, M. (2017). Sex and gender differences in post-traumatic stress disorder: An update. *European Journal of Psychotraumatology, 8*(sup4), 1351204. https://doi.org/10.1080/20008198.2017.1351204

Page, M. J., Moher, D., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., … McKenzie, J. E. (2021). PRISMA 2020 explanation and elaboration: Updated guidance and exemplars for reporting systematic reviews. *BMJ, 372*, n160. https://doi.org/10.1136/bmj.n160

*Paul, A., Gallot, C., Lelouche, C., Bouvard, M. P., & Amestoy, A. (2018). Victimisation in a French population of children and youths with autism spectrum disorder: A case control study. *Child and Adolescent Psychiatry and Mental Health, 12*, 48. https://doi.org/10.1186/s13034-018-0256-x

Peterson, J., Earl, R., Fox, E., Ma, R., Haidar, G., Pepper, M., Berliner, L., Wallace, A., & Bernier, R. (2019). Trauma and autism spectrum disorder: Review, proposed treatment adaptations and future directions. *Journal of Child and Adolescent Trauma, 12*(4), 529–547. https://doi.org/10.1007/s40653-019-00253-5

Reinvall, O., Moisio, A. L., Lahti-Nuuttila, P., Voutilainen, A., Laasonen, M., & Kujala, T. (2016). Psychiatric symptoms in children and adolescents with higher functioning autism spectrum disorders on the Development and Well-Being Assessment. *Research in Autism Spectrum Disorders, 25*, 47–57.

Reisner, S. L., White Hughto, J. M., Gamarel, K. E., Keuroghlian, A. S., Mizock, L., & Pachankis, J. (2016). Discriminatory experiences associated with posttraumatic stress disorder symptoms among transgender adults. *Journal of Counseling Psychology, 63*(5), 509–519. https://doi.org/10.1037/cou0000143

*Reuben, K. E., Self-Brown, S., & Vinoski Thomas, E. (2022). PTSD in autistic adults: Correlates of meeting DSM-5 criteria and predictors of professional diagnosis. *Psychological Trauma*. https://doi.org/10.1037/tra0001365

*Reuben, K. E., Stanzione, C. M., & Singleton, J. L. (2021). Interpersonal trauma and posttraumatic stress in autistic adults. *Autism in Adulthood, 3*(3), 247–256. https://doi.org/10.1089/aut.2020.0073

Rich, A. J., DiGregorio, N., & Strassle, C. (2021). Trauma-informed care in the context of intellectual and developmental disability services: Perceptions of service providers. *Journal of Intellectual Disabilities, 25*(4), 603–618. https://doi.org/10.1177/1744629520918086

Rumball, F. (2019). A systematic review of the assessment and treatment of posttraumatic stress disorder in individuals with autism spectrum disorders. *Review Journal of Autism and Developmental Disorders, 6*(3), 294–324. https://doi.org/10.1007/s40489-018-0133-9

*Rumball, F., Antal, K., Happé, F., & Grey, N. (2021a). Co-occurring mental health symptoms and cognitive processes in trauma-exposed ASD adults. *Research in Developmental Disabilities, 110*, 103836. https://doi.org/10.1016/j.ridd.2020.103836

*Rumball, F., Brook, L., Happé, F., & Karl, A. (2021b). Heightened risk of posttraumatic stress disorder in adults with autism spectrum disorder: The role of cumulative trauma and memory deficits. *Research in Developmental Disabilities, 110*, 103848. https://doi.org/10.1016/j.ridd.2020.103848

*Rumball, F., Happé, F., & Grey, N. (2020). Experience of trauma and PTSD symptoms in autistic adults: Risk of PTSD development following DSM-5 and non-DSM-5 traumatic life events. *Autism Research, 13*(12), 2122–2132. https://doi.org/10.1002/aur.2306

Russell, A., Gaunt, D. M., Cooper, K., Barton, S., Horwood, J., Kessler, D., Metcalfe, C., Ensum, I., Ingham, B., Parr, J. R., Rai, D., & Wiles, N. (2019a). The feasibility of low-intensity psychological therapy for depression co-occurring with autism in adults: The Autism Depression Trial (ADEPT) – A pilot randomised controlled trial. *Autism, 24*(6), 1360–1372. https://doi.org/10.1177/1362361319889272

Russell, G., Mandy, W., Elliott, D., White, R., Pittwood, T., & Ford, T. (2019b). Selection bias on intellectual ability in autism research: A cross-sectional review and meta-analysis. *Molecular Autism, 10*, 9. https://doi.org/10.1186/s13229-019-0260-x

Rydzewska, E., Hughes-McCormack, L. A., Gillberg, C., Henderson, A., MacIntyre, C., Rintoul, J., & Cooper, S.-A. (2018). Prevalence of long-term health conditions in adults with autism: Observational study of a whole country population. *British Medical*

Journal Open, 8(8), e023945. https://doi.org/10.1136/bmjopen-2018-023945

Schein, J., Houle, C., Urganus, A., Cloutier, M., Patterson-Lomba, O., Wang, Y., King, S., Levinson, W., Guérin, A., Lefebvre, P., & Davis, L. L. (2021). Prevalence of post-traumatic stress disorder in the United States: A systematic literature review. *Current Medical Research and Opinion, 37*(12), 2151–2161. https://doi.org/10.1080/03007995.2021.1978417

Smith, P., Dalgleish, T., & Meiser-Stedman, R. (2019). Practitioner review: Posttraumatic stress disorder and its treatment in children and adolescents. *Journal of Child Psychology and Psychiatry, 60*(5), 500–515. https://doi.org/10.1111/jcpp.12983

Stack, A., & Lucyshyn, J. (2019). Autism spectrum disorder and the experience of traumatic events: Review of the current literature to inform modifications to a treatment model for children with autism. *Journal of Autism and Developmental Disorders, 49*(4), 1613–1625. https://doi.org/10.1007/s10803-018-3854-9

Stavropoulos, K. K., Bolourian, Y., & Blacher, J. (2018). Differential diagnosis of autism spectrum disorder and post traumatic stress disorder: Two clinical cases. *Journal of Clinical Medicine, 7*(4), 71. https://doi.org/10.3390/jcm7040071

Stewart, G. R., Corbett, A., Ballard, C., et al. (2022). Traumatic life experiences and post-traumatic stress symptomsin middle-aged and older adults with and without autistic traits. *International Journal GeriatricPsychiatry*. 1–10. https://doi.org/10.1002/gps.5669

Storch, E. A., Lewin, A. B., Collier, A. B., Arnold, E., De Nadai, A. S., Dane, B. F., Nadeau, J. M., Mutch, P. J., & Murphy, T. K. (2015). A randomized controlled trial of cognitive-behavioral therapy versus treatment as usual for adolescents with autism spectrum disorders and comorbid anxiety. *Depression and Anxiety, 32*(3), 174–181. https://doi.org/10.1002/da.22332

Storch, E. A., Sulkowski, M. L., Nadeau, J., Lewin, A. B., Arnold, E. B., Mutch, P. J., et al. (2013). The phenomenology and clinical correlates of suicidal thoughts and behaviors in youth with autism spectrum disorders. *Journal of Autism and Developmental Disorders, 43*(10), 2450–2459.

Taylor, J. L., & Gotham, K. O. (2016). Cumulative life events, traumatic experiences, and psychiatric symptomatology in transition-aged youth with autism spectrum disorder. *Journal of Neurodevelopmental Disorders, 8*(1), 28.

The Joanna Briggs Institute. (2016). Checklist for case reports. http://joannabriggs.org/research/critical-appraisal-tools.html. Accessed Jan 2023.

Turnock, A., Langley, K., & Jones, C. R. G. (2022). Understanding Stigma in Autism: A Narrative Reviewand Theoretical Model. *Autism in Adulthood: Challenges and Management, 4*(1), 76–91. https://doi.org/10.1089/aut.2021.0005

Warrier, V., Greenberg, D. M., Weir, E., Buckingham, C., Smith, P., Lai, M.-C., Allison, C., & Baron-Cohen, S. (2020). Elevated rates of autism, other neurodevelopmental and psychiatric diagnoses, and autistic traits in transgender and gender-diverse individuals. *Nature Communications, 11*(1), 3959. https://doi.org/10.1038/s41467-020-17794-1

Wells, G. A., Shea, B., O'Connell, D., Peterson, J., Welch, V., Losos, M., & Tugwell, P. (2012). The Newcastle-Ottawa Scale (NOS) for assessing the quality if nonrandomized studies in meta-analyses, 2012. Available from: https://www.ohri.ca/programs/clinical_epidemiology/oxford.asp

White, S. W., Schry, A. R., & Maddox, B. B. (2012). Brief report: the assessment of anxiety in high-functioning adolescents with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 42*(6), 1138–1145.

White, S. W., Ollendick, T., Albano, A. M., Oswald, D., Johnson, C., Southam-Gerow, M. A., et al. (2013). Randomized controlled trial: multimodal anxiety and social skill intervention for adolescents with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 43*(2), 382–394.

Wilkenfeld, D. A., & McCarthy, A. M. (2020). Ethical concerns with applied behavior analysis for autism spectrum "disorder". *Kennedy Institute of Ethics Journal, 30*(1), 31–69. https://doi.org/10.1353/ken.2020.0000

Wood, J. J., Drahota, A., Sze, K., Har, K., Chiu, A., & Langer, D. A. (2009). Cognitive behavioral therapy for anxiety in children with autism spectrum disorders: a randomized, controlled trial. *Journal of Child Psychology and Psychiatry, 50*(3), 224–234.

Wood, J. J., Ehrenreich-May, J., Alessandri, M., Fujii, C., Renno, P., Laugeson, E., et al. (2015). Cognitive behavioral therapy for early adolescents with autism spectrum disorders and clinical anxiety: a randomized, controlled trial. *Behavior Therapy, 46*(1), 7–19.

ABA, applied behaviour analysis; *ACC*, augmentative and alternative communication; *ASD*, autism spectrum disorder; *BSI*, Brief Symptom Inventory; *CAPS-5*, Clinician-Administered PTSD Scale for DSM-5; *CASI*, Child and Adolescent Symptom Inventory; *DSM*, Diagnostic and Statistical Manual of Mental Disorders; *ICD*, World Health Organization's International Classification of Diseases; *ID*, intellectual disability; *JVQ*, Juvenile Victimisation Questionnaire; *LEC-5*, Life Events Checklist for DSM-5; *PCL-5*, PTSD Checklist for DSM-5; *PTSS*, post-traumatic stress symptoms; *RRS*, rumination response scale; *SRS-A*, Social Responsiveness Scale for adults; *TALS-SR*, Trauma and Loss Spectrum – Self Reported; *UCLA-SR/PR*, UCLA post-traumatic stress disorder reaction index for DSM-5 – self-report/parent report

Chapter 3: Autistic traits in childhood and post-traumatic stress disorder as young adults: a cohort study

3.1 Published manuscript

This chapter contains the following published manuscript:

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Autistic traits in childhood and post-traumatic stress disorder as young adults: a cohort study

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Background: Despite the higher prevalence of childhood traumatic experiences and post-traumatic stress disorder (PTSD) in autistic adults, research on trauma-related psychopathology and autistic traits in young people is lacking. This study examined if high autistic traits in childhood predispose individuals to traumatic experiences, the development of PTSD and general psychopathology, and greater functional impairment by age 18, in both the general population and a subsample of trauma-exposed young people. **Methods:** Data were utilised from the Environmental Risk (E-Risk) Longitudinal Twin Study, a nationally representative cohort of 2,232 same-sex twins born in 1994–1995 across England and Wales. Participants were a subset of children whose parents completed the Childhood Autism Spectrum Test (CAST), during assessments at ages 8, 9 and/or 12 years ($N = 1,504$). We tested associations between autistic traits in childhood and age-18 reports of lifetime trauma exposure, lifetime PTSD diagnosis, general psychopathology ('*p*-factor') and NEET status ('not in employment, education or training'). Analyses were conducted controlling for sex, family socioeconomic status (SES), intelligence quotient (IQ) and accounting for family clustering. **Results:** Higher autistic traits in childhood were significantly associated with greater reports of lifetime trauma exposure (Odd Ratio [OR] = 1.26, 95% Confidence Intervals [CI] = 1.03; 1.54), lifetime PTSD diagnosis (OR = 1.91, 95% CI = 1.29; 2.82), general psychopathology (beta = 3.22, 95% CI = 1.84; 4.60) and NEET status (OR = 1.48, 95% CI = 1.05; 2.09) at age 18. Only the associations of autistic traits with PTSD and general psychopathology were robust to adjustment for potential confounders. Among trauma-exposed children, autistic traits were also significantly associated with lifetime PTSD diagnosis (OR = 1.75, 95% CI = 1.15; 2.68) and psychopathology (beta = 3.36, 95% CI = 0.68; 6.04) at age 18, but only the association with PTSD held when adjusted for confounders. **Conclusions:** Our findings suggest a need to develop targeted assessments and evidence-based treatments for PTSD to meet the needs of children with high autistic traits. However, whether our findings extend to diagnosed autistic children requires further investigation. **Keywords:** Autism; autism spectrum; trauma; PTSD; psychopathology.

Background

Post-traumatic stress disorder (PTSD) is a debilitating psychiatric condition that can develop after experiencing a traumatic event (Danese, McLaughlin, Samara, & Stover, 2020). PTSD is characterised by persistent re-experiencing of traumatic events through intrusive and distressing memories, as well as negative appraisals, avoidance and hypervigilance to threat. In this article, we examine if higher autistic traits in childhood are associated with trauma exposure, PTSD and broader psychopathology and functional impairment in youths. Clinical, cognitive and genetic findings in the literature suggest that this might be the case.

Compared with non-autistic peers, autistic children have a greater risk of adversities, such as bullying and victimisation (Hoover & Kaufman, 2018). Autistic children also show a higher prevalence of mental health conditions than their non-autistic peers (Kerns, Rast, & Shattuck, 2020) and might be at a greater risk of developing PTSD and other types of psychopathology after trauma exposure (Kerns, Newschaffer, & Berkowitz, 2015). Research with adults suggests that autistic traits may facilitate the development of trauma-related psychopathology. In a large study, 251 middle-aged and older adults (aged 50–81) with high autistic traits showed a 12-fold increase in passing the cut-off for probable PTSD when compared with 9,179 age- and gender-matched low-trait controls (Stewart et al., 2020). Likewise, a study in 103 typically developing adults aged 18–34 showed positive associations between autistic traits and PTSD symptoms, particularly hyper-arousal symptoms (Haruvi-Lamdan, Lebendiger, Golan, & Horesh, 2019). However, empirical research on trauma-related psychopathology in children and young people on the autistic spectrum is lacking.

Children with higher autistic traits likely share similar cognitive styles to autistic children (Best, Moffat, Power, Owens, & Johnstone, 2008).

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Rumball, Happé, & Grey (2020)have suggested that specific cognitive characteristics of autism may impact how a negative or traumatic event is processed and perceived and may predispose individuals to the development of PTSD symptoms. Popular models of PTSD highlight the role of cognitive factors in promoting the development and maintenance of PTSD symptoms (Brewin, Dalgleish, & Joseph, 1996; Ehlers & Clark, 2000). Research has shown that several of these cognitive risk factors are commonly found in autistic people or those with more autistic traits, including detail-focused processing (Happé & Frith, 2006), sensory sensitivities (Weiland, Polderman, Hoekstra, Smit, & Begeer, 2020), rumination (Golan, Haruvi-Lamdan, Laor, & Horesh, 2022), emotional dysregulation (Mazefsky, Borue, Day, & Minshew, 2014), social withdrawal (Brosnan & Gavin, 2023), and poor verbal working memory (Wang et al., 2017). Studies with autistic adults have also reported that specific cognitive features common to ASD relate to increased PTSD symptoms, such as everyday and working memory deficits (Rumball, Brook, Happé, & Karl, 2021), brooding rumination (Golan et al., 2022) and thought suppression (Rumball, Antal, et al., 2021).

Genetic research also suggests possible links between high autistic traits and risk for traumatic experiences. Traumatic experiences are partly influenced by heritable factors (Dahoun et al., 2024). Previous research showed that higher polygenic scores for autism may be associated with self-reported childhood trauma (Peel et al., 2022; Ratanatharathorn et al., 2021; Warrier & Baron-Cohen, 2021; but see Sallis et al., 2021 for contrary results). However, it is unclear if polygenic scores for autism also increase the risk of trauma-related psychopathology (Huckins et al., 2021). Genetic research has also highlighted that similar genetic factors influence diagnosed autism and autistic traits in the general population (Robinson et al., 2011). Along with consistent behavioural and genetic evidence (Happé and Frith, 2020), these findings support a dimensional approach to examining the role of autistic traits in trauma-related psychopathology and related functional impairment. Although high autistic traits clearly do not equate to an autism diagnosis, research on autistic traits can provide novel insights into liability to trauma exposure and trauma-related psychopathology in the general population and prompt more focused work in clinical samples.

To examine the wider impact of trauma beyond the risk for PTSD and general psychopathology, it is also important to test whether children with high autistic traits have greater functional impairment in daily life compared with peers with less autistic traits. Being 'not in education or employment' (NEET) is a common metric of functional impairment in young adults. Previous work in a large, longitudinal UK-based study found that young people in the general population with a history of trauma were more likely to be NEET than unexposed peers, and those with PTSD were more likely to be NEET than those without PTSD (Lewis et al., 2019). However, it is unclear how the presence of both trauma exposure and high autistic traits could affect this measure of functional impairment.

Building on the evidence above, in this study, we investigated if higher autistic traits in childhood predispose individuals to trauma exposure, PTSD and worse general psychopathology, as well as greater functional impairment by age 18 in a large UK birth cohort. We considered that any associations between autistic traits and trauma-related psychopathology and functional impairment could either stem from a greater likelihood of developing negative outcomes after trauma exposure or reflect a greater likelihood of being exposed to trauma. To disentangle the relative contributions of the two mechanisms, we therefore repeated the analyses in a subset of the overall sample, including only trauma-exposed young people.

Method

This study was pre-registered with OSF (https://osf.io/uf9t7/).

Sample

Participants were members of the Environmental Risk (E-Risk) Longitudinal Twin Study, which tracks the development of 2,232 British children. The sample was drawn from a larger birth cohort of twins born in England and Wales in 1994–1995, the Twins Early Development Study (TEDS) (Trouton, Spinath, & Plomin, 2002). Full details about the sample are reported in Appendix S1 and described elsewhere (Moffitt & the E-Risk Study Team, 2002). Briefly, E-Risk was constructed in 1999–2000, when 1,116 families (93% of those eligible) with same-sex 5-year-old twins participated in home-visit assessments. This sample comprised 56% monozygotic and 44% dizygotic twin pairs; sex was evenly distributed within zygosity (49% male); 90% of participants were of White ethnicity. Although sampled from England and Wales alone, the sample represents the full socioeconomic spectrum of the UK population, as reflected in the families' distribution on neighbourhood-level socioeconomic indices (Odgers, Caspi, Bates, Sampson, & Moffitt, 2012; Reuben et al., 2020) (see Appendix S1, Figure S1). Follow-up home visits were conducted when the children were aged 7 (98% participation), 10 (96%), 12 (96%) and 18 years (93%). Visits at ages 5–12 included assessments with participants and their mother (primary caretaker) and at age 18 included interviews with participants. The Joint South London and Maudsley and the Institute of Psychiatry Research Ethics Committee approved each phase of the study. Parents gave informed consent, and participants gave assent between 5 and 12 years, then informed consent at age 18.

In this study, we sought to capitalise on the nested structure of the E-Risk study within TEDS, as they have complementary strengths in the assessment of trauma-related disorders and autism, respectively. The sample in these two studies became increasingly non-overlapping over time because of the follow-up methods used (in-person assessment for the E-Risk

Study; telephone/online assessment for TEDS), which reduced the size of the sample with data available from both studies. We identified participants with complete data for PTSD from the E-Risk study ($N = 2{,}061$) who had parent-reported Childhood Autism Spectrum Test (CAST) (Scott, Baron-Cohen, Bolton, & Brayne, 2002) from TEDS ($N = 1{,}510$). The majority had CAST data at age 8 ($n = 1{,}213$). Because CAST scores showed high correlations ($r \sim .6$; Appendix S2) and were stable (Appendix S2, Figure S2) between ages 8, 9 and 12 years, in order to maximise the analytical sample, we used available parent-reported CAST scores at ages 9 or 12 where scores at age 8 were not available. This resulted in a sample of 1,510 E-Risk Study members with complete data for both autistic traits and PTSD. Six participants (0.4% of the sample) had missing IQ data at age 5 and were removed from the analyses, resulting in the final analytical sample of 1,504 participants. This sample and the overall E-Risk participants at age 18 showed similar distributions for variables included in the analyses (see Appendix S3, Table S1).

Measures

Trauma exposure and PTSD measure.

Trauma exposure and PTSD to date were assessed at age 18 years, during face-to-face interviews with the twin participants conducted by the E-Risk Study team. Participants were asked whether they had been exposed to trauma during their lifetime, according to DSM-5 PTSD Criterion A (American Psychiatric Association, 2013). Participants who reported trauma exposure were then asked to describe the trauma they had experienced. Participants who reported trauma exposure were also further evaluated through an adapted version of the Diagnostic Interview Schedule (Robins, Cottler, Bucholz, & Compton, 1995) to assess for current (past-year) and lifetime PTSD according to the DSM-5 criteria. Our analyses focus on E-Risk Study members meeting criteria for lifetime PTSD, but results for current PTSD are also reported in sensitivity analyses detailed in the Appendix S6.

Autistic traits measure.

The Childhood Autism Spectrum Test (CAST) (originally named 'Childhood Asperger's Syndrome Test') (Scott et al., 2002) was designed as a parent-report screening instrument for autism in non-clinical samples. The CAST is a quantitative scale; all questions are answered 'yes' or 'no' by the child's mother (or primary caregiver) and are scored additively. Where items had missing data, if participants' parents had completed more than half of the questions, the total score was calculated by summing the completed items and finding the average based on the total possible scores. CAST parent-report total score at age 8 was selected as the primary measure of autistic traits, and to increase the coverage, missing scores were replaced with CAST scores taken when participants were 9 or 12 years old (see Appendix S2).

General psychopathology measure.

The 'p' factor is a composite index of general psychopathology. The measure of 'p' was computed via a bi-factor model that was fitted to 11 distinct symptom scales encompassing various mental health conditions (Schaefer et al., 2018). The symptoms were assessed in the E-Risk Study during the age-18 follow-up with a past-year reporting period including major depressive disorder, generalised anxiety disorder, PTSD, disordered eating, attention-deficit hyperactivity disorder (ADHD), conduct disorder, alcohol dependence, cannabis dependence, nicotine dependence, psychotic symptoms and prodromal symptoms. A description of how each of these was assessed is provided in Appendix S4. After scaling the scores, the mean value was set to 100, and the standard deviation was fixed at 15.

Not in education, employment or training (NEET) status.

At the time of their age-18 interview, participants were classified as NEET if they reported that they were neither studying nor working in paid employment nor pursuing a vocational qualification or apprenticeship training. Participants were asked to ensure that NEET status was not simply a function of being on summer holiday or of being a parent. The employment- and education-related questions were those used in the Longitudinal Study of Young People in England (LSYPE). This operationalisation of NEET status follows that used by the UK Office of National Statistics and the International Labour Organisation (Chandler & Barrett, 2013).

Potentially confounding variables.

Covariates for the adjusted models were selected because previous literature reported a relationship with both autistic traits and PTSD, suggesting their potential role as confounders. In particular, previous research found that the prevalence of both autistic traits and PTSD varies according to sex (Lewis et al., 2019; Napolitano et al., 2022), IQ (Koenen, Moffitt, Poulton, Martin, & Caspi, 2007; Marinopoulou et al., 2025) and socio-economic status (Lewis et al., 2019; Skylark & Baron-Cohen, 2017). Biological sex and childhood IQ scores were obtained at first contact with the twins at age 5. IQ was assessed using Vocabulary and Block Design subtests on a short form of the Wechsler Preschool and Primary Scale of Intelligence-Revised and prorated according to Sattler (1988). Family SES was defined through a standardised composite of parental income, education and occupation obtained from mothers at the age-5 assessment (Trzesniewski, Moffitt, Caspi, Taylor, & Maughan, 2006). In the full E-Risk dataset, the population-wide distribution of this composite variable was then split into tertiles. In the present study, the variable was coded so that 1 indicates the highest socioeconomic status, and 3 indicates the lowest.

Data analysis

CAST scores were log-transformed to approximate a normal distribution. Bivariate logistic regression models were used to investigate the association of autistic traits with (1) report of trauma exposure (PTSD Criterion A), (2) PTSD diagnosis and (3) NEET status (from age 18 years assessment). Bivariate linear regression models were used to test the association of autistic traits with general psychopathology. These bivariate models were then expanded to account for the influence of possible confounding factors (SES, IQ and sex) in multivariate analyses, first accounting for each single potential confounder and then in a saturated model including all potential confounders at once. The analyses were first carried out in the overall sample and subsequently in the subsample of trauma-exposed participants in order to test if any associations of autistic traits and outcomes could be explained by greater risk for trauma exposure in participants with higher autistic traits. Analysis code is available at the study's OSF pre-registration (https://osf.io/uf9t7/).

We also undertook sensitivity analyses to test the possible biases introduced by our approach to missingness in CAST data and examining past-year rather than lifetime PTSD diagnosis. Standard errors were adjusted to account for the non-independence of twin observations (Williams, 2000) applying heteroskedasticity-robust standard errors while clustering for membership in the same family. Because our analytical sample and the overall E-Risk sample at age 18 showed similar distributions for variables included in the analyses (Appendix S3, Table S1), we carried out analyses on study members with complete data. None of the included variables breached multicollinearity thresholds (Appendix S5, Figure S4).

Results

As shown in Figure 1, the overall sample consisted of 1,504 people, 460 of whom reported trauma exposure by age 18 and were therefore further assessed for PTSD. Of those who reported trauma exposure, 24% (*n* = 110) participants met PTSD diagnostic criteria. The overall analytical sample was 53.8% female (*n* = 809), had a mean CAST score of 5.47, a mean IQ of 102, and was similarly distributed in SES tertiles. Table 1 shows the demographic characteristics of the overall sample and trauma-exposed subsample, as well as details on trauma-unexposed participants, all participants with no PTSD, trauma-exposed participants with no PTSD, and those with PTSD.

Potential confounders

Associations of key potential confounders (i.e. sex, IQ and SES) with the predictor variable (autistic traits) and each outcome variable are reported in Appendix S5. In brief, children with autistic traits were less likely to be female in the overall sample. In both the overall and trauma-exposed samples, autistic traits were associated with lower IQ. Associations between the potential confounders and outcome variables are shown in the first panels of Tables 2 and 3. In both the overall sample and the trauma-exposed subsample, univariate analyses with potential confounders showed significant associations between low SES and all outcomes, and female sex with PTSD and general psychopathology.

Associations of autistic traits with trauma exposure, PTSD, general psychopathology and functional impairment in the overall sample

Full results of analyses in the overall sample (*N* = 1,504) are presented in Table 2, and the main unadjusted and fully adjusted results are displayed in Figure 2A,B.

Trauma exposure. Children with higher autistic traits in childhood had a significantly increased likelihood of reporting exposure to traumatic events by 18 years (OR = 1.26, 95% CI = 1.03; 1.54; Table 2, Panel A). This association was attenuated and became statistically non-significant when accounting for SES (OR = 1.17, 95% CI = 0.96; 1.44) and in the fully adjusted model (OR = 1.20, 95% CI = 0.97; 1.48).

PTSD diagnosis. Children with higher autistic traits had a significantly increased likelihood of meeting the diagnostic criteria for PTSD by the age of 18 (OR = 1.91, 95% CI = 1.29; 2.82; Table 2, Panel B). This association remained significant and was enhanced when sex (OR = 2.10, 95% CI = 1.40; 3.14) was accounted for, but was slightly attenuated when IQ (OR = 1.78, 95% CI = 1.20; 2.64) and SES (OR = 1.59, 95% CI = 1.08; 2.33) were accounted for individually and in the fully adjusted model (OR = 1.77, 95% CI = 1.17; 2.66).

General psychopathology. Children with higher autistic traits had a significantly increased likelihood of having more severe psychopathology at age 18 (Beta = 3.22, 95% CI = 1.84; 4.60; Table 2, Panel D). This statistically significant relationship was maintained when the analysis was individually adjusted for potential confounders; the association was enhanced when sex was accounted for (Beta = 3.53, 95% CI = 2.16; 4.91) and attenuated when adjusted for IQ (Beta = 2.79, 95% CI = 1.41; 4.17) or SES (Beta = 2.46, 95% CI = 1.05; 3.86). The association also remained significant, albeit slightly attenuated, in the fully adjusted analysis (Beta = 2.65, 95% CI = 1.25; 4.04).

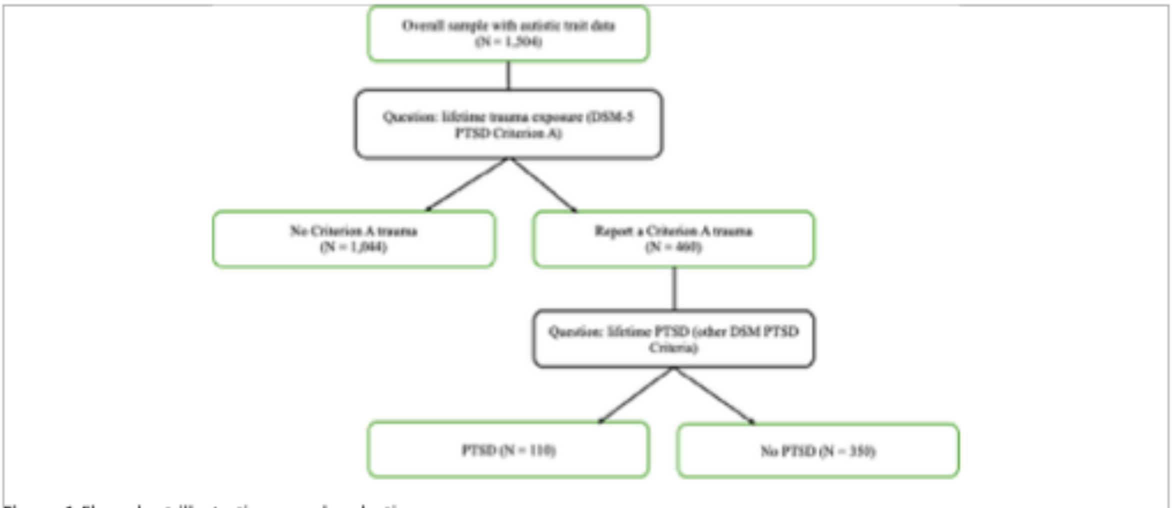

Figure 1 Flow chart illustrating sample selection

Table 1 Sample description

	Sample					
	Overall (N = 1,504)	Trauma exposed participants (n = 460)	Trauma unexposed participants (n = 1,044)	Overall sample with no PTSD (n = 1,394)	Trauma exposed with no PTSD (n = 350)	Trauma exposed with PTSD (n = 110)
Sex, *N* (%)						
Male	695 (46.2)	201 (43.7)	494 (47.3)	661 (47.4)	167 (47.7)	34 (30.9)
Female	809 (53.8)	259 (56.3)	550 (52.7)	733 (52.6)	183 (52.3)	76 (69.1)
SES, *N* (%)						
High SES	576 (38.3)	153 (33.3)	423 (40.5)	553 (39.7)	130 (37.1)	23 (20.9)
Medium SES	500 (33.2)	152 (33.0)	348 (33.3)	462 (33.1)	114 (32.6)	38 (34.5)
Low SES	428 (28.5)	155 (33.7)	273 (26.1)	379 (27.2)	106 (30.3)	49 (44.5)
NEET *N* (%)	151 (10.0)	71 (15.4)	80 (7.7)	125 (9.0)	45 (12.9)	84 (76.4)
Autistic traits (max = 31) mean (*SD*)	5.47 (3.5)	5.79 (3.6)	5.33 (3.5)	5.38 (3.5)	5.52 (3.5)	6.62 (3.9)
IQ mean (*SD*)	102 (14.9)	101 (14.2)	102 (15.2)	102 (14.9)	102 (14.1)	99.0 (14.4)
'*p*' factor mean (*SD*)	99.2 (14.7)	107.0 (15.8)	95.5 (12.5)	97.4 (13.3)	103.0 (13.9)	121.0 (13.7)

Data are *n*/*N* (%) unless stated otherwise. IQ, intelligence quotient; NEET, not in education, employment, or training; PTSD, post-traumatic stress disorder; SES, socio-economic status; '*p*'-factor, measure of general psychopathology.

Table 2 Results from the overall sample (N = 1,504); univariate models of autistic traits and confounding variables' individual relationships with outcomes at age 18, and multivariate models showing the association between autistic traits and outcomes of interest, adjusting for confounding variables

		Multivariate models adjusted for:			
	Univariate models	Sex	IQ	SES	Sex, IQ and SES
Panel A: Associations with trauma exposure in the overall sample-OR [95% CI]					
Autistic traits	**1.26 [1.03–1.54]**	**1.29 [1.05–1.58]**	**1.23 [1.00–1.50]**	1.17 [0.96–1.44]	1.20 [0.97–1.48]
Female sex	1.16 [0.93–1.44]	*1.20 [0.96–1.50]*	–	–	*1.18 [0.94–1.48]*
IQ	0.99 [0.99–1.00]	–	*1.00 [0.99–1.00]*	–	*1.00 [0.99–1.01]*
Medium SES	1.21 [0.93–1.58]	–	–	*1.18 [0.90–1.54]*	*1.17 [0.89–1.55]*
Low SES	**1.57 [1.20–2.06]**	–	–	***1.49 [1.13–1.97]***	***1.46 [1.08–1.98]***
Panel B: Associations with PTSD diagnosis in the overall sample-OR [95% CI]					
Autistic traits	**1.91 [1.29–2.82]**	**2.10 [1.40–3.14]**	**1.78 [1.20–2.64]**	**1.59 [1.08–2.33]**	**1.77 [1.17–2.66]**
Female sex	**2.02 [1.33–3.06]**	***2.24 [1.46–3.44]***	–	–	***2.21 [1.43–3.41]***
IQ	0.99 [0.97–1.00]	–	*0.99 [0.98–1.00]*	–	*1.00 [0.99–1.02]*
Medium SES	**1.98 [1.16–3.37]**	–	–	***1.85 [1.08–3.18]***	***1.89 [1.09–3.29]***
Low SES	**3.11 [1.86–5.19]**	–	–	***2.67 [1.58–4.53]***	***2.62 [1.49–4.59]***
Panel C: Associations with NEET status in the overall sample – OR [95% CI]					
Autistic traits	**1.48 [1.05–2.09]**	**1.53 [1.08–2.17]**	1.18 [0.85–1.64]	1.05 [0.76–1.47]	0.98 [0.70–1.37]
Female sex	1.22 [0.87–1.72]	*1.30 [0.92–1.84]*	–	–	*1.18 [0.82–1.70]*
IQ	0.96 [0.95–0.98]	–	*0.97 [0.95–0.98]*	–	*0.98 [0.96–0.99]*
Medium SES	1.51 [0.88–2.58]	–	–	*1.49 [0.87–2.58]*	*1.26 [0.73–2.19]*
Low SES	**6.20 [3.91–9.85]**	–	–	***6.10 [3.78–9.83]***	***4.68 [2.86–7.65]***
Panel D: Associations with the '*p*'-factor in the overall sample – Beta [95% CI]					
Autistic traits	**3.22 [1.84–4.60]**	**3.53 [2.16–4.91]**	**2.79 [1.41–4.17]**	**2.46 [1.05–3.86]**	**2.65 [1.25–4.04]**
Female sex	**2.33 [0.85–3.80]**	***2.83 [1.36–4.29]***	–	–	***2.64 [1.17–4.11]***
IQ	**−0.10 [−0.15 to −0.05]**	–	***−0.08 [−0.13 to −0.03]***	–	*−0.04 [−0.09–0.02]*
Medium SES	**2.22 [0.53–3.91]**	–	–	***1.84 [0.13–3.55]***	*1.57 [−0.19–3.32]*
Low SES	**5.28 [3.42–7.14]**	–	–	***4.46 [2.55–6.37]***	***3.85 [1.79–5.90]***

Values in bold text indicate statistically significant results ($p < .05$). Values in Italic text are contributions of confounding variables to the association between autistic traits and outcomes of interest. All models are adjusted for the non-independence of twin observations. 95% CI, 95% confidence intervals; Beta, beta coefficient; IQ, intelligence quotient; NEET, not in education, employment, or training; OR, odds ratio; '*p*'-factor, measure of general psychopathology; PTSD, post-traumatic stress disorder; SES, socio-economic status.

Functional impairment. Children with higher autistic traits had a significantly increased likelihood of being NEET at age 18 (OR = 1.48, 95% CI = 1.05; 2.09; Table 2, Panel C). This association remained significant and slightly enhanced when accounting for sex (OR = 1.53, 95% CI = 1.08; 2.17). However, this association was attenuated and not statistically significant when IQ (OR = 1.18, 95%

Table 3 Results from the trauma-exposed subsample ($n = 460$); univariate models of autistic traits and confounding variables' individual relationships with outcomes at age 18, and multivariate models showing associations between autistic traits and outcomes of interest adjusting for confounding variables

		Multivariate model adjusted for			
	Univariate models	Sex	IQ	SES	Sex, IQ and SES
Panel A: Associations with PTSD diagnosis in the trauma-exposed subsample – OR [95% CI]					
Autistic traits	**1.75 [1.15–2.68]**	**1.86 [1.21–2.88]**	**1.66 [1.08–2.54]**	**1.52 [1.00–2.32]**	**1.62 [1.04–2.53]**
Female sex	**2.04 [1.29–3.22]**	***2.17 [1.36–3.46]***	–	–	***2.18 [1.35–3.53]***
IQ	0.99 [0.97–1.00]	–	*0.99 [0.98–1.01]*	–	*1.00 [0.98–1.02]*
Medium SES	**1.88 [1.06–3.36]**	–	–	***1.80 [1.00–3.24]***	***1.84 [1.00–3.37]***
Low SES	**2.61 [1.49–4.58]**	–	–	***2.29 [1.29–4.08]***	***2.29 [1.24–4.21]***
Panel B: Associations with NEET status in the trauma-exposed subsample – OR [95% CI]					
Autistic traits	1.07 [0.65–1.77]	1.07 [0.64–1.77]	0.88 [0.56–1.39]	0.77 [0.46–1.29]	0.66 [0.40–1.08]
Female sex	0.94 [0.56–1.56]	*0.94 [0.56–1.58]*	–	–	*0.85 [0.49–1.47]*
IQ	0.96 [0.94–0.98]	–	*0.96 [0.94–0.98]*	–	*0.97 [0.95–0.99]*
Medium SES	1.19 [0.53–2.68]	–	–	*1.23 [0.54–2.80]*	*0.99 [0.42–2.35]*
Low SES	**4.81 [2.41–9.57]**	–	–	***5.26 [2.55–10.85]***	***4.14 [2.00–8.58]***
Panel C: Associations with the '*p*'-factor in the trauma-exposed sub sample – Beta [95% CI]					
Autistic traits	**3.36 [0.68–6.04]**	**3.58 [0.95–6.21]**	**2.68 [0.00–5.36]**	2.47 [−0.21–5.16]	2.35 [−0.28–4.99]
Female sex	**3.23 [0.30–6.16]**	***3.51 [0.60–6.41]***	–	–	***3.26 [0.34–6.18]***
IQ	**−0.16 [−0.26 - -0.06]**	–	***−0.14 [−0.24 - -0.03]***	–	*−0.10 [−0.21–0.01]*
Medium SES	2.43 [−1.06–5.92]	–	–	*2.14 [−1.38–5.66]*	*1.51 [−2.00–5.02]*
Low SES	**5.75 [2.27–9.24]**	–	–	***4.94 [1.36–8.52]***	***3.92 [0.13–7.70]***

Values in bold text indicate statistically significant results ($p < .05$). Values in Italic text are contributions of confounding variables to the association between autistic traits and outcomes of interest. All models are adjusted for the non-independence of twin observations. 95% CI, 95% confidence intervals; Beta, beta coefficient; IQ, intelligence quotient; NEET, not in education, employment, or training; OR, odds ratio; '*p*'-factor, measure of general psychopathology; PTSD, post-traumatic stress disorder; SES, socio-economic status.

CI = 0.85; 1.64) and SES (OR = 1.05, 95% CI = 0.76; 1.47) were accounted for, nor when the model was adjusted for all possible confounders (OR = 0.98, 95% CI = 0.70; 1.37).

Associations of autistic traits with PTSD, general psychopathology and functional impairment in the trauma-exposed subsample

Full results of analyses in the trauma-exposed subsample ($n = 460$) are given in Table 3 and the main unadjusted and fully adjusted results are displayed in Figure 2C,D.

PTSD diagnosis. In young people who reported trauma exposure, those with higher autistic traits had a significantly increased likelihood of meeting the PTSD diagnostic criteria by the age of 18 (OR = 1.75, 95% CI = 1.15; 2.68; Table 3, Panel A). This remained statistically significant when adjusted for confounders; the association was slightly enhanced when sex (OR = 1.86, 95% CI = 1.21; 2.88) was accounted for, and slightly attenuated when adjusting for IQ (OR = 1.66, 95% CI = 1.08; 2.54) and SES (OR = 1.52, 95% CI = 1.00; 2.32), as well as in the fully adjusted model (OR = 1.62, 95% CI = 1.04; 2.53).

General psychopathology. In young people who reported trauma exposure, those with higher autistic traits had a significantly increased likelihood of having higher levels of psychopathology at age 18 (Beta = 3.36, 95% CI = 0.68; 6.04; Table 3, Panel C). This relationship was not significant when the model was adjusted for confounders; the association was enhanced when sex was accounted for (Beta = 3.58, 95% CI = 0.95; 6.21), but attenuated when controlling for IQ (Beta = 2.68, 95% CI = 0.00; 5.36) or SES (Beta = 2.47, 95% CI = −0.21; 5.16), and in the fully adjusted model (Beta = 2.35, 95% CI = −0.28; 4.99).

Functional impairment. In young people who reported trauma exposure, those with higher autistic traits did not have a significantly increased likelihood of being NEET at age 18 (OR = 1.07, 95% CI = 0.65; 1.77; Table 3, Panel B). This remained statistically non-significant when adjusting for confounders; accounting for sex had minimal impact on the association (OR = 1.07, 95% CI = 0.64; 1.77), whereas the association was attenuated to a (non-significant) *decrease* in the likelihood of being NEET when adjusting for IQ (OR = 0.8, 95% CI = 0.56; 1.39) or SES (OR = 0.77, 95% CI = 0.46; 1.29), as well as in the fully adjusted model (OR = 0.66, 95% CI = 0.40; 1.08).

Sensitivity analyses

First, we restricted the analytical sample to participants with complete CAST data at age 8 to test if the replacement of missing CAST data at age 8 impacted our findings. In the restricted sample with complete CAST data at age 8 ($n = 1,213$), we found similar results as in the overall sample used above (see Appendix S6, Tables S3, S4). Second, we focused the analyses predicting PTSD on the past-year

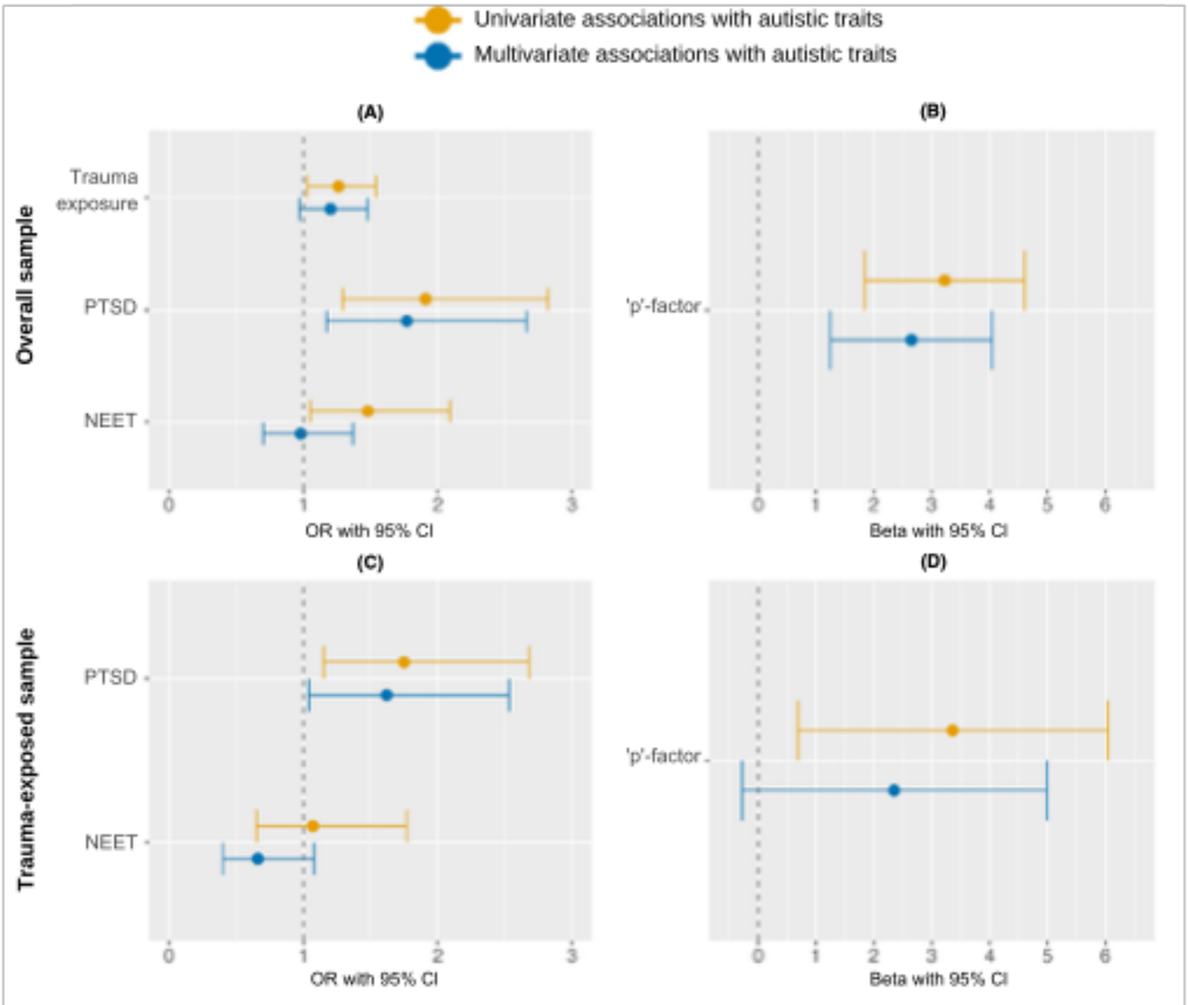

Figure 2 Univariate and multivariate regressions showing the association between autistic traits and outcome measures at age 18 for the overall sample (N = 1,504) and trauma-exposed subsample (n = 460). All models are adjusted for the non-independence of twin observations. Univariate regressions are from analyses unadjusted for potential confounders, and multivariate regression results are analyses accounting for confounding effects of sex, intelligence quotient and family socio-economic status. Odds ratios and beta-coefficients are plotted with 95% confidence limits. Figure 2 shows univariate and multivariate analyses between autistic traits and (A) trauma exposure, PTSD diagnosis and NEET status in the overall sample, (B) '*p*'-factor in the overall sample, (C) PTSD diagnosis and NEET status in the trauma-exposed subsample, and (D) '*p*'-factor in the trauma-exposed subsample. The dotted line on the axis indicates no association: 1 for logistic regressions in (A) and (C), and 0 for linear regressions (B) and (D). 95% CI, 95% confidence intervals; Beta, beta-coefficient; NEET, not in education, employment or training; OR, odds ratio; '*p*'-factor, measure of general psychopathology; PTSD, post-traumatic stress disorder

diagnosis, rather than the lifetime diagnosis used above, to provide a clearer timeline for the associations examined. As expected, fewer participants had a past-year PTSD diagnosis (n = 63) than a lifetime diagnosis. Focusing on the past-year PTSD diagnosis, we found similar results to those obtained in the analyses using the lifetime PTSD diagnosis presented above (see Appendix S6, Tables S5, S6).

Discussion

Our findings in a longitudinal birth cohort indicate an elevated propensity for meeting diagnostic criteria for PTSD in young people with higher autistic traits in childhood, over and above the effects of established risk factors, such as female sex, lower IQ, and lower SES. The relationship between autistic traits and PTSD persisted in the subsample of young people who reported trauma exposure, suggesting that the association was not simply explained by an increased risk of trauma exposure but reflects greater vulnerability to develop PTSD in trauma-exposed young people with higher autistic traits. Beyond PTSD, children with higher autistic traits in the overall sample had greater general psychopathology ('*p*'), but this association was no longer significant in the subset of trauma-exposed young people after accounting for potential confounding effects. Higher autistic traits in childhood also increased the likelihood of the young people reporting trauma exposure and being NEET at age 18, but these associations were no longer statistically significant after accounting for low SES.

Children with higher autistic traits had higher rates of self-reported trauma exposure, but this association was statistically accounted for by co-occurring disadvantaged socio-economic conditions. This is in line with the strong association of socio-economic disadvantage with childhood trauma and adversity (Lacey, Howe, Kelly-Irving, Bartley, & Kelly, 2022). Because studies have consistently reported higher rates of trauma exposure among autistic versus non-autistic adults (Quinton, Ali, Danese, Happé, & Rumball, 2024), we expected that autistic traits would be associated with reported trauma exposure in our study. However, the only case–control study that found higher rates of trauma exposure in autistic versus non-autistic children did not take into account SES (Paul, Gallot, Lelouche, Bouvard, & Amestoy, 2018). Our findings suggest that socio-economic factors may help explain the relationship between autistic traits and trauma exposure. It is also possible that the observed relationships between autistic traits, trauma exposure and socio-economic disadvantage may be due to overlapping influences, and our observational design cannot conclusively determine a direct mechanistic role for socio-economic disadvantage. Future research using experimental designs and/or repeated measures of socio-economic status (Ludwig et al., 2011) might be able to disentangle the mechanisms underlying the association between autistic traits and trauma exposure. Furthermore, the current analyses tested whether autistic traits are associated with exposure to trauma, as narrowly defined in DSM-5 (American Psychiatric Association, 2013). Research suggests that this narrow definition may not capture the broader set of negative experiences that young people with high autistic traits also appraise as traumatic and might trigger PTSD in this group (as seen in autistic adults, Rumball, Happé, & Grey, 2020). The role of subjective appraisal of trauma memories has been demonstrated as a key determinant of trauma-related psychopathology (Baldwin, Coleman, Francis, & Danese, 2024; Coleman et al., 2024; Danese & Widom, 2020). More clinical and epidemiological research is needed to map and adapt definitions of trauma for neurodivergent young people, and these findings highlight the importance of an intersectional approach to investigating the association between autistic characteristics and trauma exposure.

Children with higher autistic traits were more likely to develop PTSD as young adults, regardless of the effects of sex, IQ and SES. Furthermore, the findings did not simply reflect a heightened risk of trauma exposure, as the association held within the trauma-exposed subgroup. Rather, the findings suggest that trauma-exposed children with higher autistic traits were more likely to develop PTSD than their low-trait peers. As discussed in the introduction, studies largely undertaken in adult samples suggest an overlap between established cognitive vulnerabilities for PTSD and cognitive differences observed in autistic individuals. Further research is necessary to identify the specific profile of autistic characteristics that increase the likelihood of PTSD. By mapping cognitive risk factors linked with specific autistic traits in young people, we may better understand the mechanisms underlying the observed associations and provide more targeted support.

Autistic traits were associated with poorer mental health outcomes above and beyond PTSD, as measured by a general psychopathology factor, in line with other population-based studies (Lundström et al., 2011). This was observed both in the overall sample and in the trauma-exposed subsample to similar effect. However, after adjusting for potential confounders, the association remained significant only in the overall sample. The association in the overall sample is unsurprising given the wealth of research on poorer mental health outcomes for autistic people compared with non-autistic people (Lai et al., 2019; Muniandy, Richdale, Arnold, Trollor, & Lawson, 2021), as well as people with high autistic traits compared with those with low/no autistic traits (Stewart et al., 2020). Lack of statistical significance in the adjusted association between autistic traits and general psychopathology within the trauma-exposed subsample may reflect lower statistical power (the effect sizes in adjusted analyses were similar in the overall sample and trauma-exposed subsample) or a stronger role of the potential confounders examined. Our research adds to previous findings by indicating that autistic traits might exacerbate the impact of childhood trauma on general psychopathology, although more research is needed to disentangle causal and non-causal explanations.

Beyond mental health outcomes, our results showed a small association between autistic traits and NEET status at age 18 in the overall sample. However, this association became non-significant when other risk factors were considered, suggesting that SES and IQ played a role in this relationship. No relationship was observed between autistic traits and NEET status in the trauma-exposed subsample. There is minimal research on autistic traits and functional outcomes in the general population, but research with college students found autistic traits to be associated with academic difficulties, independent of an autism diagnosis (McLeod & Anderson, 2023). Furthermore, higher autistic traits have been associated with lower personal income in a sample of 2,491 adults (Skylark & Baron-Cohen, 2017). We know that finding employment has additional challenges for autistic adults, including being burdened by the need to conceal or 'camouflage' their autistic traits (Finn, Flower, Leong, & Hedley, 2023). Autistic people are underrepresented in the labor market (Frank et al., 2018), and previous research has highlighted that poorer mental health is one reason that autistic people's employment (Chen, Leader, Sung, & Leahy, 2015) and education (Van Hees, Moyson, & Roeyers, 2015) are disrupted. Given the negative findings, it is possible that autistic traits in the general population do not have independent effects on broad functional outcomes, such as NEET, beyond the detrimental impact of low IQ, low SES and trauma exposure.

Limitations

The first limitations pertain to the measure of childhood autistic traits. This measure was produced from CAST scores taken at different ages (mainly at 8 years, but also at 9 and 12 years when age-8 scores were not available) to maximise the sample size, but CAST scores at later ages might not have provided a reliable proxy for earlier CAST scores. However, CAST scores at these ages showed moderate positive correlations in our sample, and previous work in the full TEDS cohort found that individual differences in autistic traits measured by parent-reported CAST were stable from ages 8–12 years (Holmboe et al., 2014). Only a small number of children ($n = 33$, 2.19%) met the validated cut-off (≥ 14) suggestive of potential autism (Williams et al., 2005), which is in line with a recent estimate that 1%–2% of the UK population are autistic (NHS Digital, 2020; Zeidan et al., 2022). While it is clear that high autistic traits do not equate to an autism diagnosis (Lord & Bishop, 2021), utilising a trait-wise approach has proved beneficial for identifying and including those from under-diagnosed groups, such as older adults (Stewart et al., 2023), women (Cardon, McQuarrie, Calton, & Gabrielsen, 2023) and those from low-income countries (Heys et al., 2018). While useful, our findings may not generalise to autistic young people, and it will be essential to replicate our findings in a diagnosed autistic sample. Second, trauma exposure was measured by retrospective self-report and was recorded without information on the specific timing of the exposure. It is possible that the onset of trauma-related psychopathology preceded the autistic trait measure, and due to overlapping characteristics of autism and trauma responses in children (Stavropoulos, Bolourian, & Blacher, 2018), the exposure may have impacted the expression of the autistic trait score. However, sensitivity analysis focusing on PTSD diagnosis within the last 12 months (instead of lifetime) showed a very similar pattern of results. Third, there was a small overlap between the lifetime PTSD diagnosis and general psychopathology outcomes, as the *p*-factor was calculated from the symptoms of 11 mental health conditions over the past year, including PTSD. Although the *p*-factor and PTSD measures are not fully independent, we chose to use the previously published *p*-factor measure (Schaefer et al., 2018) to ensure comparability with other E-Risk studies and because PTSD likely makes a limited independent contribution to the *p*-factor due to its relatively low prevalence and high rates of psychiatric comorbidity. Fourth, although we controlled in the analyses for key potential confounders (sex, IQ, SES), unmeasured confounders could provide alternative explanations for the associations observed. Finally, these data were from a sample of twins; it has been argued that the experiences of twins may not be representative of those of singletons, and findings may not be generalisable to people who are not twins (Røysamb & Tambs, 2016). However, the prevalence of trauma and psychiatric disorders in E-Risk participants is within the range reported in studies involving non-twins (Lewis et al., 2019; Lewis et al., 2021), supporting the wider applicability of findings from this cohort.

Conclusions

This is the first longitudinal study to show a significant association between autistic traits in childhood and PTSD diagnosis by early adulthood. Future research needs to elucidate specific mechanisms of vulnerability to PTSD in young people with autistic traits, so that those at risk can be identified and receive targeted support in which their neurodivergent characteristics are accommodated.

Supporting information

Additional supporting information may be found online in the Supporting Information section at the end of the article:

Appendix S1. Sample characteristics.

Appendix S2. Selecting the autistic trait measure.

Appendix S3. Missing data.

Appendix S4. Dimensional measures of psychopathology within the E-Risk cohort at age 18.

Appendix S5. Associations between variables.

Appendix S6. Sensitivity analyses.

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The authors have declared that they have no competing or potential conflicts of interest.

Ethical considerations

The Joint South London and Maudsley and the Institute of Psychiatry Research Ethics Committee approved each phase of the E-Risk study. Parents gave written informed consent, and twins gave assent between 5 and 12 years; twins then gave informed consent at age 18. Ethical approval for TEDS was provided by the King's College London Ethics Committee (reference: PNM/09/10–104). Written informed consent was obtained from parents prior to data collection and from twins themselves from age 16 onward. The use of anonymised data for academic purposes did not require additional ethical approval.

Data availability

Data for this study came from the Environmental Risk (E-Risk) Longitudinal Twin Study and the Twins Early Development Study (TEDS). Researchers can apply for managed access to both (E-Risk: https://eriskstudy.com/data-access/; TEDS: https://www.teds.ac.uk/researchers/teds-data-access-policy).

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Key points

- Cross-sectional studies have previously shown positive associations between autistic traits and PTSD in adults.
- This is the first longitudinal study demonstrating a significant relationship between childhood autistic traits and meeting PTSD diagnostic criteria by early adulthood.
- Among the trauma-exposed young people, autistic traits were also significantly associated with a lifetime PTSD diagnosis.
- Increased risk for trauma exposure amongst those with subclinical autistic traits is likely multi-faceted and may be accounted for by factors such as socio-economic status.
- Findings highlight the need for targeted assessments and evidence-based treatments for PTSD in children with high autistic traits, and for future research to identify specific mechanisms of vulnerability to PTSD in autistic individuals.

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (DSM-5®)* (5th edn). Author.

Baldwin, J.R., Coleman, O., Francis, E.R., & Danese, A. (2024). Prospective and retrospective measures of child maltreatment and their association with psychopathology: A systematic review and meta-analysis. *JAMA Psychiatry*, *81*, 769–781.

Best, C.S., Moffat, V.J., Power, M.J., Owens, D.G.C., & Johnstone, E.C. (2008). The boundaries of the cognitive phenotype of autism: Theory of mind, central coherence and ambiguous figure perception in young people with autistic traits. *Journal of Autism and Developmental Disorders*, *38*, 840–847.

Brewin, C.R., Dalgleish, T., & Joseph, S. (1996). A dual representation theory of posttraumatic stress disorder. *Psychological Review*, *103*, 670–686.

Brosnan, M., & Gavin, J. (2023). The impact of higher levels of autistic traits on risk of hikikomori (pathological social withdrawal) in young adults. *PLoS One*, *18*, e0281833.

Cardon, G., McQuarrie, M., Calton, S., & Gabrielsen, T.P. (2023). Similar overall expression, but different profiles, of autistic traits, sensory processing, and mental health between young adult males and females. *Research in Autism Spectrum Disorders*, *109*, 102263.

Chandler, M., & Barrett, R. (2013). *UK estimate of young people not in education, employment or training*. London: Office for National Statistics.

Chen, J.L., Leader, G., Sung, C., & Leahy, M. (2015). Trends in employment for individuals with Autism Spectrum Disorder: A review of the research literature. *Review Journal of Autism and Developmental Disorders*, *2*, 115–127.

Coleman, O., Baldwin, J.R., Dalgleish, T., Rose-Clarke, K., Widom, C.S., & Danese, A. (2024). Research Review: Why do prospective and retrospective measures of maltreatment differ? A narrative review. *Journal of Child Psychology and Psychiatry*, *65*, 1662–1677.

Dahoun, T., Peel, A., Baldwin, J., Coleman, O., Lewis, S.J., Wertz, J., … & Danese, A. (2024). Genetic and environment influences on childhood victimization: A systematic review and meta-analysis. *Molecular Psychiatry*. https://doi.org/10.1038/s41380-024-02868-z

Danese, A., McLaughlin, K.A., Samara, M., & Stover, C.S. (2020). Psychopathology in children exposed to trauma: Detection and intervention needed to reduce downstream burden. *British Medical Journal*, *371*, m3073.

Danese, A., & Widom, C.S. (2020). Objective and subjective experiences of child maltreatment and their relationships with psychopathology. *Nature Human Behaviour*, *4*, 811–818.

Ehlers, A., & Clark, D.M. (2000). A cognitive model of posttraumatic stress disorder. *Behaviour Research and Therapy*, *38*, 319–345.

Finn, M., Flower, R.L., Leong, H.M., & Hedley, D. (2023). 'If I'm just me, I doubt I'd get the job': A qualitative exploration of autistic people's experiences in job interviews. *Autism*, *27*, 2086–2097.

Frank, F., Jablotschkin, M., Arthen, T., Riedel, A., Fangmeier, T., Hölzel, L.P., & van Tebartz Elst, L. (2018). Education and employment status of adults with autism spectrum disorders in Germany – A cross-sectional-survey. *BMC Psychiatry*, *18*, 1–10.

Golan, O., Haruvi-Lamdan, N., Laor, N., & Horesh, D. (2022). The comorbidity between autism spectrum disorder and post-traumatic stress disorder is mediated by brooding rumination. *Autism*, *26*, 538–544.

Happé, F., & Frith, U. (2006). The weak coherence account: Detail-focused cognitive style in autism spectrum disorders. *Journal of Autism and Developmental Disorders*, *36*, 5–25.

Happé, F., & Frith, U. (2020). Annual Research Review: Looking back to look forward – changes in the concept of autism and implications for future research. *Journal of Child Psychology and Psychiatry*, *61*, 218–232. https://doi.org/10.1111/jcpp.13176

Haruvi-Lamdan, N., Lebendiger, S., Golan, O., & Horesh, D. (2019). Are PTSD and autistic traits related? An examination among typically developing Israeli adults. *Comprehensive Psychiatry*, *89*, 22–27.

Heys, M., Gibbons, F., Haworth, E., Medeiros, E., Tumbahangphe, K.M., Wickenden, M., … & Pellicano, E. (2018). The estimated prevalence of autism in school-aged children living in rural Nepal using a population-based screening tool. *Journal of Autism and Developmental Disorders*, *48*, 3483–3498.

Holmboe, K., Rijsdijk, F.V., Hallett, V., Happé, F., Plomin, R., & Ronald, A. (2014). Strong genetic influences on the stability of autistic traits in childhood. *Journal of the American Academy of Child and Adolescent Psychiatry*, *53*, 221–230.

Hoover, D.W., & Kaufman, J. (2018). Adverse childhood experiences in children with autism spectrum disorder. *Current Opinion in Psychiatry*, *31*, 128–132.

Huckins, L.M., Johnson, J.S., Cancelmo, L., Diab, O., Schaffer, J., Cahn, L., … & Feder, A. (2021). Polygenic regulation of PTSD severity and outcomes among World Trade Center responders. *medRxiv*. https://doi.org/10.1101/2020.12.06.20244772

Kerns, C.M., Newschaffer, C.J., & Berkowitz, S.J. (2015). Traumatic childhood events and autism Spectrum disorder. *Journal of Autism and Developmental Disorders*, *45*, 3475–3486.

Kerns, C.M., Rast, J.E., & Shattuck, P.T. (2020). Prevalence and correlates of caregiver-reported mental health conditions in youth with autism spectrum disorder in the United States. *Journal of Clinical Psychiatry*, *82*, 11637.

Koenen, K.C., Moffitt, T.E., Poulton, R., Martin, J., & Caspi, A. (2007). Early childhood factors associated with the development of post-traumatic stress disorder: Results from a longitudinal birth cohort. *Psychological Medicine*, *37*, 181–192.

Lacey, R.E., Howe, L.D., Kelly-Irving, M., Bartley, M., & Kelly, Y. (2022). The clustering of adverse childhood experiences in the Avon Longitudinal Study of Parents and Children: Are gender and poverty important? *Journal of Interpersonal Violence*, *37*, 2218–2241.

Lai, M.-C., Kassee, C., Besney, R., Bonato, S., Hull, L., Mandy, W., … & Ameis, S.H. (2019). Prevalence of co-occurring mental health diagnoses in the autism population: A systematic review and meta-analysis. *The Lancet Psychiatry*, *6*, 819–829.

Lewis, S.J., Arseneault, L., Caspi, A., Fisher, H.L., Matthews, T., Moffitt, T.E., … & Danese, A. (2019). The epidemiology of trauma and post-traumatic stress disorder in a representative cohort of young people in England and Wales. *Lancet Psychiatry*, *6*, 247–256.

Lewis, S.J., Koenen, K.C., Ambler, A., Arseneault, L., Caspi, A., Fisher, H.L., … & Danese, A. (2021). Unravelling the contribution of complex trauma to psychopathology and cognitive deficits: A cohort study. *The British Journal of Psychiatry*, *219*, 448–455.

Lord, C., & Bishop, S.L. (2021). Let's be clear that "Autism spectrum disorder symptoms" are not always related to autism spectrum disorder. *American Journal of Psychiatry*, *178*, 680–682.

Ludwig, J., Sanbonmatsu, L., Gennetian, L., Adam, E., Duncan, G.J., Katz, L.F., … & McDade, T.W. (2011). Neighborhoods, obesity, and diabetes – A randomized social experiment. *The New England Journal of Medicine*, *365*, 1509–1519.

Lundström, S., Chang, Z., Kerekes, N., Gumpert, C.H., Råstam, M., Gillberg, C., … & Anckarsäter, H. (2011). Autistic-like traits and their association with mental health problems in two nationwide twin cohorts of children and adults. *Psychological Medicine*, *41*, 2423–2433.

Marinopoulou, M., Billstedt, E., Wessman, C., Bornehag, C.G., & Hallerbäck, M.U. (2025). Association between intellectual functioning and autistic traits in the general population of children. *Child Psychiatry and Human Development*, *56*, 264–275. https://doi.org/10.1007/s10578-023-01562-5

Mazefsky, C.A., Borue, X., Day, T.N., & Minshew, N.J. (2014). Emotion regulation patterns in adolescents with high-functioning autism spectrum disorder: Comparison to typically developing adolescents and association with psychiatric symptoms. *Autism Research*, *7*, 344–354.

McLeod, J.D., & Anderson, E.M. (2023). Autistic traits and college adjustment. *Journal of Autism and Developmental Disorders*, *53*, 3475–3492.

Moffitt, T.E., & E-Risk Study Team. (2002). Teen-aged mothers in contemporary Britain. *Journal of Child Psychology and Psychiatry*, *43*, 727–742.

Muniandy, M., Richdale, A.L., Arnold, S.R.C., Trollor, J.N., & Lawson, L.P. (2021). Inter-relationships between trait resilience, coping strategies, and mental health outcomes in autistic adults. *Autism Research*, *14*, 2156–2168.

Napolitano, A., Schiavi, S., La Rosa, P., Rossi-Espagnet, M.C., Petrillo, S., Bottino, F., … & Vicari, S. (2022). Sex differences in autism spectrum disorder: Diagnostic, neurobiological, and behavioral features. *Frontiers in Psychiatry*, *13*, 889636.

NHS Digital. (2020). *Autism waiting time statistics*. NDRS. Available from: https://digital.nhs.uk/data-and-information/publications/statistical/autism-statistics/q1-april-to-june-2020-21/data-quality-copy

Odgers, C.L., Caspi, A., Bates, C.J., Sampson, R.J., & Moffitt, T.E. (2012). Systematic social observation of children's neighborhoods using Google Street View: A reliable and cost-effective method. *Journal of Child Psychology and Psychiatry*, *53*, 1009–1017.

Paul, A., Gallot, C., Lelouche, C., Bouvard, M.P., & Amestoy, A. (2018). Victimisation in a French population of children and youths with autism spectrum disorder: A case control study. *Child and Adolescent Psychiatry and Mental Health*, *12*, 48.

Peel, A.J., Purves, K.L., Baldwin, J.R., Breen, G., Coleman, J.R.I., Pingault, J.B., … & Eley, T.C. (2022). Genetic and early environmental predictors of adulthood self-reports of trauma. *British Journal of Psychiatry*, *221*, 613–620.

Quinton, A.M.G., Ali, D., Danese, A., Happé, F., & Rumball, F. (2024). The assessment and treatment of post-traumatic stress disorder in autistic people: A systematic review. *Review Journal of Autism and Developmental Disorders*. https://doi.org/10.1007/s40489-024-00430-9

Ratanatharathorn, A., Koenen, K.C., Chibnik, L.B., Weisskopf, M.G., Rich-Edwards, J.W., & Roberts, A.L. (2021). Polygenic risk for autism, attention-deficit hyperactivity disorder, schizophrenia, major depressive disorder, and neuroticism is associated with the experience of childhood abuse. *Molecular Psychiatry*, *26*, 1696–1705.

Reuben, A., Sugden, K., Arseneault, L., Corcoran, D.L., Danese, A., Fisher, H.L., … & Caspi, A. (2020). Association of neighborhood disadvantage in childhood with DNA methylation in young adulthood. *The Journal of the American Medical Association (JAMA) Network Open*, *3*, e206095.

Robins, L., Cottler, L., Bucholz, K., & Compton, W. (1995). *Diagnostic Interview Schedule for DSM-IV*. St. Louis: Washington University School of Medicine.

Robinson, E.B., Koenen, K.C., McCormick, M.C., Munir, K., Hallett, V., Happé, F., … & Ronald, A. (2011). Evidence that autistic traits show the same etiology in the general population and at the quantitative extremes (5%, 2.5%, and 1%). *Archives of General Psychiatry*, *68*, 1113–1121.

Røysamb, E., & Tambs, K. (2016). The beauty, logic and limitations of twin studies. *Norsk Epidemiologi*, *26*, 35–46.

Rumball, F., Antal, K., Happé, F., & Grey, N. (2021). Co-occurring mental health symptoms and cognitive processes in trauma-exposed ASD adults. *Research in Developmental Disabilities*, *110*, 103836. doi: 10.1016/j.ridd.2020.103836.

Rumball, F., Brook, L., Happé, F., & Karl, A. (2021). Heightened risk of posttraumatic stress disorder in adults with autism spectrum disorder: The role of cumulative trauma and memory deficits. *Research in Developmental Disabilities*, *110*, 103848.

Rumball, F., Happé, F., & Grey, N. (2020). Experience of trauma and PTSD symptoms in autistic adults: Risk of PTSD development following DSM-5 and non-DSM-5 traumatic life events. *Autism Research*, *13*, 2122–2132.

Sallis, H.M., Croft, J., Havdahl, A., Jones, H.J., Dunn, E.C., Smith, G.D., … & Munafò, M.R. (2021). Genetic liability to schizophrenia is associated with exposure to traumatic events in childhood. *Psychological Medicine*, *51*, 1814–1821.

Sattler, J.M. (1988). In 3rd edn (Ed.), *Assessment of children*. Jerome M. Sattler.

Schaefer, J.D., Moffitt, T.E., Arseneault, L., Danese, A., Fisher, H.L., Houts, R., … & Caspi, A. (2018). Adolescent victimization and early-adult psychopathology: Approaching causal inference using a longitudinal twin study to rule out noncausal explanations. *Clinical Psychological Science*, *6*, 352–371.

Scott, F.J., Baron-Cohen, S., Bolton, P., & Brayne, C. (2002). The CAST (Childhood asperger syndrome test): Preliminary development of a UK screen for mainstream primary-school-age children. *Autism*, *6*, 9–31.

Skylark, W.J., & Baron-Cohen, S. (2017). Initial evidence that non-clinical autistic traits are associated with lower income. *Molecular Autism*, *8*, 61.

Stavropoulos, K.K.-M., Bolourian, Y., & Blacher, J. (2018). Differential diagnosis of autism spectrum disorder and post traumatic stress disorder: Two clinical cases. *Journal of Clinical Medicine*, *7*, 71.

Stewart, G.R., Corbett, A., Ballard, C., Creese, B., Aarsland, D., Hampshire, A., … & Happé, F. (2023). The cognitive profile of middle-aged and older adults with high vs. low autistic traits. *Autism Research*, *16*, 429–440.

Stewart, G.R., Corbett, A., Ballard, C., Creese, B., Aarsland, D., Hampshire, A., … & Happé, F. (2020). Sleep problems and mental health difficulties in older adults who endorse high autistic traits. *Research in Autism Spectrum Disorders*, *77*, 101633.

Trouton, A., Spinath, F.M., & Plomin, R. (2002). Twins early development study (TEDS): A multivariate, longitudinal genetic investigation of language, cognition and behavior problems in childhood. *Twin Research*, *5*, 444–448.

Trzesniewski, K.H., Moffitt, T.E., Caspi, A., Taylor, A., & Maughan, B. (2006). Revisiting the association between reading achievement and antisocial behavior: New evidence of an environmental explanation from a twin study. *Child Development*, *77*, 72–88.

Van Hees, V., Moyson, T., & Roeyers, H. (2015). Higher education experiences of students with autism spectrum disorder: Challenges, benefits and support needs. *Journal of Autism and Developmental Disorders*, *45*, 1673–1688.

Wang, Y., Zhang, Y., Liu, L., Cui, J., Wang, J., Shum, D.H.K., … & Chan, R.C.K. (2017). A meta-analysis of working memory impairments in autism spectrum disorders. *Neuropsychology Review*, *27*, 46–61.

Warrier, V., & Baron-Cohen, S. (2021). Childhood trauma, lifetime self-harm, and suicidal behaviour and ideation are associated with polygenic scores for autism. *Molecular Psychiatry*, *26*, 1670–1684.

Weiland, R.F., Polderman, T.J., Hoekstra, R.A., Smit, D.J., & Begeer, S. (2020). The Dutch Sensory Perception Quotient-Short in adults with and without autism. *Autism*, *24*, 2071–2080.

Williams, J., Scott, F., Stott, C., Allison, C., Bolton, P., Baron-Cohen, S., & Brayne, C. (2005). The CAST (Childhood Asperger Syndrome Test): Test accuracy. *Autism*, *9*, 45–68.

Williams, R.L. (2000). A note on robust variance estimation for cluster-correlated data. *Biometrics*, *56*, 645–646.

Zeidan, J., Fombonne, E., Scorah, J., Ibrahim, A., Durkin, M.S., Saxena, S., … & Elsabbagh, M. (2022). Global prevalence of autism: A systematic review update. *Autism Research*, *15*, 778–790.

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Chapter 4: Autism practitioners' perspectives on the differential diagnosis of autism, attachment difficulties and complex post traumatic stress disorder: a qualitative framework analysis

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4.1 Abstract

Background: Autism, attachment difficulties, and Complex PTSD (CPTSD) can present with overlapping characteristics in children. This can create challenges in differential diagnosis, particularly when conditions may co-occur. Understanding practitioners' perspectives on how they approach these complexities is essential for improving diagnostic practices.

Objectives: To explore how practitioners with expertise in autism assess and differentiate between autism, attachment difficulties and CPTSD in children, focusing on their experiences, challenges, and perspectives on the diagnostic process.

Methods: An online survey was conducted with 37 autism practitioners, predominantly from the UK, including clinical psychologists, psychiatrists, and speech and language therapists. Participants shared their insights on assessment practices through open-ended questions, and their responses were analysed by applying a framework analysis to the data. Through mapping and interpretation of the framework matrix, we were able to highlight any contrasting opinions amongst different professions.

Results: Four themes with subthemes were identified. Theme (1) Factors Impacting a Robust Assessment highlighted clinical experience, multidisciplinary teams, accurate history taking, assessment tools and systemic challenges in healthcare as playing key roles in assessment. Theme (2) Trauma and Autism: Either or Both? identified the challenge of differential vs co-occurring diagnosis, and that considerations of family history and watchful waiting can be helpful when confronted with this challenge. Theme (3) The Impact of a Diagnosis identified that diagnostic labels impact access to support and stigma.

Conclusions: Autism practitioners reported a need for research refining and validating diagnostic tools, particularly for differential diagnosis of attachment difficulties and autism. Shadowing opportunities for less experienced practitioners were also seen as desirable. It is essential that collaborative efforts between trauma and neurodevelopmental services attempt to integrate the current silos of autism, attachment and trauma-related expertise. Addressing systemic barriers and healthcare disparities is the first step to providing holistic care for children who are autistic, have PTSD, and/or have attachment difficulties.

4.2 Introduction

Autism, attachment difficulties and Complex Post-Traumatic Stress Disorder (CPTSD) can present with overlapping characteristics in children. This can present challenges for professionals, particularly when assessing differential or co-occurring diagnoses of these conditions. As an accurate diagnosis is often the foundation on which appropriate support or provisions are built, misdiagnosis can have significant implications on a child's development, mental health, education and sense of self.

Autism is a neurodevelopmental condition that is lifelong and typically diagnosed in childhood. Research suggests that earlier diagnosis allows autistic children, who receive resources and accommodations, to flourish throughout their development (Okoye et al., 2023). Indeed, early diagnosis of autism has been suggested to improve mental wellbeing; a study using the US-based SPARK cohort found that those with adulthood diagnoses are more likely to meet criteria for psychiatric disorders across their lifetime that their counterparts who were diagnosed in childhood (Jadav & Bal, 2022). Given the central role of an autism diagnosis in identity formation, and life-long implications for mental health and support, it is crucial that diagnosing clinicians are accurate. This is of particular importance for autistic children with complex presentations, such as those who have experienced trauma or unstable caregiving, so they are able to receive adapted or appropriate support for their needs.

Complex PTSD (CPTSD) is a psychiatric disorder that has only recently been defined in the ICD-11 (World Health Organization, 2019). CPTSD occurs after prolonged or repeated exposure to a trauma, often interpersonal and threatening in nature typically early in life (Herman, 1992), and requires core PTSD symptoms (re-experiencing, avoidance, and hypervigilance) alongside disturbances in self-organisation (DSO) (Lofthouse et al., 2024). DSO can include disturbances in relationships, emotion dysregulation and negative self-concept. Importantly, CPTSD is treatable. Research on CPTSD in children is in its infancy. However, evidence has shown that trauma-focused CBT, the primary treatment recommended in the National Institute for Health and Care Excellence (NICE) guidelines (NICE, 2018), is effective at reducing PTSD symptoms in children with CPTSD (Jensen et al., 2022; Sachser et al., 2017). It is therefore paramount that children with CPTSD are not missed or misdiagnosed, as the consequences are that a child does not receive appropriate and available mental healthcare.

Early childhood trauma has biological, cognitive, emotional and social sequelae that can appear similar to autistic characteristics in young children, with significant implications for clinical practice (Al-Attar & Worthington, 2024). Overlapping features include repetitive play, sleep difficulties, lack of interest in peers, and difficulties sharing emotions (Stavropoulos et al., 2018), potentially making differential diagnosis challenging. The DSO symptoms in CPTSD can also resemble autistic children's difficulties regulating their emotions and navigating relationships. Additionally, autistic people have high exposure to adverse childhood experiences (Hartley et al., 2024), and Paul and colleagues (2018) found autistic children experience more traumatic experiences and certain PTSD symptoms compared to non-autistic children. Given that autistic traits in childhood are related to meeting diagnostic criteria for PTSD as young adults (Quinton et al., 2025), it is essential that mental health services are meeting autistic children's needs. Both overlapping features and a lack of understanding of how trauma and PTSD present in autistic children creates difficulties for professionals in differentiating between the diagnoses.

Attachment difficulties in children, including specific attachment disorders such as reactive attachment disorder (RAD), are known to impact social and emotional behaviour. RAD is characterised by inhibited social and emotional responsiveness, alongside minimal responding or seeking out of comfort from caregivers (American Psychiatric Association, 2013). Inconsistent caregiving, neglect, or lack of stable relationships can lead to attachment difficulties that may resemble autistic characteristics, such as emotional withdrawal, challenges in peer relationships, and difficulties sharing emotions (Davidson et al., 2022). Extremely severe neglect, as experienced by children adopted from Romanian orphanages (Hoksbergen et al., 2005; Rutter et al., 1999), has been associated with elevated rates of "quasi-autism" (Rutter et al., 2007). Given that diagnostic criteria generally consider attachment disorder and autism as distinct and mutually exclusive, efforts have been made to aid clinical differentiation, such as the Coventry Grid (Moran, 2010). Discussions about attachment and autism remain complicated and often contentious due to debunked psychogenic theories, such as the "refrigerator mother" theory (see: Bennett et al., (2018)], that linked the aetiology of autism to parenting style. A systematic review of research pertaining to how attachment difficulties present in autistic children found mixed results (Teague et al., 2017), although more recent studies report high co-occurrence (Minnis et al., 2020; Talmón-Knuser et al., 2023).

When a child presents with overlapping features, the assessing clinicians must determine if there are differential or co-occurring diagnoses. When considering if an autism diagnosis is an accurate fit for the child's profile, all other explanations for behaviour must be explored. Narrative reviews have discussed the difficulties in differentiating between autism and trauma- or attachment- related diagnoses (Al-Attar & Worthington, 2024; Davidson et al., 2022). Diagnostic overshadowing occurs when all of a child's difficulties are seen exclusively through the lens of either trauma, attachment, or autism, without further exploration and consideration of a co-occurring diagnosis which may be present. Sarr and colleagues (2024) used a Delphi method to explore consensus opinion from practitioners with expertise in autism, CPTSD, emotionally unstable personality disorder or attachment difficulties. This study identified that autism can be differentiated from attachment difficulties by it's neurodevelopmental basis, stereotyped behaviours and intense interests, but highlighted that incomplete developmental information, early trauma that can lead to autism-like traits, insufficient tools, diagnostic overshadowing and professional knowledge gaps presents a clinical challenge.

Developing a better understanding of how autism experts approach the complexities of differential diagnosis of autism from socio-emotional difficulties relating to a negative experience, CPTSD and attachment difficulties, is essential for improving diagnostic practices. This study explores the perspectives of autism practitioners who assess and diagnose autism, regarding this assessment when attachment difficulties and CPTSD are also in question.

4.3 Method

Ethical approval was sought and granted from the King's College London Ethics Committee (MRSP-22/23–34,011).

4.3.1 Participants

Participants were 37 practitioners with self-reported expertise in autism. Practitioners reported working predominantly with children and adolescents. Table 4.1 provides characteristics of the sample. The majority of the professionals were clinical psychologists (n=22, 59%), although other professions are also represented in smaller numbers. The majority of the professionals (n=21, 57%) worked in the UK.

Table 4.1 *Characteristics of the sample (N=37)*

	N	%
Profession		
Clinical psychologist	22	59%
Occupational therapist	1	3%
Psychiatrist	4	11%
Educational Psychologist	5	14%
Speech and language therapist	6	16%
Country of work		
UK	21	57%
Ireland	4	11%
USA	5	14%
Australia	2	5%
Canada	3	8%
Hong Kong	1	3%
Switzerland	1	3%
Years clinical experience		
4-9 years	19	51%
10-14 years	7	19%
15 years or more	11	30%

Participants were recruited via online social media advertising, word of mouth from existing contacts within the research team, and emailing authors who had published on related topics. All components of the study survey – providing study information, screening and informed consent – took place online, via Qualtrics. The inclusion criteria were; 18 years and over, expertise in assessing/diagnosing autism, a relevant core clinical profession (e.g., psychiatry, clinical psychology, psychotherapy, occupational therapy, speech and language therapy) with at least 4 years of professional experience post-qualification and being proficient in English.

Participants were allocated a participant ID based on their profession (CP = Clinical Psychologist, P = Psychiatrist, EP = Educational Psychologist, OT = Occupational Therapist; and SLT = Speech and Language Therapist).

4.3.2 Survey

Qualitative data for the present study was collated from the first-round answers of a Delphi study (Sarr et al., 2024). As the objective of the Delphi study was to produce consensus statements, much of the richness of the text answers could not be adequately captured and warranted further, more reflective, qualitative analysis.

The survey consisted of multiple-choice demographic questions, followed by open questions with free text answer boxes. The present paper's analysis pertains only to the answers of the participants who indicated that they work with children and their expert condition was autism. Questions were designed to elicit rich text answers from the practitioners about their opinions, reflections, experiences and perspectives on assessing and diagnosing autism, attachment disorders and CPTSD. Practitioners were asked about differential diagnosis; overlapping features, differentiating features, tools and methods used to differentiate between conditions, challenges when differentiating, what's helpful, the influence of demographics (e.g., age), and suggestions for improvement. We also asked for their perspective on dual diagnoses, autism assessment and the implications and benefits of autism diagnoses. A full list of the questions answered by the participants included in our study, as well as a detailed description of the survey structure, can be found in Appendix 2. The survey was completed in November 2022 to April 2023.

4.3.3 Framework analysis

All free-text answers were uploaded and analysed by applying a framework analysis to the data (Gale et al., 2013), as it allows for comparison across groups, in this case professions. The steps were as follows (Goldsmith, 2021): 1) data familiarisation, 2) framework identification, 3) indexing, 4) charting and summarising the matrix, and 5) mapping and interpretation.

A consensus approach was utilised, with AMGQ leading the full analysis, and DS analysing 20% of the data. FR and FH were familiar with the data through development of consensus statements for Sarr et al (2024)'s Delphi study. Upon familiarisation with the full dataset and initial coding of the first 5 cases, a working analytical framework was produced by AMGQ. The analytical framework was applied and discussed regularly with AMGQ, FR, DS and FH. The framework was honed iteratively as a team throughout the coding of the data. Data was charted using a framework matrix where participants were divided into groups based on their profession. Themes were discussed between AMGQ, DS, FR and FH until consensus was reached for the final themes and subthemes. Through mapping and interpretation of the framework matrix, we were able to highlight if there were any contrasting opinions amongst different professions. Researchers engaged in a reflexive and iterative process through frequent discussion throughout analysis.

4.3.4 Positionality

The positionality of the researchers varied across clinical and research experience, but all authors had expertise in autism. The lead author (AMGQ) was a PhD student focusing on trauma-related mental health in autistic young people. Two authors are clinical researchers (FR, DS) who have PhDs in mental health and/or autism and past experiences of working clinically within Autism Intensive Support Teams. DS works clinically in the NHS with autistic adults, and FR is a clinical psychologist working in an NHS adult autism service and specialising in research exploring the trauma-related mental health experiences of autistic adults. FH is a nonclinical academic with more than 30 years' experience in autism research.

4.4 Results

Framework analysis resulted in four overarching themes and ten subthemes (see Table 4.2 and Figure 4.1). For each theme we have indicated the proportion of practitioners who contributed to the theme by using conventional levels of endorsement (Sandelowski, 2001), such that, "few" indicates <25% of participants, "some" is 25%-50%, "many" is 51%-75%, "almost all/most" is ">75%-100%" and "all" is of course 100% of participants.

***Table 4.2** Summary of themes and subthemes*

Theme	Subtheme
1. Factors impacting a robust assessment	1.1.Clinical experience and intuition 1.2. A blended team of professionals 1.3.The history is crucial 1.4.Tools and methods 1.5.Systemic challenges within healthcare system
2. Trauma and autism: either or both?	2.1.One does not exclude the other 2.2.Watchful waiting 2.3.Family history 2.4.Clinical biases
3. The impact of a diagnosis	3.1.Opening up access 3.2.Attitudes and stigma

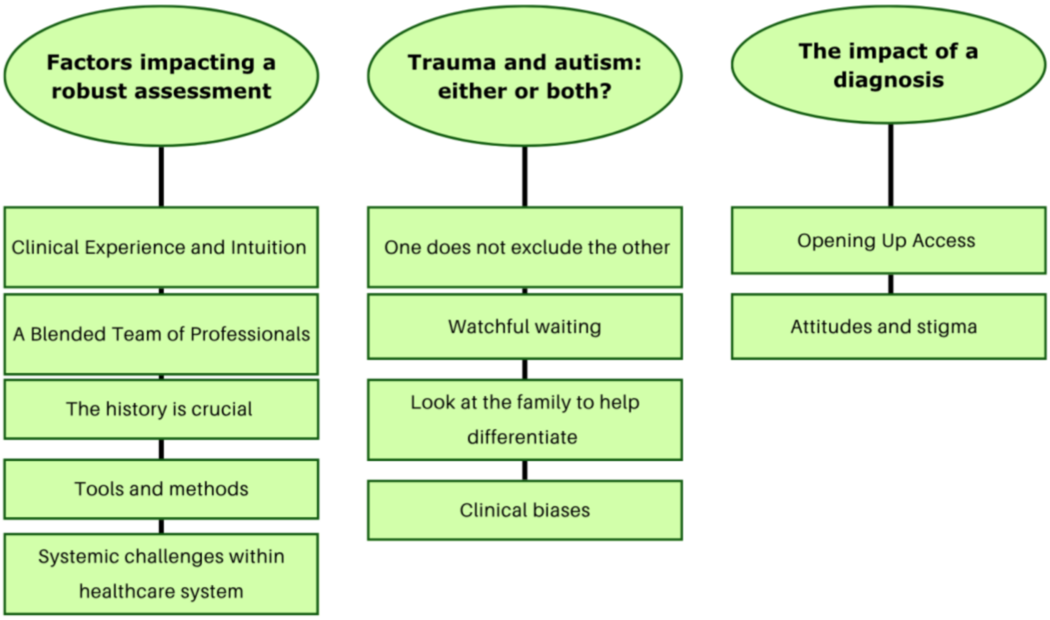

***Figure 4.1** Summary of themes and subthemes*

Theme 1: Factors impacting a robust assessment

A theme that was identified from almost all participants, was about the factors that impact a robust assessment of autism when a child's presentation may be related to negative life experiences such as CPTSD or attachment difficulties.

Subtheme 1.1: Clinical Experience and Intuition

Many of the practitioners spoke about how the amount of experience a professional has impacts on their clinical judgement and confidence. Less experienced practitioners struggle with differential diagnosis as well as with diagnosing CPTSD or attachment difficulties in autistic children. Participants felt that less experienced clinicians often over-emphasise the importance of specific characteristics. For example, differences in eye contact were described by many clinical psychologists as being given too much weight as a differential characteristic; *"For less experienced clinicians it may be that superficially these [autism and attachment difficulties] both have differences in eye contact and emotional expressiveness (facial expression etc) but the quality is often significantly different"* (CP2).

Several practitioners felt that clinical intuition gained through experience is an important aspect of an assessment, above the role of tools, as described by SLT3; "*diagnosis very rarely is down to diagnostic criteria and formal assessment tools. Clinical intuition and the feeling in the room is very important and we draw on our wealth of experience of having met lots of other young people in the assessment pathway*."

The practitioners agreed that shadowing or consulting more experienced clinicians, and continued education on trauma and attachment, would improve their experience in the area and confidence in their own and their colleagues' diagnostic choices: "*Continued access to CPD on this topic would be very helpful…reflection and learning on the overlapping features, but also the distinguishing features… Access to a consultative model across services in which one professional could seek the views of another professional in a more complex case"* (EP5).

Subtheme 1.2: A Blended Team of Professionals

Gathered in this subtheme is what most practitioners wrote about the necessity of a multidisciplinary team for a holistic assessment of the child. They felt that team discussions with colleagues, and observations from those of different professions, are valuable to gain multiple perspectives, particularly with more complex cases; *"The work is very nuanced and ideally requires a blended team of professionals to differentiate accurately"(*EP5).

However, some of the autism experts did highlight difficulties when working in a team, particularly when approaching differential or co-occurring diagnosis, such as disagreements amongst team members. EP5 shared that *"[it] can be difficult within a team if there is disagreement between members regarding whether both* *[autism and CPTSD] might exist, or whether trauma fully explains child's presentation".* Other practitioners talked of having less confidence in the opinions of team members who are less experienced (as highlighted in Subtheme 1.1), or have less knowledge of autism, "*Many clinicians who are in the MDT have not had training or experience in working with people with ASD and do not know what we are looking for in assessment. This makes it very hard to trust their opinion as we are not sure what it is based on*" (CP5).

The autism experts discussed the importance of collaborating with other teams, and out-sourcing for the diagnosis of C-PTSD or attachment disorders. They spoke of utilising other teams' expertise on other conditions, for example having a colleague that will assess PTSD while they assess autism, as conveyed by CP15, "*I do however joint assessments with a colleague...she will do the trauma / attachment part of the assessment while I do the ASD bit*".

Participants of all professions said they would ideally refer the child to services that can address both conditions if available and felt that routine screening for trauma and attachment difficulties is needed in neurodevelopmental assessments.

Subtheme 1.3: The history is crucial

Almost all practitioners identified that developmental history is crucial to see if autistic traits have been present from birth, if there have been any periods of inconsistent caregiving or any traumatic experiences. Taking comprehensive developmental history is essential for tracking a child's presentation across their development to identify factors associated with their difficulties; "*Depending on when the trauma happened, it is possible to differentiate based on normal early development up until the point of the trauma"* (CP16). A few practitioners acknowledged that this is difficult when assessing children without consistent caregivers, such as adopted or looked after children [LAC] or those with refugee status; *"Children who have been in the LAC* [Local Authority Care] *system often do not have clear accounts of their developmental history so we cannot determine the impact of attachment on them"(CP5).* Some clinicians, particularly occupational therapists and SLTs, wrote about difficulties obtaining information from educational or care settings, particularly for children from underprivileged backgrounds, as illustrated by OT1; "*There is a real challenge to get substantial information from educational settings to inform about autism or equally attachment*".

Almost all practitioners spoke about the key role of informants, usually parents, in history taking, and some expressed frustration at this sometimes being unreliable, for example CP15 wrote; *"Experience shows that some parents are lousy witnesses of their child's history"* if the *"parent has difficulties of their own (mental health and/or neurodevelopmental). You really need to be very careful to include as much corroborating information as possible, but it can be tricky."*

Many practitioners wrote about the challenge of when the informant has been involved in the trauma or not providing sufficient care. Parents and caregivers may be perpetrators or victims, leading to fear of repercussions of sharing information with practitioners. Therefore, many participants expressed the importance of nurturing trust with informants. However, as conveyed by CP5, this requires time that often clinicians do not have "*... people [need to] understand the importance of a reliable developmental history so clinicians are allocated enough time to complete interviews, chase information and help informants know that there are unlikely to be negative repercussions if they disclose issues in the relationship (unless there are risks)"* (CP5).

The need to consider the child and informant's current living situation was also voiced by some participants. Whether the trauma is on-going and how the informant perceives the event needs to be considered; *"Much of the work is reliant upon adult report… culture and socio-economic issues (e.g.: homelessness) can impact upon information gathered, and caregiver's current perceptions of the child's development*" (EP5).

Subtheme 1.4: Tools and methods

A subtheme regarding the use of standardised and unstandardised tools in assessments was identified from almost all practitioners. This revealed popular tools for diagnosis, differential or otherwise, and perspectives on which tools are fit for purpose. The practitioners described using observations, clinical interviews, parent interviews, questionnaires and often a cognitive assessment to assess autism, mental health, relationships with caregivers, sensory processing, adaptive skills, language and development.

A full list of the tools mentioned by autism practitioners can be found in Appendix 2, Table S2.1, with the Autism Diagnostic Observation Schedule (ADOS) (Lord et al., 1999) as the most mentioned across 81% of the practitioners as an effective tool to differentiate autism from trauma-related disorders. The majority of the tools were endorsed by clinical psychologists, who made up most of the sample, and psychiatrists. Autism assessment tools such as the Autism Diagnostic Interview (ADI) (Lord et al., 1994) were also highlighted as being useful for also identifying any trauma or periods of insufficient caregiving. However, practitioners wanted attachment to be considered within the ADOS interpretation and training as, as CP7 describes, children with attachment difficulties can perform similarly to autistic children, "*During ADOS, some young people with attachment disorders might not answer the questions about emotions. I do not always feel this is due to not knowing these answers, but due to fears about sharing their vulnerabilities with a new therapist in a one-hour session*."

Across all professions, practitioners expressed a need for more scales or measures that assess attachment in young children and differentiate attachment difficulties from autism effectively. When asked for suggestions on how to differentiate between autism and attachment disorders, clinical psychologists consistently mentioned the Coventry Grid (Moran, 2010) more than the other professions. Generally, they felt it was useful as a 'template', and for helping less experienced practitioners, but expressed frustration that this is all that is available.

The majority emphasised that, however useful these tools are, they must not be used in isolation but alongside clinical judgement when assessing a child. More generally, practitioners expressed concern that tools were not designed to reflect our current understanding of autism or to be inclusive of all genders and ethnicities: "*They have been constructed based on a very androcentric definition of ASD, which I believe is out-dated. We need more sensitive measures which may help us identify people who are on the spectrum but do not fit this very narrow definition" (CP5).*

Subtheme 1.5: Systemic challenges within healthcare system

A smaller but significant subtheme identified by some autism practitioners acknowledged that there are larger systemic challenges that are beyond the practitioner's control that make assessment difficult. These include being poorly resourced and not having time to thoroughly assess more complex presentations, as described by SLT2; *"Often teams don't have the expertise, time or are remote and limited to what assessments can be conducted as well as communications with other teams".* A consequence of this is that certain parts of the assessment that take the most time, such as taking detailed developmental history, suffer; *"poorly resourced services mean that clinicians are burnt out and this impacts on their clinical assessment. It means that often we do not have a lot of time to complete assessments, and differential diagnosis is very labour-intensive*"(CP5). Several participants wrote about the service barriers associated with being "bound" to the DSM-5 and medical models.

Participants of all professions expressed challenges with the integration of trauma, attachment and neurodevelopmental care – direct referral is difficult when practitioners are in different teams and child protection services are often separate from mental healthcare. This as exemplified by an educational psychologist working in Ireland; "*The health service and child protection services in Ireland are two separate entities, so joint working is very challenging. Each has a specific brief" (EP5).*

Theme 2: Trauma and autism: either or both?

A theme from almost all autism practitioners concerned the specific challenges when assessing autism if there needs to be a differential or co-occurring diagnoses of CPTD or attachment difficulties.

Subtheme 2.1: One does not exclude the other

A subtheme raised from most participants was the experience of trauma or attachment difficulties in autistic children, and many participants felt strongly that these diagnoses are not mutually exclusive. The majority of participants of all professions felt that CPTSD and autism commonly co-occur, and that autistic children are more likely to be exposed to negative experiences - such as neglect, bullying and abuse – as well as potentially finding daily life overwhelming , exemplified by CP4's comment: *"Given the overlaps, and the fact that many autistic people are quite traumatised by everyday experiences, it can be challenging but I would not hesitate to diagnose both if criteria were met".*

Practitioners felt that symptoms of CPTSD can impact how autism presents, or either condition could overshadow the other. CP8 wrote, *"It is difficult to observe features of autism when children are extremely dysregulated and it is difficult to understand the basis for the dysregulation".* Practitioners also reported difficulty identifying PTSD in Autistic children who are dysregulated by their environment;

"[they are] frequently in flight mode, meaning often autistic people are in flight mode when needs are not correctly met and they are forced to try and adapt to a neurotypical environment" (OT1).

Many mentioned that they found it particularly hard to decide about differential or co-occurrence if a child's traumatic experience was interpersonal as them finding social interactions difficult resembles characteristics of autism, as CP2 conveys; *"if the complex trauma was social, there can be overlap where the autistic young person is avoidant of social contact and the matching triggers are person based".* Participants found it is easier to identify co-occurrence when an autistic child has a sudden change in behaviour in conjunction with a negative event, but it can be more difficult if trauma has occurred early in life: "*This is particularly difficult when the trauma goes back to early childhood, especially in the context of a looked-after child. In these cases it is immensely difficult to separate out the effects of trauma from possible ASD. Quite often there is evidence of both"* (CP15).

Practitioners, particularly psychiatrists and clinical psychologists, wrote of discomfort around diagnosing co-occurring autism and attachment disorders. These clinicians conveyed that diagnosing both is a rare occurrence, and reported doing this, "*Only in exceptional circumstances where attachment disorders did not adequately explain all the presenting features"(CP3).* However, across all professions participants spoke of exercising caution but giving dual diagnoses if both conditions were evident after taking a thorough developmental history. Only two participants, clinical psychologists, reported they would not give an attachment diagnosis to an autistic child. CP16 likely referred to the DSM-5 diagnostic criteria for RAD being mutually exclusive with autism and thus preventing this, *"If I also confirm an attachment disorder, I would not give an ASD diagnosis as well due to diagnostic criteria for attachment disorders".*

Subtheme 2.2: Watchful waiting

Many autism practitioners noted that assessments conducted too early after possible trauma may not accurately distinguish between trauma-related and neurodevelopmental presentations in children. Most of the practitioners felt it can be beneficial to postpone a formal diagnosis while monitoring a child's development and providing support; "*have confidence [on] when to pull back and allow for watchful waiting in the instance where therapy is required in the first instance"*

(EP5). The importance of having the confidence and patience to wait and see was emphasised, and P2 advised *"Avoid jumping to a conclusion early on".*

Almost all practitioners spoke of, where possible, delaying an autism diagnosis until a child's trauma-related symptoms or home environment have stabilised; "*If home life is very unstable it may not be the right time to be trying to explore the autism question*" (SLT3). Observing the effects of this stability - whether from forming secure attachments with caregivers, introduction of a stable home environment, or having engaged with therapy - can help clarify whether a child's difficulties are related to complex PTSD, attachment issues, or neurodevelopmental conditions; *"Sometimes it is not until the interventions have taken place…that it becomes clearer what the main presenting issue is"(CP6).*

Other practitioners described taking this approach due to waiting for parent's attitudes to shift, and prioritising addressing immediate family needs over making an early diagnosis. EP1 described doing this, but also the importance of returning to the diagnosis for the child's self-understanding: *"I have also delayed a diagnosis when a parent / caregiver is not ready, but I always revisit particularly because it can be so important for a child's self-identity and understanding of themselves".*

Subtheme 2.3: Look at the family to help differentiate

Many practitioners highlighted the importance of considering the child's family history when differentiating between autism, attachment difficulties, and CPTSD, through taking history or observing caregiving. Practitioners agreed that if they became aware that the child had experienced disrupted or poor caregiving - potentially due to parental mental illness, parental trauma, socioeconomic status or substance misuse - they would lean towards a diagnosis of attachment difficulties or CPTSD. CP5 describes using family history to differentiate between autism and CPTSD, "*if there are reports of traumatic events…I am more inclined to consider it to be CPSTD. If there are diagnoses of ASD in the family (without trauma), I am more inclined to think of it as ASD."*

Although not mutually exclusive, most of the other practitioners also felt that autistic traits or neurodiversity of family members was a key indicator of an autism diagnosis, with several practitioners considering genetic liability. However, a minority felt that if a child has neurodivergent parents they might be at higher risk of attachment difficulties, including SLT1 who described this vulnerability for autistic children; “*I believe individuals with autism can be more vulnerable to attachment disorders, particularly as there may have been undiagnosed neurodiversity in their parents that led to the circumstances that resulted in the attachment disorder.”*

Subtheme 2.4: Clinical bias

Many practitioners acknowledged that gender, socio-economic background, and race impact the assessments and diagnoses that children are given. Participants felt that gender and race of the child may impact how a their behaviour is perceived. Many described that complex trauma is more likely to be considered in girls than autism. Aggressive behaviours are more likely to be interpreted as autism in boys than in girls, rather than a trauma-related disorder. The intersection of gender and race bias was reflected on by CP6 who describes how ‘aggressive behaviours’ in boys from ethnic minority backgrounds would be more likely to be labelled as 'behavioural issues' than CPTSD or autism, *"ASD may be under-diagnosed in BAME groups… boys in particular from these groups… may be viewed as having behavioural issues rather than ASD. There may also be demographic issues related to this also, given the likelihood of living in more adverse settings, and schools who therefore struggle to pick this up. ASD is under-diagnosed in females, and they may present with having been bullied (CPTSD) whereas the underlying difficulty is ASD"*.

Most of the practitioners felt that low family socio-economic status should be considered in an assessment, and several acknowledged that knowing a child is from a disadvantaged background introduces bias towards attachment problems: *"Social demographics definitely play a part. I think that people may be more quick to assume a 'parenting' or 'attachment' issue in a family from a low socioeconomic background"* (SLT3). EP1 described taking this into account when assessing a child’s presentation, “*I would consider child's experiences of and access to educational and social opportunities”*.

Many practitioners felt that the socio-economic background of child or family determined if they were judged through a trauma lens or not. This was explicitly illustrated by EP2 who describes how practitioners and families of those with wealth opt for seeking autism diagnoses rather than a CPTSD or attachment diagnosis, “*However, I have encountered a number of "nice families" with a child presenting with significant attachment difficulties - where both they and other clinicians have struggled with the attachment diagnosis"*.

Several practitioners acknowledged that there is a general lack of understanding as to how autism and attachment difficulties present across genders and people of non-western backgrounds, and that cultural biases will impact the assessment. OT1 describes this, *"There are biases in terms of how autism presents eg diagnostic criteria based on males and also cultural biases impact on assessment of 'expected' behaviour for both autism and attachment difficulties. This may either over, under or misdiagnose".* Culturally 'expected' behaviour and parenting styles may impact how a practitioner interprets caregiving interactions from a culture different to their own, and a child's behaviour, as explained by SLT5; "*In certain cultures the parenting style and the cultural and societal expectations of a child can impact their presentation".*

Theme 3: The impact of a diagnosis

Almost all autism practitioners contributed to a theme considering the impact of a diagnosis, when either deciding between different diagnoses, making multiple diagnoses or no diagnosis.

Subtheme 3.1: Opening up access

Almost all of the practitioners felt that the main consideration when making a diagnostic decision is what diagnosis will prove most helpful for supporting the child. Participants reported that a diagnosis is often the only way to access support, and felt frustrated by this, as exemplified by SLT1, who wrote; *"I believe support should be based on need and not gate kept by diagnosis, unfortunately in many areas it is".*

Most of the practitioners felt that a diagnosis can lead to positive changes in support, highlighting protection from discrimination under the Disability Discrimination Act, tailored resources in educational settings, improved family relationships, and connecting young people to peer support. Many discussed that an autism diagnosis can inform adaptations to the mental health support a child receives; CP16 wrote, *"Therapeutic approach can be tailored to be more skills-based and utilise different methods such as visual aids. Children with ASD may have more access to school services and support services in the community".*

Practitioners felt that similar support is needed for children with attachment disorders as is needed for an autistic child, but is not available. Several practitioners suggested they would consider giving an autism diagnosis so the child can access support in school. EP2 described leaving an autism diagnosis in place for a child, despite believing the presentation was primarily an attachment disorder; *"A child who received a private diagnosis of autism - who I felt presented with Attachment disorder… but I left the autism diagnosis in place. The associated supports ... were solid and effective supports that he would not get with an Attachment diagnosis. Service based interventions were Attachment specific though."*

Many of the practitioners were also considering the negative consequences of giving an autism diagnosis particularly for a child with co-occurring CPTSD, mental health issues or attachment difficulties. A concern of several practitioners was believing that an autism diagnosis would exclude these children from mental health treatment, whether explicitly due to the exclusion criteria of local services, or due to all a child's difficulties being attributed to autism; as OT1 wrote, *"it* [an ASD diagnosis] *can be a barrier to receiving needed care… an autistic child may have less access to mental health support due to behaviour being "explained" by autism, rather than observed and supported as a mental health need. This has serious implications for the child, their family and the educational settings."*

On the other hand, P3 highlighted that a diagnosis of autism while a child is in mental health services can lead to more appropriate care for a child whose autistic difficulties may have been falsely attributed to a mental health issue; *"often it helps to clarify and understand the particular presentation, which may inform the way treatment is offered and the types of services provided, and may sometimes lead to discharge from the mental health service for more appropriate developmental interventions and supports."*

Across different countries, the financial impact of autism diagnosis was considered as a disparity. Practitioners' reasons for caution included the cost of an assessment, impact on health insurance, and impact on child's future employment. Two American clinical psychologists (CP16 and CP21) raised that insurance companies will not cover psychological evaluations or therapeutic support for mental health issues if the primary diagnosis is autism; *"The largest barrier is insurance coverage. I will always give the ASD diagnosis, I just may not put it as the primary diagnosis as some insurance providers will not cover therapy or psychiatric hospitalization because ASD is grouped as a medical condition rather than a behavioural health condition in their system" (*CP16).

Subtheme 3.2: Attitudes and stigma

Attitudes and stigma were a large subtheme of the impact of a diagnosis theme, with most of the practitioners writing that children and their networks have different attitudes towards different diagnoses. Practitioners felt that some diagnoses are viewed more positively than others. In general, they viewed an autism diagnosis as something that would reduce stigma and increase understanding; helping other people understand the needs of the young person, and/or helping the young person understand their own identity.

While most practitioners were glad that an autism diagnosis is perceived more positively than it was previously, it has meant they experience young people and their families who are specifically seeking out an autism diagnosis, and who are disappointed when they do not receive one. For such cases, practitioners reflected finding it harder to discuss and present an alternative formulation/diagnosis of CPTSD or attachment difficulties to the young person and their family. Generally, practitioners felt that trauma-based conditions are more stigmatised than autism spectrum conditions, with better societal understanding and awareness of autism and a lack of understanding surrounding trauma and attachment difficulties. This challenge is illustrated by EP2 who wrote; "*Autism has become very well known and understood by parents, teachers and stakeholders. They tend to come to services with autism as their primary hypothesis. They can struggle with a diagnostic conclusion that is not autism, and struggle even more when the conclusion is Attachment. This 'label' seems to come with a perceived judgement…[a] failure on their part. It is something that has been caused. Autism which is perceived as genetics, a happenstance of nature, and outside of their influence."* As highlighted by EP2, parents often fear repercussions or judgment from practitioners or services, and other practitioners raised concern that schools struggle to accept non-developmental diagnoses (eg. attachment disorder).

Practitioners described experiences of cultural attitudes impacting if a family accepted a diagnosis or not. This manifested in attitudes towards talking about trauma and mental health, which included shame surrounding traumatic experiences, and cultural non/acceptance of seeking mental health support, as well as beliefs about 'causes' of autism. CP6 discussed cultural stigma around certain traumatic experiences, "*CPTSD can be associated with events that are, by their very nature,* *not talked about e.g. rape, DV [domestic violence]…. In some cultures it may not be acceptable to seek help for this, or [it] may feel especially shaming to talk about".*

All practitioners were considering these attitudes when diagnosing, although the majority were not allowing those attitudes to dictate their diagnostic decisions, as conveyed by CP18: *"I have never held back a diagnosis due to stigma or accessibility issues…a diagnosis well explained and formulated is better than no diagnosis. Some patients feel there is something wrong with them otherwise".* However, two psychiatrists (P1 and P2) stated that, very occasionally if symptoms or difficulties were mild, in some cases they would allow parents and the service user to choose if a diagnosis is put on the system.

4.5 Discussion

It is clear there are many challenges faced by professionals assessing autism in the context of alternative trauma- or attachment-related diagnoses. The themes we identified - (1) Factors impacting robust assessment, (2) Trauma and autism: either or both? (3) The impact of a diagnosis - were distinct but intersected. which highlights the multifaceted nature of assessing children with more complex presentations and histories.

Given the subject matter, it was unsurprising that robust assessment was a key theme. Practitioners highlighted challenges in obtaining developmental history, particularly for those children from unstable homes, refugee or care-experienced backgrounds. Autism assessment tools were found to be useful for identifying trauma while collecting developmental history, however practitioners across professions felt it can still be difficult to differentiate between autism and attachment difficulties using these tools. Davidson and colleagues (2015) explored what measures are able to discriminate between reactive attachment disorder and autism, and concluded that observation of child behaviour was the most effective method, emphasising a need for development of standardised observation tools. Clinical psychologists more than other professions discussed the Coventry Grid (Moran, 2010) and Coventry Grid Interview (Flackhill et al., 2017). There were discrepancies amongst our participants around awareness and confidence in their use for diagnosis. However, there is a small but encouraging evidence base for the Coventry Grid as a tool that can help identify differences between autistic children and non-autistic children with attachment problems (Davidson et al., 2022). There was a clear desire for the development of new tools for differentiation, as well as the integration and validation of existing autism assessment tools with attachment in mind. Building trust with informants was much discussed as essential and is in line with prior qualitative work with traumatised populations, where the importance of trusting a practitioner is consistently recognised (Chouliara et al., 2024; Kennedy et al., 2024; Sweeney et al., 2018).

Autism practitioners were aware that these conditions have overlapping features, and that autistic children are at high risk of experiencing potentially traumatic events and disrupted caregiving. This is in line with existing literature that highlights the challenge of distinguishing between similar features of autism and trauma-related disorders (Al-Attar & Worthington, 2024; McKenzie & Dallos, 2017; Stavropoulos et al., 2018), and meta-analytic evidence of autistic people experiencing significantly more adverse childhood experiences than their peers (Hartley et al., 2024). It was acknowledged that everyday experiences can be traumatic to autistic children, and that this should be considered in the clinic, as events impacting these children may not meet rigid diagnostic definitions of C/PTSD. Research with autistic children and their caregivers describes sources of trauma that are not captured by standardised measures (Kerns et al., 2022), and from research with autistic adults we know PTSD symptoms can be experienced from traumas that do not meet the DSM-5 (Criterion A) definition (Rumball et al., 2020).

Our findings add to the growing conversation around the purpose and impact of a diagnosis, and underscore how structural barriers, beyond clinical opinions, shape diagnostic pathways and access to care. Many participants stressed that support should be based on need rather than diagnostic labels, echoing wider conversation about the limitations of the medical model of mental health (Huda, 2021; Seery et al., 2021). Participants expressed that the immediate needs of the child were the priority, and ability to access systems of support without a diagnosis would allow for ‘Watchful waiting’ (subtheme 2.2). Autism and CPTSD diagnoses were generally deemed to open doors to more readily available educational or therapeutic support. In contrast, an attachment diagnosis was viewed by practitioners as the most stigmatising without clear pathways to help the child. In a qualitative study, parents and caregivers of children with RAD described feeling socially isolated partially due to public criticism and few services that understand the disorder (Vasquez & Stensland, 2016). There are no evidence-based treatments for

RAD, and limited literature on the treatment of attachment disorders (Zeanah & Gleason, 2015). A pilot study has shown that a video-feedback intervention for caregivers of young children with RAD in foster care is feasible and warrants a randomised controlled trial (Oliveira et al., 2022a; Oliveira et al., 2022b). This feasibility study and lack of existing literature highlights that difficulties with recruitment of these children and their families slows progress on producing such an evidence base. There is a lack of dedicated comprehensive programs for attachment disorders in schools (Dingwall & Sebba, 2018). Some practitioners in the present study felt that many educational supports or adaptations beneficial for autistic children, such as creating consistent, predictable routines, and focusing on improving emotional regulation, would also help non-autistic children for whom attachment is the primary concern.

Concerningly, practitioners raised that autistic children may be excluded from certain mental health treatments or services, and therefore may not receive evidence-based trauma-focused therapies. The NHS England guidance for meeting the mental health needs of autistic people states that “Access to mental health care must not be limited because someone has an autism diagnosis or is awaiting autism assessment” (NHS England, 2023) and NICE guidelines do not recommend excluding autistic children from treatment for trauma (NICE, 2018). However, the practitioners’ reflections highlight a much-recorded gap in services for autistic people of all ages (Scattoni et al., 2023). Autistic people describe being excluded from mental health services due to their autism diagnosis, being perceived as ‘at risk’ and cite professionals’ lack of understanding of autism as a barrier to their accessing mainstream mental health care (Adams & Young, 2021; Camm-Crosbie et al., 2019). Other studies with professionals have also identified this lack of confidence in trauma treatment options for autistic youth; in community mental health settings in the USA, autism professionals agreed there was a lack of effective treatments (Kerns et al., 2020). Likewise, certified trauma-focused cognitive behavioural therapy (TF-CBT) therapists reported feeling uncomfortable doing trauma-focused work with children with developmental disabilities, including autism (D’Amico et al., 2022). Although research evidence regarding the efficacy of PTSD treatment in autistic children is scarce (Quinton et al., 2024), there have been suggested (but not yet validated) adaptations (D’Amico et al., 2022; Peterson et al., 2019; Romney & Garcia, 2021). Encouragingly, a recent small-scale, proof-of-concept study has shown efficacy and feasibility for telehealth-based TF-CBT, in a sample of 17 autistic young people (aged 10-17 years) showed significantly reduced PTSD symptoms at (up to a month) follow up (McDonnell et al., 2025).

Autism practitioners described discrepancies in how being able to access certain services (either due to strong provisions in their local area or private healthcare), wealth, and the social class of a family often impact how a child's behaviour is perceived in the clinic. These biases often intersect with racial and cultural factors, with practitioners noting that young Black boys' presentations are frequently misinterpreted as 'behavioral issues' rather than potential autism or mental health concerns, in line with prior research suggesting adults perceive black children's behaviour as more angry compared to white peers (Cooke & Halberstadt, 2021). As identified by many practitioners in the present study, cultural sensitivity and adaptations have been called for more broadly in mental health assessments (Healey et al., 2017), as well as when assessing for attachment difficulties (Benavides-Rawson & Grinker, 2018; Keller, 2013). The clinical bias described in this study was such that children from higher social class families ("nice families") are presumed to have stable caregiving and autism is explored, where trauma and attachment are less likely to be accepted and more likely to be explored with families of lower social class. The literature does point to an increased risk of attachment disorders for children from families living in poverty (Eckstein-Madry et al., 2021; Sakman et al., 2023), and reactive attachment disorders (RAD) have been shown have a prevalence of 1.40% in 6-8 years olds living in a deprived urban area in the UK (Minnis et al., 2013). However, there is a notable lack of research on attachment in children who are not deprived (Teague et al., 2017) and some practitioners stressed the importance of not discounting attachment disorders when working with more affluent families. Findings from studies exploring the relationship between socio-economic factors and autism diagnoses vary and are likely specific to the particular cultural context of the country of practice, their healthcare model and their conceptualisation of autism. For example, a case control study in Bangladesh found low SES was associated with increased likelihood of autism (Shahid Khan et al., 2024). Whereas, a study with 13,857 UK children from the Born In Bradford sample showed that higher maternal education (achieving A-levels or higher), but not receiving means-tested benefits or neighbourhood deprivation, significantly increased the odds of a child having an autism diagnosis (Kelly et al., 2019).

A key issue underpinning the themes identified is the structure of healthcare systems and the lack of integrated expertise. While participants emphasised the importance of external collaboration, current healthcare systems discourage this by fragmentation of expertise across services, where neurodevelopmental and trauma teams operate separately. Given limited opportunities to work together, an assessment may be conducted through the lens of a practitioner's area of expertise, possibly emphasising differential diagnosis, rather than co-occurrence. To ensure comprehensive and accurate assessment of trauma and attachment difficulties, information sharing across health and social care is particularly important. Structural barriers and practical constraints such as local service availability, resource limitations, professional training gaps, implicit biases, and time constraints, can lead to a devaluation of more time-intensive assessment components such as multi-informant reports for developmental history.

4.5.1 Implications

Reform should focus on embedding autism and trauma expertise across services, ensuring that assessment frameworks and treatment can accommodate complex presentations. For autism practitioners conducting autism assessments, our findings suggest they should consider all explanations for a child's behaviour. Therefore, screening for trauma and disrupted familial relationships should be routine within neurodevelopmental services. This echoes existing calls to integrate neurodiversity into broader healthcare training. While the majority of GPs recognise that training in autism is important, they receive little to no such formal training (Chown et al., 2022). A study investigating autism specific training delivered to physicians suggests this improves their knowledge and self-efficacy when caring for autistic patients (Clarke & Fung, 2022). In the meantime, opportunities for professionals to shadow autism and trauma specialists could help bridge knowledge gaps.

It is clear that many practitioners were driven by the desire to do what was best for the child, yet they acknowledged that diagnoses are often shaped by factors outside their control. For some families, an autism diagnosis may be the only route to securing education support, leading to situations where practitioners feel pressured to diagnose based on systemic constraints. Empowering families and professionals to wait rather than rushing to make a diagnosis driven by external pressures would require a shift in service structures and support allocation. To ensure children are not 'lost' while waiting for assessments, our findings highlight the need to for broader policy changes – moving away from providing support based off rigid diagnostic categories, towards an integrated, holistic meeting of a child's needs.

4.5.2 Limitations

Several limitations should be considered. First, as our data was derived from the first round of a Delphi survey primarily focusing on differential and overlapping symptomatology (Sarr et al., 2024), this framing and the directness of the questions may have influenced the responses. Second, while our sample was international and included participants from across professions, the majority (57%) were based in the UK and clinical psychologists made up the majority (59%) amongst the professions. This likely skews our findings towards both a UK healthcare context and frameworks of clinical psychology. To address the latter issue, we opted for a framework analysis approach, dividing by profession. However, other professions were relatively under-represented. Third, we deliberately asked practitioners about autism without intellectual disability (ID), which excluded clinical perspectives on trauma and differential diagnosis in those with higher support needs. Clinicians' perspectives on this important topic have been explored elsewhere (Kildahl et al., 2020; Kildahl & Jørstad, 2021). Finally, our data provide rich insights into clinicians' views about diagnostic decision making, however we cannot determine the real-world impact on autistic and/or traumatised children. Future research should address these questions using mixed methods approaches and involve the perspectives of autistic young people and their families.

4.6 Conclusion

This study explored autism practitioners' views regarding overlapping and distinguishing features when diagnosing autism, attachment difficulties, and CPTSD presentations. Using framework analysis, we identified 3 themes; (1) Factors impacting robust assessment, (2) Trauma and autism: either or both? and (3) The impact of a diagnosis. Collectively, these findings emphasised the importance of clinical experience and multidisciplinary approaches, identifying a need for training and shadowing opportunities for individual practitioners during assessments, and suggesting the need for reform at a systemic level, with the integration of services across health and social care. We highlight a need to move beyond diagnosis as a gateway to support, towards a model where help is based on individual needs, informed by a broader understanding of how trauma, attachment, and autism intersect and differentiate.

4.7 Acknowledgements

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4.8 Statements and declarations

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Chapter 5: Peer victimisation and Maltreatment Experiences and Mental health in Neurodivergent Secondary School Students in England

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5.1 Abstract

Background: Neurodivergent (ND) adolescents—those who identify as autistic, dyslexic, dyspraxic, or having ADHD—face an increased risk of negative peer experiences and maltreatment. While previous research highlights the heightened mental health challenges within this population, less is known about how these adverse experiences interact with neurodivergence and mental health outcomes.

Methods: Using self-report data from the 2023 OxWell School Survey, we examined the prevalence of bullying, peer abuse, physical harm at school, and maltreatment among ND and neurotypical (NT) adolescents (N=11,083; 22.63% ND). Logistic and linear regression models assessed the associations between neurodivergence, peer victimisation and maltreatment, and mental health, controlling for demographic factors. Moderation analyses explored whether being ND altered the relationship between adverse experiences and mental health outcomes.

Results: Compared to their NT peers, ND adolescents were significantly more likely to report being bullied (OR=2.47), physically harmed at school (OR=2.12), experiencing peer abuse (OR=3.11), and maltreatment (RR=1.68). These experiences were associated with worse mental health across all participants, but ND adolescents had consistently poorer mental health than their NT peers, even when they had not experienced these adversities. Moderation analyses indicated that while negative experiences were linked to poorer mental health in all young people, the associations were weaker within the ND group, potentially reflecting a ceiling effect due to their overall higher levels of mental health difficulties.

Conclusions: Neurodivergent adolescents are at heightened risk of peer victimisation and maltreatment, which are in themselves linked to worse mental health. Targeted interventions in schools, including neurodiversity-affirming education and peer support initiatives, are urgently needed to reduce victimisation and promote well-being among neurodivergent youth.

5.2 Introduction

Neurodiversity is a natural part of human variation encompassing differences in communication, cognition, sensory processing and motor functions. Individuals with neurodevelopmental differences in these domains, such as those who are autistic, have ADHD, dyslexia and dyspraxia, are considered neurodivergent (ND). There is increasing recognition of shared traits, needs, genetic influences and transdiagnostic features, as well as co-occurrence, across these conditions; for example, estimates suggest 40% of autistic people also have ADHD (Rong et al., 2021). In the UK, current estimates suggest that 15-20% of children are ND (Department for Education, 2024).

Many ND young people will experience maltreatment and peer victimisation in childhood. Studies using clinical, population and meta-analytical data consistently show higher rates of adverse childhood experiences, victimisation and bullying in those who are autistic (Hoover & Kaufman, 2018; Novin et al., 2019; Trundle et al., 2023) and those who have ADHD (Bustinza et al., 2022; Fogler et al., 2022; Schilpzand et al., 2018). Children with developmental co-ordination disorder, or dyspraxia, qualitatively report experiences of bullying and exclusion (O'Dea et al., 2021): indeed a large population study demonstrated that poor motor skills in Norwegian toddlers predicted peer victimisation at age 5 (Øksendal et al., 2022). Likewise, a population-based study using the 2005 Canadian Community Health Survey (CCHS) showed dyslexia is 7 times higher in those with physical abuse histories vs those without (Fuller-Thomson & Hooper, 2015), and a study of children across 147 schools in Finland showed greater risk of bullying victimisation amongst those with reading difficulties (Turunen et al., 2017). It has been suggested that societal factors, such as stigma and discrimination (Han et al., 2022; Turnock et al., 2022), likely contribute to this risk. Behaviours or traits of neurodivergent young people that lie outside of societal norms, such as struggles to navigate social dynamics, may make them particularly vulnerable for bullying. ADHD and autism are highly heritable (Faraone & Larsson, 2019; Tick et al., 2016), with parents likely sharing traits with their children. Evocative gene-environment correlations have been proposed between behavioural difficulties that are common amongst ND children and how they are parented (Dahoun et al., 2025). Longitudinal analyses show that ADHD in adulthood is not associated with later reports of abuse and neglect when controlling for ADHD diagnosis in childhood, suggesting children with more overt traits through development may be particularly at risk of maladaptive parenting (Stern et al., 2018). Passive gene-environment correlations may also contribute, whereby children with ADHD inherit both genetic liability for ADHD traits and experience environments shaped by their parent's own ADHD traits – such as struggling with impulse control or emotional regulation - which may create a compounding risk for adverse home environments (Agnew-Blais et al., 2022).

Neurodivergence may also contribute to vulnerability to psychopathology after victimisation and traumatic experiences. ND people experience more mental health problems than their neurotypical (NT) peers; this has been shown for autistic (Kerns et al., 2020), ADHD (Brook et al., 2013; Song et al., 2021), and dyslexic (Georgiou et al., 2024) young people. Trauma impacts young people's mental health, leading to broad psychopathology and sometimes Post-traumatic stress disorder (PTSD). Recent work with autistic adults and children has shown that, after experiencing a trauma, the severity of PTSD symptoms is higher than for non-autistic people (for review, see Quinton et al., 2024). A controlled family study conducted at an outpatient mental health clinic found lifetime prevalence of PTSD is significantly higher in those with ADHD compared to those without, and showed worse psychosocial functioning in those with co-occurring ADHD and PTSD (Antshel et al., 2013; Biederman et al., 2013). Bullying victimisation has been associated with depression and anxiety in school-aged young people with autism, ADHD and co-occurring autism and ADHD in a study using large-scale data from the National Survey of Children's Health (Accardo et al., 2024). Analysis of 454 clinical case files of children receiving a dyslexia diagnosis in Australia found that bullying victimisation and peer problems (alongside self-esteem, social skills, and emotion regulation) were associated with externalising and internalising problems (Boyes et al., 2020).

Given the high prevalence of negative childhood experiences and mental health problems across neurodivergent youth, trauma-related mental health in neurodivergent young people remains under-researched. Using data from the population representative 2023 OxWell School Survey to explore reported experiences of peer victimisation, maltreatment by adults, and poor mental health in adolescents who self-identify as ND, this study aims to address the following research questions:

1. Are ND young people more likely than NT young people to experience negative events?
2. Do socio-demographic factors influence the likelihood of peer victimisation and maltreatment differently for ND and NT young people?
3. Does being ND moderate the relationship between peer victimisation/maltreatment and mental health outcomes?
4. Among adolescents who have experienced peer victimisation and maltreatment, how does mental health differ between ND and NT individuals?

5.3 Methods

This study and planned analysis were pre-registered with OSF (https://osf.io/vx635/).

5.3.1 Sample

The OxWell Survey is a repeated, anonymous, cross-sectional survey of schools and further education colleges in England, as described in the study protocol (Mansfield et al., 2021). Schools were recruited via local authorities within several counties in England; Merseyside, Oxfordshire, Buckinghamshire and Berkshire. Young people were invited to take part through their school or place of further education. Children under the age of 16 years gave assent and parents could opt out, while those over 16 gave informed consent. The survey was completed by young people within their place of education and asked them a range of questions relating to their mental health and wellbeing, life experiences, and behaviours. The variable guide with details of the full survey can be accessed via the OxWell website (https://osf.io/sekhr/).

The present study used the data from the questionnaire completed by children and young people in school years 7 to 13 (corresponding to ages 11-18 years) in 2023. The study was approved by the University of Oxford Research Ethics Committee (Ref: R62366/RE014).

5.3.2 Descriptor variables

Demographics and potential confounding variables

Participants were asked for their year group and age and answered the question ‘What is your gender?’ with ‘Female’, ‘Male’ or ‘Other’. The ‘Other’ response gave young people the option to self-identify using a free text box or ‘Prefer not to say’ as response choices. The free text responses were subsequently analysed with a PPI group of gender diverse young people to assess what responses were to be classified as ‘gender diverse’.

Adolescents were asked ‘What is your ethnic group?’. Several answer options were provided and are detailed the OxWell 2023 variable guide (https://osf.io/bwech). These were aggregated into the following categories: ‘White’, ‘Mixed/Multiple ethnic groups’, ‘Asian/Asian British’, ‘Black/African/Caribbean/Black British’, and ‘Other ethnic group’. Participants were asked questions to capture subjective experience of poverty (e.g., ‘The house I live in is cold and/or damp’). Responses were coded such that 'Never or hardly ever' was recorded as 0, and those answering, 'Some of the time' and 'Often' were coded as 1. This was combined into a count variable, such that higher scores meant endorsement of a larger number of these different experiences of poverty.

5.3.3 Measures

Neurodivergence (ND)

Participants in the OxWell study were asked the following question: ‘Do you consider yourself to be dyslexic/dyspraxic, and/or autistic, and/or have ADHD (i.e., neurodivergent)?’ The ND group was made up of those who answered ‘Yes’, coded 1. The NT group was those who answered 'No’, coded 0. Any other answers (e.g., ‘Prefer not to say’) were considered to be missing in the present analyses.

Peer victimisation variables

Bullying by peers

Adolescents were asked ‘Have you been bullied in the last year?’ and answered on a sliding scale (‘Never or just teased a few times’, ‘2-3 times a month’, ‘Weekly’, ‘Most days’, ‘Every Day’). Adolescents were considered to have experienced bullying if they were bullied 2-3 times a month or more.

Being physically hurt at school

Participants were asked ‘How often in the last year has someone from school hit, kicked or punched you on purpose with the intention of really hurting you?’. Responses were ‘Not at all’, ‘Once’, ‘2-5 Times’, ‘More than 6 times’. Adolescents who responded ‘2-5 times’ and ‘6+’ were considered to have experienced being physically hurt at school.

Abused by a peer

Participants were asked ‘Have you been a victim of abuse from a friend/another young person/boyfriend/girlfriend?’. Response categories were: ‘Yes’, ‘No’, ‘Prefer not to say’. Answering ‘prefer not to say’ was coded as missing data.

Maltreatment by adults or caregivers

The Short Child Maltreatment Questionnaire (SCMQ)

The Short Child Maltreatment Questionnaire (SCMQ) was developed by the World Health Organisation (WHO) and has items reflecting four dimensions—physical, emotional, and sexual abuse, and neglect—and a fifth dimension of witnessing parental physical violence. The OxWell study asked 6 out of the 7 items (omitting one of two sexual abuse questions, see variable guide https://osf.io/bwech). The SCMQ focuses on child maltreatment, measuring only acts of violence against children by family members or other adults. The items included are; Parent or adult physical abuse; Parent or adult emotional abuse; Sexual abuse; Parent physical neglect; Parent emotional neglect; Witnessing domestic violence. Answers are presented as ‘No, never’, ‘Yes, it has happened in my life’, ‘Yes, it has happened in the past twelve months’. If answered Yes, participants are asked about frequency of occurrence from ‘Once or twice’ to ‘Many times’. In this analysis, items were scored if they have happened in a person’s lifetime (answers; “Yes, it has happened in my life’, and ‘Yes, it has happened in the past twelve months’ will score 1, “No, Never” 0) and this was used as a total score across the six items from 0-6.

Mental health outcomes

Self-reported mental health problem

Participants were asked ‘Do you think you've had a mental health problem that has affected your daily life?’. Participants could answer ‘No’, ‘Yes - in the past

12 months’, ‘Yes - more than a year ago’, or ‘Prefer not to say’. For the present analysis we chose to assess current mental health problems, if they answered ‘Yes -in the past 12 months’. Adolescents who answered ‘No’ and ‘Yes - more than a year ago’ were considered to not have a current mental health problem. ‘Prefer not to say’ was coded as missing data.

Short Warwick-Edinburgh Mental Wellbeing Scale (SWEMWBS)

Children completed the Short Warwick-Edinburgh Mental Wellbeing Scale (SWEMWBS) (Stewart-Brown et al., 2009). The scale uses seven items from the Warwick–Edinburgh Mental Wellbeing Scale (WEMWBS) (Tennant et al., 2007). These are statements relating to thoughts and feelings they have experienced in the last two weeks. The statements are phrased positively and young people answer on a five point scale from ‘none of the time’ to ‘all of the time’. Items are then scored from 1 to 5. This results in scores from 7 to 35 with higher total score indicating better wellbeing.

Revised Child Anxiety and Depression Scale (RCADS)

Adolescents completed the 11-item Revised Child Anxiety and Depression Scale (RCADS-11) (Radez et al., 2021). The scale has 6-items that measure anxiety, 5-items that measure depression and two optional questions asking how much these difficulties impact the young person. Including the impact questions improves the accuracy of the total score (Radez et al., 2021). Young people are asked to indicate how often each item applies to them according to a 4-point Likert scale ranging from 0 (“never”) to 3 (“always”). Suggested clinical cut-offs for adolescent boys and girls, respectively, are ≥ 5 and ≥ 9 for the anxiety score, ≥ 8 and ≥ 9 for depression score, and ≥ 14 and ≥ 18 for the total score including the impact questions.

5.3.4 Missing data

Missing data was observed; we compared participants excluded vs included in the analyses on key variables (ND, negative experiences) and demographic variables using t-tests and Chi-squared.

Participants were excluded for not providing consent and for completing the survey too quickly (under 10 mins). We only included participants who progressed through the survey up to the point of having seen all our questions of interest (page 53). Any participants that stopped the survey before this point were excluded.

Participants were treated as missing if they did not answer: (1) age, gender, ethnicity, and neurodiversity questions, (2) one or more negative experience variables, and (3) one or more mental health variable.

For the RCADS-11, missing item scores within a sub-scale are imputed using mean imputation, where the mean score of completed items within the respective sub-scale is assigned to each missing item. Specifically, if a respondent has one missing item per sub-scale, the mean score of the completed items within that sub-scale is imputed for the missing item. Respondents with missing answers on three or more items of the total scale were treated as having missing data.

Patterns of missingness were inspected in the resulting dataset after exclusion criteria were applied. As the proportion of missing data for some individual variables was small (<5%), making the potential impact minimal(Dettori et al., 2018), those cases were removed. N for each analysis is reported.

5.3.5 Data analysis

The data was checked for standard statistical assumptions (e.g., normality of continuous variables, independence of observations, etc.). The RCADS-11 scores were not normally distributed; histograms were visually inspected and square root transformation was applied to improve normality. Age and poverty count were standardised using Z scores.

Descriptive data for negative experiences, mental health outcomes, neurodiversity, and other variables, as well as their missingness, are provided. For all regression analyses, categorical outcome variables were analysed using logistic regression, while continuous variables were analysed using linear regression. Where maltreatment score was the outcome, negative binomial models were used. Correction for multiple testing used false discovery rate (FDR) according to the Benjamin-Hochberg procedure, and a p value (pFDR) < 0.05 was considered statistically significant. Socioeconomic status, gender, age and ethnicity were included in all multivariate models as covariates.

Multivariate regression analyses were conducted with ND status as the predictor variable, and negative experience and mental health variables as the outcome variable. Within each ND and NT subsample, regressions with interaction terms were used to explore if gender, ethnicity, poverty, and year group are associated with reporting each negative experience.

To explore if being ND moderates any association between negative experiences and mental health, multivariate regression analyses were conducted, where the predictor variables were a negative experience variable, and the outcome variables were either of the mental health variables. Interaction terms between ND status and each negative experience variable were included to assess whether ND status significantly altered the strength of the associations between negative experiences and mental health outcomes.

5.4 Results

5.4.1 Sample description

The OxWell 2023 dataset consists of 42215 young people. Our final analytical sample consisted of 11083 young people (53.69% female; mean age 13.96; 22.63% ND). Table 5.1 shows the demographics and main variables of the ND and NT groups. In Appendix 3, Table S3.1, we compare our analytical dataset to the original raw data and report missingness; the analytical sample was slightly older (M = 14.0 vs 13.0 years), had a higher proportion of girls (53.7% vs 48.6%), White ethnicity participants (65% vs 52.6%), and those identifying as ND (22.6% vs 15.1%). The analytical sample and full sample showed similar mean scores on mental health measures (See Appendix 3, S3.1). Pearson correlations between study variables showed expected patterns, and peer victimisation and maltreatment variables showed small to moderate correlations (Appendix 3, S3.2).

Table 5.1 *Demographic and main variables by ND and NT group (% shown are of the ND or NT group)*

Variable	ND Subsample (n=2508)	NT Subsample (n=8575)	Group difference
Gender			
Boys	1089 (43.4%)	3639 (42.4%)	χ² = 449.32, p = < 0.001, V = 0.201
Girls	1156 (46.1%)	4794 (55.9%)	
Gender diverse	263 (10.5%)	142 (1.7%)	
Age and year group			
Age, M (SD)	14.16 (1.96)	13.9 (1.87)	t = 6.02, p < 0.001, d = 0.140
Year 7-9	1289 (51.4%)	4929 (57.5%)	χ² = 43, p = < 0.001, V = 0.062
Year 10-11	760 (30.3%)	2463 (28.7%)	
Year 12-13	459 (18.3%)	1183 (13.8%)	
Ethnicity			
White	2027 (80.8%)	5180 (60.4%)	χ² = 482.96, p = < 0.001, V = 0.209
Asian	144 (5.7%)	1935 (22.6%)	
Black	65 (2.6%)	502 (5.9%)	
Mixed ethnicity	201 (8%)	545 (6.4%)	
Other ethnic group	71 (2.8%)	413 (4.8%)	
Mental health and wellbeing			
Mental health problem	1120 (44.7%)	1602 (18.7%)	χ² = 755.95, p = < 0.001, V = 0.261
RCADS11, M (SD)	17.06 (10.52)	10.97 (8.56)	t = 26.54, p < 0.001, d = 0.674
Anxiety subscale	7.37 (5.23)	4.75 (4.25)	t = 22.96, p < 0.001, d = 0.583
Depression subscale	6.78 (4.41)	4.25 (3.57)	t = 26.37, p < 0.001, d = 0.671
SWEMWS, M (SD)	18.83 (4.89)	21.51 (4.62)	
Peer victimisation			
Bullying	773 (30.8%)	1145 (13.4%)	χ² = 412.55, p = < 0.001, V = 0.193

Physically hurt at school	467 (18.6%)	736 (8.6%)	χ^2 = 201, p = < 0.001, V = 0.135
Abuse from a peer	400 (15.9%)	397 (4.6%)	χ^2 = 427.49, p = < 0.001, V = 0.196
Maltreatment from a parent or adult			
SCMQ M (SD)	1.07 (1.43)	0.54 (0.99)	t = -23.89, p < 0.001, d = -0.573
Physical abuse	568 (22.6%)	1087 (12.7%)	χ^2 = 163.75, p = < 0.001, V = 0.122
Emotional abuse	1004 (40%)	2075 (24.2%)	χ^2 = 270.64, p = < 0.001, V = 0.156
Sexual abuse	230 (9.2%)	249 (2.9%)	χ^2 = 193.1, p = < 0.001, V = 0.132
Physical neglect	132 (5.3%)	148 (1.7%)	χ^2 = 101.01, p = < 0.001, V = 0.095
Emotional neglect	426 (17%)	642 (7.5%)	χ^2 = 218.73, p = < 0.001, V = 0.14
Witnessing domestic violence	300 (12%)	461 (5.4%)	χ^2 = 138.64, p = < 0.001, V = 0.112
Socio-economic disadvantage			
Poverty M (SD)	1.25 (1.64)	0.65 (1.17)	t = 16.93, p < 0.001, d = 0.460
I worry about not having enough money for the things my family needs, e.g., food, bills, electric or gas	1069 (42.6%)	2215 (25.8%)	χ^2 = 261.63, p = < 0.001, V = 0.154
My family uses food banks	174 (6.9%)	286 (3.3%)	χ^2 = 62.4, p = < 0.001, V = 0.075
The house I live in is cold and/or damp	360 (14.4%)	659 (7.7%)	χ^2 = 102.57, p = < 0.001, V = 0.096
At school, I am unable to afford the right uniform, games kit, books, equipment, or go on trips	347 (13.8%)	510 (5.9%)	χ^2 = 168.13, p = < 0.001, V = 0.123
At school, I am unable to afford to eat	289 (11.5%)	414 (4.8%)	χ^2 = 145.29, p = < 0.001, V = 0.114
At home, I do not have enough space to do things like homework or chill out	473 (18.9%)	849 (9.9%)	χ^2 = 147.4, p = < 0.001, V = 0.115
At home, I have no internet access or poor internet access	257 (10.2%)	441 (5.1%)	χ^2 = 84.81, p = < 0.001, V = 0.087
At home, I go to bed hungry because there is not enough food in the house	159 (6.3%)	217 (2.5%)	χ^2 = 84.74, p = < 0.001, V = 0.087

Categorical variables presented as n (%); continuous variables as mean (SD). χ^2 tests for categorical variables; t-tests for continuous variables. V = Cramér's V; d = Cohen's d. Individual items are in italics under total scores. All statistical tests compare neurodivergent (ND) vs neurotypical (NT) groups. RCADS-11 = 11-item Revised Child Anxiety and Depression Scale; SWEMWBS = Short Warwick-Edinburgh Mental Wellbeing Scale); SCMQ = Short Child Maltreatment Questionnaire

5.4.2 Are ND young people more likely than NT young people to experience negative events?

Figure 5.1 and Table 5.2 shows that ND young people had significantly higher likelihood of reporting peer victimisation and maltreatment, when accounting for gender, ethnicity, poverty, and age. Unadjusted models all showed significant associations and can be found in Appendix 3, S3.3. Being ND was significantly associated with having been bullied (OR = 2.47, 95%Cl = 2.20-2.78) and physically hurt at school (OR = 2.12, 95%Cl = 1.85-2.44) in the last year, and ND young people were significantly more likely to have been a victim of abuse from a peer (OR = 3.11, 95%Cl = 2.65-3.66). ND young also people showed greater odds of having experienced more maltreatment by adults (RR = 1.68, 95%Cl = 1.55-1.82).

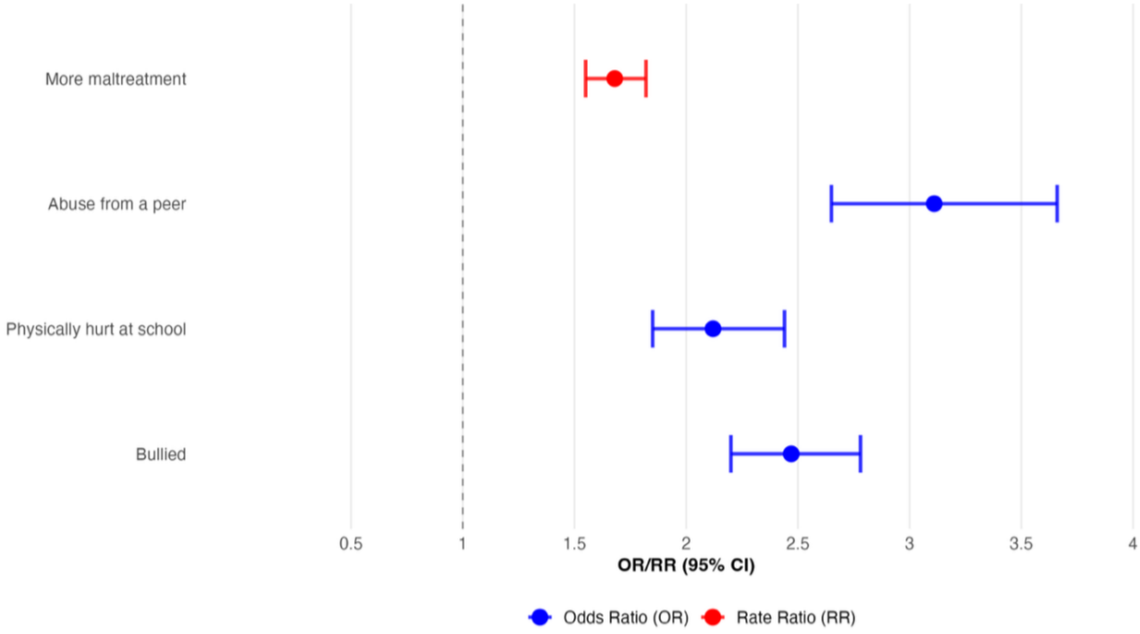

Figure 5.1 *Odds Ratios (OR) and Rate Ratio (RR) for associations between being neurodivergent (ND) versus neurotypical (NT) and negative events, from multiple regressions with covariates gender, poverty and ethnicity. Maltreatment was measured using the Short Child Maltreatment Questionnaire (SCMQ).*

***Table 5.2** Multivariate regression models for the relationship between being neurodivergent (ND) and negative experience outcomes. Odds ratios (OR) are presented for bullying, physically hurt at school and abuse from a peer.*

Outcome	Predictor	OR/RR	95% Cl	P-value	FDR P- value
Bullying	**ND**	2.473	2.203 - 2.775	<0.001	<0.001
N = 11083	Poverty	1.469	1.404 - 1.536	<0.001	<0.001
	Gender diverse	1.903	1.5 - 2.406	<0.001	<0.001
	Girl	1.181	1.06 - 1.315	0.003	0.004
	Age	0.670	0.634 - 0.708	<0.001	<0.001
	Mixed ethnicity	0.884	0.715 - 1.086	0.246	0.303
	Asian	0.867	0.748 - 1.003	0.057	0.077
	Black	0.815	0.63 - 1.042	0.110	0.142
	Other ethnic groups	0.868	0.664 - 1.121	0.288	0.328
Physically hurt at school	**ND**	2.124	1.849 - 2.437	<0.001	<0.001
N = 11083	Poverty	1.374	1.305 - 1.445	<0.001	<0.001
	Gender diverse	1.014	0.768 - 1.325	0.921	0.921
	Girl	0.508	0.446 - 0.578	<0.001	<0.001
	Age	0.659	0.616 - 0.704	<0.001	<0.001
	Mixed ethnicity	1.278	1.009 - 1.604	0.038	0.052
	Asian	0.948	0.79 - 1.131	0.556	0.579
	Black	1.129	0.844 - 1.487	0.401	0.436
	Other ethnic groups	1.107	0.82 - 1.471	0.496	0.527
Abuse from a peer	**ND**	3.112	2.646 - 3.66	<0.001	<0.001
n = 10356	Poverty	1.603	1.514 - 1.697	<0.001	<0.001
	Gender diverse	2.023	1.489 - 2.726	<0.001	<0.001
	Girl	1.073	0.915 - 1.259	0.387	0.430
	Age	1.095	1.017 - 1.179	0.016	0.023
	Mixed ethnicity	1.422	1.081 - 1.848	0.010	0.015

	Asian	0.808	0.634 - 1.021	0.079	0.105
	Black	0.800	0.531 - 1.163	0.262	0.311
	Other ethnic groups	0.788	0.505 - 1.18	0.269	0.313
Maltreatment (SCMQ)	**ND**	1.681	1.549 - 1.823	<0.001	<0.001
n = 9427	Poverty	1.503	1.455 - 1.553	<0.001	<0.001
	Gender diverse	1.522	1.274 - 1.819	<0.001	<0.001
	Girl	1.351	1.258 - 1.451	<0.001	<0.001
	Age	1.131	1.093 - 1.17	<0.001	<0.001
	Mixed ethnicity	1.480	1.302 - 1.682	<0.001	<0.001
	Asian	1.393	1.272 - 1.527	<0.001	<0.001
	Black	1.455	1.249 - 1.694	<0.001	<0.001
	Other ethnic groups	0.965	0.796 - 1.165	0.709	0.709

Maltreatment was measured using the Short Child Maltreatment Questionnaire (SCMQ). FDR = False Discovery Rate

5.4.3 Do sociodemographic factors influence the likelihood of negative experiences differently for ND and NT young people?

Univariate regressions showing the relationships between sociodemographic factors and peer victimisation and maltreatment are shown in Figure 5.2. There were consistent relationships that persisted in the whole sample and both ND and NT subsamples: experiencing more poverty significantly increased the likelihood of all negative experiences. Compared to boys, being gender diverse significantly increased likelihood of abuse from a peer, bullying and being maltreated by an adult, while being a girl significantly increased the likelihood of experiencing more maltreatment but significantly decreased likelihood of being physically hurt at school. Those of black, Asian and mixed ethnicity were also more likely to experience maltreatment compared to white peers. Being older significantly increased likelihood of abuse from a peer and maltreatment but was protective against being hurt at school and bullying.

Interaction analyses tested whether sociodemographic predictors of peer victimisation and maltreatment operated differently in ND and NT young people by fitting models with interaction terms (Appendix 3, S3.4). Only two significant interactions were identified. Older age had a weaker relationship with being less likely to be hurt at school in the ND youth (OR = 0.79, 95% CI = 0.68-0.90, p = 0.009), and higher poverty scores showed weaker association with maltreatment in the ND young people compared with the NT (RR = 0.90, 95% CI = 0.84-0.96, p = 0.009). All other interactions were non-significant, suggesting similar sociodemographic factors are associated with peer victimisation and maltreatment across ND and NT groups.

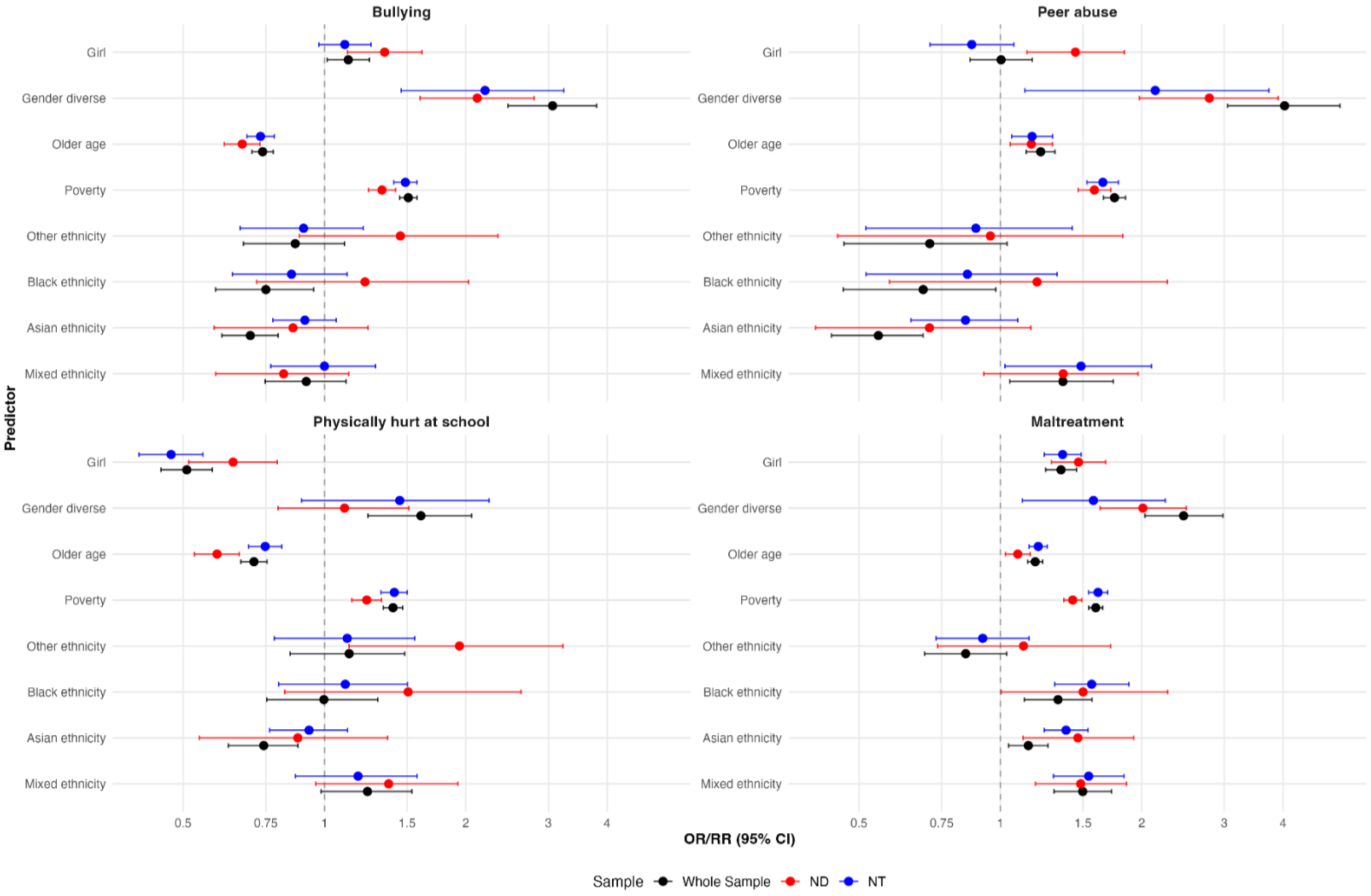

Figure 5.2: *Odds Ratios (OR) and Rate Ratio (RR) for associations between sociodemographic factors and negative events from univariate regressions with peer victimisation and maltreatment as the outcome. Girls and gender diverse young people were compared to boys, and those of all ethnicities were compared to white young people. Results are shown in the whole sample, as well as the neurodivergent (ND) and neurotypical (NT) subsamples.*

5.4.4 Does being ND moderate the relationship between peer victimisation and maltreatment and mental health outcomes?

Being ND was significantly associated with all mental health outcomes (Appendix 3, S3.5). All negative experiences were significantly associated with young people reporting worse mental health and decreased well-being (see Appendix 3, S3.6). To examine the moderating role of ND status in the relationship between adverse experiences and mental health outcomes, we compared regression models with and without interaction terms. All models included potential confounding variables: gender, ethnicity, age and poverty. Interaction effects were examined to assess if having a negative experience interacted with being ND to impact mental health outcomes. For logistic models, model fit was assessed using McFadden's pseudo-R^2, likelihood ratio tests (LRT), and Akaike Information Criterion (AIC) differences. For linear models, model fit was assessed using the change in R-squared (ΔR^2).

Effects reported below and in Table 5.3 and 5.4 were moderated by a significant (p-value <.05) interaction with ND status such that ND young people consistently showed weaker associations than NT between negative experiences and mental health/wellbeing outcomes. Figures 5.5 and 5.6 are interaction plots demonstrating how being ND changes the relationship between the negative experience and mental health outcomes.

There was a significant interaction effect between being ND and experiencing more maltreatment (OR = 0.89, 95%Cl = 0.81-0.98), bullying (OR=0.74, 95%Cl = 0.58 - 0.94) and peer-to-peer abuse (OR=0.68, 95%Cl = 0.48 -0.97) on the association with current mental health problems (Figure 5.5). ND compared to NT young people showed lower odds of current mental health problems being associated with experiencing more bullying or peer-to-peer abuse.

Being ND significantly interacted with higher levels of maltreatment on the association with mental health symptom scales, indicating a weaker association with scores for anxiety (B=-0.09, 95%Cl = -0.13- -0.05), depression (B=-0.10, 95%Cl = -0.13 - -0.06) and both (B=-0.14, 95%Cl=-0.19 - -0.09) (Figure 5.6). Additionally, there was an interaction effect with ND on well-being scores (B=0.36, 95%Cl= 0.19 - 0.53) suggesting maltreatment had less negative impact than in NT.

These findings align with significant improvements in model fit for the interaction terms (see Appendix 3, S3.7). The interaction between maltreatment score and being ND, compared to NT, significantly improved model fit for predicting current mental health problems (LRT: $\chi^2 = 5.19$, $p = .0228$; ΔAIC = 3.19). Similarly, significant interaction effects were observed for bullying (LRT: $\chi^2 = 5.83$, $p = .0157$; ΔAIC = 3.83) and peer-to-peer abuse (LRT: $\chi^2 = 4.44$, $p = .035$; ΔAIC = 2.44) on current mental health problems. The interaction between maltreatment score and ND significantly improved model fit for predicting well-being (SWEMWS) and mental health scales (RCADS11 anxiety, depression, and total scores). The interaction explained a small but significant proportion of additional variance in these outcomes ($\Delta R^2 = 0.002–0.003$, all adjusted $p < .001$).

Examination of Figures 5.5 and 5.6 makes clear that the reduced effect of negative experiences on mental health in the ND versus NT group reflects the already high rates of poor mental health even in those ND students without negative experiences.

Table 5.3 *Moderation analyses using logistic regressions to predict reported mental health problem, showing significant interactions only.*

Outcome	Predictor	OR	95% CI	P- value	FDR p-value
Mental health problem	Bullying	3.078	2.642 - 3.585	<0.001	<0.001
	ND	3.061	2.689 - 3.485	<0.001	<0.001
n =10,180	Bullying: ND*	0.736	0.575 - 0.944	0.015	0.019
	Poverty	1.398	1.332 - 1.467	<0.001	<0.001
	Gender diverse	3.231	2.512 - 4.16	<0.001	<0.001
	Girl	2.923	2.628 - 3.254	<0.001	<0.001
	Age	1.437	1.368 - 1.51	<0.001	<0.001
	Mixed ethnicity	1.052	0.87 - 1.27	0.597	0.634
	Asian	0.673	0.584 - 0.773	<0.001	<0.001
	Black	0.780	0.616 - 0.982	0.037	0.044
	Other ethnic groups	0.485	0.36 - 0.643	<0.001	<0.001
Mental health problem	Abuse from young person	4.425	3.508 - 5.583	<0.001	<0.001
	ND	3.016	2.657 - 3.424	<0.001	<0.001
n = 9601	Abuse from young person: ND*	0.682	0.48 - 0.973	0.034	0.040
	Poverty	1.411	1.34 - 1.487	<0.001	<0.001
	Gender diverse	3.195	2.423 - 4.213	<0.001	<0.001
	Girl	3.014	2.697 - 3.373	<0.001	<0.001
	Age	1.349	1.282 - 1.419	<0.001	<0.001
	Mixed ethnicity	0.978	0.798 - 1.194	0.825	0.854
	Asian	0.691	0.597 - 0.798	<0.001	<0.001
	Black	0.776	0.605 - 0.988	0.042	0.049
	Other ethnic group	0.475	0.346 - 0.641	<0.001	<0.001
Mental health problem	Maltreatment score	1.664	1.569 - 1.766	<0.001	<0.001
	ND	3.101	2.661 - 3.613	<0.001	<0.001
n=8814	Maltreatment score: ND*	0.892	0.809 - 0.984	0.022	0.026
	Poverty	1.228	1.158 - 1.302	<0.001	<0.001
	Gender diverse	3.263	2.428 - 4.384	<0.001	<0.001

	Girl	2.728	2.426 - 3.07	<0.001	<0.001
	Age	1.348	1.278 - 1.423	<0.001	<0.001
	Mixed ethnicity	0.928	0.749 - 1.145	0.488	0.528
	Asian	0.540	0.458 - 0.635	<0.001	<0.001
	Black	0.652	0.495 - 0.85	0.002	0.002
	Other ethnic groups	0.470	0.33 - 0.655	<0.001	<0.001

Neurodivergent (ND). Maltreatment was measured using the Short Child Maltreatment Questionnaire (SCMQ).

Table 5.4 *Moderation analyses using linear regressions to predict reported depression and anxiety symptoms and mental wellbeing, showing significant interactions only.*

Outcome	Predictor	Beta	95% CI	P-value	FDR p-value
Wellbeing (SWEMWS) n= 9040	Maltreatment score	-0.918	-1.024 - -0.813	<0.001	<0.001
	ND	-1.959	-2.233 - -1.685	<0.001	<0.001
	Maltreatment score: ND*	0.362	0.193 - 0.531	<0.001	<0.001
	Poverty	-0.707	-0.812 - -0.602	<0.001	<0.001
	Gender diverse	-2.136	-2.672 - -1.6	<0.001	<0.001
	Girl	-1.859	-2.042 - -1.676	<0.001	<0.001
	Age	-0.468	-0.558 - -0.379	<0.001	<0.001
	Mixed ethnicity	0.323	-0.038 - 0.684	0.080	0.100
	Asian	0.303	0.06 - 0.545	0.014	0.021
	Black	0.786	0.362 - 1.209	<0.001	<0.001
	Other ethnic groups	-0.052	-0.511 - 0.407	0.823	0.840
Depression and anxiety (RCADS11) n=9428	Maltreatment score	0.384	0.355 - 0.414	<0.001	<0.001
	ND	0.627	0.551 - 0.703	<0.001	<0.001
	Maltreatment score: ND*	-0.140	-0.188 - -0.093	<0.001	<0.001
	Poverty	0.289	0.26 - 0.318	<0.001	<0.001
	Gender diverse	0.866	0.717 - 1.015	<0.001	<0.001
	Girl	0.885	0.834 - 0.936	<0.001	<0.001

	Age	0.119	0.094 - 0.144	<0.001	<0.001
	Mixed ethnicity	0.076	-0.025 - 0.177	0.141	0.170
	Asian	-0.107	-0.174 - -0.04	0.002	0.003
	Black	-0.244	-0.361 - -0.127	<0.001	<0.001
	Other ethnic groups	-0.042	-0.17 - 0.086	0.523	0.558
Anxiety subscale (RCADS11) n=9428	Maltreatment score	0.258	0.234 - 0.281	<0.001	<0.001
	ND	0.410	0.349 - 0.471	<0.001	<0.001
	Maltreatment score: ND*	-0.093	-0.131 - -0.055	<0.001	<0.001
	Poverty	0.208	0.185 - 0.231	<0.001	<0.001
	Gender diverse	0.680	0.56 - 0.799	<0.001	<0.001
	Girl	0.737	0.696 - 0.778	<0.001	<0.001
	Age	0.041	0.021 - 0.061	<0.001	<0.001
	Mixed ethnicity	0.019	-0.062 - 0.1	0.645	0.679
	Asian	-0.110	-0.164 - -0.056	<0.001	<0.001
	Black	-0.242	-0.336 - -0.148	<0.001	<0.001
	Other ethnic groups	-0.093	-0.196 - 0.01	0.076	0.097
Depression subscale (RCADS11) n=9428	Maltreatment score	0.266	0.245 - 0.287	<0.001	<0.001
	ND	0.415	0.36 - 0.47	<0.001	<0.001
	Maltreatment score: ND*	-0.097	-0.131 - -0.062	<0.001	<0.001
	Poverty	0.189	0.168 - 0.21	<0.001	<0.001
	Gender diverse	0.507	0.399 - 0.615	<0.001	<0.001
	Girl	0.457	0.421 - 0.494	<0.001	<0.001
	Age	0.131	0.113 - 0.149	<0.001	<0.001
	Mixed ethnicity	0.079	0.005 - 0.152	0.035	0.049
	Asian	-0.046	-0.095 - 0.003	0.064	0.083
	Black	-0.097	-0.182 - -0.012	0.025	0.035
	Other ethnic groups	0.035	-0.058 - 0.128	0.456	0.497

Short Warwick-Edinburgh Mental Wellbeing Scale (SWEMWBS); 11-item Revised Child Anxiety and Depression Scale (RCADS-11); Neurodivergent (ND). Maltreatment was measured using the Short Child Maltreatment Questionnaire (SCMQ).

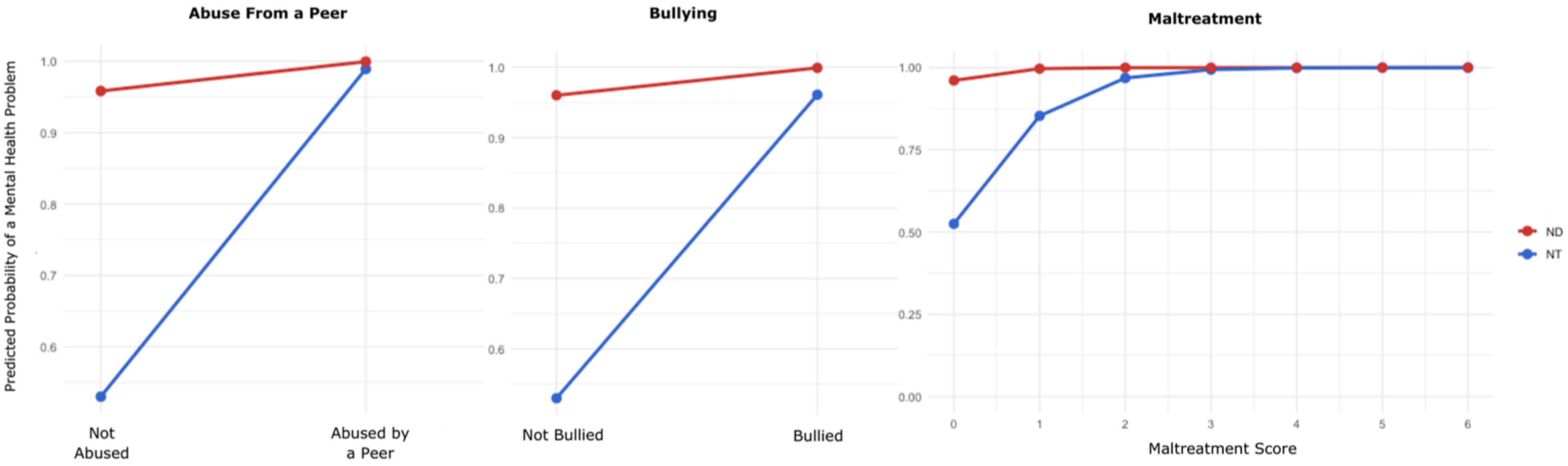

Figure 5.3 *Interaction plots of significant interaction effects of being abused by a peer, bullied and maltreated by an adult with being neurodivergent (ND) or neurotypical (NT) in predicting mental health problems. Maltreatment was measured using the Short Child Maltreatment Questionnaire (SCMQ).*

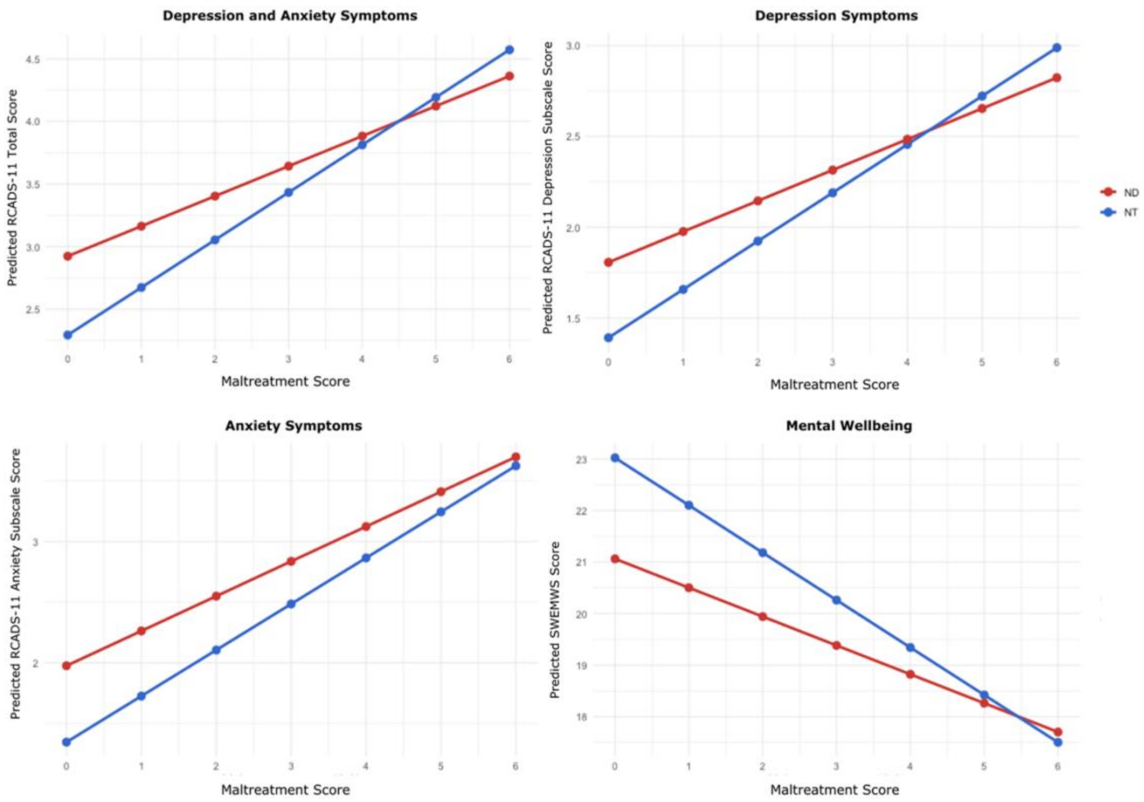

Figure 5.4 *Interaction plots of significant interaction effects of maltreatment score, measured using the Short Child Maltreatment Questionnaire (SCMQ), with being neurodivergent (ND) or neurotypical (NT) on predicting mental health and wellbeing scales. Depression and anxiety symptoms were measured using the 11-item Revised Child Anxiety and Depression Scale (RCADS-11) and subscales, and wellbeing using the Short Warwick-Edinburgh Mental Wellbeing Scale (SWEMWBS).*

5.4.5 Among adolescents who have experienced peer victimisation and maltreatment, how does mental health differ between ND and NT individuals?

There were significantly higher rates of current self-reported mental health problems (Figure 5.5), mean depression and anxiety symptoms and lower mean mental wellbeing (Figure 5.6) in the ND young people who reported peer victimisation and maltreatment, compared to those who had not and their NT peers. Amongst adolescents who had not been victimised, the ND group fared worse on mental health outcomes.

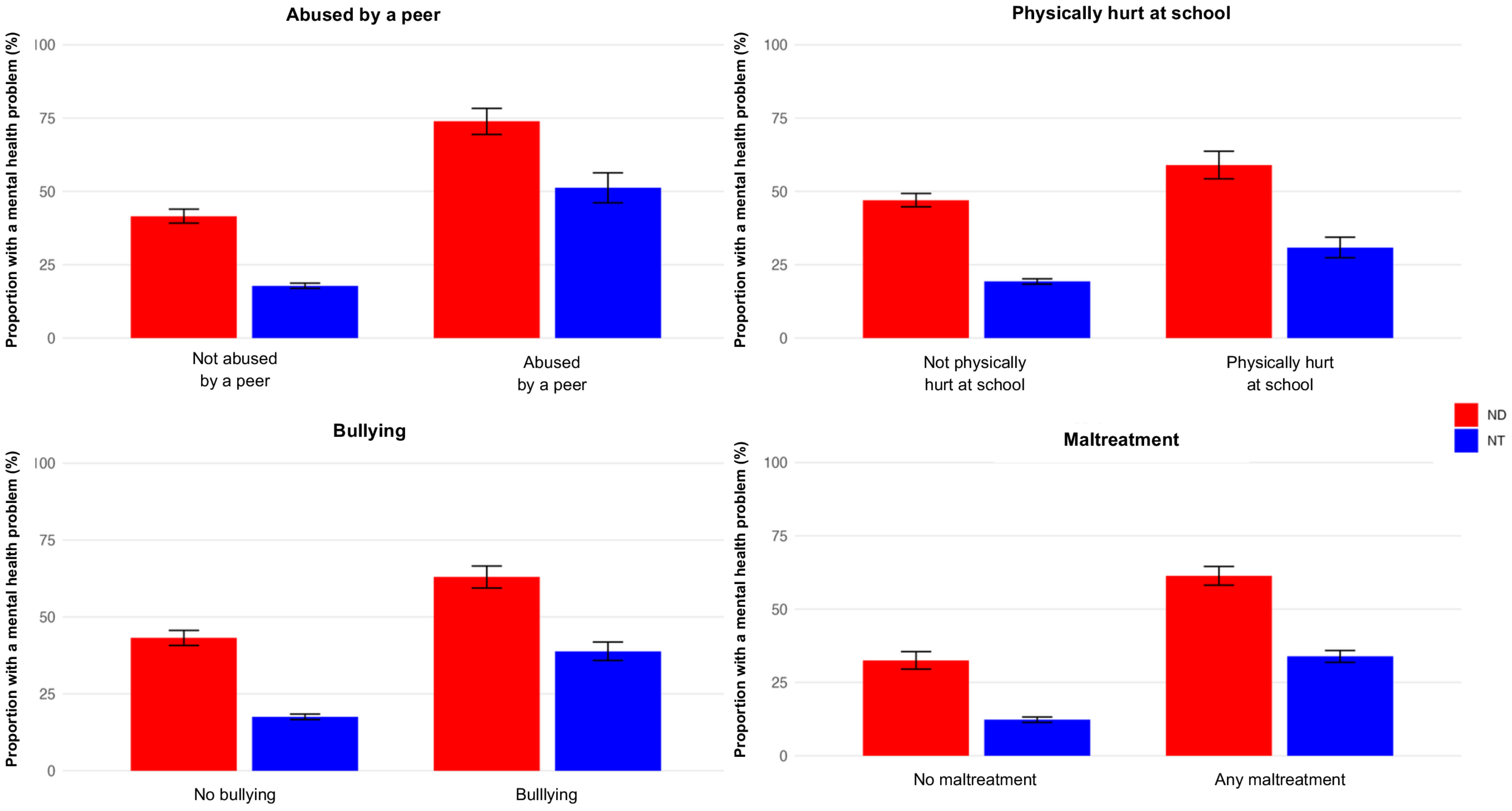

Figure 5.5 *Bar chart comparing percentage of neurodivergent (ND) and neurotypical (NT) young people reporting mental health problems amongst those reporting abuse from a peer, being physically hurt at school, being bullied or any maltreatment.*

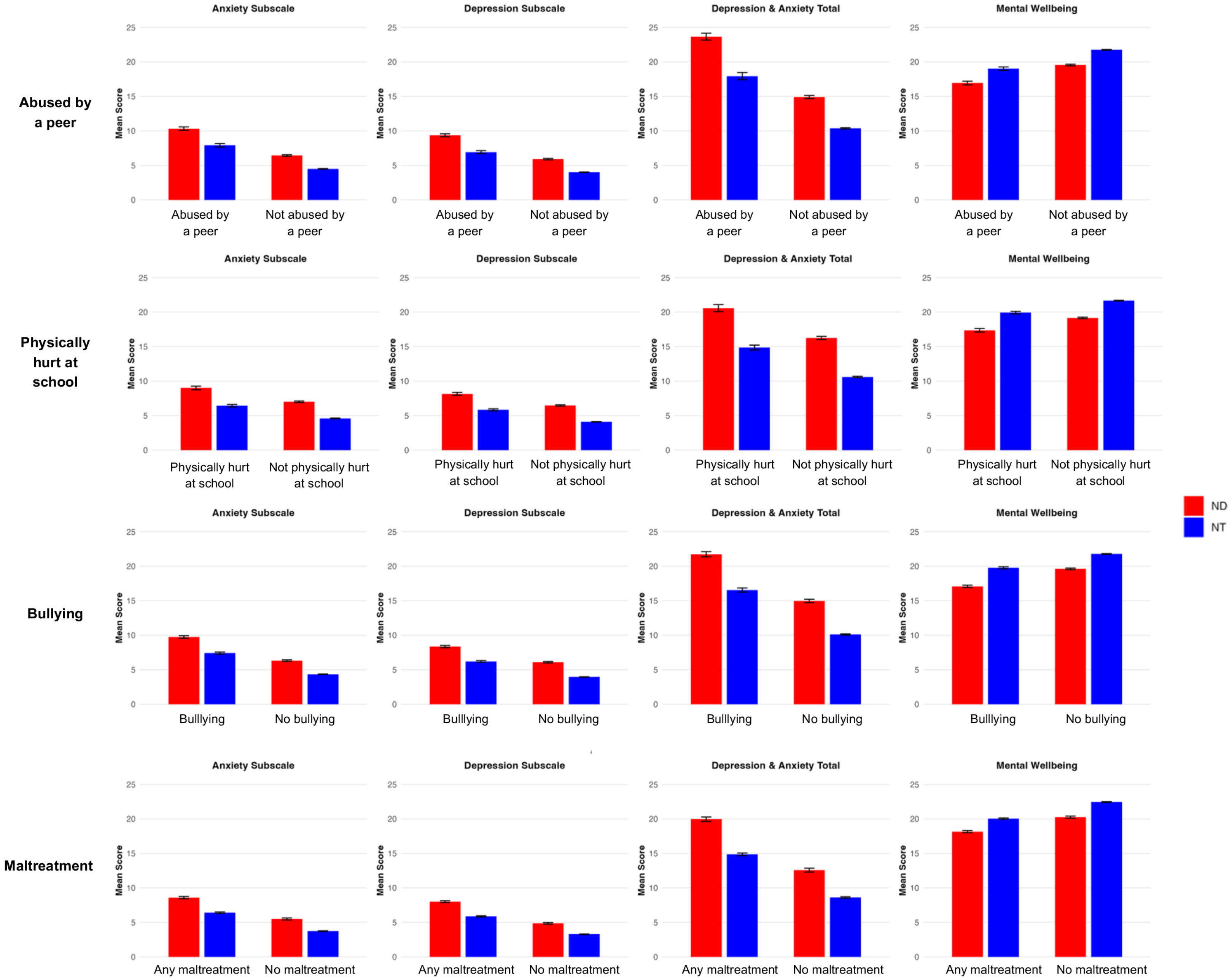

Figure 5.6 *Bar chart comparing mean depression and anxiety symptoms using the 11-item Revised Child Anxiety and Depression Scale (RCADS-11) and subscales, and wellbeing using the Short Warwick-Edinburgh Mental Wellbeing Scale (SWEMWBS) in neurodivergent (ND) and neurotypical (NT) young people reporting versus not reporting peer-to-peer abuse, being hurt at school, being bullied or maltreatment.*

5.5 Discussion

Our findings show that ND adolescents experience higher rates of victimisation from peers and adults, alongside reporting worse mental health than their NT peers. However, the relationship between victimisation and mental health outcomes appears weaker in the ND group, possibly due to high rates of poor mental health even in those reporting no negative experiences introducing a ceiling effect, or potentially due to different mechanisms of how victimisation affects mental health in ND and NT adolescents.

ND young people were found to be at greater risk of abuse from another young person, bullying and being physically hurt by someone at school even when accounting for ethnicity, gender, poverty and age. This is consistent with prior research showing that, compared to a control group, young people with learning difficulties, autism or ADHD aged 8-17 years suffered more bullying and those with autism and ADHD experienced more ostracization (Twyman et al., 2010). Qualitative research on autistic adolescents' peer relationships, systematically reviewed by Cresswell and colleagues' (2019), suggests that interventions that increase awareness and understanding of neurodiversity may be a promising prevention strategy for bullying and peer victimisation. For example, the Learning About Neurodiversity at School (LEANS) is an evidence-based resource pack designed to teach primary school students about neurodiversity (Alcorn et al., 2022). Similarly, peer support groups using the co-produced Neurodivergent peer Support Toolkit (NEST) and led by ND adolescents have demonstrated feasibility and acceptability in Scottish mainstream secondary schools (Crompton et al., 2024), giving these young people the chance to spend time together and learn about neurodiversity.

Being ND increased a young person's likelihood of experiencing multiple forms of maltreatment by a caregiver or another adult. Amongst the ND adolescents the most frequently reported forms of maltreatment were emotional abuse (40%), physical abuse (22.6%) and emotional neglect (17%). This is in line with population data from Australia that identified that children with specific disabilities - those with intellectual disability, behavioral problems and conduct disorders - are more likely to have been maltreated than those without disabilities (Maclean et al., 2017). They also showed that autistic young people were found to be at lower risk of maltreatment than children without disabilities, and indeed another study of maltreated children from child protection services in Quebec found no significant differences in forms of abuse experienced by autistic and non-autistic children (Dion et al., 2024). These previous findings highlight that there may be differences in risk within our heterogeneous ND group, and that having specific or multiple diagnoses may be important. Gene-environment interactions may play a role in why children with neurodevelopmental disorders may be particularly vulnerable to maltreatment, through an intricate bidirectional interplay between a child's behavior and parental characteristics and responses, alongside gaps in support for families. Indeed, autistic children who have more externalizing behaviors, but not internalizing (such as withdrawal or anxiety), have been found to be at risk of poorer family functioning and negative attitudes towards parenting (Sikora et al., 2013). Maladaptive parenting practices, such as harsh or inconsistent parenting, may exacerbate a child's behavioral difficulties, while these difficulties may also be associated with environmental strain, emotionally and financially, triggering these responses from parents. Indeed, maladaptive parenting has shown bidirectional relationships with psychopathology, ADHD symptoms and oppositional defiance in children (Allmann et al., 2022), such that they influence each-other over time. Given these complex dynamics, targeted interventions are needed. Parent-focused public health prevention strategies to address child maltreatment, such as those that attempt to target the parent-child interactions to support a child's social, emotional and behavioural wellbeing, require a cross-sector approach and consideration of wider contextual factors (Prinz, 2016; Sanders et al., 2014). One such factor, as the present study suggests, is a child's neurodivergence. A meta-analysis of interventions for parents of children with ADHD found improved parental outcomes (e.g., mental health and positive parenting) with techniques that taught parents to anticipate their child's behaviour and use positive re-enforcement, whereas psychoeducation was suggested to inadvertently increase the perceived burden of ADHD (Dekkers et al., 2022). Literature suggest that strengthening parenting skills and confidence improve outcomes of children with learning difficulties and the wellbeing of their parents (Guerra et al., 2025). Interventions for parents of autistic children have primarily focused on changing the communication and behaviour of the individual child rather than parent behaviour (Deb et al., 2020; McCafferty & and McCutcheon, 2021). However, the Pre-school Autism Communication Trial (PACT) used video-feedback to teach parents to notice their autistic children's subtle or atypical communicative cues and is effective at improving parent-child dyadic social communication (Carruthers et al., 2024; Green et al., 2010). To our knowledge, there has yet to be targeted parent focused interventions focused on prevention of maltreatment in ND young people, and often these children may be missed by child protection services and the care system (Dilly & Pavlov, 2022; Klein et al., 2015).

Mental health was generally worse in the ND group, which has been frequently reported in previous research (for review see Lai et al, (2019)). It is striking that, for several mental health outcomes, the ND group without negative experiences were equivalent to the NT group with maltreatment, bullying or abuse. Maltreatment and all forms of peer victimisation were associated with worse mental health for both ND and NT groups, as has been shown in previous studies (Carr et al., 2020; Geoffroy et al., 2018; Lereya et al., 2015). Being ND did moderate this relationship, but not as we might have expected: mental health problems and symptoms were less strongly associated with experiencing more maltreatment, bullying, or peer-to-peer abuse in the ND than the NT group. This likely reflects the substantially worse mental health of the ND youth generally, suggesting a ceiling effect whereby the additional burden of bullying, maltreatment or peer abuse may appear less pronounced for ND young people, because their mental health challenges are already severe. Over double the proportion of ND young people (c.44%) reported a current mental health problem, compared to NT young people (c.18%), and they had higher levels of anxiety and depression symptoms. This likely reflects the higher rates of mental health problems amongst ND young people (Kerns et al., 2020) and may reflect a need for more sensitive scales to detect differences in ND populations who are scoring high on these symptoms. The 46-item version of the RCADS scale has shown good validity in autistic young people (Khalfe et al., 2023) and the 25 item was recommended by experts for use with ND care-experienced youth (Power et al., 2024), but the RCADS11 used in this study has not been validated in ND young people, which could contribute to the ceiling effects we see. There may also be different mechanisms at play whereby the mental health impact of victimisation occurs to a lesser degree in ND young people. Black and colleagues (2024) reviewed literature and identified several biological, social and psychological resilience factors in ND people, including self-understanding and positive identity. Given the mediating role of self-compassion (İme, 2025) and shame (Irwin et al., 2019) in the relationship between peer victimisation and mental health, this could potentially be a factor for those adolescents in OxWell who are self-reporting being ND, as self-identifying and being diagnosed as ND is often associated with a positive identity and self-understanding (Eccleston et al., 2019; Overton et al., 2024; Wilmot et al., 2023).

Our findings show that being ND increased a young person's likelihood of being physically hurt by peers at school, abused by a peer, bullied or maltreated, regardless of sociodemographic factors. However, to explore if specific risk factors for victimisation differed between the ND and NT young people, we compared the relationships between gender, ethnicity, age or poverty with the negative experiences in both groups. Adolescents of racialised minorities and living in poverty had higher odds of experiencing maltreatment, however the relationship between poverty and being maltreated by an adult was weaker in the ND group, further suggesting that ND young people face elevated risk of experiencing more forms of maltreatment, despite socio-economic disadvantage. Our findings are consistent with prior research demonstrating that those who experience bullying victimisation are more likely to come from socio-economic disadvantage (Hosozawa et al., 2021; Tippett & Wolke, 2014), that gender minorities may be particularly at risk (Bower-Brown et al., 2023), and that girls are less likely to experience physical victimisation than boys (Becker et al., 2017; Sullivan et al., 2006; Turner et al., 2013), regardless of being ND or not. When considering the intersectional nature of victimisation, we must be aware that different ND identities come with different levels or types of discrimination and intersect with other minoritised identities in different ways. Menzes and colleagues (2025) used the US-based 2021–2022 National Survey of Children's Health to explore autistic youths' experiences of discrimination, compared to other ND (e.g., ADHD, learning disability or a language disorder) young people and NT youth. Discrimination on the basis of race, ethnicity, sexual orientation, and gender identity were higher amongst the autistic young people compared to NT. Interestingly, discrimination on the basis of health and disability was also reported at higher rates amongst autistic youth (31.81%) when compared to other ND young people (12.94%) and NT youth (1.14%). In our data, the relative persistence of physical victimisation risk from peers across age groups in ND adolescents is particularly concerning. Results suggested that NT young people were less likely to be physically hurt or bullied at school as they got older. This is consistent with previous findings that general bullying, including physical, verbal, relational and cyber forms, tends to decline with age (Hwang et al., 2018). However, this protective effect was significantly weaker in our ND group; these negative experiences do appear to dissipate with age to the same extent as in their NT peers. As adolescents get older, the importance of peer relationships increases, and these relationships also increase in complexity, which can leave ND young people struggling to make and maintain friendships (Libster et al., 2023; Rokeach & Wiener, 2020). Family and peer support has been shown to be protective against experiencing multiple forms of bullying (Lee et al., 2022). Our findings could reflect that ND young people may not have the same social developmental protections as their peers, such as intuitive understanding of social dynamics and peer support.

5.5.1 Limitations

There are some key limitations to consider when interpreting these findings. The cross-sectional, correlational nature of this study limits our ability to establish causal relationships; the assumption that the ND young people are having negative experiences *because* they are ND requires further exploration. A strength of the OxWell dataset as a whole is its representativeness of the popularion of young people in England, however substantial exclusions due to eligibility criteria and missing data resulted in an analytical sample of 11,083 from an original 42,215 participants (26% retention). This significant reduction may limit generalisability. As the main OxWell study was conducted in mainstream schools, we have not captured the full range of ND experiences as we have not included those with higher support needs who may be in specialist schooling, or those not currently attending school.

Our measures of victimisation where self-reported from adolescents completing the survey unsupervised. A strength of this approach is that anonymous self-report results in less social desirability bias (Rickwood & Coleman-Rose, 2023), however there is the possibility that this may introduce inflation or that young people had differing interpretations of what the question was capturing. However, our findings do echo literature using more objective measurements; for example, population data utilising information about maltreatment from child protection (or social) services has shown autistic children are more likely to experience maltreatment (McDonnell et al., 2019), and there are high rates of children with learning difficulties amongst maltreated children in the USA (Scurich, 2025).

Finally, the neurodiversity measure in this study is board, capturing those with autism, ADHD, dyslexia, dyspraxia and likely other forms of neurodivergence. This heterogeneity may mask important differences in victimisation patterns and mental health outcomes, as each comes with distinct needs and presentations.

5.5.2 Future research

These finding highlight several crucial avenues for future research. First, future work should examine peer victimisation and maltreatment amongst distinct diagnostic groups (eg. autism, ADHD and learning difficulties) to identify if this risk differentiates or is common for all ND young people. Exploring the impact of multiple ND identities on this risk (eg, autism plus ADHD), as well as investigating the role of transdiagnostic traits could reveal more about key drivers of the vulnerability this study suggests. Second, validating mental health measures in ND young people and using multiple informants is essential to effectively capture changes in their well-being. Previous research has found ND young people tend to under-report mental health symptoms when compared to other informants (Kalvin et al., 2020). The way that ND and NT young people interpret the language of these questionnaires may differ and warrants psychometric exploration. Third, explicitly asking young people if they perceive their negative experiences to be linked to being ND and identifying if their ND traits, stigma associated with disclosure of their ND identity and/or institutional support plays a role in their victimisation experiences could help to identify effective prevention strategies. Finally, when designing preventative public health interventions for child maltreatment, neurodivergence must be considered. More broadly, there are critical gaps across evidence and interventions regarding parenting skills and mental health of those with ND children, including a lack of longitudinal studies, little focus on fathers, and a failure to gather the perspective of the children. A focus on the family unit holistically could bolster the ability of these interventions to support positive parenting of ND children.

5.6 Conclusion

The present study shows that young people who self-report report being ND are at increased likelihood of peer victimisation and maltreatment, and worse mental health. This supports future work exploring ND young people within individual diagnostic categories, as well as assessing the transdiagnostic needs of the whole group. However, more work is needed to tease apart mechanisms of mental ill-health in ND young people who have experienced victimisation from peers and the adults in their life. While suggesting the need for validated scales that capture sensitively the dimensionality of mental health in ND adolescents, these findings highlight the need for preventive approaches that address victimisation of ND young people in schools and at the family-level.

5.7 Acknowledgments

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5.8 Statements and declaration

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Chapter 6: Teaching the traumatised autistic student: A qualitative interview study with teachers

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6.1 Abstract

Background: Autistic children have largely been excluded from research on trauma to date. Teachers with experience working with autistic children are well-placed to offer valuable perspectives on what they recognise as trauma-related symptoms, identify key areas for support, and to address traumatised children's wellbeing in their classrooms.

Objectives: This study investigates teachers' experiences in recognising and supporting autistic children with trauma-related behaviours.

Methodology: A qualitative approach was employed; 15 teachers were recruited via convenience sampling from mainstream and special educational needs (SEN) schools in the United Kingdom (UK). Data was collected via online semi-structured interviews and examined through reflexive thematic analysis.

Results: Four themes, each with subthemes, were identified: 1) Perceptions on how autistic children experience trauma, 2) Taking an informed approach to teaching, 3) Helping with a holistic perspective, and 4) Support is under strain. Findings suggest that autistic children may find everyday school experiences traumatic and experience difficulties in the classroom, and that disentangling trauma-related behaviours from those associated with autism is challenging. Teachers felt that improving their ability to support these children hinges on collaboration, whole-school approaches, appropriate context-specific training, time to build relationships, and adequate school resources.

Conclusion: This is the first study exploring teachers' experiences teaching traumatised autistic children. Our findings provide valuable insights to inform school policy and practices. We emphasise the need for the allocation of resources to SEN

and mental health support in schools, as well as the development of targeted trauma-related teacher training adapted to specific school contexts.

Key words: Trauma, Autism, Mental health, Special Educational Needs (SEN)

6.2 Introduction

Experiencing childhood trauma is prevalent amongst young people in the UK and can have a profound impact on how children function at school (Perfect et al., 2016). Autistic young people report more adverse experiences and victimisation than their neurotypical peers (Hartley et al., 2024; Trundle et al., 2023), and adults with high autistic traits report more traumatic experiences in their childhoods (Stewart et al., 2023). Beyond facing a higher risk of experiencing events widely acknowledged to be traumatic autistic children may also find other experiences, such as social demands, changes in routine and sensory overstimulation, harmful or threatening (Kerns et al., 2015).

In some cases, children can develop trauma-related psychopathology, most notably post-traumatic stress disorder (PTSD) (Danese et al., 2020). Little is known about the presentation of trauma-related psychopathology in autistic young people. A significant barrier to support is ‘diagnostic overshadowing’ (Reiss et al., 1982) – where trauma-related psychological symptoms are misattributed to features of autism without further exploration. Common features of autism, such as sensory sensitivities, and emotional dysregulation, can also be characteristic of behaviours exhibited by traumatised children (American Psychiatric Association, 2013; Stavropoulos et al., 2018). In the classroom, a typical response to trauma might manifest as dissociation, task avoidance, or aggression (Cavanaugh, 2016), all of which could be wrongly attributed to autistic student’s difficulties.

Recognising trauma-related symptoms is all the more challenging with children with language/intellectual disability (ID) where carers may be unaware that a potentially traumatic experience has taken place and the ability to self-report may be hindered (Borghus et al., 2020). Reports of the proportion of autistic children who are non-speaking or minimally verbal varies by definition and instrument used. In a sample of 1,470 school aged autistic children, Bal and colleagues (2016) found 17.5% were considered minimally verbal across definitions by at least one instrument, with only 3.9% meeting criteria on all five measurement instruments. These children may be particularly vulnerable to adversity due to reliance on carers or institutional care. Despite this, autistic people with language/intellectual disabilities have largely been excluded from research on PTSD and trauma-related psychopathology to date (Quinton et al., 2024). For autistic children facing difficulties self-advocating, reporting trauma and accessing mental health care, it's crucial that professionals and carers in their lives are able to recognise trauma-related symptoms (Kildahl et al., 2020).

Teachers with experience working with autistic children can offer a valuable perspective on how autistic children respond to potentially traumatic events, what support may be needed, and how they address traumatised children's wellbeing in their classrooms (Michna et al., 2023). A narrative review found that there are overlapping aspects of the frameworks of trauma-informed care and support for autism in schools, suggesting that combining these would be most appropriate (Berger et al., 2021). Miller and Santos' (2020) literature review of 20 studies from the United States found that while SEN schoolteachers recognise signs of abuse and neglect, they feel ill-prepared to support affected children, and report a lack of high-quality professional development opportunities related to this issue. It should be noted that most (> 70%) autistic students attend mainstream schools (National Autistic Society, 2023). With regard to mainstream education, a cross-sectional study of 765 Dutch mainstream schoolteachers also reported that they feel overwhelmed and under-skilled to address the complex needs of traumatised students (Alisic et al., 2012). Prior qualitative research has focused broadly on autistic children's experiences of school; focusing on the perspectives of the child (Goodall, 2018; Horgan et al., 2023), their parents (McKinlay et al., 2022) and teachers (Lindsay et al., 2014) on the impact of an inclusive school environment on autistic children's wellbeing and mental health.

However, research exploring teachers' perspectives on how to support traumatised autistic students is lacking. In this qualitative study, we interviewed teachers from UK mainstream and SEN schools about their experiences with autistic pupils whom they knew, or suspected, to be traumatised.

6.3 Method

This qualitative research project received ethical approval from King's College London Ethics Committee (ref: LRS/DP-23/24-40936).

6.3.1 Participant Recruitment

Recruitment criteria for this study required participants to hold Qualified Teacher Status, work or have worked in a UK-based school, and to have taught at least one autistic student who has experienced known or suspected trauma. Participants were initially recruited through convenience, network sampling; researchers approached teachers and schools within their social-networks and requested that they refer others in their professional circles.

6.3.2 Participants

Interviews were conducted with 15 teachers (2 males, 13 females), aged 26 to 59 years (M = 37.26, SD = 12.42). Teaching experience ranged from 3 to 37 years (M = 11.60, SD = 10.61). Seven teachers (46.7%) taught primary school-aged students (ages 4-11 years) and eight (53.3%) taught secondary school-aged students (ages 11-18). Seven teachers taught in SEN schools (46.7%) and eight (53.3%) taught in mainstream schools.

Most teachers (n = 9, 60%) taught in schools with a student body from majority low-income families, five teachers said their students were from a range of socio-economic backgrounds (N=5, 33.3%), and one teacher taught in a school with a student body from majority high-income families. When asked about the ethnicity of their student body, over half of the teachers taught at schools where all (n=3, 20%) or the majority (n=5, 33.3%) of students are from minoritised ethnic backgrounds. Four (26.7%) said their school has lots of different ethnicities, and three said their school was majority (n=2, 13.3%) or all (n=1, 6.7%) White British.

Nearly half of the participants (46.7%) rated their confidence in understanding trauma as 4 on a 1–5 Likert scale, indicating a relatively high level of confidence overall, although one participant rated their confidence as 1 (mean= 3.5). Details of individual participants are provided in Appendix 4, S4.2. Participants were assigned a number and letters indicating the school setting where they teach; such that 'MAIN-' is mainstream, 'SEN-' is SEN, 'S' is secondary and 'P' is primary.

6.3.3 Interview Development

The interview questions were developed with input from a Patient and Public Involvement (PPI) group of teaching staff. The study's design and objectives were presented to the PPI group. The consultation and discussion informed question development, including question wording and focus.

6.3.4 Data Collection

Data collection occurred across May-October of 2024, and interviews were conducted by two researchers (AMGQ and AO). To determine eligibility, participants completed a short online screening questionnaire. Those who met inclusion criteria read a participant information sheet before signing a consent form. Semi-structured interviews were conducted, recorded and transcribed online using Microsoft-Teams. The interviews began with basic demographic questions about the teachers and their schools, such as gender identity, age and the type of school they currently work in. Teachers were also asked to rate their level of confidence on their own understanding of trauma on a Likert scale from 1-5.

In the interview, participants were asked to describe a time they taught a child they knew or suspected to have had a traumatic experience, the support they were able or unable to give traumatised autistic children, and the challenges and gaps in support and knowledge they faced. The full interview schedule can be found in Appendix 4, S4.1. After the interview, participants were sent debrief information, and a gift voucher via email to thank them for their time.

6.3.5 Analysis

All interviews were fully transcribed, checked and anonymised. Interviews were analysed using reflexive thematic analysis (RTA) (Braun & Clarke, 2006, 2022). We took an inductive approach to generate meaningful themes while, reflecting on our subjectivity. AMGQ and AO conducted the analysis, which began with data familiarisation, followed by initial data coding. Codes were grouped into themes which were generated iteratively in discussion with the research team (AMGQ, AO, FH). Themes and subthemes were reviewed to ensure they captured the data's codes, and each researcher's interpretation of the data. Final theme and subtheme names were determined and elaborated on; we sought to map meaning within and between the themes to produce a coherent narrative.

6.3.6 Positionality Statement

The lead researcher (AMGQ) is a PhD student researching post-traumatic stress in autistic young people. AO is a postgraduate student with a professional background in mental health and special education. FH is a senior academic with more than 30 years' experience in autism research. Some of the researchers consider themselves neurodivergent. All the researchers embrace a neurodiversity and neurodivergent-positive approach to research.

6.4 Results

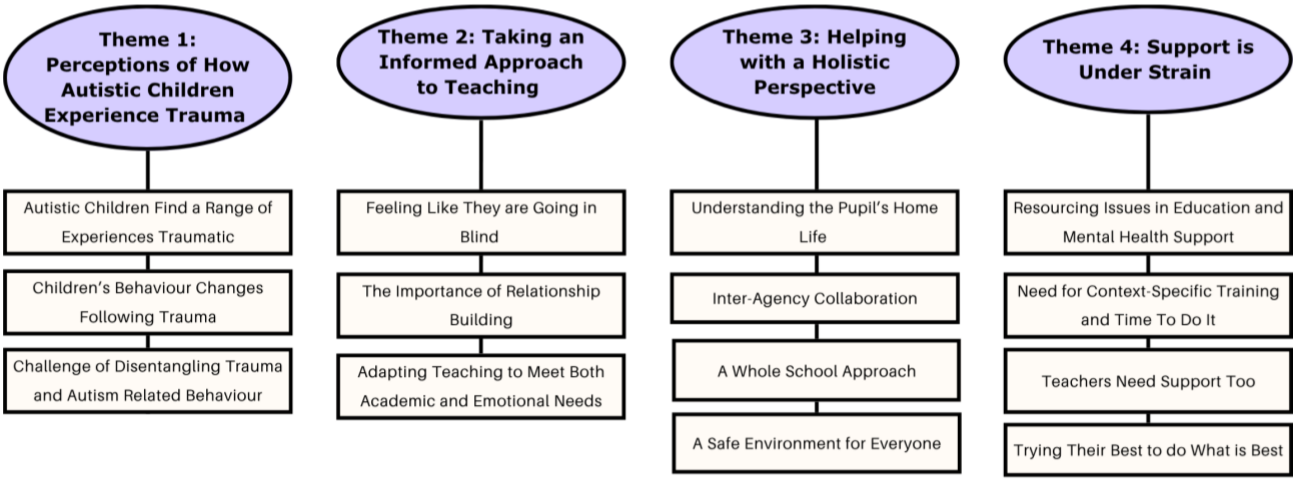


Figure 6.1 *Themes and subthemes developed through reflexive thematic analysis (RTA)*

Through RTA, four themes were developed, encompassing what teachers know, and what they would like to know, about teaching traumatised autistic pupils. These themes and their subthemes are shown in Figure 6.1 and Appendix 4, S4.3.

Theme 1: Perceptions of how autistic children experience trauma

The first theme explores what teachers think about how autistic children experience trauma; delving into how teachers conceptualise what trauma autistic pupils experience, how this manifests in trauma-related behaviours and disentangling these from autism.

Subtheme 1.1: Autistic children find a range of experiences traumatic

Across teachers, there was a broad acknowledgement that autistic pupils are not only at risk of experiencing trauma-related difficulties from traditionally traumatic experiences but also from seemingly every-day experiences. Numerous examples were provided describing how autistic children struggled with the school environment. Elements such as the sensory environment - overwhelming noises, lights or smells – as well as unavoidable transitions between classes and staff changes were cited as leading to what the teachers perceived as trauma-related distress for autistic children.

> *"I've had some children who are very averse to different foods and even going in the dining hall they found really, really difficult… the smells of things or other people eating... we wouldn't necessarily see that in in a neurotypical person as something that is a trauma as such, but… for [an autistic child] that can make their life really, really difficult." (SEN-P9)*

More broadly, teachers consistently cited changes in routine as particularly difficult for autistic pupils. They also noted that changes at home, such as new bedtimes, new carers, or a new sibling, often resulted in increased struggles at school.

> *"When your life has to have such a strict routine for you to be able to function and for your anxiety to work at a level whereby you can just be present…. when those routines are changed that has a far greater impact upon that child than it would on a neurotypical child." (SEN-P7)*

Some teachers were surprised when autistic children showed no reaction to expected stressors but were deeply affected by events they would not have considered would be distressing. MAIN-P12, a mainstream primary teacher, described a student whose school refusal was linked to their being impacted by the Queen dying.

> *He took the queen dying very, very personally…Something that for us isn't traumatic at all, for him has like, ruined his life. I mean, his parents broke up like this week and he doesn't care, but he because he's still so upset about the queen". (MAIN-P12)*

Several of the teachers described teaching in schools where it was common that their children had difficult homelives, including domestic violence, crime, and poor parental mental health. A male SEN teacher described having to consider himself as being a potential trigger due to many pupils having had abusive past experiences with males. Mainstream teachers compared the trauma-related responses of autistic children to their non-autistic peers. While acknowledging these adverse experiences are challenging for any child, they felt it may be particularly challenging for autistic children due to additional difficulties.

> *"We deal quite a lot with kind of family situations where a member of the family is involved in a crime and ... police are involved and things like that. That's obviously very traumatic for any child. Then a child with autism - that's obviously going to be even worse." (MAIN-S13)*

Subtheme 1.2: Children's behaviour changes following trauma

Teachers observed behaviour changes in autistic students after experiencing a traumatic event, or such changes are what indicates to staff something may have occurred. Both SEN and mainstream teachers highlighted that every child is different and described a variety of responses. Some students externalised distress, while others withdrew or sought reassurance. Teachers noted that disruptive behaviours often receive more attention than quietly struggling.

> *"We have our pupils that have had similar experiences, but again it's different in how they perhaps handle it, manage it, think it through. Some explode instantly. And some wind up to it." (SEN-S11)*

Qualitative changes in behaviour often served as crucial indicators for teachers, prompting investigation into potential traumatic experiences. New self-injurious behaviour, shouting and swearing, copying behaviour and the acting out of domestic violence through play were all cited as responses to trauma. Teachers frequently noted that following trauma, there was an increase in the intensity of externalising behaviours, such as verbal and physical aggression, and noted that an increase in sexualised behaviours and decreased inhibitions may indicate that sexual trauma may have occurred.

> *"We have a student currently... she'd come to us from mainstream with some sexualised behaviours. So we suspected that there might have been some abuse." (SEN-S1)*

They also observed that once students were in a heightened state, it became increasingly difficult to help them regulate their emotions. Some teachers described children being stuck in the state they were in when the trauma happened, unable to move forward.

> *"I guess the word I would use is couldn't be soothed, the usual techniques that we would use [to regulate] this student just didn't work anymore, and they weren't kind of strong enough." (MAIN-S4)*

Subtheme 1.3: Challenge of disentangling trauma and autism related behaviours

Teachers talked about whether behaviours linked to trauma can be disentangled from those that they associated with a child's autism. There were different views on whether these behaviours can or should be addressed differently. Teachers acknowledged that strategies beneficial for autistic students, such as routine building and predictability, should also help traumatised students. Some argued that if trauma and autism related behaviours present similarly, then the same strategies should be effective for both without the need to differentiate.

"Support that we're trained to give for students with autism is…. so much routine, make it really predictable…. but also behaviourally be softer, and have a have a lot of empathy and a lot of patience… I think that supporting someone through trauma, predictability is really important, routine is really important." (MAIN-S3)

Some SEN teachers noted that behaviourism-based autism strategies focus too much on the immediate function of the behaviour rather than the traumatic experiences from which it might have stemmed. Mainstream teachers expressed concern that behaviours which would prompt investigation if exhibited by a neurotypical student, are often dismissed as part of autism if exhibited by an autistic student. Some were frustrated that pursuing neurodevelopmental diagnosis was the default route to accessing support without exploration of trauma or attachment.

"I felt a little bit like this is not great that we're just putting [his behaviour] down to his autism because it's really extreme and I think he could probably benefit from some counselling or some kind of therapeutic modality". (MAIN-S3)

Many teachers argued that there is a need for both trauma-specific and autism-specific strategies within schools, although they were uncertain how best to implement this or felt limited by what support they could offer due to students' complex needs.

"These children have really complex… needs and… they need specialist EP [Educational Psychologist] input, and we can't give them that. And safeguarding is very important, but we can't overstep the mark. We can't start offering our opinion. And these kids are crying out for mental health support." (MAIN-S4)

Theme 2: Taking an informed approach to teaching

The second theme we generated was about teachers wanted to feel informed in their approach to teaching traumatised autistic children.

Subtheme 2.1: Feeling like they're going in blind

Teachers varied in how much they could know about what a child had been through, and described various ways they are given information about trauma. Some teachers, particularly mainstream subject teachers, noted that student circumstances are shared on a need-to-know basis, often excluding them and thus limiting the personalised day-to-day support they can provide. Many teachers acknowledged this is necessary due to safeguarding policy but felt frustrated by the lack of context they and teaching assistants (TA) are given.

"[The school] does not expect subject teachers to be providing that kind of support, full stop…. so they don't give you any information about the students like, about what's going on in their lives." (MAIN-P2)

Even when a teacher senses from a student's behaviour that something negative has taken place, they may not be able to determine what this negative event was, and what kind of support is needed.

"Communication is very difficult, you know, it's very difficult for them to communicate to us what they're going through and it's very difficult for us to communicate to them about how they can support themselves" (SEN-P15)

Teachers described how privileged they felt when students confided in them and acknowledged the importance of protecting that confidentiality while checking safeguarding teams are aware there is an issue. Teachers felt that asking a child directly about trauma should be approached gently and led by the child, and most felt it was better to focus on creating a safe space in school rather than pushing them to focus on potentially triggering memories.

"Come in Monday morning. They don't then want to be reminded. School's kind of like quite a safe place for him. So if you ask him how the weekend's gone it's, you know, then recycling and thinking back through it when they've moved on and they've come to school and it's a safe place for them." (SEN-S11)

Subtheme 2.2: The importance of relationship building

Every teacher highlighted the importance of relationship building with the child. It was widely stated that knowing students well is essential for recognising trauma-related behaviour and providing effective support. Having a good understanding of a student's typical mood and behaviour, allowed teachers to notice when changes occurred and to tailor support to the child's needs. There was a notable difference between teachers in mainstream and SEN schools**.** SEN teachers highlighted that their high staff-to-student ratio made it easier for them to build relationships and track changes in their students' behaviours.

"We know our children really well, they're in small class sizes with lots of adults and if a child suddenly becomes more heightened, or the opposite, you know, more subdued or suddenly falling asleep in class or is responding in a different way... we would start to question." (SEN-P10)

Teachers from mainstream schools, however, spoke of larger class sizes, with less time spent with each student, making it harder to build relationships. In mainstream secondary schools, where each subject has a different teacher, being a form tutor was highlighted as the best opportunity to get to know students.

"Whereas in a secondary school, you know as a subject teacher, you might see that student you know twice a week and so you don't... know them very well ultimately." (MAIN-P2)

Many teachers emphasised the importance of building trust through creating opportunities for connection, such as acknowledging when things are tough and understanding a student's triggers. Highlighting their students' small achievements, as well as creating opportunities for student success, were cited as ways to build trust and confidence.

"I'm really trying to like big up all of [their] achievements as well. I think [it] is really important that when things are really awful for them, you're not just having conversations about how awful things are, you're also being like, "Oh my God, you did a week of work experience, and it went really well." (SEN-S1)

Teachers often commented that traumatised students struggled with attachment, either struggling to trust teachers, or forming very strong attachments to certain teachers. They highlighted that being consistent, and providing stable, well-defined relationships between staff and students is vital for these students.

Subtheme 2.3: Adapting teaching to meet both academic and emotional needs

Teachers reported tension between the pressure to meet academic targets and enforce school rules, and their desire to support their students emotionally. Generally, teachers acknowledged that they could not always know in depth how trauma is impacting a child, but they try to reasonably adjust. They favoured compassionate, curious and kind approaches to behaviours rather than punitive ones.

> *"I generally just go with the be kind, be fair. I think being fair is the key thing. Consistency and fairness." (MAIN-S14)*

Teachers understood that students cannot learn at school if their emotional needs are not met, but they are constantly balancing which to prioritise. Teachers described feeling more informed in this decision making if they know if a child has experienced trauma and can use neurodiversity and trauma-informed approaches.

> *"As teachers, we feel, you know, students have to come in and sit and learn, and we forget about all these other issues and other difficulties and differences and especially emotional regulation. (SEN-P15)*

Many recognised that students struggling with trauma-related difficulties cannot concentrate in class, and spoke of building confidence through setting achievable tasks. Teachers spoke of lowering demands and relaxing rules when trauma was known or suspected, explaining that students cannot learn if excessive demands are placed on them when they are distressed.

> *"If you stop thinking of a student as being difficult and confrontational but understand actually how triggered they are by what we might think of as quite small demands…that'll again make things a lot better….to understand, what are trauma responses." (MAIN-S6)*

Teachers were conflicted when balancing their capacity to be flexible in attending to an individual child's needs, while being consistent and fair. Emotional needs and individualised approaches were particularly difficult to attend to in mainstream schools with larger class sizes. Teachers cited difficulties in balancing the rest of the class's learning with deciding when to hold back to allow a child to self-regulate, when to approach, and when to ask for help from other staff.

"You have to also care for 28 other kids… and that's really hard to then focus on the one and provide for their needs." (MAIN-S13)

Several teachers emphasised the need for discretion when bending rules, providing support, or altering tasks to avoid singling out children and drawing attention to their difficulties. Many found seating children separately or at the front of the class helpful but considered the long-term impact, including a child feeling excluded from their peers, reintegration challenges and the impact if this accommodation is not consistent across classes.

"All these children really need and want is consistency and the more you create a different existence for them, the more a sense of otherness you create, and the more they end up isolated, essentially, and people don't like hearing that". (MAIN-P12)

Theme 3: Helping with a holistic perspective

The third theme highlights the critical need for a collaborative and holistic approach to supporting traumatised autistic children. Teachers alone cannot meet the multifaceted needs of these students; it requires the concerted effort of the entire system around the child.

Subtheme 3.1: Understanding the pupil's home life

Teachers emphasised the importance of building connections with parents/carers, to maintain clear communication about a student's home life. They noted that parents might fear social care referrals if they disclose potentially traumatic events, and the importance of avoiding parents feeling blamed or judged when discussing concerning behavioural changes.

"You want to be very careful… because you don't want to demonise people… a lot of special needs families haven't had very good experiences of services, and it can be really hard to build that relationship. So, you don't want to jeopardise that by making accusations." (SEN-S1)

Teachers in primary and SEN settings had more experiences of family involvement, due to children being younger and/or having more complex needs. One teacher acknowledged the difference between mainstream and SEN school when involving parents.

> *"Special schools are very different to mainstream schools. We get much more, much stronger, kind of relations with the families because it is very hard for the families and we have less children. So having those relationships with parents is very important and most families are very open and really need that, probably because they ...don't have many people ...to talk to and who understand... what it is to have a child with complex needs and autism." (SEN-P15)*

Many teachers identified unstable home environments or disrupted families as a possible source of trauma for autistic students. Teachers working with students from deprived backgrounds highlighted the connection between poverty and trauma. For example, unstable housing, forcing families to move between temporary accommodation, may be particularly traumatic for autistic children who value consistent routine. Other cited sources of trauma included deaths and illnesses within the family, as well as domestic violence.

> *"We've had children who have been made homeless and sent to Travelodges for six months. And like those sorts of events would be traumatising, probably... but also other children who ... just live in high poverty and inconsistent [electrical] power" (SEN-P10)*

Teachers acknowledged that autistic students with stable home lives were better equipped to handle day-to-day stressors, while those from underprivileged home environments were more likely to exhibit more extreme trauma-responses.

> *"When children come to us, they are generally unsettled, but I think those that have had trauma take longer to achieve what those that are coming from safe, nurturing home lives can achieve much quicker." (SEN-P10)*

Subtheme 3.2: Inter-agency collaboration

Most teachers noted that traumatised autistic children often have complex needs, and that communication difficulties among autistic students can hinder the recognition and support of trauma. To overcome these barriers, teachers emphasised the importance of collaborating with external professionals around the child, such as Child and Adolescent Mental Health Services (CAMHS) practitioners, social workers and past educators. This is useful for gathering information about the child's past experiences and mental health, as well as collaborating to prepare a child for the future. Working closely with social workers helped teachers to support children through transitions such as changing schools or difficulties at home.

"Good support is collaboration between professionals in the industry and everyone listening to each other and understanding exactly what is important for the child... A little bit taken from everyone and everyone working together to find the best solution." (MAIN-S4)

Teachers also highlighted the need for clear referral pathways to CAMHS and efficient collaboration between schools and local authorities to avoid delays in support. Those with experience working alongside various therapy teams, psychiatrists, educational psychologists and psychotherapists highlighted the significant benefits of external collaborations. However, teachers still highlighted that, across professionals and agencies, there is little understanding of how to support autistic children who have experienced trauma, as mental health professionals often recommend actions that are designed for neurotypical children.

"When we speak to CAMHS practitioners and they come up with these ideas... there isn't anything specific and it's very... designed for neurotypical people, like CBT, or you know it's not neuro-affirming practice." (SEN-P15)

Subtheme 3.3: A whole school approach

All of the teachers asserted that for support to be effective, a whole-school approach is necessary. Many teachers felt that having whole-school policies that incorporate neurodiversity and trauma was helpful to all children, not just those who are autistic and/or traumatised. Some mainstream teachers described not having the resources to have individual behavioural plans or one-to-one support, so described a whole-school approach as a more resource-efficient way to support these children.

"Instead of differentiating it for just that autistic child, making that [support] just available for everyone means the autistic child is also included in the whole learning, and everyone's benefiting from that." (MAIN-S13)

Teachers discussed how creating a school environment that caters to the needs of autistic traumatised students by providing safe and suitable spaces, takes the strain off being the sole person responsible for that child's wellbeing and helps the child feel supported.

"...it's the environment that they feel and understand when they come into school. Rather than just having, like, the one great teacher." (SEN-S11)

Teachers stressed the importance of good teamwork, communication and alignment among professionals within a school, including teachers, SENCOs, therapy teams and TAs. Some SEN teachers described regular team briefings to discuss the specific needs of each child, whereas mainstream teachers generally described informal conversations in staff rooms. Both SEN and mainstream teachers talked about appreciating guidance from senior leadership.

"It's about working with all the teachers together on a large scale and just saying, "oh, I'm doing this at the moment. Can I have some support here?" So, it's just having that structure in place and being proactive about it and also realising that you're not alone." (MAIN-S5)

Effective information sharing about support strategies when students change class or when they are struggling is vital to ensuring that students receive consistent care across classrooms, regardless of their teacher.

"We change classes and children every year... But of course, the children don't necessarily change. And what they need doesn't essentially change either, and so you have to try and pass on some of that information to their next teacher." (SEN-P8)

Subtheme 3.4: A safe environment for everyone

The need for schools to create a safe environment for everyone was strongly stated by the teachers. There was an understanding that many behavioural changes following trauma result from an autistic student's decreased feeling of safety. Teachers expressed that many autistic children have limited control over their lives, particularly those whose trauma stems from their home lives. Some teachers felt that externalising behaviours reflect students trying to make themselves feel safe by exerting control over their bodies and environment, so this should not be suppressed.

"So the reason you stim is so that you have some sort of control, so you're able to feel calm and safe." (SEN-P7)

Some teachers felt that providing opportunities to exercise choice and control may help these students to feel safer at school. Examples included offering alternative locations if a space is aversive, providing breaks during tasks, and allowing adaptations to school uniform. Others placed more emphasis on the importance of clear structure and expectations, consistent responses and routine as sources of safety for autistic children - sometimes contrasting with instability at home.

"Actually all these children are desperate for is consistent responses. That's where all of this like over and over and over heightened behaviour comes from. It is ambiguity causing further anxiety." (MAIN-P12)

Teachers also spoke of the conflicting needs of traumatised students, who may require space to express a range of complex emotions at school, and the needs of their peers, who could find it distressing to witness a student in crisis.

"You want to give them like a space where they can feel held and a space [to] regulate and a space where they can feel safe, which can be challenging in a school with other dysregulated traumatised young people with difficult needs." (SEN-S1)

All teachers emphasised the importance of being a safe and supportive adult for their students, even in situations where their own physical safety was at risk. Many talked about being hit, bitten, and having objects thrown at them in school. Teachers described safety plans and where necessary removing more vulnerable members of staff from risky situations or environments. Staff described feeling safer in crisis situations as they get more experienced in their career, if they trust other staff members to help, if they've experienced these behaviours with this child before, or when following a clear behaviour plan.

"I think it's having those firm lines when needed because for my safety and for him… it's trying to make sure it's a safe environment for everyone." (MAIN-S14)

Theme 4: Support is under strain

The fourth theme explores the barriers teachers face in supporting traumatised autistic students, and their suggestions for improving provision.

Subtheme 4.1: Resourcing issues in education and mental health support

Almost every teacher highlighted the systemic issues affecting UK schools, often referencing the years-long waiting lists for CAMHS**.** Schools have also been impacted by funding cuts, loss of staff, resulting in remaining staff having to take on additional responsibilities and limiting the support they can offer, while receiving relatively low pay.

"When you cut schools' funding, they cut things that they deem are non-essential....TAs are deemed to be non-essential. And then obviously that puts more pressure on teachers to be this kind of like every person." (MAIN-S3)

Teachers argued that traumatised autistic students require more resources than their peers, such as additional staff to support behaviours and the involvement of mental health professionals, making them more vulnerable to funding cuts and recruitment crises. Many mainstream teachers felt that they have more SEN students with Education, Health and Care Plans (EHCP; plans that outline a child's needs and the additional support required to meet them) in their classes than ever before, without the resources to fulfil the stipulations. Some spoke of having to provide specialist support on an ad-hoc basis for children with more complex presentations, for example setting up unofficial specialist classrooms with a specialist TA, due to appropriate SEN schools not being available.

"Because we're only having 5 TAs in the whole school, you can't always provide that provision ... one lesson they might have that support and it's fantastic, and then the next lesson they don't and then I'm getting back to square one because I can't provide that." (MAIN-S13)

Teachers described a lack of available mental health professionals both inside and outside of schools. They tried to fill the gaps in mental health provision, relying on their instincts or personal experience with autistic family members, in the absence of formal training. They may use external qualifications, personal experience with autistic family members, or rapport with an individual student to guide their approach.

"It's largely making it up and that - I wouldn't know where to go to get advice to do it properly as it were, we just follow our noses." (SEN-P10)

Subtheme 4.2 Need for context-specific training and the time to do it

Teachers frequently reported feeling out of their depth when supporting traumatised autistic students, with every teacher expressing a desire for more training. Most teachers, across both SEN and mainstream schools, noted a recent push for trauma-informed practice and related training in their schools. Teachers who had received training expressed appreciation, or regret that they had not received it earlier, with some teachers expressing a desire for more regular trauma-informed training.

"I feel like the trauma-informed practise should almost be, you know, a bit like you do safeguarding every three years or something.... to keep your awareness." (SEN-P9)

However, the quality and content of these trainings, most of which focused on neurotypical children, varied; some teachers said they had had no training. Mainstream teachers expressed that to access SEN training they had to take a personal interest to make it a priority but still needed the school to give them dedicated training time.

"I feel like from the SEN perspective... they [school] let down the staff and that we're not trained enough to deal with some of the things that are getting thrown our way. And as I said, time is the big thing because they don't have that training time." (MAIN-S14)

For the content of the training, teachers wanted more training on distinguishing between trauma-related responses and behaviours related solely to autism, as well as learning what kinds of experiences are traumatic for autistic students. Many teachers requested training in supporting students when they are in crisis, especially during challenging incidents involving aggression and unsafe behaviour. There was a sentiment, particularly amongst those teaching in under-privileged areas, that training would be more helpful if it was adapted to the context of their school, the backgrounds of their student body and the resources they have available to them.

"It would be nice to have CPD that felt almost personalised to your school, like the person talking had considered the setting they're coming to... I think that would be

good for teachers to feel like, yes, I'm being given stuff that's supporting what I need to know." (MAIN-S13)

Lastly, teachers expressed a need for training in providing developmentally appropriate trauma-informed practice, with standard emotional literacy programs often feeling unsuitable for students with higher support needs. Teachers also sought guidance around communicating with non-verbal, or minimally verbal students, to better support them when they are struggling.

"[With] students who weren't able to speak or write… I felt way out of my depth… I didn't know how to reach them and I didn't know how to help them." (MAIN-S6)

Subtheme 4.3: Teachers need support too

Teachers described being in critical need of support. They highlighted that regular supervision would be helpful, as it serves as both emotional support and a training opportunity, as well as debriefing opportunities and reflective spaces to address vicarious trauma. Some teachers discussed the impact of student trauma on their wellbeing, particularly when they have experienced trauma of their own, and stressed how the emotional toll of the job makes the routine tasks, such as marking and making reports, particularly challenging.

"Sometimes if you've been through a particularly difficult time…the way that the children are presenting or the trauma that they have could impact on [teachers] who have…some sort of trauma... And it would be good if they could have that chance to be able to talk through that with somebody in a confidential way… sometimes it's just that you need to sort of debrief a bit with somebody." (SEN-P9)

Teachers expressed a need for breaks and space away from school and students after being hurt on the job to decompress, but this was rarely possible, as teachers' need for breaks conflicted with traumatised students' need for support and unconditional positive attention.

"I think for the staff, probably what would be needed would be like opportunities for respite almost, so time away… from that student if not away from the school. But… that's not the best thing for the student, so it's a very difficult balancing act." (SEN-S1)

Some of the teachers from across mainstream and SEN schools described a damaging disconnect between frontline staff and senior management in their schools, expressing a need for more regular check-ins when they are affected by student behaviour.

"A lot of staff say… that they're not checked up on, you know, like we are hurt every day. So, when you [senior staff/management] are then saying "It's not so bad"… you don't know because you're not actually living that day-to-day…you're in an office. I'm the one that's constantly dealing with this." (SEN-P7)

Many spoke of the power of uplifting and supporting other members of staff who are having a difficult time with a child's behaviour and have shown perseverance. For example, a senior teacher described supporting a member of staff who returned from stress leave by reminding them what a difference they had made to a traumatised autistic child's life:

"...you're gonna find this really hard, but it is really worth it when it works. ***Like*** *to watch him go from a child that was like attending school for an hour a day to being essentially in full time ... this is all because of you.." (MAIN-P12)*

Subtheme 4.4: Trying their best to do what is best

All teachers expressed that they were trying their best to do what is best for their students, either within a broken system or with children that have intensely complex needs. Many teachers expressed a sense of helplessness with the time and resources they are given, continuing to try even when they know there are some children they may let down.

"We are trying to do as much as we can. But until you actually have the capacity and the resources and whatever it is to do that, I don't think what we're doing will ever be enough, which is kind of sad." (MAIN-S13)

Teachers - particularly SEN teachers - experienced pressure to try to be everything to everyone and some felt overwhelmed by a child's continued distress when they feel like they're trying everything with no progress.

"I felt like I became everything but a teacher because you end up trying to support emotionally and you're trying to be mum and you're trying to be, you know, protector of the others and all of those things." (SEN-P8)

Mainstream teachers also felt overwhelmed by the merging of their role as educators with pastoral responsibilities, when trying to keep these roles separate was at odds with their students' need for consistent support and follow up.

"The role ...is not just to stand at the front of the classroom and teach. Yeah. I mean, you're effectively social workers. First aiders, like behavioural people, and sometimes it's just [being] that regular person that the child feels comfortable to talk to, like a therapist sometimes."(MAIN-S14)

Most teachers spoke about their job being hard but ultimately rewarding when you know your efforts have helped a child. Teachers wanted autistic children to be able to flourish, despite adversity, into confident adults. They described the efforts they would go to, including helping families navigate SEN pathways, foster care and CAMHS, as well as committing extra time to ease transitions between schools.

"I think here we really do try and develop that pupil so that they can be like a a pretty good citizen when they leave... Some have had some experience of life which far outweighs what I can kind of comprehend ... what they've seen, what they know, what they've been involved in. And they're just kids." (SEN-S11)

6.5 Discussion

This is the first study to explore both mainstream and SEN teachers' experiences supporting traumatised autistic students. We developed four themes from the interview data; 1) Perceptions of how autistic children experience trauma, 2) Taking an informed approach to teaching, 3) Helping with a holistic perspective, and 4) Support is under strain.

The teachers' perceptions provide useful insights into what autistic pupils may experience as traumatic and the ways they may respond. The school environment was cited as both a trigger and a source of trauma. Teachers' observations about how changes in routine, classrooms and sensory sensitivities in school impact autistic children, align with prior qualitative research on why some autistic students dread school (Goodall, 2018) and studies showing that the lighting and acoustics of classrooms impact autistic students' externalising behaviours (Al Qutub et al., 2024). If the experience of being autistic in an environment set up by, and for, neurotypical individuals can be inherently traumatic, discerning a trauma-specific symptom profile among autistic students becomes even more complex. There is a need for environmental adjustments to reduce distress and accommodate sensory sensitivities. Many traumatic events teachers described were in line with standard clinical definitions of trauma (American Psychiatric Association / DSM-5), but many were 'everyday experiences' that were distressing for an autistic child. This is supported by research with autistic adults, whereby frequency of PTSD symptoms did not differ between those who had experienced a trauma that aligns with DSM-5 Criterion A trauma definition and those who had experienced something that did not (Rumball et al., 2020). The teachers' views suggest that a broader set of experiences may be perceived as traumatic by autistic children too, echoing the sources of trauma identified by Kerns and colleagues (2022), and providing an educational perspective consistent with clinical findings that the subjective experience of trauma bears a greater impact on mental health than objective severity ratings of the experience (Coleman et al., 2024; Danese & Widom, 2020).

Teachers consistently applied an 'all behaviour is communication' approach that aligns with many trauma-informed and neurodiversity-affirming pedagogies, prioritising understanding emotional needs. Teachers typically identified non-specific emotional and behavioural responses to distressing or traumatic experiences, such as emotional dysregulation, outbursts, or withdrawing. In contrast, there was limited reference to 'core' symptoms of PTSD, such as re-experiencing or avoidance symptoms (American Psychiatric Association, 2013). While this could indicate that teachers weren't observing classic PTSD symptoms in these children, it importantly highlights that trauma manifestations extend beyond PTSD, encompassing a wider range of trauma-related reactions which may be more relevant and useful for teacher's to recognise in the classroom.

Teachers' knowledge about a child directly impacts their ability to address trauma-related behaviours that impact their learning. The importance of relationship-building to inform their approach to teaching reflected core principles of trauma-informed practice; providing safety, trustworthiness, collaboration and empowerment (UK Government, 2022). The balance between prioritising either a child's educational or emotional needs revealed the largest divergence between mainstream and SEN teachers. This likely reflects an emphasis generally on academic targets in mainstream, versus a greater focus on providing for higher support need in SEN. Holistic support requires teaching staff, external professionals and parents to work as team to support the child. This aligns with qualitative work by Jahans-Baynton and Grealish (2022), who found successful collaboration and clear communication improved child safeguarding.

Building good relationships with children was crucial for teachers, enabling them to contextualise behaviour and provide appropriate support. Previous literature links frequent positive interactions between students and staff to improved academic engagement and reduced behavioural difficulties in neurotypical traumatised students (Conroy et al., 2009). The advantage of smaller class sizes in SEN settings supports previous findings that lower staff-to-student ratios facilitate more personalised support and better implementation of trauma-informed practices (Maynard et al., 2019). However, SEN teachers faced challenges in managing expressions of distress from multiple children simultaneously. They prioritised protecting their relationship with the child by understanding behaviours, rather than merely suppressing or containing them, aligning with studies showing restrictive practices (eg. holds) harm teacher-child relationships (Willis et al., 2021). Strengthening relationships requires empowering teachers with knowledge about the child. There is a need for better information sharing on trauma and autism with careful consideration of who can access trauma histories. For mainstream teachers to effectively support both the autistic child and the learning of the whole class, our findings suggest reducing the high staff-to-student ratios, providing adequate training and preparation time, and ensuring teaching assistant support is essential.

Findings illustrate that whole-school approaches that integrate neurodiversity and trauma-informed principles benefit not only traumatised autistic children but also their peers and teachers. Building adaptations for autism and trauma into school policies gives a sense of shared responsibility, unburdening individual teachers from being the sole providers of care and decision making. Despite whole-school trauma-informed approaches growing in popularity, and perhaps due to their novelty, there is minimal evidence for their efficacy to date. Several systematic reviews have been conducted by groups in Australia (Berger, 2019; Newton et al., 2024; Roseby & Gascoigne, 2021) and America (Avery et al., 2020; Fondren et al., 2020, 2020; Maynard et al., 2019) utilising different approaches and criterion. Existing studies do show promise, and suggest factors such as school readiness, leadership buy-in, alignment with school values, and infrastructure to be crucial for the success of trauma-informed interventions.

Significant funding cuts to education, mental health services and social care were reflected in our findings. Strain and instability in students' communities and homes has simultaneously increased autistic children's risk of traumatic experiences and decreased their access to support services. Consequently, schools frequently become the primary point of intervention for traumatised autistic children, placing enormous pressure on teachers to address their pupil's mental health needs, alongside meeting the growing demands of EHCPs without the necessary staff, training or resources. Participants stressed that for training to be worthwhile must be tailored to the backgrounds and abilities of the students they teach, and indeed previous pilot and implementation studies have shown that customised training sessions improve teachers' ability to support neurotypical traumatised students (Day et al., 2015; Perry & Daniels, 2016).

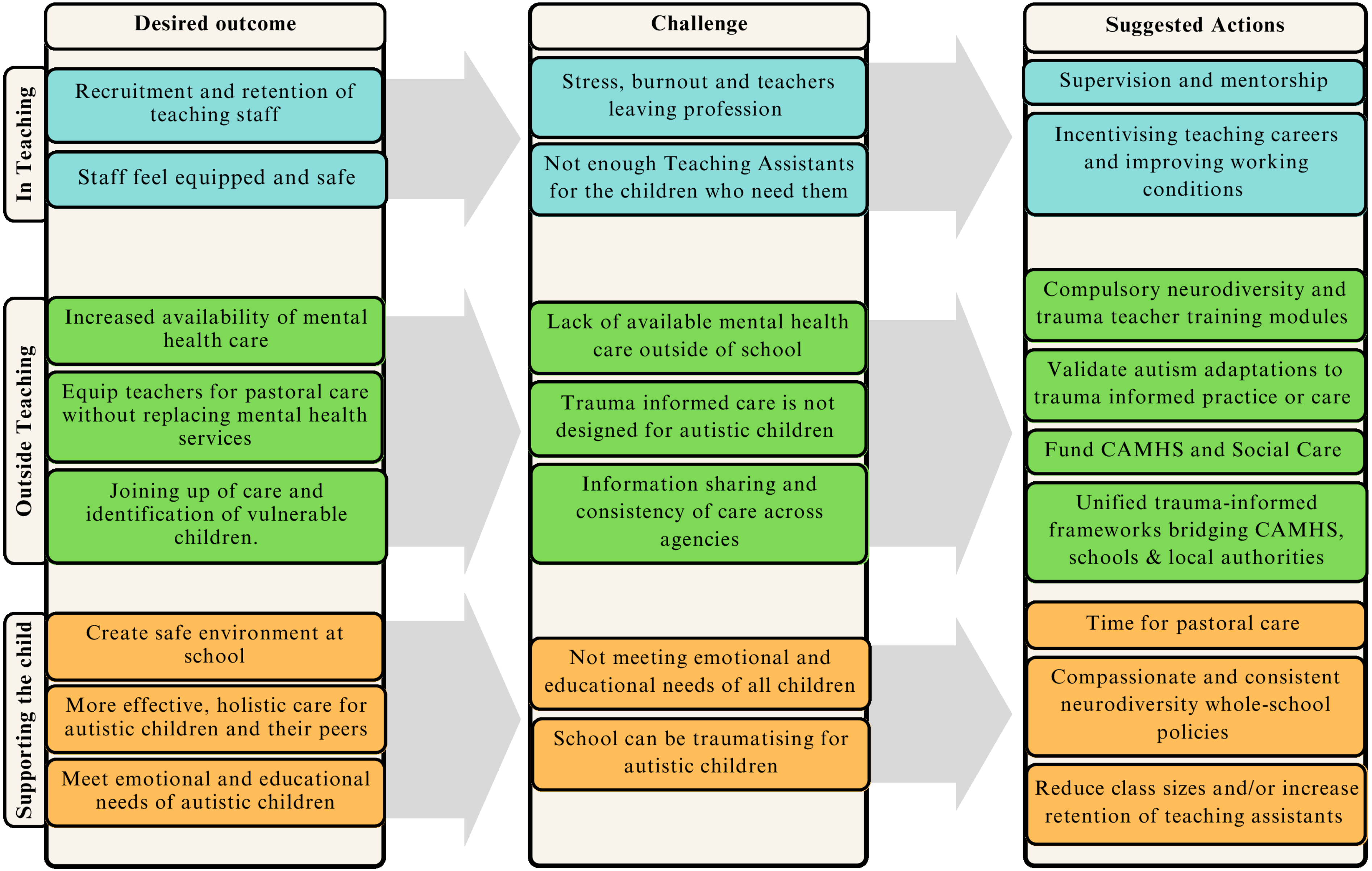
Despite these challenges, the current study gathered many touching examples of successful support provided by teachers, suggesting that compiling such strategies could inform future training programs. All teachers spoke of trying their best and persisting despite feeling like they are letting some children down, highlighting the need for support, recognition and supervision for teachers themselves. Teacher coaching and supervision has been shown to improve translation of knowledge into practice, positive student outcomes, and improve teacher wellbeing and emotional resilience (Artman-Meeker et al. 2014; Gray et al. 2015). Our results suggest that teachers would value mentoring and input from more experienced staff, particularly concerning management of crisis situations.

6.5.1 Strengths and limitations

This study is the first to investigate teachers' experience of teaching autistic children they consider traumatised, contributing to the existing body of research into trauma as experienced by autistic children. The inclusion of teachers from various school types (primary, secondary, SEN and mainstream, private and state) increased the chances that the experiences shared in these interviews captured the range of school settings across the UK. However, the study is not without limitations. At the request of the PPI group, we did not pre-define 'trauma' in the interviews but were guided by how the teachers themselves conceptualised it. This meant references to trauma were sometimes ambiguous, with some teachers referring to ‘trauma’ as the event, as symptoms or both, and may have described behaviours that were un-related trauma. Our sample was predominantly female, with perspectives from only two male teachers. Interesting considerations of gender did emerge in the data, such as how male teachers adapt their approach due to children having experienced trauma with men. Gaining more male teachers’ perspectives would enhance generalisability. However, given that as of 2021, only c. 24% of teachers in England were male, our sample is reflective of who is currently in teaching. Additionally, the non-random sampling likely attracted teachers with a pre-existing interest in trauma, who may not represent the views of UK teachers generally. Gaining insights from those without personal interest in the topic would be helpful when developing future resources for professional development.

6.5.2 Implications

Our findings highlight that in order to support traumatised autistic children in schools, challenges within teaching, more broadly in children's mental health and social care and at the individual child level need addressing. Figure 6.2 illustrates challenges, actions and desired outcomes desired outcomes inside and outside teaching, based on the findings of this study.



Desired outcome

In Teaching
- Recruitment and retention of teaching staff
- Staff feel equipped and safe

Outside Teaching
- Increased availability of mental health care
- Equip teachers for pastoral care without replacing mental health services
- Joining up of care and identification of vulnerable children.

Supporting the child
- Create safe environment at school
- More effective, holistic care for autistic children and their peers
- Meet emotional and educational needs of autistic children

Challenge

- Stress, burnout and teachers leaving profession
- Not enough Teaching Assistants for the children who need them
- Lack of available mental health care outside of school
- Trauma informed care is not designed for autistic children
- Information sharing and consistency of care across agencies
- Not meeting emotional and educational needs of all children
- School can be traumatising for autistic children

Suggested Actions

- Supervision and mentorship
- Incentivising teaching careers and improving working conditions
- Compulsory neurodiversity and trauma teacher training modules
- Validate autism adaptations to trauma informed practice or care
- Fund CAMHS and Social Care
- Unified trauma-informed frameworks bridging CAMHS, schools & local authorities
- Time for pastoral care
- Compassionate and consistent neurodiversity whole-school policies
- Reduce class sizes and/or increase retention of teaching assistants

Figure 6.2 *A multi-level approach to supporting traumatised autistic children.*
CAMHS = Child and Adolescent Mental Health Services

Policymakers must adopt a holistic approach to educational reform, which involves strengthening community support and services, tackling structural inequalities and ensuring that children's mental health and social services are meeting the needs of autistic children. The lack of specialised mental health support catering to autistic students experiencing PTSD, or other trauma-related disorders or mental health difficulties, creates pressure on schools to fill gaps in provision. Investment in school based mental health professionals and stronger collaborations with community mental health teams is desperately needed as, when implementing trauma-informed mental health care in schools, we need to ensure we are not placing all the responsibility of mental health care onto already stretched teachers. These implementation challenges when allocating mental health care to teachers has been evidenced, with 47% of Senior Mental Health Leads reporting insufficient time to achieve goals (Department of Education, 2023), and Smith et al. (2025) finding that schools with external consultants implemented trauma-responsive environments more successfully than self-guided schools. While many teachers intuitively make adjustments and understand that getting to know an individual child's triggers is key, there is a clear need for explicit guidance and whole-school polices to creating school environments that are less aversive for autistic students. School-based initiatives to target creating accessible environments should be developed collaboratively between teachers and students to cultivate meaningful recommendations.

6.5.3 Future research directions

Future research should prioritise hearing the autistic students' perspectives on what they find traumatic in school settings. Our findings suggest that teachers are less concerned with whether autistic children exhibit the same symptomatology in response to trauma as neurotypical students and more focused on having an evidence base for effective support. Research evaluating effective autism modifications of interventions for trauma-related difficulties developed for neurotypical students could enhance teachers' confidence in their choices. Retrospective studies with autistic adults who experienced childhood trauma, in or out of the classroom, could also offer valuable insights for autistic-led practices. As more schools begin implementing trauma- and neurodiversity-informed frameworks, longitudinal follow up of student and teacher wellbeing could inform decisions about future national education initiatives.

6.6 Conclusion

Teachers working closely with autistic students offer valuable insights on the challenges of meeting both emotional and educational needs and highlight significant gaps in our understanding of trauma-related psychopathology in this population. To effectively support these students, teachers must be equipped with adequate training, time and sufficient staffing (including TAs and school based mental health professionals), alongside investment in accessible community-based mental health services. Trauma-informed teaching is still a relatively new approach, and there is a pressing need for an evidence base that is inclusive of neurodivergent students. Our findings suggest a need to embrace trauma-informed care in schools, but we must exercise caution if not concurrently providing the resources for teachers to enact them. While sharing autism-specific strategies across mainstream and SEN settings could be beneficial, this knowledge must be tailored to the unique needs of each school's students and the resources available.

6.7 Acknowledgments

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6.8 Statements and Declarations

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Chapter 7: General Discussion

This chapter includes a general discussion of the research presented in this thesis, the aim of which was to use a mixed-methods approach to explore trauma-related experiences and outcomes in autistic young people. In this thesis I systematically review existing literature on PTSD in autistic people (Chapter 2), utilise longitudinal modelling to demonstrate a relationship between autistic traits in childhood and PTSD in adulthood (Chapter 3), and analyse the interaction between peer victimisation and maltreatment, mental health and neurodivergence in a large dataset from UK secondary school students (Chapter 5). Qualitatively, I explore how autism practitioners approach differential diagnosis of autism, attachment disorders and complex PTSD, using data from an online survey of clinicians (Chapter 4), and explore through teacher interviews how traumatised autistic children are supported in the classroom (Chapter 6).

The relationship between autism and trauma is complex and multifaceted, influenced by developmental, cognitive, social, and demographic factors. This research advances our understanding of the all-too-common experiences of trauma and its sequelae in autistic young people, providing evidence to inform future research on approaches to diagnosis, treatment, and support for autistic young people with PTSD or trauma-related symptoms in both clinical and educational settings.

In this final chapter, an over-arching summary of the main findings of the empirical chapters is given. Taking all of my results together, implications and areas for future research are highlighted. For more detailed implications, limitations and discussion of specific results for individual studies, please refer to each chapter.

7.1 Heightened Trauma Exposure in Autistic and Neurodivergent Young People

Taken together, the findings of this thesis support prior literature demonstrating higher rates of traumatic experiences in autistic/neurodivergent individuals than their neurotypical counterparts. In systematically reviewing the recent literature on PTSD in autistic people in Chapter 2, the studies comparing trauma exposure between autistic and non-autistic participants found autistic people consistently showed higher rates of trauma exposure. Since the review was published, another online US-based study has echoed this finding. In a sample of 276 autistic adults and a nationally representative sample of 361 non-autistic adults, the autistic adults had experienced significantly more traumatic events and PTSD symptoms (Andrzejewski et al., 2024). This is complemented by findings from Chapter 5, where, using data available from the OxWell Student survey, we explored if self-identifying as neurodivergent (defined there as covering autism, ADHD, dyslexia, and dyspraxia) was associated with potentially traumatic experiences. In a sample of more than 11,000 adolescents, reporting peer victimisation or maltreatment was significantly more likely if a child identified as neurodivergent. In Chapter 3, utilising longitudinal data from 1,504 young people in the E-Risk and TEDs twin cohorts, we showed that subclinical autistic traits in childhood were associated with trauma exposure, albeit that this was statistically accounted for by socio-economic status. The relationship between autism and trauma exposure likely has other confounds (e.g., socio-economic disadvantage) that warrant further exploration. Next, I will discuss some possible research directions to better understand factors explaining the heightened rates of reported trauma in young people with elevated autistic traits.

7.1.1 Stigma and Discrimination as Risk Factors

A much-cited risk factor for trauma exposure amongst autistic people is the experience of stigma and discrimination in a society that is built around the needs of neurotypical people. Stigma is impacted by societal understanding of autism, as well as negative reactions to autistic traits (Turnock et al., 2022). The intersecting nature of adverse experiences with discrimination is assumed, but difficult to empirically assess. For example, Chapter 5's findings show increased odds of bullying and other forms of peer victimisation, but we cannot directly infer that this was connected to their neurodivergent identity/characteristics as these findings are correlational, and the OxWell survey did not explicitly ask them.

The perceived link between neurodivergent identity and discrimination (including bullying victimisation) could be explored with young people through qualitative interviews or quantitative measures. Measures have been utilised to assess caregivers' perceptions of discrimination experienced by their autistic children (Recio et al., 2020), but none have been designed for self-report from autistic young people. Jeanneret and colleagues (2022) used questions contributed from autistic collaborators to measure if they experienced victimisation due to being autistic, for example 'would you say that you are currently experiencing violence, whether verbal or physical, on the Internet or elsewhere, because you are autistic?'. In this online survey of 222 Canadian autistic adults, discrimination and victimisation were separately shown to be factors contributing to psychological distress, but their direct relationship with negative life events was not explored. The commonly used Everyday Discrimination Scale was originally designed to measure perceived discrimination among minority racial and ethnic groups (Williams et al., 1997) and has been used across different social groups (although psychometric studies revealed it required further refinement and validation; Bastos & Harnois, 2020; Harnois et al., 2019); it has not been validated for autism related discrimination in autistic people. Producing a psychometrically sound self-report measure of perceived discrimination in autistic young people would be of great utility. Fostering a positive autism identity has been proposed as a protective mechanism against poor mental health (Cooper et al., 2023); an online survey of 272 autistic people found that identifying more strongly with the autistic community was associated with improved self-worth, self-esteem and better mental health (Cooper et al., 2017). Exploring the relationship between perceived discrimination with self-esteem and self-compassion would be highly relevant to understanding protective factors for mental health of autistic people.

Another approach would be to explore if living in an area or attending a school where more discriminatory attitudes towards autistic people are prevalent influences the amount of trauma exposure an autistic child experiences. In other words, do autistic young people who grow up in a more accepting or neuro-affirming society experience lower levels of trauma? There is little evidence in the current literature of validated tools for measuring discriminatory attitudes and social norms against children with disabilities (Sood et al., 2022). The Autism Stigma and Knowledge Questionnaire (ASK-Q) (Harrison et al., 2017, 2025), designed to identify knowledge gaps in the general population and professionals and validated cross-culturally, has a stigma subscale. However, this is a screener for stigma associated with less knowledge about autism rather than a direct metric of the broader concept of stigma. Reducing stigma was the aim of the Learning About Neurodiversity at School (LEANS) programme by addressing knowledge gaps and teaching mainstream primary school pupils about the different ways people process information and experience the world (Alcorn et al., 2024). A feasibility study delivered the programme to approximately 140 pupils aged 8 to 11, across seven classrooms in Scottish schools. Due to the absence of existing measures, an Attitudes and Actions Questionnaire was created to capture children's attitudes towards neurodiversity. The study found that, amongst the 62 children who provided data, the programme increased knowledge about neurodiversity and improved attitudes towards neurodivergent peers. It has not yet been assessed if modifying such knowledge gaps could reduce rates of trauma experienced by autistic young people. Future research should prioritise developing comprehensive measures that directly assess autism-specific discrimination at multiple levels, combining self-report with population level measures to elucidate how stigma mechanisms contribute to trauma vulnerability amongst autistic populations.

7.1.2 The Role of Socioeconomic Status

Alongside qualitative findings from other chapters, findings from Chapter 3 suggest that social and economic disadvantage may partially explain the association between autistic traits and exposure to potentially traumatic events. Socioeconomic status accounted for the relationship between autistic traits and trauma exposure (using the trauma definition from DSM-5 criterion A) and, of the variables in this analysis, socioeconomic status had the strongest association with reports of trauma. Themes from teachers in Chapter 6 reinforce this finding, highlighting that unstable home environments or disrupted families (e.g., local authority temporary accommodation) may be particularly difficult for autistic children, who typically need consistent routine. Chapter 4 reported that autism practitioners perceive that socio-economic status and class not only impact exposure to trauma, but also clinical bias and access to appropriate assessment and support services for autistic people.

These findings together suggest that addressing socioeconomic disparities may be a crucial component of trauma prevention and recognition for autistic individuals, as has been proposed for prevention and public health approaches in non-autistic people (Magruder et al., 2016). Lower socio-economic status for children in the general population is associated with financial instability as well as being linked to higher risk of bullying (Tippet et al., 2014), witnessing domestic violence (Fraga et al., 2021), and poor access to services for support (Gautam et al., 2023), which may disproportionately impact autistic children. Because poverty is directly related to children's adversity and ACEs (Farooq et al., 2024), it is essential that socio-economic status is accounted for when studying autistic children's exposure to trauma. Family socio-economic status has previously been linked to victimisation in studies of autistic school-aged youth (Sreckovic et al., 2014). A cross-sectional study from Kerns and colleagues stratified the 2011-2012 US National Survey of Child Health sample by income, and found that the relationship between autism and ACEs was greater in children with low family income (Kerns et al., 2017).

The way socio-economic status is measured in mental health research is highly variable and the chapters of this thesis that accounted for socioeconomic status included both objective (Chapter 3) and subjective (Chapter 5) measures. Taking an objective approach, Chapter 3 utilised a multi-faceted measure of socioeconomic status by taking tertiles of a composite of parental income, along with their education and occupation when the child was 5 years old (Trzesniewski et al., 2006). Although this is an objective measure of a family's current finances, it is potentially an imperfect reflection of a child's access to supportive schooling, social class and available community resources. Chapter 5 produced a score from self-report items capturing aspects of poverty answered by the child, such as whether they 'go to bed hungry'. Neither of these measures capture social standing or status: a person's perceived position in social hierarchies, which can be influenced by both social and cultural factors (Manstead, 2018).

There is emerging evidence that economic circumstances and social status are distinct constructs that can both be captured by the MacArthur Scale of Subjective Social Status (Adler et al., 2000; Galvan et al., 2023; Zhao et al., 2023). This is a ten-point scale presented as a picture of a ladder that measures how people see their place in society, the top of which represents those with more money, better jobs and education. In a UK-based cohort of a multiethnic community of women living in an area of high deprivation, the scale did align with other subjective measures of financial status, more so than objective measures like education status, the IMD (Index of Multiple Deprivation), and household occupation (Moss et al., 2023). For the youth version of the scale (Goodman et al., 2001), children are asked to indicate which rung of the ladder represents their family's place in society, and another ladder is presented to represent their own perceived place in their school community. In young people, both perceived social standings have shown significant correlations with parental monthly income, with their perceptions about their family's place in society correlating with their parent's perceived status (Cardel et al., 2018). These scales have the benefit of being easily administrable with children, and future work should consider if a child's perceived social standing, alongside objective measures, impacts the relationship between autism and trauma.

7.1.3 Gender as a Risk Factor

Although historically overlooked, the specific experiences of autistic and neurodivergent women and non-binary people (Cook et al., 2024; Gould, 2017; Lockwood Estrin et al., 2021) have more recently received long-overdue attention (e.g., Grove et al., 2024; Putnam et al., 2025). Gender and sex assigned at birth were not individually explored here. However, Chapter 5 did observe that girls and gender-diverse adolescents were more likely than boys to experience multiple forms of maltreatment by an adult, with no significant difference between neurotypical and neurodivergent groups in the strength of this association.

In the general population, women and girls experience interpersonal trauma at higher rates than men (White et al., 2024) and, based on a small body of evidence, this seems to hold true amongst autistic people as well. A systematic review of 22 studies on sexual violence experiences among autistic participants found evidence of more sexual victimisation of autistic women and girls compared to their non-autistic peers (Dike et al., 2023). Online research conducted by Reuben and colleagues (2021) with 687 autistic adults on experiences of interpersonal trauma collected information on both sex and gender identity. They found that cisgender women and gender minorities were significantly more likely to experience interpersonal trauma than cisgender men. This is echoed by a recent meta-analysis of 24 studies that found increased experiences of interpersonal violence amongst autistic cisgender women and gender minorities, when compared to autistic cisgender men (Cooke et al., 2025). An online survey of 225 French autistic females found that nine out of ten had experienced sexual violence, with many (60%) being under 18 years at the time of the abuse, and almost half (48.7%) of the sample reporting sexual victimisation when they were under 15 years (Cazalis et al., 2022). Although these studies highlight a potential trauma vulnerability amongst autistic women, they were conducted online, with adults, and likely present a sampling bias towards those who experienced trauma. With no neurotypical comparison group, it is difficult to disentangle if this trauma exposure is unique to autistic girls or part of a broader phenomenon of violence against girls. There is a need for large population-based studies examining the unique contributions of sex assigned at birth and gender to trauma exposure in autistic young people, collecting specific information about the context (e.g., in school, at home) and perpetrators (e.g., peers, adults).

Several studies have suggested that social naivety may put autistic girls at particular risk of exploitation, abuse, bullying, and negative experiences from peers (Sedgewick et al., 2016, 2019), and a qualitative study examining the sexual abuse of women and non-binary people highlighted that many will try to 'maintain a relationship at all costs' even if there is abuse occurring (Ballester-Galí & Garcia-Molina, 2025). Following from this, qualitative work with autistic adults (men, women, and non-binary) who had experienced interpersonal trauma highlighted that the sex and relationship education they received from parents or in schools had inadequately prepared them to recognise unhealthy dynamics and abuse (Douglas & Sedgewick, 2024). Efforts must be made to deliver interventions that empower autistic young people with knowledge about healthy sex and relationships; a 2022 systematic review of randomised controlled trials identified three potentially effective programmes in autistic youth, and highlighted that more are in development, however their comparative efficacy needs testing (Holmes et al., 2022). As autistic girls tend to mask their difficulties (Tomlinson et al., 2020), and masking is associated with past interpersonal trauma (Evans et al., 2024), it is important that caregivers, teachers and clinicians ask young people – and particularly girls – explicitly about their experiences of interpersonal trauma.

Gender diverse and transgender people experience higher risk of victimisation (Closson et al., 2024; Evje et al., 2024; Norris & Orchowski, 2020), and are also more likely to be autistic (Warrier et al., 2020), than their cisgender peers. There is also higher gender diversity amongst autistic than non-autistic youth (Corbett et al., 2023). Strand and colleagues (2023) have refined a Gender-Diversity and Autism Questionnaire using iterative inputs from different sources of experience (lived, community, academic) to explore the specific needs of autistic transgender individuals. This has 85 items and is designed to give a structured way to communicate their experiences and needs, rather than as a research tool. It is assumed that being autistic and gender diverse compounds risk of trauma exposure, with intersecting experiences of discrimination and stigmatization related to both gender identity and neurodivergence. Therefore, for future research it would be constructive to conduct a qualitative study exploring this intersection and how individuals experience their autism and gender identity in relation to traumatic experiences. Many studies on young people do not collect separate information about sex assigned at birth and gender identity. If they do so, they are often limited to the use of restrictive categories. As experienced with the OxWell dataset in Chapter 5, some studies cannot collect this as more specific information about a young person's gender identity may compromise their anonymity. Excitingly the Strang group has developed a 30-item gender self-report tool that removes more complex language around gender (Strang, Wallace, et al., 2023). This tool allows the characterisation of multidimensional traits of binary and non-binary gender, and has been validated in autistic and non-autistic people as young as 10 years old. Future research that is explicitly exploring gender and sex differences in autistic experiences of trauma should strive to utilise more dimensional measures such as this, which have the advantage of situating all participants in a multidimensional space as opposed to attempting to analyse very small numbers in specific (and often differently used) gender identity categories.

7.1.4 Transdiagnostic trauma risk and neurodivergence

Given the findings from the adolescents who completed the OxWell survey in Chapter 5, it appears that elevated risk of trauma exposure goes beyond autism. Additionally, although the focus of the interviews in Chapter 6 was on autistic children, teachers often reflected on the trauma experiences of other neurodivergent children, or those with SEN, further suggesting a broader issue of trauma exposure within this group. Other forms of neurodivergence also may contribute to the relationship between autism and trauma. As there is a high degree of overlap between autism and ADHD (Russell et al., 2014) and other forms of neurodivergence, these are likely a confound within our studies. A recent systematic review of 21 studies found elevated risk for PTSD in adults with ADHD compared to those without, with more severe symptoms and functional outcomes (Magdi et al., 2025). Additionally, a large study using consortium data conduced genetic correlation analysis and found that genetic liability for autism and ADHD had a unidirectional relationship with risk of PTSD (Song et al., 2024).

This poses the question whether the relationship with trauma exposure is unique to autism, or something that is experienced across neurodivergent young people. Chapter 5 found that young people identifying with the fairly broad category of 'Neurodivergent' reported higher levels of peer victimisation and maltreatment.

Research using the most recent wave of the OxWell data will be able to explore this within separate neurodivergent groups; those who have learning difficulties, dyslexia and dyscalculia, autistic young people and those with ADHD. This will allow us to identity (1) if the frequency of victimisation experiences is unique to certain neurodevelopmental conditions/diagnoses or shared across neurodivergent groups, (2) if having multiple neurodivergent diagnoses increases risk of these experiences, and (3) if there are particular combinations of these diagnoses that increase risk. For the latter, regression models with the separate categorical variables for each neurodevelopmental condition, including interaction terms between these diagnostic categories (e.g., ADHD×autism, autism×dyslexia) would identify which specific combinations confer the highest risk. Another approach could be to take a transdiagnostic dimensional approach to neurodivergent traits, to assess which traits are predictive of trauma and its sequalae. Interestingly, a recent study has used confirmatory factor analysis in a UK representative population sample using several self-report measures of neurodivergent traits (Apperly et al., 2024). They identified a bifactor model with a general neurodiversity factor (termed 'N' factor) which accounts for shared traits across conditions, and four orthogonal factors capture unique variance of individual conditions. It would be interesting to see whether, utilising similar methods, a general 'N' factor could predict trauma exposure and its sequalae.

7.2 Broad range of events considered traumatic for autistic children

A key objective of this research was to be open to a broad range of events that could be potential sources of trauma for autistic children. Across the qualitative chapters it was consistently highlighted that autistic young people may experience autism-related difficulties as traumatic, particularly when there is poor autism-environment fit. Teachers in Chapter 6 described sensory sensitivities, transitions, and routine changes as distressing experiences that they felt were experienced as traumatic by some autistic children. Similarly, autism practitioners' responses to an online survey on differential diagnosis, expressed that 'everyday' experiences can be a source of trauma for autistic children, under a theme that stressed that PTSD and autism can co-occur. This expands our understanding of potential sources of trauma in educational and 'everyday' contexts and has significant implications for how we conceptualise and assess trauma in autistic young people.

Previous research has begun to validate what events may be traumatic in autistic populations. In the interviews of a mixed-methods study exploring potential sources of trauma with 14 autistic adults and 15 caregivers of autistic adults and children (aged 5 to 29 years), all participants described sources of trauma that were not on the Trauma History Questionnaire (THQ) (Kerns et al., 2022). Analysis of the interviews highlighted key sources of trauma for autistic individuals, including feeling trapped (through physical restraint, loss of autonomy, or diminished opportunities), social exclusion (bullying, isolation, stigma, and betrayal), and traumatic incongruities (sensory sensitivities, transitions, and social confusion). This reinforces the need for research incorporating trauma scales that are relevant to the experiences of autistic children. Future work should explore quantitatively whether those who are autistic experience these sources of trauma more than other young people. For example, those with other neurodevelopmental conditions or mental ill-health also experience poor person-environment fit in their daily lives. One could hypothesise that some of these ‘other’ sources of trauma may also make lists of traumatic events more inclusive for other groups too. Replicating Rumball and colleagues’ (2020) study in autistic adults comparing DSM-5 and non-DSM-5 criterion A traumas with autistic young people, with both a neurodivergent and neurotypical control group, would be an exciting avenue for research answering this question.

With the sources of school-based trauma described by teachers in Chapter 6 in mind, it would be useful to conduct mixed-methods research with autistic young people in the UK specifically on the topic of experiences that have happened at school. Asking them if they have had an experience at school that they considered to be traumatic, to describe it, and assessing trauma-related symptoms could allow us to identify specific, context-specific points of intervention.

7.3 Development and Maintenance of Trauma-Related Mental Health

Exploring trauma-related psychopathology in autistic young people was a key aim of this thesis. Taken together, the chapters highlight that autistic children experience at least comparable rates of PTSD to those reported in the general population and provide longitudinal evidence that those with higher autistic traits in the general population are more likely to meet the criteria for PTSD in adulthood.

7.3.1 Longitudinal Evidence for the Relationship Between Autism and PTSD

The longitudinal analysis in Chapter 3 showed the dimensional relationship between autistic traits and PTSD in both the whole sample and the trauma-exposed subsample. Future longitudinal work would benefit from exploring if autistic traits are associated with PTSD symptoms, regardless of how much trauma is experienced. In the E-Risk data collection, the questions about PTSD were gated so that they were not asked of young people who had not reported exposure to experiences meeting the DSM-5 definition of trauma. This meant that conducting a mediation analysis with this dataset was not possible. To explore if autistic traits have a direct effect on PTSD symptoms beyond trauma exposure, future work utilising the latest wave of the TEDS dataset will explore this question in more detail as dimensional measures of PTSD symptoms as well as childhood and adulthood trauma screeners were included in that data collection wave. Building on Chapter 3's findings using outcomes at age 26, we can determine if autistic traits in childhood (1) are associated with experiencing more trauma across their lifetime; (2) predispose development of PTSD symptoms (not just a diagnosis) in adulthood, and; (3) are directly associated with PTSD symptoms beyond what can be explained by trauma exposure alone. If the quantity of trauma exposures fully mediates the relationship between autistic traits and PTSD symptoms, this would suggest that the relationship can be entirely explained by increased trauma exposure among those with higher autistic traits. If the number of trauma exposures only partially mediates the relationship between autistic traits and PTSD symptoms, this could suggest that young people with autistic traits are vulnerable to developing PTSD symptoms via other mechanisms, such as differences in trauma processing. This would elucidate whether autistic traits in childhood present as a vulnerability for future development of PTSD symptomatology because of increased trauma exposure or because of cognitive vulnerabilities independent of exposure.

7.3.2 Challenges in Studying Mental Health and Trauma in Autistic Young People

Several chapters explore mental health more broadly in autistic young people and attempt to explore how it relates to potential trauma exposure. Both Chapters 3 and 5 encounter the challenge of there being a consistent (high) baseline of neurodivergent young people having poorer mental health, making it difficult to disentangle how trauma exposure interacts with the pre-existing relationship between neurodivergence and mental health. Results from Chapter 5 indicated that the neurodivergent young people had higher rates of mental health problems and symptoms, as well as lower mental well-being, than neurotypical adolescents. In Chapter 3, autistic traits were significantly associated with psychopathology in the full sample but were not significant in the trauma-exposed subsample. Although this confirms prior studies showing a relationship between autistic traits, or being autistic, with poorer mental health outcomes, this higher baseline of poor mental health does make it statistically difficult to assess if trauma exposure impacts psychopathology in autistic young people.

This challenge was illustrated by the moderation analysis in Chapter 5, which highlighted a potential ‘ceiling effect’ whereby exposure to peer victimisation and maltreatment had less of a statistical impact on neurodivergent (vs neurotypical) young people’s mental health because their baseline mental health issues were already much worse than neurotypical pupils’. This finding highlights how the pre-existing mental health disparities between neurodivergent and neurotypical populations may mask or alter the apparent impact of traumatic experiences. In principle, to address this, future work could implement mental health measures that are able to capture variability at the higher end of the scale. Potentially measuring functional outcomes alongside mental health symptoms could capture more individual differences (McKnight & Kashdan, 2009). Alternatively, as discussed in Chapter 5, victimisation and maltreatment may affect mental health in ND and NT adolescents via alternative mechanisms. Ideally, having time points before and after trauma, and matching neurodivergent and neurotypical groups on mental health before trauma, would allow us to infer the relative impact of the trauma on the mental health of autistic young people. Capturing this information sequentially to establish causality is a key challenge of research on the long-term impact of trauma and adversity (Brand et al., 2017; Jaen et al., 2023).

Broadly, there is a need for longitudinal work with sequential data on frequency, severity and time course of potentially traumatic experiences, autistic traits and trauma-related symptomatology and mental health more broadly, in order to see how children’s presentation changes across development. However, as demonstrated by previous research exploring age-related sensitive periods of development for trauma (Stevens et al., 2018), many studies do not record the precise timings of adverse experiences, and it is a particular challenge to do so in childhood. Retrospective measures can be unreliable for timelines and repeated prospective measures may suffer issues of reporting (for example, a parent may not report maltreatment) (Coleman et al., 2024). Studies utilising court records, like those with the Widom Midwest study (Danese & Widom, 2020), can be more precise but may not have information about autism.

Interestingly two studies from the same research group used the E-Risk Study longitudinal data to develop risk calculators for children who have experienced victimisation, which included ADHD symptoms assessed at age 12 in their multivariate individualised risk prediction models for functional outcomes at age 18. One study showed ADHD was a significant predictor of economic disadvantage but not psychosocial outcomes (Latham et al., 2019). For the other, ADHD was a significant predictor of externalising disorders but not internalising nor any psychiatric disorder (Meehan et al., 2020). Unfortunately, data on autism or autistic traits were not available in this dataset, but it would be interesting to utilise a similar design to assess if autism/autistic traits are longitudinal predictors of psychosocial and mental health outcomes alongside other risk factors.

7.3.3 Cognitive Mechanisms and Vulnerability Factors

This thesis has added to the body of work that demonstrates that trauma and trauma-related symptoms are prevalent amongst autistic young people. Finding out if there are characteristics of autism, or increased traumatic experiences specific to being autistic, that are driving this relationship is essential for effective treatment and preventative actions. Given that amongst trauma-exposed young people, autistic traits in childhood were associated with PTSD in adulthood, this suggests that elements above and beyond trauma exposure may be driving this relationship. As described in Chapter 3, those with autistic traits likely share similar cognitive characteristics to autistic people. Given autism's heterogeneity, it is important to investigate whether there are specific characteristics, traits or cognitive styles that drive the development and maintenance of trauma-related symptoms across children of different profiles and neurotypes. The 'fine cuts' approach advocates for detailed mechanistic models that can be empirically tested by isolating the critical cognitive component of the model (Bird, 2025; Frith & Happé, 1994). Taking a transdiagnostic (Astle et al., 2022; Shah & Holmes, 2023) and a "fine cuts" approach to exploring neurodiversity and trauma-related cognition, could reveal more about vulnerability factors independent of the diagnostic categories.

In the general population, poorly contextualised and disjointed trauma memories can lead to intrusive trauma memories and PTSD symptoms (Halligan et al., 2003). Local (versus global, or featural versus configural) visuospatial processing of the traumatic event can be a risk factor for these disjointed or fragmented sensory-based memories (Ehlers & Clark, 2000). The ability to analyse and synthesise abstract visual stimuli impacts this memory formation. A trait that is common amongst autistic people, and that putatively impacts the development and maintenance of PTSD, is a preference for detail-focused and data-driven processing. The "weak central coherence" hypothesis suggests that autistic children and adults have an inherent preference for this detail-focused processing style (Happé & Frith, 2006; Koldewyn et al., 2013); prioritising the analysis of specific features or components of information rather than integrating them into a broader, cohesive whole (i.e., "the big picture"). This may impact cognitive processing during and after the trauma and influence its appraisal; leading to a more poorly contextualised trauma memory that is laden with specific sensory features, making autistic people vulnerable to fear appraisals and vivid sensory flashbacks (Ehlers & Clark, 2000). In non-autistic adults, it has been shown that preference for local, detail-oriented processing was associated with less memory reappraisal and more re-experiencing symptoms when using a trauma film paradigm (Hagenaars et al., 2016). Studies in non-autistic children aged 7-16 years who had undergone an orthodontic procedure or attended a hospital Emergency Department, show that peri-traumatic data-driven processing was associated with post-traumatic stress symptoms (when fear was controlled for) (McKinnon et al., 2017). Another study showed that perceptions of memory quality and intrusive memories were associated with data-driven processing in children who had been in intensive care 6 months prior (McKinnon et al., 2008). Autistic children with an inherent preference for this information processing style may therefore be more vulnerable to developing PTSD symptoms following trauma.

The narrative of a trauma memory impacts how a memory is processed, appraised, and retrieved. Theories of PTSD posit that fragmented recall of memories, that are not rooted in context or meaning, is an important component of the development of PTSD. Narrative coherence (i.e., a clear order of events with a beginning, middle, and end, with context and meaning provided) of life stories has been associated with mental well-being in adults (Baerger & McAdams, 1999), and research has suggested that narrative coherence may have a protective role against the development of emotional problems in children exposed to adverse experiences (Sticca et al., 2023). Some studies report that autistic children show poorer narrative coherence than controls when recalling stories (Ferretti et al., 2018; Losh & Gordon, 2014), which may represent a risk factor for PTSD development. However, narrative coherence in relation to trauma processing in autistic children has yet to be explored.

Other individual differences to consider in relation to PTSD symptom vulnerability include alexithymia (i.e., difficulties identifying, understanding, and describing one's own feelings) and sensory sensitivities. Literature suggests that alexithymia is commonly associated with autism in adults and children (Vaiouli et al., 2022) and c.50% of autistic adults have high alexithymia (Kinnaird et al., 2019). Alexithymia is associated with poor mental health, including depression and anxiety (Liss et al., 2008), as well as more severe PTSD symptoms (Eichhorn et al., 2014). Alexithymia may play a role in trauma therapy outcomes. For example, in a programme for women survivors of abuse, improvements in alexithymia were associated with positive outcomes over the course of therapy and supported attending to difficulties associated with alexithymia in the initial stages of therapy (Zorzella et al., 2020). Sensory sensitivities are featured as a possible trait in current autism diagnostic criteria (American Psychiatric Association, 2013); autistic people who are hypersensitive to light, sounds, and touch may experience these as uncomfortable, overwhelming, or painful (Grapel et al., 2015; Taels et al., 2023). Thus, sensory sensitivities could both add to distress during an event and increase the emotional valence of the trauma memory and could also mean that a trauma memory is encoded with sensory details, which could place autistic people at greater risk of being triggered and experiencing vivid flashbacks (Brewin et al., 1996).

Future research should explore whether individual differences in cognitive style are associated with trauma-related symptomatology in autistic young people using experimental methodologies. A future study with autistic young people could use validated questionnaires to assess trauma exposure, PTSD symptoms, and trauma-related cognitive processing, as well as alexithymia and sensory sensitivity, alongside cognitive tasks measuring detail-focused processing (e.g., the Embedded Figures Test), and narrative coherence (e.g., through a video recall task). Correlational and regression analyses could test whether autistic children with a greater preference for detail-focused processing, poorer narrative coherence, or higher alexithymia show more severe PTSD symptoms and trauma-related cognitive processing difficulties, potentially identifying specific cognitive vulnerabilities that could inform targeted therapeutic interventions.

Further investigation could take a transdiagnostic approach to cognitive, emotional and behavioural mechanisms that may contribute to risk of trauma-related symptoms across neurodivergent groups. For example, people with ADHD, who are also at increased risk of PTSD (Magdi et al., 2025), may share similar risk mechanisms for trauma symptoms with autistic people. We propose that characteristics associated with both ADHD and autism could drive trauma-related symptoms. Emotional dysregulation, which is consistently elevated in those with ADHD (Soler-Gutiérrez et al., 2023) and autism (Restoy et al., 2024), could amplify the emotional impact of trauma. Sensory processing differences, which could impact the sensory encoding of memories and their triggers, are also consistently seen in ADHD (Jurek et al., 2025) and autism (Ben-Sasson et al., 2019) literature. Studying if these characteristics act as potential risk mechanisms across neurodivergent populations could enhance our understanding of trauma vulnerability and inform targeted interventions.

7.4 Assessment and Diagnosis of Trauma-Related Mental Health in Autistic Young People

The accuracy of assessment tools for trauma-related symptomatology amongst autistic youth is likely impacted by several factors: overlapping behavioural presentations of trauma and autistic characteristics, differences in how autistic people may interpret questions, and lack of validation of mental health measures in the autistic population. Both autism practitioners (Chapter 4) and teachers (Chapter 6) emphasised the challenge of disentangling trauma-related and autism-related behaviours. The "either/or vs. both" theme in Chapter 4 highlights that practitioners are contending with this risk of misattributing symptoms of CPTSD or attachment difficulties to autism, or vice versa. For teachers in Chapter 6, it was useful to note changes in a child’s behaviour to help identify what might be a trauma response. This emphasises the importance of having time to get to know an autistic child, either in the classroom or the clinic, in order to contextualise any potentially trauma-related behaviour against their typical way of being.

7.4.1 Validating Assessment Tools for Autistic Populations

As detailed in Chapter 2, prior studies in autism reported lower rates of PTSD using clinician assessment compared to studies using symptom questionnaire cut-offs alone. This is unsurprising as, in line with the insights from diagnostic autism practitioners in Chapter 4, standardised questionnaires and tools are only one component of a robust clinical assessment for PTSD. Taken together with clinical judgement, developmental history, and the perspectives of a multi-disciplinary team of professionals, it is possible that symptoms measured on questionnaires may not reach the clinical diagnostic threshold. However, the emphasis is placed on clinical intuition, which may introduce bias if clinicians are unfamiliar with either autism or the presentation of trauma-related symptoms in autism. Chapters of this thesis highlight the potential for diagnostic overshadowing leading to trauma-related diagnoses being missed in autistic children (Kildahl et al., 2024; Stavropoulos et al., 2018), but it is also a concern that autism may be being missed amongst traumatised children. A US population-based sample showed that children with family ACEs received an autism diagnosis at an older age than those without ACEs (Berg et al., 2018). A vignette-based study found that mental health professionals' judgements concerning a patient coming for assessment of obsessive-compulsive disorder or substance misuse was affected by the presence (vs absence) of a trauma history (Wislocki & Zalta, 2024); the professionals were significantly more likely to opt for a PTSD diagnosis and treatment over the target diagnosis when trauma was present. Future work could utilise this vignette approach with professionals working in either trauma or neurodevelopmental teams in the UK to further study possible clinical biases - and potentially as a training exercise.

It is also possible that the discrepancy between rates of PTSD from questionnaire scores and from clinical diagnoses reflects problems with the use of standard PTSD symptom questionnaires with autistic people, as their reliability and validity in this population is unknown. This highlights the need to validate PTSD symptom questionnaries for use with autistic children and adults. Recent qualitative work highlights some of the difficulties that autistic people can experience in differentiating aspects of their experience that relate to autism and aspects that relate to mental health (Crane et al., 2019). Therefore, assessing the psychometrics of autism measures and trauma-related symptom measures together would prove informative. Making use of existing data from studies that have administered PTSD symptom questionnaires (e.g., PCL-5) alongside autism-specific measures (e.g., AQ) to large samples of autistic individuals with and without trauma exposure, could be a valuable approach. An individual participant data meta-analysis would be a labour-intensive but worthwhile method to aggregate data from multiple studies and could provide sufficient power for psychometric evaluation (Kaufmann, 2018), as has been utilised to assess optimal cut-off for various depression scales (He et al., 2019; Levis et al., 2017; Thombs et al., 2020). Such an approach could include exploratory factor analysis to see if trauma and autism items cluster together, which would suggest they may be measuring overlapping rather than distinct constructs. Confirmatory factor analysis and item invariance testing could then test whether the original PTSD factor structure holds in autistic people, and if questionnaire items measure the same phenomena in autistic and non-autistic people. Additionally, a network analysis of symptom-level data could show how autistic characteristics and PTSD symptoms influence each other. A recent example of how this approach can reveal these symptom interactions was a network analysis of data from 150 autistic boys, that showed that autistic traits and symptoms of generalised anxiety disorder were distinct but that social awareness and social communication were connected to feeling worried (Bitsika et al., 2025). The boys with less social awareness felt less worried, and those with more communication difficulties struggled to control their worries more.

Beyond these quantitative approaches, it would be useful to conduct cognitive interviews with autistic people as they fill out the PTSD questionnaries, asking them to think-aloud to understand their thought process as they complete it (Wolcott & Lobczowski, 2021). We should explicitly ask if questionnaries (1) have items that are recording autistic characteristics, (2) if there are symptoms they associate with a trauma that are not asked about, and (3) if the questionnaire items are clear and accessible. If existing questionnaries are found to be inadequate, future work could co-produce new items to design an acceptable PTSD questionnaire for autistic people.

7.4.2 Are There Autism Specific Manifestations of Trauma?

Research in this thesis has primarily considered PTSD as it is currently conceptualised in the DSM/ICD frameworks. Using these frameworks, we note quantitative differences in PTSD symptomatology between autistic and non-autistic people; Chapter 2 found that when compared to their neurotypical peers, negative cognitions and hyperarousal symptoms were consistently experienced more by autistic adults, and the latter was also more prevalent in autistic children.

PTSD already has high heterogeneity of symptom presentations, therefore the question of variability of the PTSD symptom profile is not unique to autism. After the broadening of the PTSD criteria for the DSM-5, Galatzer-Levy and Byrant (2013) were able to demonstrate that this expanded almost ten-fold the number of possible combinations of symptoms following traumatic stress that would qualify a patient for a PTSD diagnosis (from c. 79,000 in DSM-IV to over 630,000 in DSM-5). Despite this general heterogeneity in PTSD presentation, there may still be uniquely "autistic ways" of experiencing and expressing trauma-related distress that current frameworks fail to capture. The reliance on the existing PTSD criteria inherently limits our understanding of autism-specific manifestations of trauma-related symptomatology. However, without controlled, mixed-methods studies that compare mental health associated with a traumatic event between autistic and non-autistic people we cannot assess whether there are qualitative differences in autistic people’s trauma-related symptomatology.

Whether there is an ‘autism-specific’ presentation of mental health problems is also a question that is not unique to PTSD. Due to the historic exclusion of autistic people from studies investigating mental and physical health, there has been a wave of research into the autistic experience of different illnesses, mental health problems and developmental experiences. The hypotheses of some of these studies are that the autistic experience of these issues may differ qualitatively; other studies have the primary objective of ensuring that autistic people have the same amount of evidence supporting their healthcare as neurotypical people. As described in the qualitative chapters, evidence points to autistic characteristics becoming more disabling or pronounced in children following trauma exposure. For instance, in Chapter 6, teachers described how sensory sensitivities, routine disruptions, and social withdrawal, which are traits already present in some autistic children, became significantly more pronounced after traumatic experiences. This raises an important question about whether these alterations in a child’s behaviour should be considered part of their autism-specific trauma-related symptom profile or a transdiagnostic response to psychological difficulties. For example, research on depression in autistic youth shows intensified repetitive behaviours and increased, decreased or changes in intense interests (Pezzimenti et al., 2019). Indeed, research on anxiety in autistic youth suggests that there may be two phenomenologically distinct forms that can co-occur in autistic young people: traditional anxiety as it also occurs in non-autistic young people, and atypical anxiety which interacts with autism-related traits (Kerns et al., 2014; Kerns & Kendall, 2012). Given these patterns across mental health conditions, PTSD assessment and intervention for autistic individuals may need to encompass both typical trauma symptomatology and (atypical) autism-specific presentations that emerge through the intensification or alteration of pre-existing traits.

7.5 Holistic approaches to trauma-informed care for autistic children

Across chapters it was stressed that support should be based on need, rather than diagnostic label, in order to ensure all children get access to the support they need. It is clear that across services and research, a more holistic approach is key to ensure that mental health care for trauma-related symptoms is accessible for autistic children.

7.5.1 Cross-Service Collaboration and Integration

Themes of 'Interagency Collaboration' (in Chapter 6) and 'A blended team of professionals' (Chapter 4) highlight the challenges, but necessity, of working across services with professional with different types of expertise and understanding of the child across contexts. This included working with families to be consistent in support offered across settings, or to obtain information about development or potential trauma. From both perspectives, external agencies or allied health professionals were particularly useful to build bridges between the clinic and schools for information sharing.

There is a need to ensure that all stakeholders work together effectively to provide care through a unified framework, bridging gaps between CAMHS and local authority services and promoting preventative work. This includes ensuring that autistic children in vulnerable settings, such as the care system, are identified and supported so that local authorities can assist in coordinating their care and education (Parsons et al., 2019). We already see examples of inter-agency, trauma-informed initiatives at a local and national level. In Scotland, the National Trauma Transformation Programme is funded by the Scottish Government and takes a multiagency approach, providing learning materials on trauma-informed care with the aim of producing trauma-responsive services across different sectors of the workforce (NHS Education for Scotland, 2020). In Yorkshire, the Leeds Health and Care Partnership has been formed between different teams, services, schools and organisations to agree on a strategic vision to provide trauma-informed services for young people and their communities in Leeds. For integration to be truly effective, it is essential that research explores how mental health agencies such as CAMHS can begin to tailor their support to meet the needs of traumatised autistic children.

7.5.2 Autism Accessible Mental Healthcare

The NHS England 2023 guidance on autism mental health services emphasises that all statutory bodies should develop and maintain a workforce equipped to provide high-quality care for autistic people, including through autism training at all levels (NHS England, 2023). A co-produced systematic review of strategies to improve mental healthcare for autistic adults and children identified that many interventions are simple ‘reasonable adjustments’ such as adapting communication styles and ensuring an autism-friendly environment (Loizou et al., 2024). They also highlight that taking an individually tailored, neurodiversity-informed approach would be most helpful to adapting to the varying support needs and traits of autistic people. Taking a personalised approach to care increases accessibility of mental health care for autistic children as well as promoting the need to understand and support the individual needs and preferences of all children who require these services.

Adequate funding for social care and CAMHS is crucial not only for providing children with necessary support, but also for enabling preventative care that can reduce the need for future intensive trauma interventions (Colizzi et al., 2020). Both teachers (Chapter 6) and autism practitioners (Chapter 4) identified significant resource limitations, cuts to CAMHS and service gaps that hinder effective assessment and support for traumatised autistic children. Teachers reported feeling that schools were left trying to fill these gaps with insufficient time and resources, while practitioners noted disparities in access to appropriate services based on socioeconomic factors.

7.5.3 Neurodiversity- and Trauma-Informed Schools

Several chapters concerned the educational context as a significant source of potentially traumatic events for autistic or neurodivergent young people, and highlight the need to integrate neurodiversity- and trauma-informed support in schools. The OxWell school survey was filled out by adolescents attending mainstream schools. Chapter 5 shows that neurodivergent pupils were more likely than neurotypical peers to report being physically hurt at school and bullied. While bullying was not emphasised by the teachers in Chapter 6 as a source of trauma, they were concerned that providing adaptations that single out an autistic child may leave them isolated from their peers. Other aspects of the school environment that particularly impact a child's sensory world were recognised as extremely distressing but provided hope for a modifiable target. Together these findings highlight that the school environment, including negative peer relationships, disproportionately impacts neurodivergent and autistic pupils.

Targeting peer victimisation within the school context is a key message from this research. Educating fellow students on neurodiversity and mental health to increase peer understanding of differences could also alleviate some teachers' concerns that some accommodations can be othering, and could help to create a compassionate school culture. In UK secondary schools (Naylor et al., 2009), adolescents who received a programme of lessons on understanding mental health had significantly more empathy and significantly less pejorative attitudes towards those with mental health difficulties, than those who did not receive the lessons. The LEANS programme used a set of lessons on understanding neurodiversity that has shown promise and feasibility in increasing positive attitudes towards neurodivergent peers in UK mainstream primary schools (Alcorn et al., 2024). Both programmes demonstrate that education-based interventions in the school community can effectively shift peer attitudes, which could suggest a viable pathway for prevention at, what we presume to be, the root of victimisation from peers.

Trauma-informed practice is defined by the UK government as "an approach to health and care interventions which is grounded in the understanding that trauma exposure can impact an individual's neurological, biological, psychological and social development". They outline six core principles of trauma-informed practice: safety, trust, choice, collaboration, empowerment and cultural consideration (UK

Government, 2022). There is a very small body of evidence supporting whole-school trauma-informed interventions, as only a small number of studies have assessed their efficacy, and all primarily focused on professional development of staff (Avery et al., 2021; Newton et al., 2024). Several pedagogical frameworks exist for inclusive and responsive education for special educational needs, however these often centre on deficit-focused support to "normalise" a student, rather than embracing neurodiversity across all learners (Cook, 2024; Hamilton & Petty, 2023). Rajette and colleagues (2025) have proposed a neuroinclusive school model that highlights ways to adapt the school environment rather than changing the child. They propose celebrating neurodiversity, providing safe spaces, reducing sensory barriers, offering visual supports, fostering children's interests, offering predictability, and incorporating flexible, restorative activities.

Integrating neurodiversity and trauma-informed whole-school frameworks could be an exciting avenue for schools to support their autistic students. Table 7.1 places the neuroinclusive school model (Rajotte et al., 2025) within the six principles of trauma-informed care (UK Government, 2022) and integrates the two. The proposed integrated approach acknowledges that many autistic children have experienced trauma, and that being trauma-informed without being neurodiversity-affirming (or vice versa) provides incomplete support. By addressing both domains holistically, schools can create environments where all children feel safe, understood, and supported to thrive.

Table 7.1 *Proposed integration of trauma- and neurodiversity-informed approaches*

Principle	Trauma-Informed Practice	Neuroinclusive school model	Integrated Approach
Safety	Create environments with predictable routines and clear boundaries, with reasonable freedom from threat.	Create environments that are sensory-friendly spaces, by removing excessive stimuli. Have clearly defined spaces with clear expectations and consistent routines.	Clear communication of routines and boundaries. Provide a calm sensory environment such as quiet spaces to self-regulate.

Trustworthiness	Staff should be transparent and explain what they are doing and why. Be consistent in meeting set expectations (doing what they say they are going to do).	Build relationships between staff and students and offer support in subtle ways to avoid stigma. Use clear communication without subtext. Be predictable and announce changes in advance.	Build trust through literal, accurate communication with consistent follow-through. Provide clear expectations about what will happen and when.
Choice	Give children agency over their learning and interactions. Explain choices clearly and transparently acknowledging that trauma-exposed children may feel a lack of safety or control.	Be flexible to multiple ways children can participate in learning and respect reasonable accommodations. Provide visual supports and different media for learning based on communication preferences. Allow judgement free self-regulation (e.g., stimming).	Have student-directed learning, with clear explanations of choices. Empower students to communicate their preferences and support these preferences. Allow safe expression of emotion and teach or support existing self-regulation strategies.
Collaboration	Teaching staff and caregivers must work to actively involve students in decision-making about their learning.	Work with neurodivergent perspectives and co-create accommodations with students and their families.	Involve students and families in collaborative decision-making about learning goals, accommodations, and strategies while honouring their past experiences and neurodivergent perspectives.
Empowerment	Validate feelings and experiences and listen to a child's needs. Support them to make decisions and acknowledge they may find this difficult due to low self-worth and powerlessness.	Be neuro-affirmative and celebrate neurodiversity by focusing on strengths, self-esteem, autonomy and self-advocacy. Harness their interests by encouraging students to share their passions.	Support students to recognise their unique strengths, achievements and contributions while building self-advocacy skills.

Cultural Consideration	Move past cultural stereotypes and biases. Be responsive to individual needs based on gender, race or sexuality.	Acknowledge intersectionality and how gendered and cultural biases may impact how a child's communication and neurodivergent traits are interpreted. Move away from deficit-based language and respect preferences of neurodivergent community.	Recognise how marginalised identities interact with trauma and neurodivergence. Be culturally responsive and identity-affirming.

Comparison and integration of the six trauma-informed care principles (UK Government, 2022) with corresponding features from the neuroinclusive school model (Rajotte et al., 2025), demonstrating alignment and synthesis into an integrated approach.

7.6 Conclusions

This thesis has contributed to the understanding of the complex relationship between autism, trauma exposure, and trauma-related outcomes in young people. Through a mixed-methods approach spanning systematic review, longitudinal analysis, quantitative survey data, and qualitative interviews with practitioners and teachers, several key findings emerge.

First, autistic and neurodivergent young people experience disproportionately high rates of potentially traumatic experiences, including both traditional adverse events and autism-related stressors that may not be captured by conventional trauma frameworks.

Second, assessment and diagnosis of trauma-related mental health conditions in autistic young people present unique challenges.

Third, there is an urgent need for trauma-informed approaches that are simultaneously neurodiversity-affirming. Both clinicians and educators emphasised the importance of multidisciplinary, holistic approaches that consider the needs of trauma-exposed autistic young people. However, significant resource limitations and service gaps exist, creating barriers to effective support across clinical and educational settings.

Future research should prioritise (1) longitudinal studies examining developmental trajectories and relationships between autism and trauma outcomes; (2) cognitive experimental work to identify specific traits that may increase vulnerability to trauma-related symptoms amongst autistic young people; (3)

validation of trauma assessment tools in autistic young people; and (4) exploration of gender, intersectionality, and broader neurodivergent experiences in relation to risk of trauma exposure and its sequelae.

Key implications of this research extend across domains. Preventative measures must be implemented to protect autistic children from potentially traumatic experiences; educational settings could be a crucial point of intervention. Mental healthcare must become more accessible and responsive to the potentially unique needs of traumatised autistic youth, with neurodiversity-informed practice across services. Additionally, professionals across disciplines require specialised training to appropriately prevent, identify and respond to traumatic experiences and their effects in neurodivergent populations.

Ultimately, the findings underscore that supporting autistic children who have been exposed to trauma demands both individual support and systemic changes across clinical, educational, and community settings to establish more inclusive, neuro-affirming, and responsive environments so these young people can truly flourish.

Appendices

The following appendices are supplementary materials that have been referred to in the chapters of this thesis. There is an appendix for each of the Chapters 3 to 6.

Appendix 1 Supplementary materials for Chapter 3

Chapter 3 is a published manuscript whose supplementary materials are reproduced below. To maintain consistency with the published version, the in-text references (e.g., 'Appendix S1', 'Appendix S2') have been retained as originally published. In this Appendix of the thesis, these materials appear as sections (e.g., S1.1, S1.2) instead.

In-text references in the manuscript	**Appendix label**
Appendix S1	S1.1
Appendix S2	S1.2
Appendix S3	S1.3
Appendix S4	S1.4
Appendix S5	S1.5
Appendix S6	S1.6

S1.1 Sample Characteristics

S1.1.1 E-Risk

Participants were members of the Environmental Risk (E-Risk) Longitudinal Twin Study, which tracks the development of a birth cohort of 2232 British children. The sample was drawn from a larger birth register of twins born in England and Wales in 1994–1995 (Trouton et al., 2002). Full details about the sample are reported elsewhere (Moffitt & E-Risk Study Team, 2002). Briefly, the E-Risk sample was constructed in 1999–2000, when 1116 families (93% of those eligible) with same-sex 5-year-old twins participated in home visit assessments. This sample comprised 56% monozygotic (MZ) and 44% dizygotic (DZ) twin pairs; sex was evenly distributed within zygosity (49% male). Families were recruited to represent the UK population of families with new-borns in the 1990s, on the basis of residential location throughout England and Wales and mother's age. Teenaged mothers with twins were over selected to replace high-risk families who were selectively lost to the register through non-response. Older mothers having twins via assisted reproduction were under selected to avoid an excess of well-educated older mothers. The study sample represents the full range of socioeconomic conditions in the UK, as reflected in the families' distribution on a neighbourhood-level socioeconomic index (called ACORN (A Classification of Residential Neighbourhoods), developed by CACI Inc. for commercial use in Great Britain) (Odgers et al., 2012): 25.6% of E-Risk families live in 'wealthy achiever' neighbourhoods compared with 25.3% nationwide; 5.3% live in 'urban prosperity' neighbourhoods compared with 11.6% nationwide; 29.6% live in 'comfortably off' neighbourhoods compared with 26.9% nationwide; 13.4% live in 'moderate means' neighbourhoods compared with 13.9% nationwide; and 26.1% live in 'hard-pressed' neighbourhoods compared with 20.7% nationwide. E-Risk underrepresents 'urban prosperity' neighbourhoods because such households are likely to be childless.

Follow-up home visits were conducted when the children were aged 7 (98% participation), 10 (96% participation), 12 (96% participation) and 18 (93% participation) years. Home visits at ages 5, 7, 10 and 12 years included assessments with participants and their mother (or primary care-taker); the home visit at age 18 years included interviews only with participants. Each twin participant was assessed by a different interviewer. There were 2066 children who participated in the E-Risk assessments at age 18 years, and the proportions of MZ (55%) and male same-sex (47%) twins were almost identical to those found in the original sample at age 5 years. The average age of the twins at the time of assessment was 18.4 years (s.d. 0.36); all interviews were conducted after their 18th birthday. The study sample at age 18 years was equally distributed across all deciles of the Index of Multiple Deprivation 2015, which measures relative levels of deprivation in small areas in England (Figure S1.1).

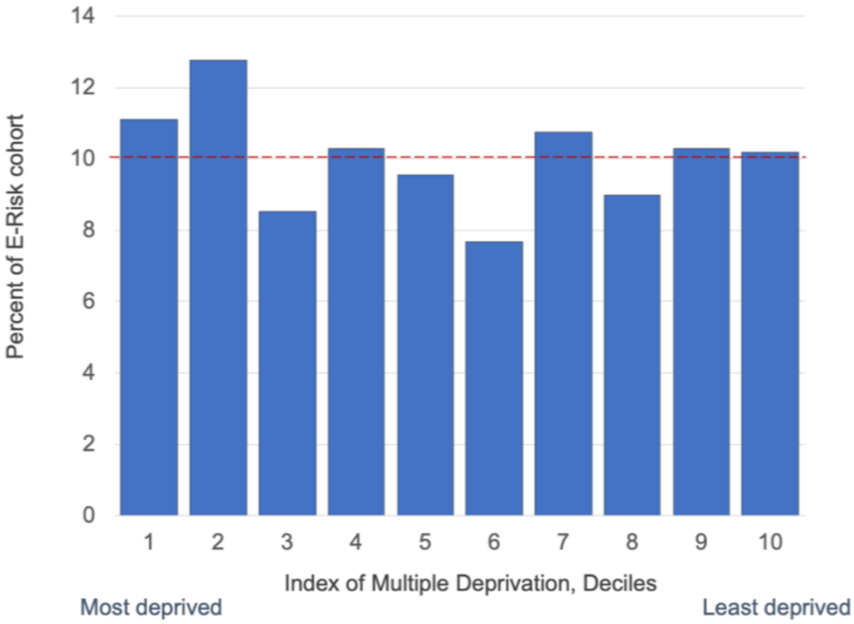


Figure S1.1 *Population representativeness of the E-Risk Study. The histogram shows that E-Risk families' addresses at age 18 years are a near-perfect match to the deciles of England's Lower-layer Super Output Area (LSOA) Index of Multiple Deprivation 2015 (IMD) which averages 1,500 residents; approximately 10% of the cohort fills each of IMD's 10% bands for England.*

S1.2 Selecting the Autistic trait Measure

S1.2.1 Childhood Autism Spectrum Test (CAST)

Childhood Autism Spectrum Test (CAST) scores collected from parents when the child was age 8, 9 and 12 showed high correlations (Figure S1.2), and the mean scores were stable across the different ages (Figure S1.3). We removed participants who did not have parent reported CAST data for any of the three time points and examined the missingness of CAST data at ages 8, 9 and 12 in this sample (N=1504). Table S1.1 shows that CAST at age 8 was the most informative and was therefore selected as the primary autistic trait measure. In this sample, 1213 participants had data at age 8. For those with missing data at age 8, a replacement method was used to maximise the analytical sample size. Where possible, missing data was replaced with CAST score at age 12 (n= 242), as this was the most highly correlated with age 8 (r=0.6). The remaining participants with missing data (n=49) were replaced with CAST scores at age 9.

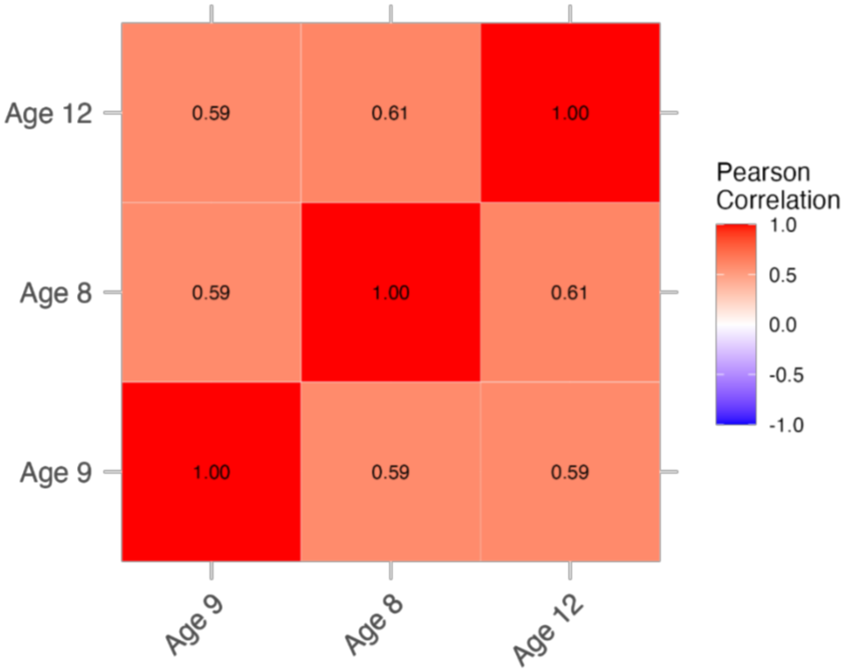


Figure S1.2 *Correlations between Childhood Autism Spectrum Test (CAST) scores at different ages. Heat map showing Pearson correlations between the CAST scores reported by parents at different ages, in Environmental Risk (E-Risk) Longitudinal Twin Study participants with complete post-traumatic stress disorder (PTSD) data and CAST scores for at least one of three time points (N=1,504).*

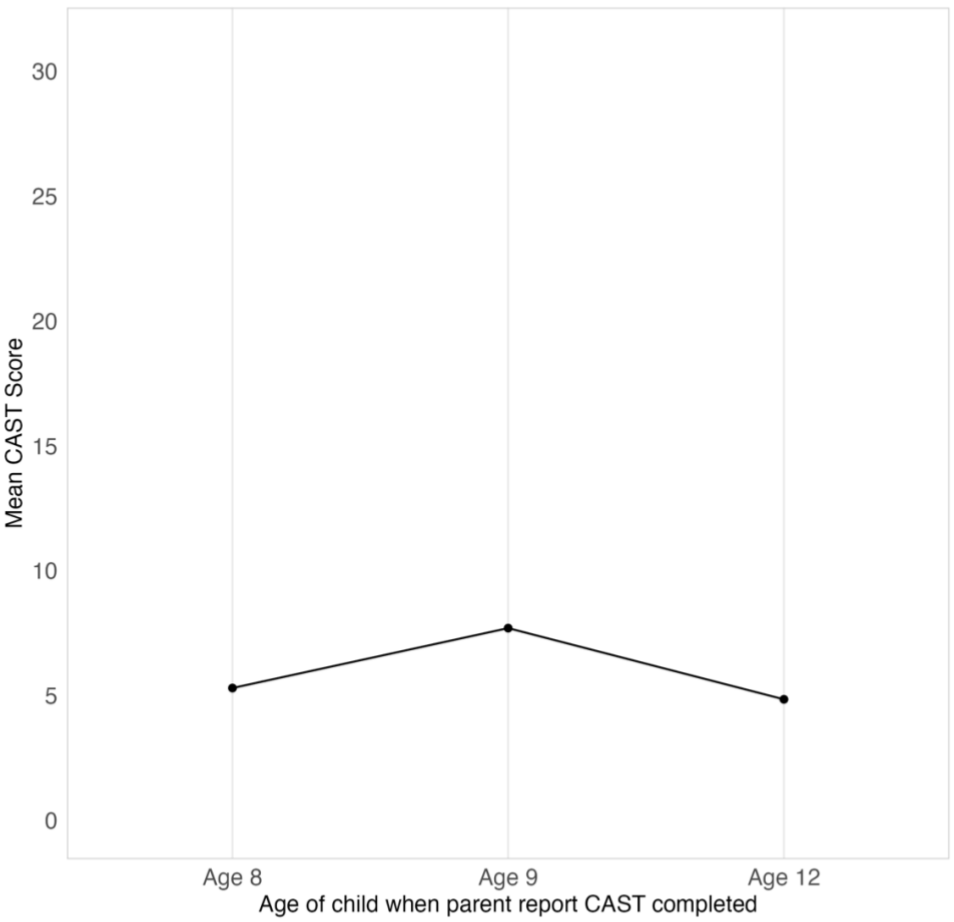


Figure S1.3 *Mean scores of parent reported Childhood Autism Spectrum Test (CAST) scores at different ages. This group reports the means of the parent reported CAST scores at different ages and shows the stability of the parents' reports across ages 8, 9 and 12.*

Table S1.1 *Missingness of parent reported Childhood Autism Spectrum Test (CAST) scores at different ages*

Age of child when parent reported CAST completed	Missing CAST data in analytical sample with CAST data at age 8, 9 or 12, and complete PTSD data (N=1504)
Age 8	291 (19.4%)
Age 9	564 (37.5%)
Age 12	367 (24.4%)

S1.3 Missing data

S1.3.1 Missing autistic trait data

Table S1.2 shows data for key outcome measures and demographic variables (including potential confounds) for the analytical sample used in this study where those with missing CAST data at ages 8, 9 and 12 had been removed, and those in the E-Risk sample who had complete PTSD data.

Table S1.2 *E-Risk participants with and without missing autistic trait data*

	Subset with CAST data at age 8, 9 or 12, and complete PTSD data (analytical sample) (N=1504)	**E-Risk sample with complete PTSD data (N=2061)**
Female	809 (53.8%)	1082 (52.5%)
Family SES		
High SES	596 (38.3%)	689 (33.4%)
Medium SES	500 (33.2%)	683 (33.1%)
Low SES	428 (28.5%)	689 (33.4%)
IQ, Mean (SD)	102 (14.9)	100 (15.1)

Data are n/N (%) unless otherwise stated. 'IQ' = intelligence quotient; 'SD' = standard deviation; 'SES' = socio-economic status'.

S1.4 Dimensional measures of psychopathology within the E-Risk cohort at age 18

S1.4.1 Assessment of symptoms of mental health conditions

At age 18, participants were assessed in private interviews about past-year symptoms of mental health conditions (Schaefer et al., 2018). Five externalising-spectrum disorder symptoms were assessed: Diagnostic and Statistical Manual of Mental Disorders 4th edition (DSM–IV) (American Psychiatric Association, 1994) symptoms of alcohol dependence and cannabis dependence assessed via the Diagnostic Interview Schedule (DIS) (Robins et al., 1995); conduct disorder assessed by inquiring about DSM–IV symptoms; symptoms of tobacco dependence assessed via the Fagerstrom Test for Nicotine Dependence (Heatherton et al., 1991); and attention-deficit/ hyperactivity disorder (ADHD) assessed by inquiring about DSM 5th edition (DSM–5) symptoms (Agnew-Blais et al., 2016; American Psychiatric Association, 2013). Four internalising-spectrum disorder symptoms were assessed: DSM–IV symptoms of depression, generalised anxiety disorder, and posttraumatic stress disorder (PTSD) assessed via the DIS (Robins et al., 1995), and symptoms of eating disorder assessed via the SCOFF (Morgan et al., 1999). Thought disorder symptoms were assessed in two ways: first, participants were asked 7 items about delusions and hallucinations (psychotic-like experiences: e.g., “Have other people ever read your thoughts?”; “Have you ever thought you were being followed or spied on?”; “Have you ever heard voices that other people cannot hear?”) (Polanczyk et al., 2010). Second, participants were asked 6 items about unusual thoughts and feelings (prodromal symptoms: e.g., “My thinking is unusual or frightening”; “People or places I know seem different”), drawing on item pools since formalised in prodromal psychosis instruments, including the PRIME-screen and SIPS (Loewy et al., 2011).

S1.4.2 The structure of psychopathology

Using confirmatory factor analysis, two standard models (Brunner et al., 2012; Rindskopf & Rose, 1988) that are frequently used to examine hierarchically structured constructs were estimated: a correlated-factors model with three factors (representing Internalising, Externalising, and Thought Disorder symptoms) and a bi-factor model specifying a General Psychopathology factor (Figure S1.4) in addition to the three specific factors. Decisions about symptom-factor loadings were guided by the Hierarchical Taxonomy of Psychopathology consortium (https://medicine.stonybrookmedicine.edu/HITOP/AboutHiTOP) (Kotov et al., 2017). Symptoms corresponding to disorders of distress (depression, generalised anxiety disorder, and PTSD) and eating pathology loaded on the Internalising factor; symptoms corresponding to disorders of substance use (alcohol, cannabis, tobacco) and oppositional behaviour (conduct disorder) and ADHD loaded on the Externalising factor; and symptoms corresponding to disorders associated with psychosis loaded on the Thought Disorder factor. Confirmatory factor analyses were run as two-level clustered models to account for the nesting of twins within families, with analyses performed in MPlus v7.4 (Muthén & Muthén, 2017) using the robust maximum likelihood estimator (MLR) to provide standard errors that are robust to non-normality and non-independence of observations.

Both models fit the data well as assessed by the Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC) and the Sample Adjusted BIC, although the bi-factor model demonstrated marginally superior fit.

For the correlated-factors model, AIC=42987.116, BIC=43488.486, Sample Adjusted BIC=43205.726. Loadings on each of the three factors were all positive, generally high (all p's < .001) and averaged 0.680 (Externalising: average loading=0.638; Internalising: average loading=0.654; Thought Disorder: average loading=0.836). Correlations between the three factors were all positive and ranged from 0.552 between Externalising and Thought Disorder to 0.756 between Internalising and Thought Disorder. Thus, this model confirmed that three correlated factors (i.e., Internalising, Externalising, and Thought Disorder) explained the structure of the 11 symptom scales examined in the E-Risk twins at age 18.

For the bi-factor model, AIC=42897.350, BIC=43443.787, Sample Adjusted BIC=43135.609. Loadings on the General Psychopathology factor ("p") were all positive, generally high (all p's < .001) and averaged 0.519; the highest standardised loadings were for psychotic symptoms (0.759 and 0.592), major depressive episode (0.718), eating disorders (0.574), and generalised anxiety disorder (0.567). Similarly, the loadings for the three style factors were all positive and averaged 0.507 for Externalising, 0.270 for Internalising, and 0.496 for Thought Disorder. Thus, this model confirmed that a bi-factor structure (i.e., with a General Psychopathology factor and three specific Internalising, Externalising, and Thought Disorder factors) explained the structure of the 11 symptom scales examined in the E-Risk twins at age 18.

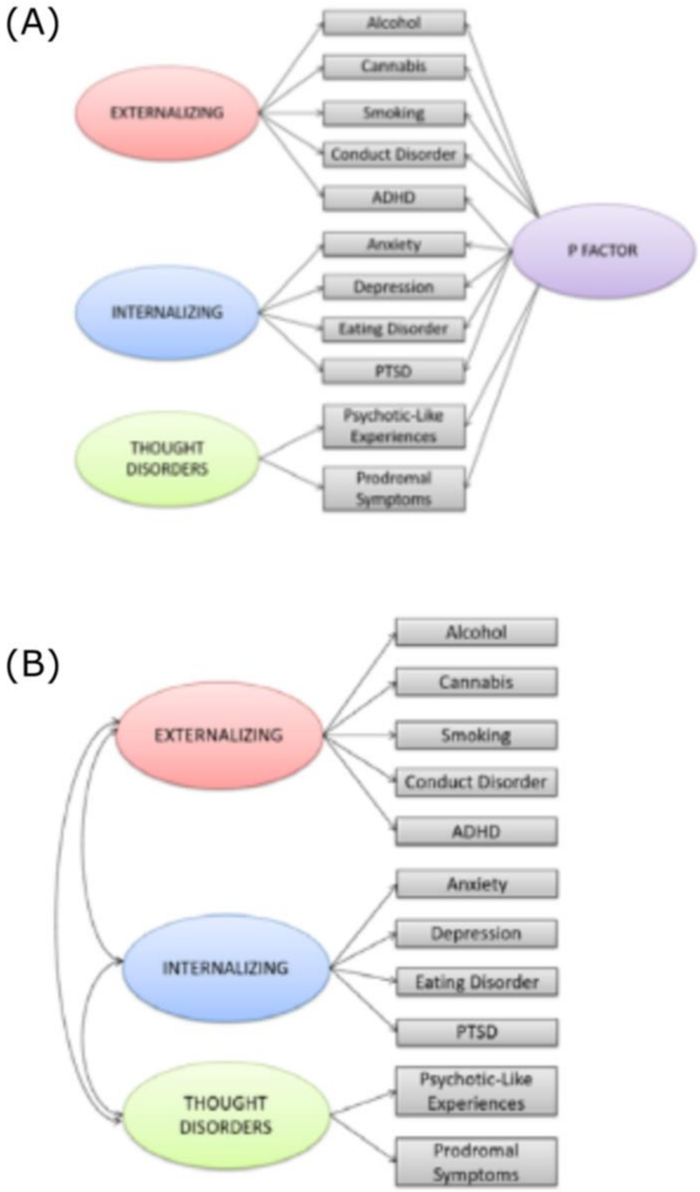


Figure S1.4 *The Structure of psychopathology at age 18 years in the E-Risk Cohort.*

Note. (A) Bi-factor model, (B) Correlated-factors model. Coloured ovals represent latent (unobserved) continuous symptom trait factors; grey boxes represent age-18 observed scores on symptom scales corresponding to each disorder. ADHD = attention-deficit/hyperactivity disorder, PTSD = post-traumatic stress disorder. P-Factor represents the factor of General Psychopathology. Figure reproduced from Schaefer et al. (2018).

S1.5 Associations between variables

S1.5.1 Multicollinearity in predictor, confounding and outcome variables

Figure S1.5 shows that none of the variables included in the analyses breached the multicollinearity threshold (r>0.9).

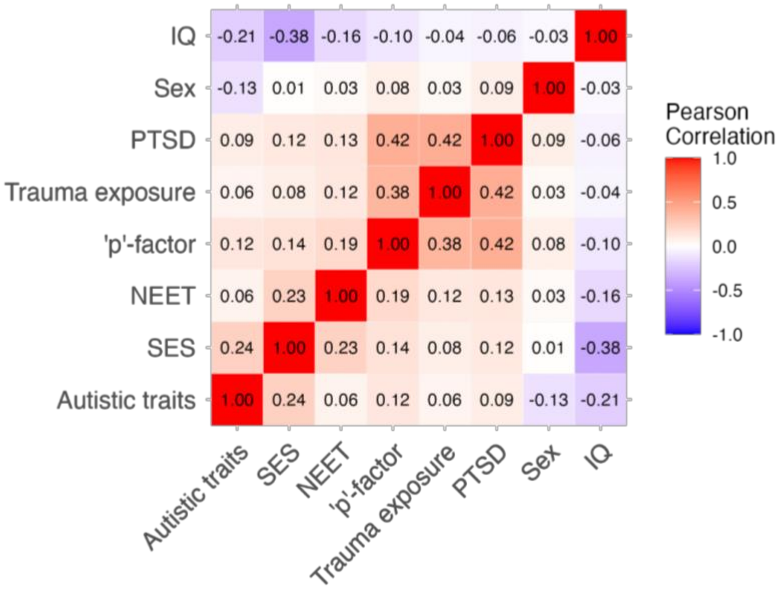


Figure S1.5 Heat map showing Pearson correlations between all variables entered into the analyses.

S1.5.2 Associations between potential confounders and autistic traits

The association between potential confounders and the predictor variable, autistic traits, was examined in the overall sample and trauma-exposed subsample. In the overall sample, children with higher autistic traits were less likely to be female (OR=-0.46, 95% CI=-0.64;-0.27), but were more likely to have lower IQ (Beta=-5.48, 95% CI=-6.80;-4.16). There was no significant association with being in the low SES group (OR=0.91, 95% CI=0.66;1.16). In the trauma-exposed subsample, children with higher autistic traits were more likely to have lower IQ (Beta=-4.95, 95% CI=-7.33;-2.56). There were no significant links between higher autistic traits in children and being female (OR=0.73, 95% CI=0.37;1.09) or being in the low SES group (OR=0.96, 95% CI=0.52;1.40).

S1.6 Sensitivity analyses

S1.6.1 Sensitivity analysis: Using CAST score data at age 8 only

The full analysis was re-run in a sample of participants with CAST data at age 8 (n=1213). The estimates followed similar patterns for unadjusted and adjusted analyses to those yielded in the analyses where missing data was replaced with CAST scores at age 9 and 12. There were marginal differences, as outlined below and indicated in Table S1.3 for the overall sample (n=1213) and Table S1.4 in the trauma-exposed subsample (n=369). While the results fell just below conventional levels of statistical significance, the estimates were similar to those obtained in the main analyses potentially reflecting the smaller sample size.

In the overall sample, with trauma exposure as the outcome, the results differed for the unadjusted analysis, with findings just below statistical significance (OR = 1.21, 95% CI = 0.97 - 1.51), compared to a statistically significant result in the main analysis (OR =1.26, 95% CI = 1.03 - 1.54). Additionally, when controlled for sex (OR = 1.24, 95% CI = 0.99 - 1.55) or IQ (OR =1.19, 95% CI = 0.95 - 1.49) the relationship between autistic traits and trauma was not significant, whereas this was statistically significant in the main analysis (adjusted for sex (OR = 1.29, 95% CI = 1.05 - 1.58) and IQ (OR = 1.23, 95% CI = 1.00 - 1.50).

In the trauma-exposed subsample (N=369), the only finding that differed in the sensitivity analysis was the fully adjusted model where PTSD was the outcome which was not statistically significant (OR = 1.73, 95% CI = 0.98 - 3.04), compared to the statistically significant finding in the main analysis (OR = 1.62, 95% CI = 1.04 - 2.53).

Table S1.3 *Sensitivity analysis in those with CAST score data at age 8 only (N=1213).*

Panel A: Associations with trauma exposure in the overall sample-OR [95% CI]					
	Univariate models	Multivariate models adjusted for:			
		Sex	IQ	SES	Sex, IQ and SES
Autistic traits	1.21 [0.97 - 1.51]*	1.24 [0.99 - 1.55]*	1.19 [0.95 - 1.49]*	1.13 [0.90 - 1.42]	1.15 [0.91 - 1.46]
Female sex	1.10 [0.86 - 1.40]	*1.14 [0.89 - 1.47]*			*1.14 [0.88 - 1.47]*
IQ	1.00 [0.99 - 1.00]		*1.00 [0.99 - 1.00]*		*1.00 [0.99 - 1.01]*
Medium SES	1.15 [0.86 - 1.54]			*1.13 [0.84 - 1.52]*	*1.13 [0.83 - 1.54]**
Low SES	**1.53 [1.13 - 2.07]**			***1.47 [1.08 - 2.01]***	***1.47 [1.05 - 2.05]****
Panel B: Associations with PTSD diagnosis in the overall sample-OR [95% CI]					
	Univariate models	Multivariate models adjusted for:			
		Sex	IQ	SES	Sex, IQ and SES
Autistic traits	**2.00 [1.25 - 3.20]**	**2.29 [1.40 - 3.76]**	**1.80 [1.13 - 2.87]**	**1.59 [1.01 - 2.51]**	**1.81 [1.11 - 2.95]**
Female sex	**2.09 [1.30 - 3.35]**	***2.43 [1.48 - 3.98]***			***2.45 [1.48 - 4.04]***
IQ	0.98 [0.97 - 1.00]		*0.99 [0.97 - 1.00]*		*1.00 [0.98 - 1.01]*
Medium SES	**2.11 [1.14 - 3.93]**			***1.99 [1.06 - 3.72]***	***2.02 [1.07 - 3.82]***
Low SES	**3.84 [2.13 - 6.92]**			***3.29 [1.81 - 6.00]***	***3.22 [1.69 - 6.13]***
Panel C: Associations with NEET status in the overall sample – OR [95% CI]					
	Univariate models	Multivariate models adjusted for:			
		Sex	IQ	SES	Sex, IQ and SES
Autistic traits	1.48 [0.98 - 2.24]	1.52 [0.99 - 2.33]*	1.15 [0.78 - 1.68]	0.98 [0.65 - 1.47]	0.90 [0.60 - 1.35]
Female sex	1.09 [0.74 - 1.59]	*1.17 [0.79 - 1.74]*			*1.12 [0.74 - 1.71]*
IQ	0.96 [0.95 - 0.97]		*0.96 [0.95 - 0.98]*		*0.98 [0.96 - 0.99]*
Medium SES	1.69 [0.90 - 3.16]			*1.70 [0.90 - 3.19]*	*1.41 [0.74 - 2.68]*

Low SES	**8.10 [4.73 - 13.87]**			***8.17 [4.71 - 14.15]***	***6.19 [3.51 - 10.91]***
Panel D: Associations with the ‘p’-factor in the overall sample – Beta [95% CI]					
	Univariate models	Multivariate models adjusted for:			
		Sex	IQ	SES	Sex, IQ and SES
Autistic traits	**3.16 [1.63 - 4.70]**	**3.73 [2.20 - 5.25]**	**2.65 [1.14 - 4.17]**	**2.41 [0.85 - 3.96]**	**2.78 [1.24 - 4.31]**
Female sex	**3.12 [1.50 - 4.74]**	***3.82 [2.20 - 5.43]***			***3.73 [2.12 - 5.34]***
IQ	**-0.12 [-0.18 - -0.06]**		***-0.10 [-0.16 - -0.04]***		*-0.06 [-0.12 - -0.01]*
Medium SES	**2.24 [0.41 - 4.07]**			***1.89 [0.04 - 3.74]***	*1.45 [-0.42 - 3.32]*
Low SES	**5.13 [3.03 - 7.22]**			***4.30 [2.15 - 6.45]***	***3.47 [1.23 - 5.71]***

Values in ***bold text*** *indicate statistically significant results (p<0.05). Values in Italic text are contributions of confounding variables to association between autistic traits and outcomes of interest. All models are adjusted for the non-independence of twin observations. ‘PTSD’ = post-traumatic stress disorder; ‘NEET’ = not in education, employment or training; ‘’p’-factor’ = measure of general psychopathology; ‘IQ’ = intelligence quotient; ‘SES’ = socio-economic status’; ‘OR’ = odds ratio; ‘Beta’ = beta coefficient; ‘95% CI’ = 95% confidence intervals. An asterisk indicates where sensitivity analyses results’ significance differed to those in the main analyses.*

Table S1.4 *Sensitivity analysis in trauma-exposed young people with CAST score data at age 8 only (n=369)*

Panel A: Associations with trauma exposure in the trauma-exposed sub-sample-OR [95% CI]					
Overall sample: PTSD	Univariate models	Multivariate models adjusted for:			
		Sex	**IQ**	**SES**	**Sex, IQ and SES**
Autistic traits	**1.94 [1.15 - 3.26]**	**2.17 [1.24 - 3.78]**	**1.78 [1.07 - 2.96]**	**1.58 [0.93 - 2.65]**	1.73 [0.98 - 3.04]*
Female sex	**2.22 [1.32 - 3.72]**	***2.46 [1.43 - 4.22]***			***2.57 [1.47 - 4.49]***
IQ	0.98 [0.96 - 1.00]		*0.99 [0.97 - 1.00]*		*0.99 [0.97 - 1.01]*
Medium SES	**2.10 [1.08 - 4.09]**			***2.02 [1.02 - 3.96]***	***2.07 [1.02 - 4.20]***
Low SES	**3.41 [1.79 - 6.49]**			***2.93 [1.51 - 5.66]***	***2.91 [1.43 - 5.92]***
Panel B: Associations with NEET status in the trauma-exposed sub-sample – OR [95% CI]					
Overall sample: NEET	Univariate models	Multivariate models adjusted for:			
		Sex	**IQ**	**SES**	**Sex, IQ and SES**
Autistic traits	1.17 [0.62 - 2.21]	1.17 [0.61 - 2.23]	0.96 [0.55 - 1.69]	0.71 [0.36 - 1.41]	0.63 [0.33 - 1.19]
Female sex	0.94 [0.53 - 1.66]	*0.95 [0.53 - 1.73]*			*0.92 [0.49 - 1.72]*
IQ	0.96 [0.94 - 0.98]		*0.96 [0.94 - 0.98]*		*0.97 [0.94 - 0.99]*
Medium SES	1.26 [0.49 - 3.25]			*1.31 [0.50 - 3.40]*	*1.02 [0.38 - 2.76]*
Low SES	**6.37 [2.90 - 14.00]**			***7.26 [3.14 - 16.82]***	***5.68 [2.41 - 13.35]***
Panel C: Associations with the ‘p’-factor in the trauma-exposed sub-sample – Beta [95% CI]					
Overall sample: P factor	Univariate models	Multivariate models adjusted for:			
		Sex	**IQ**	**SES**	**Sex, IQ and SES**
Autistic traits	**3.83 [0.66 - 7.00]**	**4.30 [1.20 - 7.39]**	3.12 [-0.01 - 6.24]	2.80 [-0.42 - 6.01]	2.92 [-0.18 - 6.01]
Female sex	**5.02 [1.81 - 8.24]**	***5.46 [2.29 - 8.64]***			***5.33 [2.16 - 8.50]***
IQ	**-0.19 [-0.30 - -0.08]**		***-0.17 [-0.28 - -0.06]***		*-0.14 [-0.26 - -0.02]*
Medium SES	1.75 [-2.10 - 5.61]			*1.47 [-2.40 - 5.35]*	*0.72 [-3.08 - 4.52]*
Low SES	**5.84 [1.98 - 9.71]**			***4.83 [0.85 - 8.80]***	***3.58 [-0.50 - 7.67]***

Values in ***bold text*** *indicate statistically significant results (p<0.05). Values in Italic text are contributions of confounding variables to association between autistic traits and outcomes of interest. All models are adjusted for the non-independence of twin observations. 'PTSD' = post-traumatic stress disorder; 'NEET' = not in education, employment or training; ''p'-factor' = measure of general psychopathology; 'IQ' = intelligence quotient; 'SES' = socio-economic status'; 'OR' = odds ratio; 'Beta' = beta coefficient; '95% CI' = 95% confidence intervals. An asterisk indicates where sensitivity analyses results' significance differed to those in the main analyses.*

S1.6.2 Sensitivity analysis: Using PTSD within 12 months of assessment as outcome measure

The main analysis used lifetime PTSD as the PTSD outcome. In this sensitivity analysis, in the full analytical sample (N=1504), we repeated analyses where PTSD was the outcome using PTSD within 12 months of the assessment as the outcome variable. This significantly reduced the number of PTSD cases within sample (N= 63). Findings are shown for the overall sample in Table S1.5 and trauma-exposed sub-sample in Table S1.6.

The relationships between autistic traits and PTSD in the overall sample were unchanged in this sensitivity analysis. Key differences in the sensitivity analysis findings in the overall sample were that being female was significantly associated with PTSD (OR =1.94, 95% CI = 1.13 - 3.33), which was not significant in the main analysis (female sex OR = 1.16, 95% CI = 0.93 - 1.44). Having medium family SES was also associated with PTSD (OR =1.94, 95% CI = 1.13 - 3.33) in the sensitivity analysis, but this was not significant in the main analysis (OR =1.21, 95% CI = 0.93 - 1.58).

In the trauma-exposed sub-sample, the key differences in the sensitivity analysis compared to the main results were that autistic traits were not significantly associated with PTSD when controlling for SES (OR =1.41, 95% CI = 0.86 - 2.32) nor in the fully adjusted analysis (OR =1.54, 95% CI = 0.93 - 2.55). In the main analyses, there was a significant association between autistic traits and PTSD in both of these models; controlling for SES (OR = 1.52, 95% CI = 1.00 - 2.32) and the fully adjusted analysis (OR =1.62, 95% CI = 1.04 - 2.53).

Table S1.5 *Sensitivity analysis in overall sample using PTSD in last 12 months rather than lifetime PTSD.*

Associations with PTSD diagnosis (<12 months) in the overall sample-OR [95% CI]					
	Univariate models	Multivariate models adjusted for:			
		Sex	**IQ**	**SES**	**Sex, IQ and SES**
Autistic traits	**2.02 [1.26 - 3.26]**	**2.21 [1.37 - 3.58]**	**1.90 [1.19 - 3.05]**	1.53 [0.95 - 2.46]	**1.75 [1.07 - 2.87]**
Female sex	**1.94 [1.13 - 3.33]***	***2.17 [1.26 - 3.72]***			***2.12 [1.22 - 3.71]****
IQ	0.99 [0.97 - 1.00]		*0.99 [0.98 - 1.01]*		*1.01 [0.99 - 1.03]*
Medium SES	**2.76 [1.25 - 6.10]***			***2.60 [1.16 - 5.79]****	***2.79 [1.24 - 6.29]***
Low SES	**5.44 [2.58 - 11.48]**			***4.73 [2.16 - 10.35]***	***5.02 [2.20 - 11.45]***

Values in ***bold text*** *indicate statistically significant results (p<0.05). Values in Italic text are contributions of confounding variables to association between autistic traits and outcomes of interest. All models are adjusted for the non-independence of twin observations. 'PTSD' = post-traumatic stress disorder; 'IQ' = intelligence quotient; 'SES' = socio-economic status'; 'OR' = odds ratio; '95% CI' = 95% confidence intervals. An asterisk indicates where sensitivity analyses results' significance differed to those in the main analyses.*

Table S1.6 *Sensitivity analysis in trauma-exposed subsample using PTSD in last 12 months rather than lifetime PTSD.*

Associations with PTSD diagnosis (<12 months) in the trauma-exposed sub-sample-OR [95% CI]					
	Univariate models	Multivariate models adjusted for:			
		Sex	**IQ**	**SES**	**Sex, IQ and SES**
Autistic traits	**1.79 [1.09 - 2.94]**	**1.88 [1.14 - 3.09]**	**1.71 [1.05 - 2.80]**	1.41 [0.86 - 2.32]*	1.54 [0.93 - 2.55]*
Female sex	**1.85 [1.05 - 3.26]**	***1.96 [1.11 - 3.45]***			***2.01 [1.10 - 3.66]***
IQ	0.99 [0.97 - 1.01]		*0.99 [0.97 - 1.01]*		*1.01 [0.98 - 1.03]*
Medium SES	**2.56 [1.13 - 5.83]**			***2.47 [1.08 - 5.66]***	***2.63 [1.13 - 6.11]***
Low SES	**4.50 [2.06 - 9.79]**			***4.03 [1.78 - 9.09]***	***4.30 [1.85 - 10.01]***

Values in ***bold text*** *indicate statistically significant results (p<0.05). Values in Italic text are contributions of confounding variables to association between autistic traits and outcomes of interest. All models are adjusted for the non-independence of twin observations. 'PTSD' = post-traumatic stress disorder; 'IQ' = intelligence quotient; 'SES' = socio-economic status'; 'OR' = odds ratio; '95% CI' = 95% confidence intervals. An asterisk indicates where sensitivity analyses results' significance differed to those in the main analyses.*

Appendix 2 Supplementary materials for Chapter 4

S2.1 Survey design

The data used in this study was from a first round of a Delphi study exploring differential diagnosis of autism, attachment disorders, complex post-traumatic stress disorder (CPTSD) and emotionally unstable personality disorder (Sarr et al., 2024). In the first round of this study, participants were asked to describe their perspective on different aspects of the diagnostic process in order to generate short statements for subsequent rounds of the subsequent rounds of the Delphi study. In round 2 and 3, participants were asked for their level of agreement on these statements alone to achieve clinical consensus (Sarr et al., 2024).

The structure of the round 1 survey was such that participants were first asked if (1) they worked with adults or children, and (2) which of the conditions they considered to be their expertise. Those who worked with children were not asked about personality disorders, and those who worked with adults were not asked about attachment disorders. Their answers to (1) and (2) directed the focus of the open text questions they were asked in the survey.

The present paper's analysis pertains only to the answers of the practitioners who indicated that they (1) work with children and (2) their expert condition was autism. These practitioners were asked about their professional background and basic demographics, features suggestive of autism, attachment difficulties and CPTSD in children and, factors they would consider in the assessment, diagnosis and differential diagnosis of these conditions.

S2.2 Tools, Assessments and Scales

Table S2.1 shows the assessment tools that autism practitioners endorsed for assessing autism when trauma- and attachment-related diagnoses may also be a possibility.

Table S2.1 *Number of autism practitioners endorsing assessment tools for differentiating between autism and difficulties relating to a negative experience (CPTSD and attachment difficulties)*

Assessment Tool	**CP (n=22)**	**EP (n=5)**	**OT (n=1)**	**P (n=4)**	**SLT (n=6)**	**Total**	**% total practitioners**
Autism Diagnostic Observation Schedule (ADOS)	19	3	1	4	3	30	81%
Autism Diagnostic Interview (ADI)	12	3	0	3	2	20	54%
Conners Comprehensive Behaviour Rating Scale	6	1	0	1	1	9	24%
The Coventry Grid	4	1	0	1	2	8	22%
Revised Children’s Anxiety and Depression Scale (RCADS)	4	0	0	2	1	7	19%
Wechsler Intelligence Scale for Children, Fifth Edition (WISC5)	6	1	0	0	0	7	19%
Adaptive Behaviour Assessment System, Third Edition (ABAS-3)	5	1	0	0	0	6	16%
Strengths and Difficulties questionnaire (SDQ)	3	1	0	1	1	6	16%
Social Responsiveness Scale (SRS-2)	4	1	0	1	0	6	16%
Behaviour Assessment System for Children, Third Edition (BASC-3)	3	1	0	0	0	4	11%
Diagnostic Interview for Social And Communication Disorders (DISCO)	2	0	0	1	1	4	11%
NEPSY-II	4	0	0	0	0	4	11%
Vineland Adaptive Behaviour Scales	3	1	0	0	0	4	11%
Autism Quotient (AQ)	1	0	0	0	2	3	8%
Brown Executive Function/Attention Scales (Brown EFA Scales)	2	1	0	0	0	3	8%
Camouflaging Autistic Traits Questionnaire (CAT-Q)	0	1	0	0	2	3	8%
Child Behaviour Checklist (CBCL)	2	1	0	0	0	3	8%
Griffiths Scales of Child Development III	1	2	0	0	0	3	8%
Standford-Binet Intelligence Scales, Fifth Edition	1	2	0	0	0	3	8%

Achenbach System of Empirically Based Assessment (ASEBA)	0	2	0	0	0	2	5%
Autism Clinical Interview Adults Training (ACIA)	0	0	0	0	2	2	5%
Behaviour Rating Inventory of Executive Function, Second Edition (BRIEF2)	1	1	0	0	0	2	5%
Childhood Autism Rating Scale, Second Edition (CARS-2)	1	0	0	1	0	2	5%
Clinical Evaluation of Language Fundamentals, Fifth Edition (CELF-5)	1	0	0	0	1	2	5%
Dyadic Adjustment Scale (DAS)	2	0	0	0	0	2	5%
Development and Well-Being Assessment (DAWBA)	1	0	0	1	0	2	5%
Play-based observation	1	1	0	0	0	2	5%
Stress of Conscience Questionnaire (SCQ)	0	2	0	0	0	2	5%
Theory of Mind (ToM) stories	2	0	0	0	0	2	5%
Toronto Alexithymia Scale (TAS)	1	0	0	0	0	1	3%
Adult ADHD Self-Report Scale (ASRS)*	1	0	0	0	0	1	3%
Autism Spectrum Screening Questionnaire (ASSQ)	1	0	0	0	0	1	3%
BarOn Emotional Quotient Inventory	1	0	0	0	0	1	3%
Bayley Scales of Infant and Toddler Development, Third Edition (Bayley-III)	0	1	0	0	0	1	3%
Clinical Assessment Scale of Child and Adolescent Psychopathology (CASCAP)	1	0	0	0	0	1	3%
Childhood Autism Spectrum Test (CAST)	1	0	0	0	0	1	3%
Child Depression Inventory (CDI)	1	0	0	0	0	1	3%
Child Attachment Interview	1	0	0	0	0	1	3%
Child Sensory Processing Checklist	1	0	0	0	0	1	3%
Children's Yale-Brown Obsessive Compulsive Scale (CYBOCS)	1	0	0	0	0	1	3%
Depression Anxiety Stress Scale (DASS)	1	0	0	0	0	1	3%
Extreme Demand Avoidance Questionnaire (EDA-Q)	1	0	0	0	0	1	3%
Rey-Osterrieth Complex Figure (ROCF)	1	0	0	0	0	1	3%
Generalised Anxiety Disorder, Seventh Edition (GAD7)	0	0	0	0	1	1	3%

Leiter International Performance Scale	1	0	0	0	0	1	3%
Millon Adolescent Clinical Inventory (MACI)	1	0	0	0	0	1	3%
Neonatal Behavioural Assessment Scale (NBAS)	1	0	0	0	0	1	3%
Moods and Feelings Questionnaire (MFQ)	0	0	0	1	0	1	3%
Monteiro Interview Guidelines for Diagnosing the Autism Spectrum, Second Edition (MIGDAS-2)	1	0	0	0	0	1	3%
Minnesota Multiphasic Personality Inventory Adolescent Restructured Form (MMPI-A-RF)	1	0	0	0	0	1	3%
Millon Pre-Adolescent Clinical Inventory (MPACI)	1	0	0	0	0	1	3%
Patient Health Questionnaire, Ninth Edition (PHQ9)	0	0	0	0	1	1	3%
Prodromal Questionnaire, Brief Version (PQ-B)	1	0	0	0	0	1	3%
Ritvo Autism and Asperger Diagnostic Scale (RAADS)	0	0	0	0	1	1	3%
Revised Children's Manifest Anxiety Scale (RCMAS)	1	0	0	0	0	1	3%
Resiliency Scale for Children & Adolescents	1	0	0	0	0	1	3%
Roberts Apperception Test for Children 2	1	0	0	0	0	1	3%
Rorschach Performance Assessment System (RPAS)	1	0	0	0	0	1	3%
Relationships Questionnaire (RQ)	0	0	0	0	1	1	3%
Screen for Child Anxiety Related Disorders (SCARED)	0	0	0	1	0	1	3%
Sensory Profile 2	1	0	0	0	0	1	3%
Special Needs Assessment Profile (SNAP)	0	0	0	1	0	1	3%
Sensory Processing Measure (SPM)	1	0	0	0	0	1	3%
Test of Pragmatic Language (TOPL)	1	0	0	0	0	1	3%
Trauma Symptom Checklist for Children (TSCC)	1	0	0	0	0	1	3%
Trauma Symptom Checklist for Young Children (TSCYC)	1	0	0	0	0	1	3%
UCLA Child/Adolescent PTSD Reaction Index for DSM-5	1	0	0	0	0	1	3%
Wechsler Adult Intelligence Scale, Fourth Edition (WAIS-IV)*	1	0	0	0	0	1	3%
Wechsler Individual Achievement Test, Third Edition (WIAT3)	1	0	0	0	0	1	3%

CP = Clinical Psychologist, P = Psychiatrist, EP = Educational Psychologist, OT = Occupational Therapist; and SLT = Speech and Language Therapist). An asterisk indicates tools used with adults.

Appendix 3 - Supplementary materials for Chapter 5

S3.1 Exclusion criteria and missing data

Of the 42,215 young people, A total of 31,132 were excluded. When applying the exclusion criteria, 9,250 were removed as they were not in secondary school. A further 3694 were excluded for completing the survey too quickly (less than 10 minutes), and 9,772 stopped the survey before seeing all the pages with our variables of interest. We excluded 4,310 adolescents who were missing information on their neurodiversity status (missing, not sure or preferred not to say). Those who had not provided information about their ethnicity (n= 2643) and then gender (n=97). Of the remaining sample, 10 young people had not completed at least one of the negative experience variables, 124 had no mental health variables and 10 had not completed the poverty questions.

This resulted in a cleaned sample of 11,847. For when the proportion of missing data was small (less than 5%), the potential impact of the missing data is likely minimal and a complete case analysis was conducted (Dettori et al., 2018). Therefore, variables that were missing for less than 5% of the sample were identified as psychically hurt at school (n=448, 3.78%), age (n=70, 0.59%), RCADS11 (n=448, 3.78%) and bullying (n=27, 0.22%). 764 participants with these missing values were removed. This resulted in an analytical sample of 11,083.

Table S3.1 *Demographics of analytical dataset compared to the raw data*

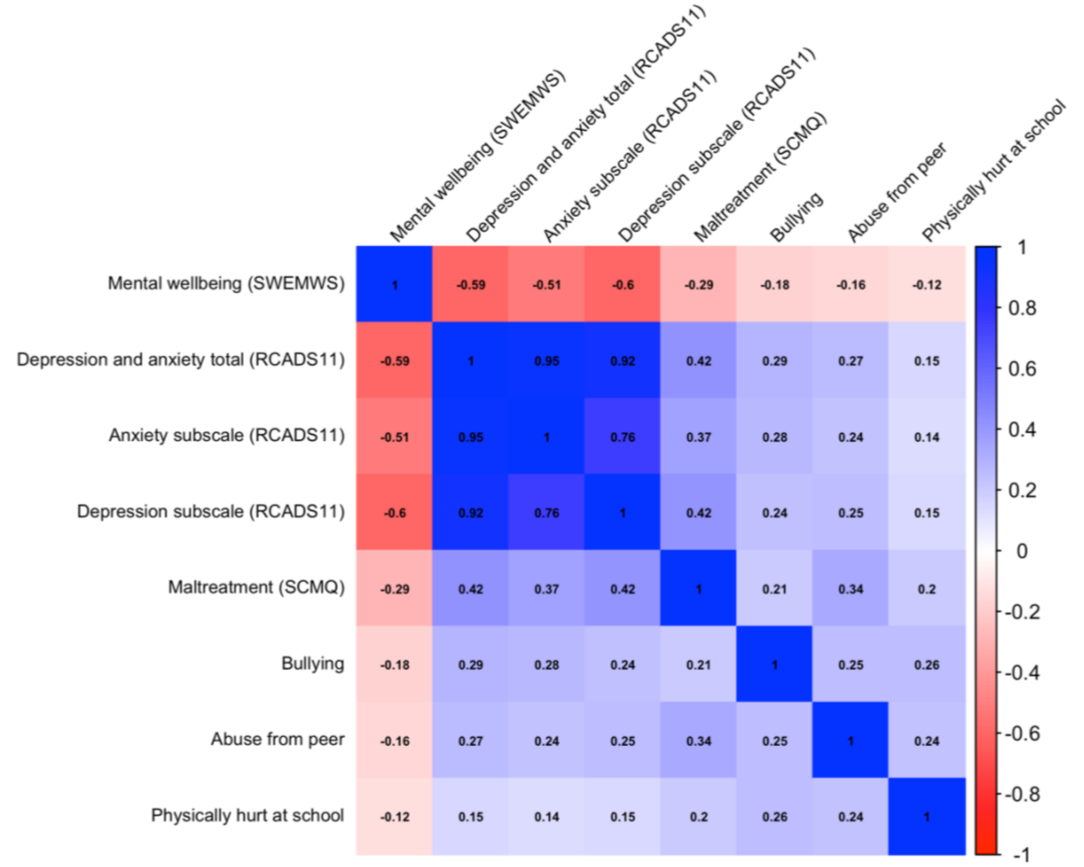
Characteristic	***Original Raw Data***	***Analytical Dataset***
Total N	**42215**	**11083**
Age, mean (SD)	**13 (2.3)**	**14 (1.9)**
Age, missing n (%)	853 (2%)	0 (0%)
Girls, n (%)	**20500 (48.6%)**	**5950 (53.7%)**
Boys, n (%)	**19375 (45.9%)**	**4728 (42.7%)**
Gender diverse/non-binary, n (%)	**1874 (4.4%)**	**405 (3.7%)**
Gender, missing n (%)	466 (1.1%)	0 (0%)
Year 7-9, n (%)	**19161 (45.4%)**	**6218 (56.1%)**
Year 10-11, n (%)	**9173 (21.7%)**	**3223 (29.1%)**
Year 12-13, n (%)	**4631 (11%)**	**1642 (14.8%)**
Year group, missing n (%)	0 (0%)	0 (0%)
White ethnicity, n (%)	**22221 (52.6%)**	**7207 (65%)**
Asian ethnicity, n (%)	**5808 (13.8%)**	**2079 (18.8%)**
Black ethnicity, n (%)	**1947 (4.6%)**	**567 (5.1%)**
Mixed ethnicity, n (%)	**2246 (5.3%)**	**746 (6.7%)**
Other ethnicity, n (%)	**1787 (4.2%)**	**484 (4.4%)**
Ethnicity, missing n (%)	8206 (19.4%)	0 (0%)
Neurodivergent, n (%)	**6387 (15.1%)**	**2508 (22.6%)**
Neurotypical, n (%)	**18557 (44%)**	**8575 (77.4%)**

Neurodiversity 'Not sure', n (%)	6556 (15.5%)	0 (0%)
Neurodiversity 'Prefer not to say', n (%)	683 (1.6%)	0 (0%)
Neurodiversity, missing n (%)	10032 (23.8%)	0 (0%)
Poverty count, mean (SD)	**1 (1.5)**	**0.8 (1.3)**
Poverty count, missing n (%)	5826 (13.8%)	0 (0%)
SWEMWS (wellbeing), mean (SD)	**20.5 (5)**	**20.9 (4.8)**
SWEMWS, missing n (%)	18351 (43.5%)	489 (4.4%)
RCADS11 Total score, mean (SD)	**12.55 (9.4)**	**12.34 (9.39)**
RCADS Total, missing n (%)	11056 (26.2%)	0 (0%)
RCADS Anxiety subscale, mean (SD)	**5.49 (4.66)**	**5.35 (4.63)**
RCADS Anxiety, missing n (%)	9912 (23.5%)	0 (0%)
RCADS Depression subscale, mean (SD)	**4.78 (3.9)**	**4.82 (3.92)**
RCADS Depression, missing n (%)	*9914 (23.5%)*	*0 (0%)*
Bullying experienced, n (%)	**8443 (20%)**	**1918 (17.3%)**
Bullying, missing n (%)	*3524 (8.3%)*	*0 (0%)*
Peer abuse experienced, n (%)	**1599 (3.8%)**	**797 (7.2%)**
Peer abuse, missing n (%)	*23287 (55.2%)*	*727 (6.6%)*
SWEMWS (wellbeing), mean (SD)	**20.5 (5)**	**20.9 (4.8)**
School abuse, missing n (%)	*14721 (34.9%)*	*0 (0%)*
SCMQ Maltreatment score, mean (SD)	**0.7 (1.2)**	**0.6 (1.1)**
SCMQ Maltreatment, missing n (%)	*25337 (60%)*	*1656 (14.9%)*

Mental well-being was measured using the Short Warwick-Edinburgh Mental Wellbeing Scale (SWEMWBS) and maltreatment measured using the Short Child Maltreatment Questionnaire (SCMQ). Depression and anxiety symptoms were recorded using the 11-item Revised Child Anxiety and Depression Scale (RCADS-11).

S3.2 Multicollinearity in peer victimisation, maltreatment and mental health variables

Figure S3.1 shows, as expected, that the anxiety and depression subscales of the 11-item Revised Child Anxiety and Depression Scale (RCADS11) correlated strongly with both each other and the total score. Mental wellbeing, as measured by the Short Warwick-Edinburgh Mental Wellbeing Scale (SWEMWBS), also correlated with strongly with the RCADS11. The correlations between each of the peer victimisation measures were small in strength with each other, and small to moderate with the Short Child Maltreatment Questionnaire (SCMQ).



	Mental wellbeing (SWEMWS)	Depression and anxiety total (RCADS11)	Anxiety subscale (RCADS11)	Depression subscale (RCADS11)	Maltreatment (SCMQ)	Bullying	Abuse from peer	Physically hurt at school
Mental wellbeing (SWEMWS)	1	-0.59	-0.51	-0.6	-0.29	-0.18	-0.16	-0.12
Depression and anxiety total (RCADS11)	-0.59	1	0.95	0.92	0.42	0.29	0.27	0.15
Anxiety subscale (RCADS11)	-0.51	0.95	1	0.76	0.37	0.28	0.24	0.14
Depression subscale (RCADS11)	-0.6	0.92	0.76	1	0.42	0.24	0.25	0.15
Maltreatment (SCMQ)	-0.29	0.42	0.37	0.42	1	0.21	0.34	0.2
Bullying	-0.18	0.29	0.28	0.24	0.21	1	0.25	0.26
Abuse from peer	-0.16	0.27	0.24	0.25	0.34	0.25	1	0.24
Physically hurt at school	-0.12	0.15	0.14	0.15	0.2	0.26	0.24	1

Figure S3.1 *Associations between mental health, peer victimisation and maltreatment variables in the analytical sample (N=11,083). Mental well-being was measured using the Short Warwick-Edinburgh Mental Wellbeing Scale (SWEMWBS) and maltreatment measured using the Short Child Maltreatment Questionnaire (SCMQ). Depression and anxiety symptoms were recorded using the 11-item Revised Child Anxiety and Depression Scale (RCADS-11).*

S3.3 Unadjusted regression results

Table S3.2 shows the unadjusted regression models where being ND, relative to NT, was the predictor and negative experiences were the outcome, with no other covariates.

Table S3.2 *Odds Ratios (OR) and Rate Ratios (RR) for neurodivergent (ND), versus neurotypical, student's likelihood of negative experiences.*

Outcome	Predictor	OR/ RR	95% CI	P-value	FDR p-value
Abuse from a peer	ND	4.322	3.728-5.012	<0.001	<0.001
Physically hurt at school	ND	2.437	2.148-2.763	<0.001	<0.001
Bullied	ND	2.891	2.602-3.211	<0.001	<0.001
Maltreatment	ND	1.987	1.830-2.157	<0.001	<0.001

ND = Neurodivergent; OR = Odds Ratio; RR = Rate Ratio; FDR = False discovery rate

S3.4 Interaction analysis testing if sociodemographic predictors of peer victimisation and maltreatment differ in neurodivergent and neurotypical young people

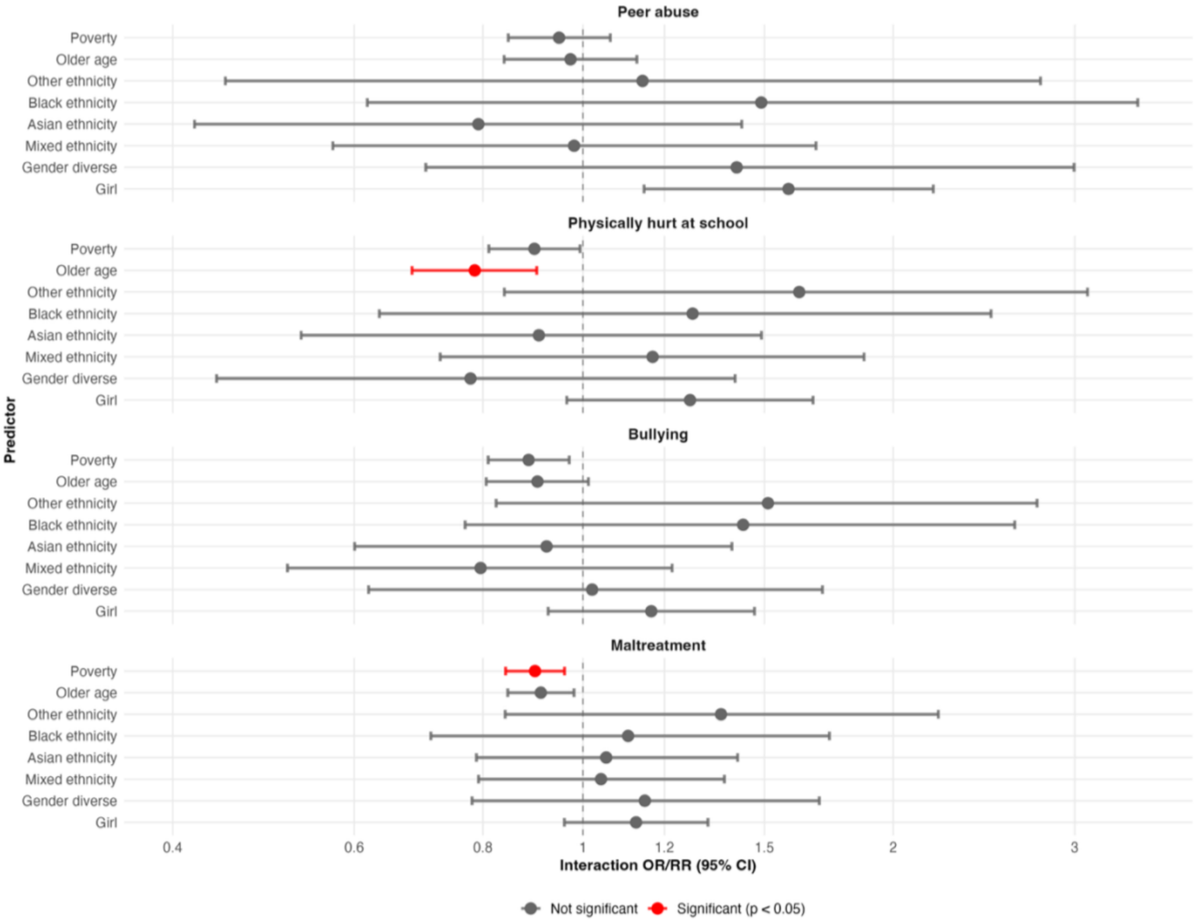


Figure S3.2 *Interaction effects between neurodiversity status and predictors of negative experiences. Points represent interaction terms testing whether predictors affect outcomes differently in neurodivergent (ND) versus neurotypical (NT) groups. Values <1.0 = weaker effect in ND group; values >1.0 = stronger effect in ND group. Red = significant (p < 0.05 after FDR correction); grey = non-significant. Error bars = 95% confidence intervals. Odds ratios (OR) reported for binary outcomes; rate ratios (RR) for maltreatment count. Maltreatment was measured using the Short Child Maltreatment Questionnaire (SCMQ).*

S3.5 Neurodiversity and Mental health outcomes

Table S3.3 shows ND young people were more likely to have poorer mental health and wellbeing. Compared to their NT peers, ND young people had significantly higher likelihood of having ever had a mental health problem in their life (OR = 3.76, 95%Cl = 3.37-4.21) or having had one in the year prior to taking the survey (OR = 3.19, 95%Cl = 2.85-3.56). Being ND was significantly associated with lower well-being scores on the SWEMWS (B= -2.06, 95%Cl = -2.28- -1.85) and higher scores on the RCADS11 full scale (B= 0.65, 95%Cl = 0.59-0.71), as well as significantly higher scores on anxiety (B= 0.42, 95%Cl = 0.37-0.47) and depression (B= 0.44, 95%Cl = 0.40-0.49) sub-scales.

Table S3.3 *Regression models where neurodiversity predicts mental health outcomes*

Outcome	***Predictor***	***OR***	***95% Cl***	***P- value***	***FDR p-value***
Mental health problem	Neurodiversity	3.19	2.85 - 3.56	<0.001	<0.001
N = 10179	Poverty	1.48	1.41 - 1.55	<0.001	<0.001
	Gender diverse	3.52	2.74 - 4.51	<0.001	<0.001
	Girl	2.94	2.64 - 3.26	<0.001	<0.001
	Age	1.34	1.28 - 1.40	<0.001	<0.001
	Mixed ethnicity	1.04	0.86 - 1.25	0.69	0.71
	Asian	0.66	0.57 - 0.76	<0.001	<0.001
	Black	0.75	0.59 - 0.94	0.01	0.02
	Other ethnic groups	0.48	0.36 - 0.63	<0.001	<0.001
Outcome	**Predictor**	**Beta**	**Cl low**	**P- value**	**FDR p-value**
Wellbeing (SWEMWS)	Neurodiversity	-2.06	-2.28- -1.85	<0.001	<0.001
N = 10594	Poverty	-1.05	-1.13 - -0.96	<0.001	<0.001
	Gender diverse	-2.62	-3.09 - -2.15	<0.001	<0.001
	Girl	-2.02	-2.2 - -1.85	<0.001	<0.001
	Age	-0.46	-0.55 - -0.38	<0.001	<0.001
	Mixed ethnicity	0.1	-0.24 – 0.44	0.57	0.59
	Asian	0.11	-0.11 – 0.34	0.33	0.38
	Black	0.61	0.22 – 1.00	<0.001	<0.001
	Other ethnic groups	0	-0.41 - 0.42	0.99	0.99
Anxiety and Depression Total (RCADS11)	Neurodiversity	0.65	0.59 – 0.71	<0.001	<0.001
N = 11083	Poverty	0.42	0.39 – 0.44	<0.001	<0.001
	Gender diverse	1.07	0.93 – 1.2	<0.001	<0.001
	Girl	0.96	0.91 -1.01	<0.001	<0.001

	Age	0.13	0.11 – 0.16	<0.001	<0.001
	Mixed ethnicity	0.14	0.04 – 0.24	<0.001	0.01
	Asian	-0.02	-0.09 – 0.04	0.48	0.53
	Black	-0.16	-0.27 - -0.05	<0.001	0.01
	Other ethnic groups	-0.1	-0.22 – 0.01	0.08	0.1
Anxiety subscale (RCADS11)	Neurodiversity	0.42	0.37 – 0.47	<0.001	<0.001
N = 11083	Poverty	0.3	0.28 – 0.31	<0.001	<0.001
	Gender diverse	0.82	0.72 – 0.93	<0.001	<0.001
	Girl	0.78	0.74 – 0.82	<0.001	<0.001
	Age	0.05	0.03 – 0.07	<0.001	<0.001
	Mixed ethnicity	0.05	-0.02 – 0.13	0.16	0.19
	Asian	-0.06	-0.11 – 0.00	0.03	0.04
	Black	-0.17	-0.26 - -0.08	<0.001	<0.001
	Other ethnic groups	-0.12	-0.21 - -0.03	0.01	0.01
Depression subscale (RCADS11)	Neurodiversity	0.44	0.4 – 0.49	<0.001	<0.001
N = 11083	Poverty	0.27	0.26 – 0.29	<0.001	<0.001
	Gender diverse	0.65	0.55 – 0.74	<0.001	<0.001
	Girl	0.52	0.48 – 0.55	<0.001	<0.001
	Age	0.14	0.12 – 0.15	<0.001	<0.001
	Mixed ethnicity	0.13	0.06 – 0.2	<0.001	<0.001
	Asian	0.02	-0.03 – 0.07	0.4	0.44
	Black	-0.05	-0.13 – 0.03	0.2	0.23
	Other ethnic groups	-0.03	-0.11 – 0.06	0.56	0.59

Beta estimates are presented for outcomes of depression, anxiety and mental wellbeing. Odds ratios (OR) are presented for when reporting a mental health problem was the outcome. Mental well-being was measured using the Short Warwick-Edinburgh Mental Wellbeing Scale (SWEMWBS) and maltreatment measured using the Short Child Maltreatment Questionnaire (SCMQ). Depression and anxiety symptoms were recorded using the 11-item Revised Child Anxiety and Depression Scale (RCADS-11).

S3.6 Relationship between peer victimisation and maltreatment with mental health outcomes

Table S3.4 shows the main effects of linear and logistic regression models with victimisation variables as the predictor, and mental health variables as the outcome. All of the models included gender, ethnicity, age and poverty as covariates.

Table S3.4 *Regression models where peer victimisation and maltreatment are associated with mental health outcomes, when considering gender, ethnicity, age and poverty.*

Predictor	***Outcome***	***Beta/OR***	***95% Cl***	***P-value***	***FDR P-value***
Abuse from a peer	Mental wellbeing	-2.22	-2.561 - -1.887	<0.001	<0.001
	Depression and anxiety (RCADS11)	0.92	0.822 - 1.011	<0.001	<0.001
	Anxiety subscale (RCADS11)	0.64	0.564 - 0.713	<0.001	<0.001
	Depression subscale (RCADS11)	4.52	0.511 - 0.648	<0.001	<0.001
	Mental health problem	4.52	3.802 - 5.378	<0.001	<0.001
Hurt at school	Mental wellbeing	-2.17	-2.452 - -1.894	<0.001	<0.001
	Depression and anxiety (RCADS11)	0.76	0.679 - 0.835	<0.001	<0.001
	Anxiety subscale (RCADS11)	0.51	0.452 - 0.576	<0.001	<0.001
	Depression subscale (RCADS11)	2.52	0.455 - 0.568	<0.001	<0.001
	Mental health problem	2.52	2.176 - 2.918	<0.001	<0.001
Bullying	Mental wellbeing	-2.15	-2.379 - -1.919	<0.001	<0.001
	Depression and anxiety (RCADS11)	0.88	0.813 - 0.941	<0.001	<0.001
	Anxiety subscale (RCADS11)	0.65	0.601 - 0.702	<0.001	<0.001
	Depression subscale (RCADS11)	3.18	0.465 - 0.558	<0.001	<0.001
	Mental health problem	3.18	2.823 - 3.592	<0.001	<0.001
Maltreatment	Mental wellbeing	-0.88	-0.966 - -0.792	<0.001	<0.001
	Depression and anxiety (RCADS11)	0.36	0.337 - 0.386	<0.001	<0.001
	Anxiety subscale (RCADS11)	0.24	0.223 - 0.262	<0.001	<0.001
	Depression subscale (RCADS11)	1.66	0.232 - 0.267	<0.001	<0.001
	Mental health problem	1.66	1.586 - 1.747	<0.001	<0.001

Beta estimates are presented for outcomes of depression, anxiety and mental wellbeing. Odds ratios (OR) are presented for when reporting a mental health problem was the outcome. Mental well-being was measured using the Short Warwick-Edinburgh Mental Wellbeing Scale (SWEMWBS) and maltreatment measured using the Short Child Maltreatment Questionnaire (SCMQ). Depression and anxiety symptoms were recorded using the 11-item Revised Child Anxiety and Depression Scale (RCADS-11).

S3.7 Moderating role of neurodiversity on the relationship between mental health with peer victimisation or maltreatment

Interaction effects were examined to assess if having a victimisation experience interacted with being ND to impact mental health outcomes. For logistic models, model fit was assessed using McFadden's pseudo-R², likelihood ratio tests (LRT), and Akaike Information Criterion (AIC) differences. For linear models, model fit was assessed using the change in R-squared (ΔR²). Tables S3.5 and S3.6 shows the main effects comparing the regression models with and without the interaction term. Covariates of gender, poverty, ethnicity and poverty were included in both models with and without the interaction term.

Table S3.5 *Comparing logistic regression models with and without the interaction term.*

Outcome	**Experience**	**Pseudo -R² (Base)**	**Pseudo-R² (with Interaction)**	**ΔR²**	**ΔAIC**	**LRT χ²**	**LRT p-value**
Mental health problem	Physically hurt at school	0.151	0.151	0	-1.31	0.69	0.41
	Abuse from a peer	0.159	0.16	0.001	2.44	4.44	0.04
	Bullying	0.164	0.164	0	3.83	5.83	0.02
	Maltreatment (SCMQ)	0.177	0.188	0.001	3.19	5.19	0.02

Maltreatment measured using the Short Child Maltreatment Questionnaire (SCMQ).

Table S3.6 *Comparing linear regression models with and without the interaction term.*

Experience	Outcome	R² (Base)	R² (Interaction)	ΔR²	p-value	p-value (FDR adjusted)
Physically hurt at school	Anxiety subscale (RCADS11)	0.246	0.246	<0.001	0.11	0.16
	Depression subscale (RCADS11)	0.235	0.235	<0.001	0.07	0.12
	Anxiety and Depression Total (RCADS11)	0.279	0.279	<0.001	0.0523	0.12
	Wellbeing score (SWEMWS)	0.175	0.175	<0.001	0.93	0.93
Abuse from a peer	Anxiety subscale (RCADS11)	0.240	0.240	<0.001	0.04	0.12
	Depression subscale (RCADS11)	0.225	0.226	<0.001	0.10	0.15
	Anxiety and Depression Total (RCADS11)	0.271	0.271	<0.001	0.04	0.12
	Wellbeing score (SWEMWS)	0.163	0.163	<0.001	0.04	0.12
Bullying	Anxiety subscale (RCADS11)	0.266	0.266	<0.001	0.33	0.42
	Depression subscale (RCADS11)	0.242	0.242	<0.001	0.06	0.12
	Anxiety and Depression Total (RCADS11)	0.297	0.297	<0.001	0.06	0.12
	Wellbeing score (SWEMWS)	0.180	0.181	<0.001	0.08	0.13
Maltreatment (SCMQ)	Anxiety subscale (RCADS11)	0.258	0.260	0.002	<0.001	<0.001
	Depression subscale (RCADS11)	0.254	0.257	0.002	<0.001	<0.001
	Anxiety and Depression Total (RCADS11)	0.298	0.301	0.003	<0.001	<0.001

	Wellbeing score (SWEMWS)	0.176	0.178	0.002	<0.001	<0.001

Mental well-being was measured using the Short Warwick-Edinburgh Mental Wellbeing Scale (SWEMWBS) and maltreatment measured using the Short Child Maltreatment Questionnaire (SCMQ). Depression and anxiety symptoms were recorded using the 11-item Revised Child Anxiety and Depression Scale (RCADS-11).

Appendix 4 Supplementary materials for Chapter 6

S4.1 Interview Schedule

Participant information – gather prior to interview start

Demographics and describing the school

- *Sex and gender*
- *Age*
- *What year did you complete your teacher training?*
- *What school age-group do you teach: Primary or secondary?*
- *SEN or Mainstream?*
- *Fee-paying or State school?*
- *Level of confidence on understanding of trauma (Likert scale 1-5, 1 = low confidence)*

Can you describe the socio-economic status of typical students in your school:

- *1 – The majority of my pupils are from low income families*
- *2 – The majority of my pupils are from middle income families*
- *3 – The majority of my pupils are from high income families*
- *4 – My pupils are from a range of socioeconomic backgrounds*
- *Other – describe*

What proportion of the student body of your school are from minoritised ethic groups?

- *1 - All pupils are white British*
- *2 - The majority of pupils are white British, but some students are from minoritised ethnic backgrounds*
- *3 - Our school has students of lots of different ethnicities*
- *4 - The majority of students are from minoritised ethnic backgrounds, but some students are not.*
- *5 - All of our pupils are from minoritised ethnic backgrounds*
- *Other - describe*

Core Questions – start of interview

1. Opening Question

First, can you tell me about a bit about profile of the autistic kids you teach?

- *level of support needs*
- *co-occurrence etc.*
- *Have you always worked with this group of pupils?*

2. Awareness of trauma

Has there been a time when you've been aware that a child/children in your class has experienced something traumatic? Can you tell me about that?

- *Did this change your approach to teaching this child?*
- *Did knowing about this trauma change how you interpreted certain behaviours of this child?*
- *How do these behaviours differ from those of other children?*
- *Do you feel that the child needed additional support due to their experience?*
- *Is this a common experience for you?*

3. Suspected trauma

Has there been a time when you suspected a child was behaving a certain way due to a negative experience you didn't know about?

- *What led you to think that?*
- *What kinds of negative experiences?*
- *Can you describe the behaviour of this child?*
- *What do you think that the behaviour is telling you?*

4. Need for support

Can you describe a time you felt like support was needed by the child, but you couldn't provide it?

- *What support would you have liked to give?*
- *What does support mean to you?*

Does the support/care you provide for comorbidities interfere with support you would want to give for trauma?

5. Provided support

Can you describe a time you provided support that you felt was helpful/successful?

- *Can you explain why you went about it that way?*

6. School support system

Does your school have systems in place for supporting kids who are also traumatised?

- *Do you feel confident in how your school supports these children?*
- *What do you think your school needs to better support these kids?*
- *Do you feel confident your school supports you?*

7. Knowledge

What do you think is important teachers know about supporting or teaching autistic children who are traumatised?

- *What would you like to know about?*

8. Additional comments

Is there anything else you would like to share related to teaching traumatised autistic children?

S4.2 Participant characteristics

Table S4.1 *Participant information for teachers who were interviewed.*

	Teacher's Characteristics							Describing the student body	
Participant number:	**Gender**	**Age (years)**	**Age group taught**	**School type**	**Private or state**	**Level of confidence**	**Years teaching**	**Income of families**	**Ethnicity**
SEN-S1	Female	25-30	Secondary	SEN	State	4	4	Majority from low income families	Lots of different ethnicities
MAIN-P2	Female	25-30	Primary	Mainstream	Private	3	3	Majority from high income families	Lots of different ethnicities
MAIN-S3	Female	25-30	Secondary	Mainstream	State	3.5	3	Majority from low income families	Majority from minoritised ethnic backgrounds
MAIN-S4	Female	25-30	Secondary	Mainstream	State	3	3	Majority from low income families	All of our pupils are from minoritised ethnic backgrounds
MAIN-S5	Female	25-30	Secondary	Mainstream	State	3.5	5	Majority from low income families	All of our pupils are from minoritised ethnic backgrounds
MAIN-S6	Female	46-60	Secondary	Mainstream	Private	4	37	Range of socioeconomic backgrounds	Majority are white British
SEN-P7	Female	36-40	primary	SEN	State	4	13	Majority from low income families	Majority from minoritised ethnic backgrounds
SEN-P8	Female	36-40	Primary	SEN	State	3	15	Range of socioeconomic backgrounds	Majority from minoritised ethnic backgrounds
SEN-P9	Female	51-55	Primary	SEN	State	3	30	Range of socioeconomic backgrounds	Majority from minoritised ethnic backgrounds
SEN-P10	Female	46-50	Primary	SEN	State	4	21	Majority from low income families	Majority from minoritised ethnic backgrounds
SEN-S11	Male	51-55	Secondary	SEN	Private	4	4	Range of socioeconomic backgrounds	Majority are white British
MAIN-P12	Female	31-35	Primary	Mainstream	State	4	10	Majority from low income families	Lots of different ethnicities
MAIN-S13	Male	25-30	Secondary	Mainstream	State	3	4	Majority from low income families	Lots of different ethnicities
MAIN-S14	Female	25-30	Secondary	Mainstream	State	1	6	Range of socioeconomic backgrounds	All pupils are white British

SEN-P15	Female	51-55	Primary	SEN	State	4	16	Majority from low income families	All pupils are from minoritised ethnic backgrounds

S4.3 Theme and subthemes

Table S4.2 Themes and subthemes with example quotes.

Theme 1. Perceptions of how autistic children experience trauma	Subtheme 1.1 Autistic children find a range of experiences traumatic	*"There are other children for whom they haven't had those sort of more obvious… experiences, but that may be something like just coming to school and having to be in that environment is actually traumatic for them." (SEN-P9)*
	Subtheme 1.2. Children's behaviour changes following trauma	*"Behaviour is communicative, so if this particular child has come in, for example, and this is an experience that I had a couple of years ago, coming [in with] rage, absolute rage, I'm like, I can't work out…. what you're trying to tell me." (SEN-P8)*
	Subtheme 1.3. Challenge of disentangling trauma and autism related behaviours	*"My school is an autism specialist school, and everything is approached up from an autism viewpoint. "Ohh they need this because they're autistic" and I feel like that's not always the case." (SEN-P7)*
Theme 2. Taking an informed approach to teaching	Subtheme 2.1, Feeling like they're going in blind	*"It is difficult because you don't always know the context. I think that's the thing, you're almost going into battle blind sometimes." (MAIN-S14)*
	Subtheme 2.2. The importance relationship building	*"I'm just being like, oh, you've had a really … I don't swear in front of students, but "you've had a **** year, and I'm really impressed that you're still coming to school and working hard and like giving things a go". And I think things like that are important to him, like being seen and being acknowledged and opening up opportunities for one-on-one conversations and to do it." (SEN-S1)*
	Subtheme 2.2. Adapting teaching to meet both academic and emotional needs	*"Oh yeah, massively lowering demands and getting that kind of stability around them making sure they're comfortable, kind of that social, emotional side shot up. Whereas the academic side dropped down." (MAIN-S4)*
Theme 3. Helping with a holistic perspective	Subtheme 3.1. Understanding the pupil's home life	*"I think what is important is to have, to work with families very, very closely. Whoever is involved in that child's life needs to be kind of working together. I think you need to be honest. You need to be you know about what is happening [at home]." (SEN-P15)*
	Subtheme 3.2. Inter-agency collaboration	*"You want to be able to connect to other services and provide like linked up care really that's, that's what I want to do. I think the difficulties come in the other services being able to provide what's needed. And that's everything. Like that's social care, that's housing, that's CAMHS, that's medical. Like there's so many factors." (SEN-S1)*

	Subtheme 3.3: A whole school approach	*"I guess just to say, I think it really is, it's got to be a whole school approach. So it's got to have some trauma understanding and it's got to be you know, you can't just do it with one kid or one class. It's got to sort of permeate through everything. Yeah, everyone's got to be on the same page. I don't think it's going to work." (SEN-P10)*
	Subtheme 3.4. A safe environment for everyone	*"Autism is one thing ...But if you add in the layer of trauma alongside it that you don't know how to process. And you don't feel safe. And you're autistic. And you don't feel safe anyway, because the world's really scary. That's when you get these huge behaviours." (MAIN-P12)*
Theme 4. Support is under strain	Subtheme 4.1. Resourcing issues in education and mental health support	"*It's very frustrating to be honest at times, but they've also got lots of children that they're trying to manage and it is unfortunately a priority thing. So the ones that are in the most need come first, or if they're in a real crisis that comes first. But that's just lack of staff. Lack of time. Oversubscribed. Big classes. And it's yeah, an issue, whether it's autism, trauma, mental health. Yeah. Any of those areas of, of need." (MAIN-S14)*
	Subtheme 4.2. Need for context-specific training and the time to do it	*"I don't feel there's a lot to tell me what to do at that moment when that child is feeling... overwhelmed... I wanted to know what to do in the moments when he was so angry and he was unsafe." (SEN-P7)*
	Subtheme 4.3. Teachers need support too	*"I think in retrospect, that's made me feel really strongly about supervision and the level of supervision that's needed within educational contexts, especially ones like ours, where there are so many high cases of physical and challenging behaviours. There isn't a time where you know when you're in that that process, that there's a coming together in a sitting down and unpicking what's happened and that I think is crucial because then it helps you to have the sustenance for the rest of the year and so yeah, I just felt really ill supported and I felt like in retrospect and I would be very keen that that never happened to anybody else that I work with." (SEN-P8)*
	Subtheme 4.4. Trying their best to do what is best	*"Yeah, my understanding and I can only talk to my colleagues, but schools are really trying. But like it's a battle and it's like, I don't know if there's the resources in the whole country to really deal with it right now. And that's a real shame." (MAIN-S13)*

References

Accardo, A. L., Neely, L. C., Pontes, N. M. H., & Pontes, M. C. F. (2024). Bullying victimization is associated with heightened rates of anxiety and depression among autistic and ADHD youth: National Survey of Children's Health 2016–2020. *Journal of Autism and Developmental Disorders*. https://doi.org/10.1007/s10803-024-06479-z

Adams, D., & Young, K. (2021). A systematic review of the perceived barriers and facilitators to accessing psychological treatment for mental health problems in individuals on the autism spectrum. *Review Journal of Autism and Developmental Disorders*, *8*(4), 436–453. https://doi.org/10.1007/s40489-020-00226-7

Adler, N. E., Epel, E. S., Castellazzo, G., & Ickovics, J. R. (2000). Relationship of subjective and objective social status with psychological and physiological functioning: Preliminary data in healthy white women. *Health Psychology, 19*(6), 586–592. https://doi.org/10.1037/0278-6133.19.6.586

Agnew-Blais, J. C., Polanczyk, G. V., Danese, A., Wertz, J., Moffitt, T. E., & Arseneault, L. (2016). Evaluation of the Persistence, Remission, and Emergence of Attention-Deficit/Hyperactivity Disorder in Young Adulthood. JAMA Psychiatry, 73(7), 713–720. https://doi.org/10.1001/jamapsychiatry.2016.0465

Agnew-Blais, J. C., Wertz, J., Arseneault, L., Belsky, D. W., Danese, A., Pingault, J., Polanczyk, G. V., Sugden, K., Williams, B., & Moffitt, T. E. (2022). Mother's and children's ADHD genetic risk, household chaos and children's ADHD symptoms: A gene–environment correlation study. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, *63*(10), 1153–1163. https://doi.org/10.1111/jcpp.13659

Ahad, A., Thompson, A. M., & Hall, K. E. (2022). Identifying service users' experience of the education, health and care plan process: A systematic literature review. *Review of Education*, *10*(1), e3333. https://doi.org/10.1002/rev3.3333

Al Qutub, R., Luo, Z., Vasilikou, C., Tavassoli, T., Essah, E., & Marcham, H. (2024). Impacts of school environment quality on autistic pupil's behaviours – A systematic review. *Building and Environment*, *265*, 111981. https://doi.org/10.1016/j.buildenv.2024.111981

Al-Attar, Z., & Worthington, R. (2024). Trauma or autism? – Understanding how the effects of trauma and disrupted attachment can be mistaken for autism. *Advances in Autism*, *10*(3), 120–134. https://doi.org/10.1108/AIA-07-2023-0041

Alcorn, A. M., Fletcher-Watson, S., McGowen, S., Murray, F., Altken, D., Peacock, L. J. J., & Mandy, W. (2022). *Learning About Neurodiversity at School: A resource pack for primary school teachers and pupils*. University of Edinburgh. https://salvesen-research.ed.ac.uk/leans

Alcorn, A. M., McGeown, S., Mandy, W., Aitken, D., & Fletcher-Watson, S. (2024). Learning About Neurodiversity at School: A feasibility study of a new classroom programme for mainstream primary schools. *Neurodiversity*, *2*. https://doi.org/10.1177/27546330241272186

Alisic, E., Bus, M., Dulack, W., Pennings, L., & Splinter, J. (2012a). Teachers' experiences supporting children after traumatic exposure. *Journal of Traumatic Stress*, *25*(1), 98–101. https://doi.org/10.1002/jts.20709

Allen, L., Jones, C., Fox, A., Copello, A., Jones, N., & Meiser-Stedman, R. (2021). The correlation between social support and post-traumatic stress disorder in children and adolescents: A meta-analysis. *Journal of Affective Disorders*, *294*, 543–557. https://doi.org/10.1016/j.jad.2021.07.028

Allmann, A. E. S., Klein, D. N., & Kopala-Sibley, D. C. (2022). Bidirectional and transactional relationships between parenting styles and child symptoms of ADHD, ODD, depression, and anxiety over 6 years. *Development and Psychopathology*, *34*(4), 1400–1411. https://doi.org/10.1017/S0954579421000201

American Psychiatric Association. (2013). Diagnostic and Statistical Manual of Mental Disorders (DSM-5TR). *American Psychiatric Publication.*

American Psychiatric Association. (1994). Diagnostic and statistical manual of mental disorders, 4th ed (pp. xxvii, 886). American Psychiatric Publishing, Inc.

Anderson-Chavarria, M. (2022). The autism predicament: models of autism and their impact on autistic identity. *Disability & Society*, *37*(8), 1321–1341. https://doi.org/10.1080/09687599.2021.1877117

Andrews, J. L., Ahmed, S. P., & Blakemore, S.-J. (2021). Navigating the social environment in adolescence: the role of social brain development. *Biological Psychiatry*, *89*(2), 109–118. https://doi.org/10.1016/j.biopsych.2020.09.012

Andrzejewski, T., Gomez Batista, S., Abu-Ramadan, T., Breitenfeldt, K. E., Tassone, A. U., Winch, A., Rozek, D. C., & McDonnell, C. G. (2024). Examining rates of traumatic events and posttraumatic stress disorder symptoms among autistic adults. *Autism in Adulthood: Challenges and Management*, *6*(3), 374–387. https://doi.org/10.1089/aut.2023.0022

Antshel, K. M., Kaul, P., Biederman, J., Spencer, T. J., Hier, B. O., Hendricks, K., & Faraone, S. V. (2013). Posttraumatic stress disorder in adult attention-deficit/hyperactivity disorder: clinical features and familial transmission. *The Journal of Clinical Psychiatry*, *74*(3), e197-204. https://doi.org/10.4088/JCP.12m07698

Apperly, I. A., Lee, R., van der Kleij, S. W., & Devine, R. T. (2024). A transdiagnostic approach to neurodiversity in a representative population sample: the N+ 4 model. *Journal of Child Psychology and Psychiatry Advances*, *4*(2), e12219. https://doi.org/10.1002/jcv2.12219

Astle, D. E., Holmes, J., Kievit, R., & Gathercole, S. E. (2022). Annual Research Review: The transdiagnostic revolution in neurodevelopmental disorders. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, *63*(4), 397–417. https://doi.org/10.1111/jcpp.13481

Atwoli, L., Stein, D. J., Koenen, K. C., & McLaughlin, K. A. (2015). Epidemiology of posttraumatic stress disorder: Prevalence, correlates and consequences. *Current Opinion in Psychiatry*, *28*(4), 307–311. https://doi.org/10.1097/YCO.0000000000000167

Avery, J. C., Morris, H., Galvin, E., Misso, M., Savaglio, M., & Skouteris, H. (2020). Systematic review of school-wide trauma-informed approaches. *Journal of Child & Adolescent Trauma*, *14*(3), 381–397. https://doi.org/10.1007/s40653-020-00321-1

Aymerich, C., Pacho, M., Catalan, A., Yousaf, N., Pérez-Rodríguez, V., Hollocks, M. J., Parellada, M., Krebs, G., Clark, B., & Salazar de Pablo, G. (2024). Prevalence and correlates of the concurrence of autism spectrum disorder and obsessive compulsive disorder in children and adolescents: a systematic review and meta-analysis. *Brain Sciences*, *14*(4), Article 4. https://doi.org/10.3390/brainsci14040379

Baerger, D. R., & McAdams, D. P. (1999). Life story coherence and its relation to psychological well-being. *Narrative Inquiry*, *9*(1), 69–96. https://doi.org/10.1075/ni.9.1.05bae

Bal, V. H., Katz, T., Bishop, S. L., & Krasileva, K. (2016). Understanding definitions of minimally verbal across instruments: evidence for subgroups within minimally verbal children and adolescents with autism spectrum disorder. *Journal of Child Psychology and Psychiatry*, *57*(12), 1424–1433. https://doi.org/10.1111/jcpp.12609

Ballester-Galí, A., & Garcia-Molina, I. (2025). “For fear that they would turn away from me”: from transgressing boundaries to sexual abuse in spanish autistic women and non-binary people. *Autism in Adulthood*. https://doi.org/10.1089/aut.2024.0226

Bastos, J. L., & Harnois, C. E. (2020). Does the everyday discrimination scale generate meaningful cross-group estimates? A psychometric evaluation. *Social Science & Medicine*, *265*, 113321. https://doi.org/10.1016/j.socscimed.2020.113321

Becker, S. P., Mehari, K. R., Langberg, J. M., & Evans, S. W. (2017). Rates of peer victimization in young adolescents with adhd and associations with internalizing symptoms and self-esteem. *European Child & Adolescent Psychiatry*, *26*(2), 201–214. https://doi.org/10.1007/s00787-016-0881-y

Benavides-Rawson, J., & Grinker, R. R. (2018). Reactive attachment disorder and autism spectrum disorder: diagnosis and care in a cultural context. In J. M. Fogler & R. A. Phelps (Eds.), *Trauma, Autism, and Neurodevelopmental Disorders: Integrating Research , Practice, and Policy* (pp. 149–160). Springer International Publishing; Springer Link. https://doi.org/10.1007/978-3-030-00503-0_8

Bennett, M., Webster, A. A., Goodall, E., & Rowland, S. (2018). Establishing contexts for support: undoing the legacy of the "refriger ator mother" myth. In M. Bennett, A. A. Webster, E. Goodall, & S. Rowland (Eds.), *Life on the Autism Spectrum: Translating Myths and Misconceptions into Positive Futures* (pp. 61–80). Springer; Springer Link. https://doi.org/10.1007/978-981-13-3359-0_4

Bennett, R. S., Denne, M., McGuire, R., & Hiller, R. M. (2021). A systematic review of controlled-trials for PTSD in maltreated children and adolescents. *Child Maltreatment*, *26*(3), 325–343. https://doi.org/10.1177/1077559520961176

Ben-Sasson, A., Gal, E., Fluss, R., Katz-Zetler, N., & Cermak, S. A. (2019). Update of a meta-analysis of sensory symptoms in asd: a new decade of research. *Journal of Autism and Developmental Disorders*, *49*(12), 4974–4996. https://doi.org/10.1007/s10803-019-04180-0

Berg, K. L., Acharya, K., Shiu, C.-S., & Msall, M. E. (2018). Delayed diagnosis and treatment among children with autism who experience adversity. *Journal of Autism and Developmental Disorders*, *48*(1), 45–54. https://doi.org/10.1007/s10803-017-3294-y

Berger, E. (2019). Multi-tiered approaches to trauma-informed care in schools: a systematic review. *School Mental Health*, *11*(4), 650–664. Scopus. https://doi.org/10.1007/s12310-019-09326-0

Berger, E., D'Souza, L., & Miko, A. (2021). School-based interventions for childhood trauma and autism spectrum disorder: a narrative review. *Educational and Developmental Psychologist*, *38*(2), 186–193. https://doi.org/10.1080/20590776.2021.1986355

Biederman, J., Petty, C. R., Spencer, T. J., Woodworth, K. Y., Bhide, P., Zhu, J., & Faraone, S. V. (2013). Examining the nature of the comorbidity between pediatric attention deficit/hyperactivity disorder and post-traumatic stress disorder. *Acta Psychiatrica Scandinavica*, *128*(1), 78–87. https://doi.org/10.1111/acps.12011

Bird, G. (2025). The enduring importance of the "fine cuts" approach to psychology: EPS Mid-Career Award Lecture 2024. *Quarterly Journal of Experimental Psychology (2006)*, *78*(4), 641–646. https://doi.org/10.1177/17470218241311291

Bitsika, V., Sharpley, C. F., Vessey, K. A., & Evans, I. D. (2025). Network analysis of symptoms of generalized anxiety and autism: discrete but connected. *International Journal of Developmental Neuroscience*, *85*(1), e70006. https://doi.org/10.1002/jdn.70006

Black, M. H., Helander, J., Segers, J., Ingard, C., Bervoets, J., de Puget, V. G., & Bölte, S. (2024). Resilience in the face of neurodivergence: a scoping review of resilience and factors promoting positive outcomes. *Clinical Psychology Review*, *113*, 102487. https://doi.org/10.1016/j.cpr.2024.102487

Blehm, A. (2024). What is trauma? A critique and definition. *Journal of Theoretical and Philosophical Psychology*. https://doi.org/10.1037/teo0000274

Boesley, L., & Crane, L. (2018). 'forget the health and care and just call them education plans': sencos' perspectives on education, health and care plans. *Journal of Research* *in Special Educational Needs*, *18*(S1), 36–47. https://doi.org/10.1111/1471-3802.12416

Bower-Brown, S., Zadeh, S., & Jadva, V. (2023). Binary-trans, non-binary and gender-questioning adolescents' experiences in UK schools. *Journal of LGBT Youth*, *20*(1), 74–92. https://doi.org/10.1080/19361653.2021.1873215

Boyes, M. E., Leitão, S., Claessen, M., Badcock, N. A., & Nayton, M. (2020). Correlates of externalising and internalising problems in children with dyslexia: An analysis of data from clinical casefiles. *Australian Psychologist*, *55*(1), 62–72. https://doi.org/10.1111/ap.12409

Brady, K. T., Killeen, T. K., Brewerton, T., & Lucerini, S. (2000). Comorbidity of psychiatric disorders and posttraumatic stress disorder. *The Journal of Clinical Psychiatry*, *61 Suppl 7*, 22–32.

Brand, R. M., Rossell, S. L., Bendall, S., & Thomas, N. (2017). Can we use an interventionist-causal paradigm to untangle the relationship between trauma, ptsd and psychosis? *Frontiers in Psychology*, *8*. https://doi.org/10.3389/fpsyg.2017.00306

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Braun, V., & Clarke, V. (2022). Conceptual and design thinking for thematic analysis. *Qualitative Psychology*, *9*(1), 3–26. https://doi.org/10.1037/qup0000196

Brewin, C., & Ehlers, A. (2023). Posttraumatic Stress Disorder. In M. Kahana & A. Wagner (Eds.), *In: Kahana, M and Wagner, A, (eds.) Handbook of Human Memory: Foundations and Applications. Oxford University Press (2023).* Oxford University Press. https://global.oup.com/academic/

Brewin, C. R., Rumball, F., & Happé, F. (2019). Neglected causes of post-traumatic stress disorder. *British Medical Journal (Clinical research ed.)*, *365*, l2372. https://doi.org/10.1136/bmj.l2372

Brewin, C. R., Dalgleish, T., & Joseph, S. (1996). A dual representation theory of posttraumatic stress disorder. *Psychological Review*, *103*(4), 670–686. PubMed. https://doi.org/10.1037/0033-295x.103.4.670

Brook, J. S., Brook, D. W., Zhang, C., Seltzer, N., & Finch, S. J. (2013). Adolescent ADHD and adult physical and mental health, work performance, and financial stress. *Pediatrics*, *131*(1), 5–13. https://doi.org/10.1542/peds.2012-1725

Brosnan, M., & Gavin, J. (2023). The impact of higher levels of autistic traits on risk of hikikomori (pathological social withdrawal) in young adults. *PLOS ONE*, *18*(2), e0281833. https://doi.org/10.1371/journal.pone.0281833

Brunner, M., Nagy, G., & Wilhelm, O. (2012). A tutorial on hierarchically structured constructs. Journal of Personality, 80(4), 796–846. https://doi.org/10.1111/j.1467-6494.2011.00749.x

Buijsman, R., Begeer, S., & Scheeren, A. M. (2023). 'Autistic person' or 'person with autism'? Person-first language preference in Dutch adults with autism and parents. *Autism*, *27*(3), 788–795. https://doi.org/10.1177/13623613221117914

Burgess, A. W., & Holmstrom, L. L. (1974). Rape trauma syndrome. *The American Journal of Psychiatry*, *131*(9), 981–986. https://doi.org/10.1176/ajp.131.9.981

Bustinza, C. C., Adams, R. E., Claussen, A. H., Vitucci, D., Danielson, M. L., Holbrook, J. R., Charania, S. N., Yamamoto, K., Nidey, N., & Froehlich, T. E. (2022). Factors associated with bullying victimization and bullying perpetration in children and adolescents with ADHD: 2016 to 2017 National Survey of Children's Health. *Journal of Attention Disorders*, *26*(12), 1535–1548. https://doi.org/10.1177/10870547221085502

Butler, N., Quigg, Z., Bates, R., Jones, L., Ashworth, E., Gowland, S., & Jones, M. (2022). The contributing role of family, school, and peer supportive relationships in protecting the mental wellbeing of children and adolescents. *School Mental Health*, *14*(3), 776–788. https://doi.org/10.1007/s12310-022-09502-9

Camm-Crosbie, L., Bradley, L., Shaw, R., Baron-Cohen, S., & Cassidy, S. (2019). 'People like me don't get support': Autistic adults' experiences of support and treatment for mental health difficulties, self-injury and suicidality. *Autism*, *23*(6), 1431–1441. https://doi.org/10.1177/1362361318816053

Cao, H., Ma, R., Li, X., Liang, Y., Wu, Q., Chi, P., Li, J.-B., & Zhou, N. (2022). Childhood emotional maltreatment and adulthood romantic relationship well-being: a multilevel, meta-analytic review. *Trauma, Violence, & Abuse*, *23*(3), 778–794. https://doi.org/10.1177/1524838020975895

Cardel, D. M. I., Tong, S., Pavela, G., Dhurandhar, D. E., Miller, D., Boles, R., & Haemer, M. (2018). Youth Subjective Social Status (SSS) is associated with parent SSS, income, and food insecurity but not weight loss among low-income hispanic youth. *Obesity (Silver Spring, Md.)*, *26*(12), 1923. https://doi.org/10.1002/oby.22314

Careaga, M. B. L., Girardi, C. E. N., & Suchecki, D. (2016). Understanding posttraumatic stress disorder through fear conditioning, extinction and reconsolidation. *Neuroscience & Biobehavioral Reviews*, *71*, 48–57. https://doi.org/10.1016/j.neubiorev.2016.08.023

Carr, A., Duff, H., & Craddock, F. (2020). A systematic review of reviews of the outcome of noninstitutional child maltreatment. *Trauma, Violence, & Abuse*, *21*(4), 828–843. https://doi.org/10.1177/1524838018801334

Carruthers, S., Kinnaird, E., Rudra, A., Smith, P., Allison, C., Auyeung, B., Chakrabarti, B., Wakabayashi, A., Baron-Cohen, S., Bakolis, I., & Hoekstra, R. A. (2018). A cross-cultural study of autistic traits across India, Japan and the UK. *Molecular Autism*, *9*(1), 52. https://doi.org/10.1186/s13229-018-0235-3

Carruthers, S., Pickles, A., Charman, T., McConachie, H., Le Couteur, A., Slonims, V., Howlin, P., Collum, R., Salomone, E., Tobin, H., Gammer, I., Maxwell, J., Aldred, C., Parr, J., Leadbitter, K., & Green, J. (2024). Mediation of 6-year mid-childhood follow-up outcomes after pre-school social communication (PACT) therapy for autistic children: randomised controlled trial. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, *65*(2), 233–244. https://doi.org/10.1111/jcpp.13798

Cassidy, S., Hannant, P., Tavassoli, T., Allison, C., Smith, P., & Baron-Cohen, S. (2016). Dyspraxia and autistic traits in adults with and without autism spectrum conditions. *Molecular Autism*, *7*, 48. https://doi.org/10.1186/s13229-016-0112-x

Cavanaugh, B. (2016). Trauma-informed classrooms and schools. *Beyond Behavior*, *25*(2), 41–46. https://doi.org/10.1177/107429561602500206

Cazalis, F., Reyes, E., Leduc, S., & Gourion, D. (2022). Evidence that nine autistic women out of ten have been victims of sexual violence. *Frontiers in Behavioral Neuroscience*, *16*. https://doi.org/10.3389/fnbeh.2022.852203

Chouliara, Z., Murray, J., Coleman, A. M., Burke Draucker, C., & Choi, W. M. A. (2024). Therapeutic trust in complex trauma: a unique person-centred understanding. *Person-Centered & Experiential Psychotherapies*, *23*(2), 177–202. https://doi.org/10.1080/14779757.2023.2207107

Chown, N., Shaw, S. C., Doherty, M., Johnson, M., Krupa, J., Martin, N., & Brooker-Corcoran, M. (2022). General practitioner autism training and mandatory medical training: A cross-sectional study of GPs' knowledge, attitudes and practices. *Canadian Journal of Educational and Social Studies*, *3*(1), 1–16.

Clarke, L., & Fung, L. K. (2022). The impact of autism-related training programs on physician knowledge, self-efficacy, and practice behavior: a systematic review. *Autism*, *26*(7), 1626–1640. https://doi.org/10.1177/13623613221102016

Closson, K., Boyce, S. C., Johns, N., Inwards-Breland, D. J., Thomas, E. E., & Raj, A. (2024). Physical, sexual, and intimate partner violence among transgender and gender-diverse individuals. *JAMA Network Open*, *7*(6), e2419137. https://doi.org/10.1001/jamanetworkopen.2024.19137

Cochrane, H., & Soni, A. (2020). Education, health and care plans: what do we know so far? *Support for Learning*, *35*(3), 372–388. https://doi.org/10.1111/1467-9604.12316

Coleman, O., Baldwin, J. R., Dalgleish, T., Rose-Clarke, K., Widom, C. S., & Danese, A. (2024). Research Review: Why do prospective and retrospective measures of maltreatment differ? A narrative review. *Journal of Child Psychology and Psychiatry*, *65*. https://doi.org/10.1111/jcpp.14048

Colizzi, M., Lasalvia, A., & Ruggeri, M. (2020). Prevention and early intervention in youth mental health: is it time for a multidisciplinary and trans-diagnostic model for care? *International Journal of Mental Health Systems*, *14*(1), 23. https://doi.org/10.1186/s13033-020-00356-9

Constantino, J. N., & Todd, R. D. (2003). Autistic traits in the general population: a twin study. *Archives of General Psychiatry*, *60*(5), 524–530. https://doi.org/10.1001/archpsyc.60.5.524

Cook, A. (2024). Conceptualisations of neurodiversity and barriers to inclusive pedagogy in schools: a perspective article. *Journal of Research in Special Educational Needs*, *24*(3), 627–636. https://doi.org/10.1111/1471-3802.12656

Cook, J., Hull, L., & Mandy, W. (2024). Improving diagnostic procedures in autism for girls and women: a narrative review. *Neuropsychiatric Disease and Treatment*, *20*, 505–514. https://doi.org/10.2147/NDT.S372723

Cooke, A. N., & Halberstadt, A. G. (2021). Adultification, anger bias, and adults' different perceptions of black and white children. *Cognition & Emotion*, *35*(7), 1416–1422. https://doi.org/10.1080/02699931.2021.1950127

Cooke, K., Ridgway, K., Pecora, L., Westrupp, E. M., Hedley, D., Hooley, M., & Stokes, M. A. (2025). Gender differences in the prevalence of autistic experiences of interpersonal violence: a mixed methods systematic review and meta-analysis. *Review Journal of Autism and Developmental Disorders*. https://doi.org/10.1007/s40489-025-00498-x

Cooper, K., Russell, A. J., Lei, J., & Smith, L. G. (2023). The impact of a positive autism identity and autistic community solidarity on social anxiety and mental health in autistic young people. *Autism*, *27*(3), 848–857. https://doi.org/10.1177/13623613221118351

Cooper, K., Smith, L. G. E., & Russell, A. (2017). Social identity, self-esteem, and mental health in autism. *European Journal of Social Psychology*, *47*(7), 844–854. https://doi.org/10.1002/ejsp.2297

Copeland, W. E., Shanahan, L., Hinesley, J., Chan, R. F., Aberg, K. A., Fairbank, J. A., van den Oord, E. J. C. G., & Costello, E. J. (2018). Association of childhood trauma exposure with adult psychiatric disorders and functional outcomes. *JAMA Network Open*, *1*(7), e184493. https://doi.org/10.1001/jamanetworkopen.2018.4493

Corbett, B. A., Muscatello, R. A., Klemencic, M. E., West, M., Kim, A., & Strang, J. F. (2023). Greater Gender Diversity among Autistic Children by Self Report and Parent Report. *Autism*, *27*(1), 158–172. https://doi.org/10.1177/13623613221085337

Crane, L., Adams, F., Harper, G., Welch, J., & Pellicano, E. (2019). 'Something needs to change': mental health experiences of young autistic adults in England. *Autism*, *23*(2), 477–493. https://doi.org/10.1177/1362361318757048

Crane, L., Chester, J. W., Goddard, L., Henry, L. A., & Hill, E. (2016). Experiences of autism diagnosis: a survey of over 1000 parents in the United Kingdom. *Autism*, *20*(2), 153–162. https://doi.org/10.1177/1362361315573636

Cresswell, L., Hinch, R., & Cage, E. (2019). The experiences of peer relationships amongst autistic adolescents: a systematic review of the qualitative evidence. *Research in Autism Spectrum Disorders*, *61*, 45–60. https://doi.org/10.1016/j.rasd.2019.01.003

Crompton, C. J., Fotheringham, F., Cebula, K., Webber, C., Foley, S., & Fletcher-Watson, S. (2024). Neurodivergent-designed and neurodivergent-led peer support in school: a feasibility and acceptability study of the neurodivergent peer support toolkit (NEST). *Neurodiversity*, *2*, 27546330241275248. https://doi.org/10.1177/27546330241275248

Crowson, S., Poole, D., Scargill, K., & Freeth, M. (2024). Understanding the post-diagnostic support priorities of autistic adults in the United Kingdom: a co-produced modified Delphi study. *Autism*, *28*(4), 854–865. https://doi.org/10.1177/13623613231196805

Dahoun, T., Peel, A., Baldwin, J., Coleman, O., Lewis, S. J., Wertz, J., Rijsdijk, F., & Danese, A. (2024). Genetic and environment influences on childhood victimization: a systematic review and meta-analysis. *Molecular Psychiatry*, 1–11. https://doi.org/10.1038/s41380-024-02868-z

Danese, A., Asmussen, K., MacLeod, J., Meehan, A., Sears, J., Slopen, N., Smith, P., & Sweeney, A. (2024). Revisiting the use of adverse childhood experience screening in healthcare settings. *Nature Reviews Psychology*, *3*(11), 729–740. https://doi.org/10.1038/s44159-024-00362-5

Danese, A., McLaughlin, K. A., Samara, M., & Stover, C. S. (2020). Psychopathology in children exposed to trauma: detection and intervention needed to reduce downstream burden. *British Medical Journal*, *371*, m3073. https://doi.org/10.1136/bmj.m3073

Danese, A., & Widom, C. S. (2020). Objective and subjective experiences of child maltreatment and their relationships with psychopathology. *Nature Human Behaviour*, *4*(8), 811–818. https://doi.org/10.1038/s41562-020-0880-3

Davidson, C., Moran, H., & Minnis, H. (2022). Autism and attachment disorders – how do we tell the difference? *British Journal of Psychiatry Advances*, *28*(6), 371–380. https://doi.org/10.1192/bja.2022.2

Davidson, C., O'Hare, A., Mactaggart, F., Green, J., Young, D., Gillberg, C., & Minnis, H. (2015). Social relationship difficulties in autism and reactive attachment disorder: Improving diagnostic validity through structured assessment. *Research in Developmental Disabilities*, *40*, 63–72. https://doi.org/10.1016/j.ridd.2015.01.007

Davies, J., Redmayne, B., Allain, L., Portway, L., Mandy, W., Cooper, K., & Crane, L. (2024). The codesign and initial evaluation of a peer support program for autistic young adults. *Autism in Adulthood*, aut.2023.0153. https://doi.org/10.1089/aut.2023.0153

Day, A. G., Somers, C. L., Baroni, B. A., West, S. D., Sanders, L., & Peterson, C. D. (2015). Evaluation of a trauma-informed school intervention with girls in a residential facility school: student perceptions of school environment. *Journal of Aggression, Maltreatment & Trauma*, *24*(10), 1086–1105. https://doi.org/10.1080/10926771.2015.1079279

Deb, S. (Shoumi), Retzer, A., Roy, M., Acharya, R., Limbu, B., & Roy, A. (2020). The effectiveness of parent training for children with autism spectrum disorder: A systematic review and meta-analyses. *BioMed Central Psychiatry*, *20*(1), 583. https://doi.org/10.1186/s12888-020-02973-7

Dekkers, T. J., Hornstra, R., van der Oord, S., Luman, M., Hoekstra, P. J., Groenman, A. P., & van den Hoofdakker, B. J. (2022). Meta-analysis: which components of parent training work for children with attention-deficit/hyperactivity disorder? *Journal of the American Academy of Child & Adolescent Psychiatry*, *61*(4), 478–494. https://doi.org/10.1016/j.jaac.2021.06.015

Dell'Osso, L., Amatori, G., Giovannoni, F., Massimetti, E., Cremone, I. M., & Carpita, B. (2024). Rumination and altered reactivity to sensory input as vulnerability factors for developing post-traumatic stress symptoms among adults with autistic traits. *CNS Spectrums*, *29*(2), 119–125. https://doi.org/10.1017/S1092852924000014

Department for Education. (2024). *Special educational needs in England, Academic year 2023/24*. https://explore-education-statistics.service.gov.uk/find-statistics/sp ecial-educational-needs-in-england

Department of Education. (2023). *Transforming children and young people's mental health implementation programme; Data release*. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1156762/Transforming_CYPMH_implementation_programme__data_release_May_2023.pdf

Department of Education. (2024, October). Special education schools and colleges in England: policy and challenges in the special educational needs sector. *House of Lords Library*. https://lordslibrary.parliament.uk/special-education-schools-and-colleges-in-england-policy-and-challenges-in-the-special-educational-needs- sector/#fn-9

Dettori, J. R., Norvell, D. C., & Chapman, J. R. (2018). The Sin of Missing Data: Is All Forgiven by Way of Imputation? *Global Spine Journal*, *8*(8), 892–894. https://doi.org/10.1177/2192568218811922

Di Marco, A., Grewal, R., Colangeli, T., & Rupert, A. (2025). A scoping review of autistic children's neurological, cognitive, and psychological responses to trauma. *Topics in Language Disorders*, *45*(1), 60–76. https://doi.org/10.1097/TLD.0000000000000350

Dike, J. E., DeLucia, E. A., Semones, O., Andrzejewski, T., & McDonnell, C. G. (2023). A Systematic review of sexual violence among autistic individuals. *Review Journal of Autism and Developmental Disorders*, *10*(3), 576–594. https://doi.org/10.1007/s40489-022-00310-0

Dilly, L. J., & Pavlov, A. (2022). Assessing students in foster care for autism spectrum disorders. *Psychology in the Schools*, *59*(7), 1402–1418. https://doi.org/10.1002/pits.22657

Dingwall, N., & Sebba, J. (2018). Evaluation of The Attachment Aware Schools Programme Final Report. University of Oxford, Rees Centre. https://www.education.ox.ac.uk/wp-content/uploads/2019/06/Bath-and-NE-Somerset-Attachment-Aware-Schools-Programme-Evaluation-report.pdf

Dion, J., Paquette, G., De La Sablonnière-Griffin, M., Argumedes, M., Martin-Storey, A., Bolduc, M.-L., Hélie, S., & Bussières, È.-L. (2024). Forms and correlates of child maltreatment among autistic children involved in child protection services. *Frontiers in Child and Adolescent Psychiatry*, *3*. https://doi.org/10.3389/frcha.2024.1386781

Douglas, S., & Sedgewick, F. (2024). Experiences of interpersonal victimization and abuse among autistic people. *Autism*, *28*(7), 1732–1745. https://doi.org/10.1177/13623613231205630

Dworkin, E. R., Menon, S. V., Bystrynski, J., & Allen, N. E. (2017). Sexual assault victimization and psychopathology: A review and meta-analysis. *Clinical Psychology Review*, *56*, 65–81. https://doi.org/10.1016/j.cpr.2017.06.002

Eccleston, L., Williams, J., Knowles, S., & Soulsby, L. (2019). Adolescent experiences of living with a diagnosis of ADHD: A systemati c review and thematic synthesis. *Emotional and Behavioural Difficulties*, *24*(2), 119–135. https://doi.org/10.1080/13632752.2019.1582762

Eckstein-Madry, T., Piskernik, B., & Ahnert, L. (2021). Attachment and stress regulation in socioeconomically disadvantaged children: can public childcare compensate? *Infant Mental Health Journal*, *42*(6), 839–850. https://doi.org/10.1002/imhj.21878

Ehlers, A., & Clark, D. M. (2000). A cognitive model of posttraumatic stress disorder. *Behaviour Research and Therapy*, *38*(4), 319–345.

Eichhorn, S., Brähler, E., Franz, M., Friedrich, M., & Glaesmer, H. (2014). Traumatic experiences, alexithymia, and posttraumatic symptomatology: a cross-sectional population-based study in Germany. *European Journal of Psychotraumatology*, *5*, 10.3402/ejpt.v5.23870. https://doi.org/10.3402/ejpt.v5.23870

Elias, R., & Lord, C. (2022). Diagnostic stability in individuals with autism spectrum disorder: insights from a longitudinal follow-up study. *Journal of Child Psychology and Psychiatry*, *63*(9), 973–983. https://doi.org/10.1111/jcpp.13551

Evans, J. A., Krumrei-Mancuso, E. J., & Rouse, S. V. (2024). What you are hiding could be hurting you: autistic masking in relation to mental health, interpersonal trauma, authenticity, and self-esteem. *Autism in Adulthood*, *6*(2), 229–240. https://doi.org/10.1089/aut.2022.0115

Evje, J., Fluit, S., & Soest, T. (2024). Transgender people experience more discrimination and violence than cisgender lesbian, gay, or bisexual people: a multilevel analysis across 30 European countries. *International Journal of Transgender Health*, *0*(0), 1–15. https://doi.org/10.1080/26895269.2024.2440856

Faraone, S. V., & Larsson, H. (2019). Genetics of attention deficit hyperactivity disorder. *Molecular Psychiatry*, *24*(4), 562–575. https://doi.org/10.1038/s41380-018-0070-0

Fares-Otero, N. E., Sharp, T. H., Balle, S. R., Quaatz, S. M., Vieta, E., Åhs, F., Allgaier, A.-K., Arévalo, A., Bachem, R., Belete, H., Mossie, T. B., Berzengi, A., Capraz, N., Ceylan, D., Dukes, D., Essadek, A., Iqbal, N., Jobson, L., Levy-Gigi, E., … Halligan, S. L. (2024). Social support and (complex) posttraumatic stress symptom severity: does gender matter? *European Journal of Psychotraumatology*, *15*(1), 2398921. https://doi.org/10.1080/20008066.2024.2398921

Farooq, B., Allen, K., Russell, A. E., Howe, L. D., & Mars, B. (2024). The association between poverty and longitudinal patterns of adverse childhood experiences across childhood and adolescence: Findings from a prospective population-based cohort study in the UK. *Child Abuse & Neglect*, *156*, 107014. https://doi.org/10.1016/j.chiabu.2024.107014

Fergusson, E., Reed-Purvis, S., & Foulkes, L. (2023). Overmedicalization of young people's distress is undermining and disem powering families. *Nature Mental Health*, *1*(6), 381–382.

Ferretti, F., Adornetti, I., Chiera, A., Nicchiarelli, S., Valeri, G., Magni, R., Vicari, S., & Marini, A. (2018). Time and narrative: an investigation of storytelling abilities in children with autism spectrum disorder. *Frontiers in Psychology*, *9*. https://doi.org/10.3389/fpsyg.2018.00944

Fielding, C., Streeter, A., Riby, D. M., & Hanley, M. (2025). Neurodivergent pupils' experiences of school distress and attendance difficulties. *Neurodiversity*, *3*, 27546330251327056. https://doi.org/10.1177/27546330251327056

Flackhill, C., James, S., Soppitt, R., & Milton, K. (2017). The Coventry Grid Interview (CGI): exploring autism and attachment difficulties. *Good Autism Practice*, *18*(1), 62–80.

Fletcher-Watson, S., & Happé, F. (2019). *Autism: a new introduction to psychological theory and current debate* (2nd ed.). Routledge. https://doi.org/10.4324/9781315101699

Fogler, J. M., Weaver, A. L., Katusic, S., Voigt, R. G., & Barbaresi, W. J. (2022). Recalled experiences of bullying and victimization in a longitudinal, population-based birth cohort: the influence of ADHD and co-occurring psychiatric disorder. *Journal of Attention Disorders*, *26*(1), 15–24. https://doi.org/10.1177/1087054720969981

Fondren, K., Lawson, M., Speidel, R., McDonnell, C. G., & Valentino, K. (2020). Buffering the effects of childhood trauma within the school setting: a systematic review of trauma-informed and trauma-responsive interventions among trauma-affected youth. *Children and Youth Services Review*, *109*. Scopus. https://doi.org/10.1016/j.childyouth.2019.104691

Foulkes, L., & Andrews, J. L. (2023). Are mental health awareness efforts contributing to the rise in reported mental health problems? A call to test the prevalence inflation hypothesis. *New Ideas in Psychology*, *69*, 101010. https://doi.org/10.1016/j.newideapsych.2023.101010

Foulkes, L., & Blakemore, S.-J. (2021). Individual differences in adolescent mental health during COVID-19: the importance of peer relationship quality. *Neuron*, *109*(20), 3203–3205. https://doi.org/10.1016/j.neuron.2021.07.027

Fraga, S., Soares, S., Peres, F. S., & Barros, H. (2022). Household dysfunction is associated with bullying behavior in 10-year-old children: do socioeconomic circumstances matter?. *Journal of interpersonal violence*, 37(15-16), NP13877–NP13901. https://doi.org/10.1177/08862605211006352

Frith, U., & Happé, F. (1994). Autism: beyond 'theory of mind'. *Cognition*, *50*(1–3), 115–132. https://doi.org/10.1016/0010-0277(94)90024-8

Fuller-Thomson, E., & Hooper, S. R. (2015). The association between childhood physical abuse and dyslexia: findings from a population-based study. *Journal of*

Interpersonal Violence, *30*(9), 1583–1592. https://doi.org/10.1177/0886260514540808

Galatzer-Levy, I. R., & Bryant, R. A. (2013). 636,120 Ways to have posttraumatic stress disorder. *Perspectives on Psychological Science: A Journal of the Association for Psychological Science*, *8*(6), 651–662. https://doi.org/10.1177/1745691613504115

Gale, N. K., Heath, G., Cameron, E., Rashid, S., & Redwood, S. (2013). Using the framework method for the analysis of qualitative data in multi-disciplinary health research. *BMC Medical Research Methodology*, *13*(1), 117. https://doi.org/10.1186/1471-2288-13-117

Galvan, M. J., Payne, B. K., Hannay, J., Georgeson, A. R., & Muscatell, K. A. (2023). What does the macarthur scale of subjective social status measure? Separating economic circumstances and social status to predict health. *Annals of Behavioral Medicine*, *57*(11), 929–941. https://doi.org/10.1093/abm/kaad054

Gautam, N., Dessie, G., Rahman, M. M., & Khanam, R. (2023). Socioeconomic status and health behavior in children and adolescents: A systematic literature review. *Frontiers in Public Health, 11,* 1228632. https://doi.org/10.3389/fpubh.2023.1228632

Geoffroy, M.-C., Boivin, M., Arseneault, L., Renaud, J., Perret, L. C., Turecki, G., Michel, G., Salla, J., Vitaro, F., Brendgen, M., Tremblay, R. E., & Côté, S. M. (2018). Childhood trajectories of peer victimization and prediction of mental health outcomes in mid-adolescence: A longitudinal population-based study. *CMAJ*, *190*(2), E37–E43. https://doi.org/10.1503/cmaj.170219

Georgiades, S., Tait, P. A., McNicholas, P. D., Duku, E., Zwaigenbaum, L., Smith, I. M., Bennett, T., Elsabbagh, M., Kerns, C. M., Mirenda, P., Ungar, W. J., Vaillancourt, T., Volden, J., Waddell, C., Zaidman-Zait, A., Gentles, S., & Szatmari, P. (2022). Trajectories of symptom severity in children with autism: variability and turning points through the transition to school. *Journal of Autism and Developmental Disorders*, *52*(1), 392–401. https://doi.org/10.1007/s10803-021-04949-2

Georgiou, G. K., Parrila, R., & McArthur, G. (2024). Dyslexia and mental health problems: Introduction to the special issue. *Annals of Dyslexia*, *74*(1), 1–3. https://doi.org/10.1007/s11881-024-00300-3

Ghafoori, B., Barragan, B., & Palinkas, L. (2013). Gender disparities in the mental health of urban survivors of trauma. *Journal of Aggression, Maltreatment & Trauma*, *22*(9), 950–963. https://doi.org/10.1080/10926771.2013.835016

Giserman-Kiss, I., & Carter, A. S. (2020). Stability of autism spectrum disorder in young children with diverse backgrounds. *Journal of Autism and Developmental Disorders*, *50*(9), 3263–3275. https://doi.org/10.1007/s10803-019-04138-2

Golan, O., Haruvi-Lamdan, N., Laor, N., & Horesh, D. (2022). The comorbidity between autism spectrum disorder and post-traumatic stress disorder is mediated by brooding rumination. *Autism*, *26*(2), 538–544. NLM. https://doi.org/10.1177/13623613211035240

Goldsmith, L. (2021). Using framework analysis in applied qualitative research. *The Qualitative Report*, *26*(6), 2061–2076. https://doi.org/10.46743/2160-3715/2021.5011

Goodall, C. (2018). 'I felt closed in and like I couldn't breathe': a qualitative study exploring the mainstream educational experiences of autistic young people. *Autism & Developmental Language Impairments*, *3*, 2396941518804407. https://doi.org/10.1177/2396941518804407

Goodman, E., Adler, N. E., Kawachi, I., Frazier, A. L., Huang, B., & Colditz, G. A. (2001). Adolescents' perceptions of social status: development and evaluation of a new indicator. *Pediatrics*, *108*(2), e31. https://doi.org/10.1542/peds.108.2.e31

Gould, J. (2017). Towards understanding the under-recognition of girls and women on the autism spectrum. *Autism*, *21*(6), 703–705. https://doi.org/10.1177/1362361317706174

Gradus, J. L., & Galea, S. (2022). Reconsidering the definition of trauma. *The Lancet. Psychiatry*, *9*(8), 608–609. https://doi.org/10.1016/S2215-0366(22)00196-1

Grapel, J. N., Cicchetti, D. V., & Volkmar, F. R. (2015). Sensory features as diagnostic criteria for autism: sensory features in autism. *The Yale Journal of Biology and Medicine*, *88*(1), 69–71. PubMed Central.

Green, J., Charman, T., McConachie, H., Aldred, C., Slonims, V., Howlin, P., Le Couteur, A., Leadbitter, K., Hudry, K., Byford, S., Barrett, B., Temple, K., Macdonald, W., Pickles, A., & PACT Consortium. (2010). Parent-mediated communication-focused treatment in children with autism (PACT): a randomised controlled trial. *Lancet (London, England)*, *375*(9732), 2152–2160. https://doi.org/10.1016/S0140-6736(10)60587-9

Grove, R., Clapham, H., Moodie, T., Gurrin, S., & Hall, G. (2024). 'nothing about us, without us': research priorities for autistic girls, women and gender diverse people in australia. *Journal of Autism and Developmental Disorders*. https://doi.org/10.1007/s10803-024-06330-5

Grummitt, L., Barrett, E., Kelly, E., & Newton, N. (2022). An umbrella review of the links between adverse childhood experiences and substance misuse: what, why, and where do we go from here? *Substance Abuse and Rehabilitation*, *13*(null), 83–100. tandfonline.com (Atypon). https://doi.org/10.2147/SAR.S341818

Guerra, G. C., Positano, M. T., Sperati, A., Passaquindici, I., Logrieco, M. G., Lionetti, F., Spinelli, M., & Fasolo, M. (2025). Supporting parents of children with learning disorders: A systematic review of intervention strategies. *Frontiers in Psychology*, *16*. https://doi.org/10.3389/fpsyg.2025.1536894

Haan, A. de, Meiser-Stedman, R., Landolt, M. A., Kuhn, I., Black, M. J., Klaus, K., Patel, S. D., Fisher, D. J., Haag, C., Ukoumunne, O. C., Jones, B. G., Flaiyah, A. M., Catani, C., Dawson, K., Bryant, R. A., Roos, C. de, Ertl, V., Foa, E. B., Ford, J. D., … Dalgleish, T. (2024). Efficacy and moderators of efficacy of cognitive behavioural therapies with a trauma focus in children and adolescents: an individual participant data meta-analysis of randomised trials. *The Lancet Child & Adolescent Health*, *8*(1), 28–39. https://doi.org/10.1016/S2352-4642(23)00253-5

Hagenaars, M. A., Engelhard, I. M., & Putman, P. (2016). Eye for detail: Local versus global visual processing style predicts the development of re-experiencing after analogue trauma. *Journal of Experimental Psychopathology*, *7*(3), 391–403. https://doi.org/10.5127/jep.052215

Hallett, V., Ronald, A., Colvert, E., Ames, C., Woodhouse, E., Lietz, S., Garnett, T., Gillan, N., Rijsdijk, F., Scahill, L., Bolton, P., & Happé, F. (2013). Exploring anxiety symptoms in a large-scale twin study of children with autism spectrum disorders, their co-twins and controls. *Journal of Child Psychology and Psychiatry*, *54*(11), 1176–1185. https://doi.org/10.1111/jcpp.12068

Halligan, S. L., Michael, T., Clark, D. M., & Ehlers, A. (2003). Posttraumatic stress disorder following assault: The role of cognitive processing, trauma memory, and appraisals. *Journal of Consulting and Clinical Psychology*, *71*(3), 419–431. Scopus. https://doi.org/10.1037/0022-006X.71.3.419

Hamilton, L. G., & Petty, S. (2023). Compassionate pedagogy for neurodiversity in higher education: A conceptual analysis. *Frontiers in Psychology*, *14*. https://doi.org/10.3389/fpsyg.2023.1093290

Han, E., Scior, K., Avramides, K., & Crane, L. (2022). A systematic review on autistic people's experiences of stigma and coping strategies. *Autism Research, 15*(1), 12–26. https://doi.org/10.1002/aur.2652

Happé, F., & Frith, U. (2006). The weak coherence account: detail-focused cognitive style in autism spectrum disorders. *Journal of Autism and Developmental Disorders*, *36*(1), 5–25. https://doi.org/10.1007/s10803-005-0039-0

Haraguchi, H., Stickley, A., Saito, A., Takahashi, H., & Kamio, Y. (2019). Stability of autistic traits from 5 to 8 years of age among children in the general population. *Journal of Autism and Developmental Disorders*, *49*(1), 324–334. https://doi.org/10.1007/s10803-018-3770-z

Hardcastle, K., Bellis, M. A., Ford, K., Hughes, K., Garner, J., & Ramos Rodriguez, G. (2018). Measuring the relationships between adverse childhood experiences and educational and employment success in England and Wales: Findings from a retrospective study. *Public Health*, *165*, 106–116. https://doi.org/10.1016/j.puhe.2018.09.014

Harnois, C. E., Bastos, J. L., Campbell, M. E., & Keith, V. M. (2019). Measuring perceived mistreatment across diverse social groups: an evaluation of the Everyday Discrimination Scale. *Social Science & Medicine*, *232*, 298–306. https://doi.org/10.1016/j.socscimed.2019.05.011

Harrison, A. J., Bradshaw, L. P., Naqvi, N. C., Paff, M. L., & Campbell, J. M. (2017). Development and psychometric evaluation of the Autism Stigma and Knowledge Questionnaire (ASK-Q). *Journal of Autism and Developmental Disorders*, *47*(10), 3281–3295. https://doi.org/10.1007/s10803-017-3242-x

Harrison, A. J., Madison, M., Naqvi, N., Bowman, K., & Campbell, J. (2025). The development of the Autism Stigma and Knowledge Questionnaire, Second edition (ASK-Q-2), through a cross-cultural psychometric investigation. *Autism*, *29*(1), 195–206. https://doi.org/10.1177/13623613241270916

Hartley, G., Sirois, F., Purrington, J., & Rabey, Y. (2024). Adverse childhood experiences and autism: a meta-analysis. *Trauma, Violence & Abuse*, *25*(3), 2297–2315. https://doi.org/10.1177/15248380231213314

Haruvi-Lamdan, N., Horesh, D., Zohar, S., Kraus, M., & Golan, O. (2020). Autism Spectrum Disorder and Post-Traumatic Stress Disorder: an unexplored co-occurrence of conditions. *Autism*, *24*(4), 884–898. https://doi.org/10.1177/1362361320912143

Haruvi-Lamdan, N., Lebendiger, S., Golan, O., & Horesh, D. (2019). Are PTSD and autistic traits related? An examination among typically developing Israeli adults. *Comprehensive Psychiatry*, *89*, 22–27. https://doi.org/10.1016/j.comppsych.2018.11.004

Haslam, N., Dakin, B. C., Fabiano, F., McGrath, M. J., Rhee, J., Vylomova, E., Weaving, M., & Wheeler, M. A. (2020). Harm inflation: making sense of concept creep. *European Review of Social Psychology*, *31*(1), 254–286. tandfonline.com (Atypon). https://doi.org/10.1080/10463283.2020.1796080

He, C., Levis, B., Riehm, K. E., Saadat, N., Levis, A. W., Azar, M., Rice, D. B., Krishnan, A., Wu, Y., Sun, Y., Imran, M., Boruff, J., Cuijpers, P., Gilbody, S., Ioannidis, J. P. A., Kloda, L. A., McMillan, D., Patten, S. B., Shrier, I., … Benedetti, A. (2019). The Accuracy of the Patient Health Questionnaire-9 Algorithm for screening to detect major depression: an individual participant data meta-analysis. *Psychotherapy and Psychosomatics*, *89*(1), 25–37. https://doi.org/10.1159/000502294

Healey, P., Stager, M. L., Woodmass, K., Dettlaff, A. J., Vergara, A., Janke, R., & Wells, S. J. (2017). Cultural adaptations to augment health and mental health services: A systematic review. *BMC Health Services Research*, *17*(1), 8. https://doi.org/10.1186/s12913-016-1953-x

Heatherton, T. F., Kozlowski, L. T., Frecker, R. C., & Fagerström, K. O. (1991). The Fagerström Test for Nicotine Dependence: A revision of the Fagerström Tolerance Questionnaire. *British Journal of Addiction,* 86(9), 1119–1127. https://doi.org/10.1111/j.1360-0443.1991.tb01879.x

Hediger, K., Wagner, J., Künzi, P., Haefeli, A., Theis, F., Grob, C., Pauli, E., & Gerger, H. (2021). Effectiveness of animal-assisted interventions for children and adults with post-traumatic stress disorder symptoms: A systematic review and meta-analysis. *European Journal of Psychotraumatology*, *12*(1), 1879713. https://doi.org/10.1080/20008198.2021.1879713

Herd, T., Haag, A.-C., Selin, C., Palmer, L., S., S., Strong-Jones, S., Jackson, Y., Bensman, H. E., & Noll, J. G. (2023). Individual and social risk and protective factors as predictors of trajectories of post-traumatic stress symptoms in adolescents. *Research on Child and Adolescent Psychopathology*, *51*(12), 1739–1751. https://doi.org/10.1007/s10802-022-00960-y

Hiller, R. M., Meiser-Stedman, R., Elliott, E., Banting, R., & Halligan, S. L. (2021). A longitudinal study of cognitive predictors of (complex) post-traumatic stress in young people in out-of-home care. *Journal of Child Psychology and Psychiatry*, *62*(1), 48–57. https://doi.org/10.1111/jcpp.13232

Hoge, C. W., Yehuda, R., Castro, C. A., McFarlane, A. C., Vermetten, E., Jetly, R., Koenen, K. C., Greenberg, N., Shalev, A. Y., Rauch, S. A. M., Marmar, C. R., & Rothbaum, B. O. (2016). Unintended consequences of changing the definition of posttraumatic stress disorder in DSM-5: critique and call for action. *JAMA Psychiatry*, *73*(7), 750–752. https://doi.org/10.1001/jamapsychiatry.2016.0647

Hoksbergen, R., Laak, J. ter, Rijk, K., van Dijkum, C., & Stoutjesdijk, F. (2005). Post-institutional autistic syndrome in romanian adoptees. *Journal of Autism and Developmental Disorders*, *35*(5), 615–623. https://doi.org/10.1007/s10803-005-0005-x

Hollins, S., Lodge, K.-M., & Lomax, P. (2019). The case for removing intellectual disability and autism from the Mental Health Act. *The British Journal of Psychiatry*, *215*(5), 633–635. https://doi.org/10.1192/bjp.2019.26

Hollocks, M. J., Lerh, J. W., Magiati, I., Meiser-Stedman, R., & Brugha, T. S. (2019). Anxiety and depression in adults with autism spectrum disorder: a systematic review and meta-analysis. *Psychological Medicine*, *49*(4), 559–572. https://doi.org/10.1017/S0033291718002283

Holmes, L. G., Ofei, L. M., Bair-Merritt, M. H., Palmucci, P. L., & Rothman, E. F. (2022). A Systematic review of randomized controlled trials on healthy relationship skills and sexual health for autistic youth. *Review Journal of Autism and Developmental Disorders*, *9*(4), 555–570. https://doi.org/10.1007/s40489-021-00274-7

Holmes, S. C., Facemire, V. C., & DaFonseca, A. M. (2016). Expanding criterion A for posttraumatic stress disorder: considering the deleterious impact of oppression. *Traumatology*, *22*(4), 314–321. https://doi.org/10.1037/trm0000104

Hoover, D. W., & Kaufman, J. (2018). Adverse childhood experiences in children with autism spectrum disorder. *Current Opinion in Psychiatry*, *31*(2), 128–132. https://doi.org/10.1097/yco.0000000000000390

Hoppen, T. H., Wessarges, L., Jehn, M., Mutz, J., Kip, A., Schlechter, P., Meiser-Stedman, R., & Morina, N. (2025). Psychological interventions for pediatric posttraumatic stress disorder: a systematic review and network meta-analysis. *JAMA Psychiatry*, *82*(2), 130–141. https://doi.org/10.1001/jamapsychiatry.2024.3908

Horgan, F., Kenny, N., & Flynn, P. (2023). A systematic review of the experiences of autistic young people enrolled in mainstream second-level (post-primary) schools. *Autism*, *27*(2), 526–538. https://doi.org/10.1177/13623613221105089

Hosozawa, M., Bann, D., Fink, E., Elsden, E., Baba, S., Iso, H., & Patalay, P. (2021). Bullying victimisation in adolescence: prevalence and inequalities by gender, socioeconomic status and academic performance across 71 countries. *eClinicalMedicine*, *41*. https://doi.org/10.1016/j.eclinm.2021.101142

Huda, A. S. (2021). The medical model and its application in mental health. *International Review of Psychiatry*. https://www.tandfonline.com/doi/abs/10.1080/09540261.2020.1845125

Hughes, K., Bellis, M. A., Hardcastle, K. A., Sethi, D., Butchart, A., Mikton, C., Jones, L., & Dunne, M. P. (2017). The effect of multiple adverse childhood experiences on health: a systematic review and meta-analysis. *The Lancet Public Health*, *2*(8), e356–e366. https://doi.org/10.1016/S2468-2667(17)30118-4

Hultmann, O., Broberg, A. G., & Axberg, U. (2023). A randomized controlled study of trauma focused cognitive behavioural therapy compared to enhanced treatment as usual with patients in child mental health care traumatized from family violence. *Children and Youth Services Review*, *144*, 106716. https://doi.org/10.1016/j.childyouth.2022.106716

Hunsche, M. C., Cervin, M., Storch, E. A., Kendall, P. C., Wood, J. J., & Kerns, C. M. (2022). Social functioning and the presentation of anxiety in children on the autism spectrum: a multimethod, multi-informant analysis. *Journal of Psychopathology and Clinical Science*, *131*(2), 198–208. https://doi.org/10.1037/abn0000724

Hwang, S., Kim, Y. S., Koh, Y.-J., & Leventhal, B. L. (2018). Autism spectrum disorder and school bullying: who is the victim? who is the perpetrator? *Journal of Autism and Developmental Disorders*, *48*(1), 225–238. https://doi.org/10.1007/s10803-017-3285-z

Hyland, P., Karatzias, T., Shevlin, M., McElroy, E., Ben-Ezra, M., Cloitre, M., & Brewin, C. R. (2021). Does requiring trauma exposure affect rates of ICD-11 PTSD and complex PTSD? Implications for DSM-5. *Psychological Trauma: Theory, Research, Practice and Policy*, *13*(2), 133–141. https://doi.org/10.1037/tra0000908

İme, Y. (2025). The link between bullying victimization and mental well-being: Self-compassion and emotional flexibility as mediators among adolescents. *Current Psychology*, *44*(5), 3033–3043. https://doi.org/10.1007/s12144-025-07378-x

Irwin, A., Li, J., Craig, W., & Hollenstein, T. (2019). The role of shame in the relation between peer victimization and mental health outcomes. *Journal of Interpersonal Violence*, *34*(1), 156–181. https://doi.org/10.1177/0886260516672937

Jadav, N., & Bal, V. H. (2022). Associations between co-occurring conditions and age of autism diagnosis: Implications for mental health training and adult autism research. *Autism Research*, *15*(11), 2112–2125. https://doi.org/10.1002/aur.2808

Jaen, J., Lovett, S. M., Lajous, M., Keyes, K. M., & Stern, D. (2023). Adverse childhood experiences and adult outcomes using a causal framework perspective: Challenges and opportunities. *Child Abuse & Neglect*, *143*, 106328. https://doi.org/10.1016/j.chiabu.2023.106328

Jahans-Baynton, K., & Grealish, A. (2022). Safeguarding communications between multiagency professionals when working with children and young people: A qualitative study. *Journal of Child and Adolescent Psychiatric Nursing, 35*(2), 171–178. https://doi.org/10.1111/jcap.12363

Jeanneret, N., Courcy, I., Caron, V., Giroux, M., Guerrero, L., Ouimet, M., d'Arc, B. F., & Soulières, I. (2022). Discrimination and victimization as mediators between social support and psychological distress in autistic adults. *Research in Autism Spectrum Disorders*, *98*, 102038. https://doi.org/10.1016/j.rasd.2022.102038

Jensen, T. K., Braathu, N., Birkeland, M. S., Ormhaug, S. M., & Skar, A.-M. S. (2022). Complex PTSD and treatment outcomes in TF-CBT for youth: a naturalistic study. *European Journal of Psychotraumatology*, *13*(2), 2114630. https://doi.org/10.1080/20008066.2022.2114630

Jolliffe, R., Adams, D., & Simpson, K. (2023). Trait anxiety in individuals on the autism spectrum: a systematic review. *Review Journal of Autism and Developmental Disorders*, *10*(3), 523–545. https://doi.org/10.1007/s40489-022-00308-8

Joshi, G., Faraone, S. V., Wozniak, J., Tarko, L., Fried, R., Galdo, M., Furtak, S. L., & Biederman, J. (2017). Symptom profile of ADHD in youth with high-functioning autism spectrum disorder: a comparative study in psychiatrically referred populations. *Journal of Attention Disorders*, *21*(10), 846–855. https://doi.org/10.1177/1087054714543368

Junewicz, A., Dhir, S., Guo, F., Song, Y., Stein, C. R., & Baroni, A. (2024). Trauma diagnoses during emergency psychiatric evaluation among youth with and without autism spectrum disorder. *Autism*, 13623613241274832. https://doi.org/10.1177/13623613241274832

Jurek, L., Duchier, A., Gauld, C., Hénault, L., Giroudon, C., Fourneret, P., Cortese, S., & Nourredine, M. (2025). Sensory processing in individuals with attention-deficit/hyperactivity disorder compared with control populations: a systematic review and meta-analysis. *Journal of the American Academy of Child and Adolescent Psychiatry*, S0890-8567(25)00209-6. https://doi.org/10.1016/j.jaac.2025.02.019

Kalvin, C. B., Marsh, C. L., Ibrahim, K., Gladstone, T. R., Woodward, D., Grantz, H., Ventola, P., & Sukhodolsky, D. G. (2020). Discrepancies between parent and child ratings of anxiety in children with autism spectrum disorder. *Autism Research*, *13*(1), 93–103. https://doi.org/10.1002/aur.2220

Kapp, S. K. (Ed.). (2020). *Autistic Community and the Neurodiversity Movement: Stories from the Frontline*. Springer. https://doi.org/10.1007/978-981-13-8437-0

Kaufmann, E. (2018). Data Aggregation: A Proposed Psychometric IPD Meta-Analysis. *Open Journal of Statistics*, *08*(01), 38–48. https://doi.org/10.4236/ojs.2018.81004

Keller, H. (2013). Attachment and culture. *Journal of Cross-Cultural Psychology*, *44*(2), 175–194. https://doi.org/10.1177/0022022112472253

Kelly, B., Williams, S., Collins, S., Mushtaq, F., Mon-Williams, M., Wright, B., Mason, D., & Wright, J. (2019). The association between socioeconomic status and autism diagnosis in the United Kingdom for children aged 5-8 years of age: findings from the Born in Bradford cohort. *Autism: The International Journal of Research and Practice*, *23*(1), 131–140. https://doi.org/10.1177/1362361317733182

Kendler, K. S., & Baker, J. H. (2007). Genetic influences on measures of the environment: A systematic review. *Psychological Medicine*, *37*(5), 615–626. https://doi.org/10.1017/S0033291706009524

Kennedy, A. C., Prock, K. A., Adams, A. E., Littwin, A., Meier, E., Saba, J., & Vollinger, L. (2024). Can this provider be trusted? A review of the role of trustworthiness in the provision of community-based services for intimate partner violence survivors. *Trauma, Violence, & Abuse*, *25*(2), 982–999. https://doi.org/10.1177/15248380231168641

Kenny, L., Hattersley, C., Molins, B., Buckley, C., Povey, C., & Pellicano, E. (2016). Which terms should be used to describe autism? Perspectives from the UK autism community. *Autism*, *20*(4), 442–462. https://doi.org/10.1177/1362361315588200

Kerns, C. M., Berkowitz, S. J., Moskowitz, L. J., Drahota, A., Lerner, M. D., & Newschaffer, C. J. (2020). Screening and treatment of trauma-related symptoms in youth with autism spectrum disorder among community providers in the United States. *Autism*, *24*(2), 515–525. https://doi.org/10.1177/1362361319847908

Kerns, C. M., & Kendall, P. C. (2012). The presentation and classification of anxiety in autism spectrum disorder. *Clinical Psychology: Science and Practice*, *19*(4), 323–347. https://doi.org/10.1111/cpsp.12009

Kerns, C. M., Kendall, P. C., Berry, L., Souders, M. C., Franklin, M. E., Schultz, R. T., Miller, J., & Herrington, J. (2014). Traditional and atypical presentations of anxiety in youth with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, *44*(11), 2851–2861. https://doi.org/10.1007/s10803-014-2141-7

Kerns, C. M., Lankenau, S., Shattuck, P. T., Robins, D. L., Newschaffer, C. J., & Berkowitz, S. J. (2022). Exploring potential sources of childhood trauma: a qualitative study with autistic adults and caregivers. *Autism*, *26*(8), 1987–1998. https://doi.org/10.1177/13623613211070637

Kerns, C. M., Newschaffer, C. J., & Berkowitz, S. J. (2015). Traumatic childhood events and autism spectrum disorder. *Journal of Autism and Developmental Disorders*, *45*(11), 3475–3486. https://doi.org/10.1007/s10803-015-2392-y

Kerns, C. M., Newschaffer, C. J., Berkowitz, S., & Lee, B. K. (2017). Examining the association of autism and adverse childhood experiences in the National Survey of Children's Health: the important role of income and co-occurring mental health conditions. *Journal of Autism and Developmental Disorders*, *47*(7), 2275–2281. https://doi.org/10.1007/s10803-017-3111-7

Kerns, C. M., Rast, J. E., & Shattuck, P. T. (2020). Prevalence and correlates of caregiver-reported mental health conditions in youth with autism spectrum disorder in the united states. *The Journal of Clinical Psychiatry*, *82*(1). https://doi.org/10.4088/JCP.20m13242

Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, *62*(6), 593–602. https://doi.org/10.1001/archpsyc.62.6.593

Khalfe, N., Goetz, A. R., Trent, E. S., Guzick, A. G., Smarason, O., Kook, M., Olsen, S., Ramirez, A. C., Weinzimmer, S. A., Berry, L., Schneider, S. C., Goodman, W. K., & Storch, E. A. (2023). Psychometric properties of the revised children's anxiety and depression scale (RCADS) for autistic youth without co-occurring intellectual disability. *Journal of Mood and Anxiety Disorders*, *2*, 100017. https://doi.org/10.1016/j.xjmad.2023.100017

Khan, A. M., Dar, S., Ahmed, R., Bachu, R., Adnan, M., & Kotapati, V. P. (2018). Cognitive behavioral therapy versus eye movement desensitization and reprocessing in patients with post-traumatic stress disorder: systematic review and meta-analysis of randomized clinical trials. *Cureus*, *10*(9), e3250. https://doi.org/10.7759/cureus.3250

Kildahl, A. N., Helverschou, S. B., Bakken, T. L., & Oddli, H. W. (2020). "Driven and tense, stressed out and anxious": clinicians' perceptions of post-traumatic stress disorder symptom expressions in adults with autism and intellectual disability. *Journal of Mental Health Research in Intellectual Disabilities*, *13*(3), 201–230. Scopus. https://doi.org/10.1080/19315864.2020.1760972

Kildahl, A. N., & Jørstad, I. (2021). Post-traumatic stress disorder symptom manifestations in an autistic m an with severe intellectual disability following coercion and scalding. *Https://Doi.Org/10.3109/13668250.2021.1995930*. https://www.tandfonline.com/doi/full/10.3109/13668250.2021.1995930

Kildahl, A. N., Storvik, K., Wächter, E. C., Jensen, T., Ro, A., & Haugen, I. B. (2024). Distinguishing between autism and the consequences of early traumatisation during diagnostic assessment: a clinical case study. *Advances in Autism*, *10*(3), 135–148. https://doi.org/10.1108/AIA-02-2024-0015

Kilpatrick, D. G., Resnick, H. S., Milanak, M. E., Miller, M. W., Keyes, K. M., & Friedman, M. J. (2013). National estimates of exposure to traumatic events and PTSD prevalence using DSM-IV and DSM-5 criteria. *Journal of Traumatic Stress*, *26*(5), 537–547. https://doi.org/10.1002/jts.21848

Kim, B., & Royle, M. (2025). Annual Research Review: Mapping the multifaceted approaches and impacts of adverse childhood experiences – an umbrella review of meta-analyses. *Journal of Child Psychology and Psychiatry*, *66*(4), 399–416. https://doi.org/10.1111/jcpp.14022

Kinnaird, E., Stewart, C., & Tchanturia, K. (2019). Investigating alexithymia in autism: a systematic review and meta-analysis. *European Psychiatry*, *55*, 80–89. https://doi.org/10.1016/j.eurpsy.2018.09.004

Klein, B., Damiani-Taraba, G., Koster, A., Campbell, J., & Scholz, C. (2015). Diagnosing attention-deficit hyperactivity disorder (ADHD) in children involved with child protection services: are current diagnostic guidelines acceptable for vulnerable populations? *Child: Care, Health and Development*, *41*(2), 178–185. https://doi.org/10.1111/cch.12168

Koenen, K. C., Ratanatharathorn, A., Ng, L., McLaughlin, K. A., Bromet, E. J., Stein, D. J., Karam, E. G., Ruscio, A. M., Benjet, C., Scott, K., Atwoli, L., Petukhova, M., Lim, C. C. W., Aguilar-Gaxiola, S., Al-Hamzawi, A., Alonso, J., Bunting, B., Ciutan, M., de Girolamo, G., … Kessler, R. C. (2017). Posttraumatic stress disorder in the World Mental Health Surveys. *Psychological Medicine*, *47*(13), 2260–2274. https://doi.org/10.1017/S0033291717000708

Koldewyn, K., Jiang, Y. V., Weigelt, S., & Kanwisher, N. (2013). Global/local processing in autism: not a disability, but a disinclination. *Journal of Autism and Developmental Disorders*, *43*(10), 2329–2340. PubMed. https://doi.org/10.1007/s10803-013-1777-z

Kotov, R., Krueger, R. F., Watson, D., Achenbach, T. M., Althoff, R. R., Bagby, R. M., Brown, T. A., Carpenter, W. T., Caspi, A., Clark, L. A., Eaton, N. R., Forbes, M. K., Forbush, K. T., Goldberg, D., Hasin, D., Hyman, S. E., Ivanova, M. Y., Lynam, D. R., Markon, K., … Zimmerman, M. (2017). The Hierarchical Taxonomy of Psychopathology (HiTOP): a dimensional alternative to traditional nosologies. *Journal of Abnormal Psychology*, 126(4), 454–477. https://doi.org/10.1037/abn0000258

Lai, M.-C., Kassee, C., Besney, R., Bonato, S., Hull, L., Mandy, W., Szatmari, P., & Ameis, S. H. (2019). Prevalence of co-occurring mental health diagnoses in the autism population: a systematic review and meta-analysis. *The Lancet Psychiatry*, *6*(10), 819–829. https://doi.org/10.1016/S2215-0366(19)30289-5

Latham, R. M., Meehan, A. J., Arseneault, L., Stahl, D., Danese, A., & Fisher, H. L. (2019). Development of an individualized risk calculator for poor functioning in young people victimized during childhood: a longitudinal cohort study. *Child Abuse & Neglect*, *98*, 104188. https://doi.org/10.1016/j.chiabu.2019.104188

Lee, J., Roh, B.-R., & Yang, K.-E. (2022). Exploring the association between social support and patterns of bullying victimization among school-aged adolescents. *Children and Youth Services Review*, *136*, 106418. https://doi.org/10.1016/j.childyouth.2022.106418

Leenarts, L. E. W., Diehle, J., Doreleijers, T. A. H., Jansma, E. P., & Lindauer, R. J. L. (2013). Evidence-based treatments for children with trauma-related psychopathology as a result of childhood maltreatment: A systematic review. *European Child & Adolescent Psychiatry*, *22*(5), 269–283. https://doi.org/10.1007/s00787-012-0367-5

Leeuw, A., Happé, F., & Hoekstra, R. A. (2020). A conceptual framework for understanding the cultural and contextual factors on autism across the globe. *Autism Research*, *13*(7), 1029–1050. Wiley Online Library. https://doi.org/10.1002/aur.2276

Lereya, S. T., Copeland, W. E., Costello, E. J., & Wolke, D. (2015). Adult mental health consequences of peer bullying and maltreatment in childhood: two cohorts in two countries. *The Lancet Psychiatry*, *2*(6), 524–531. https://doi.org/10.1016/S2215-0366(15)00165-0

Levin-Aspenson, H. F., & Greene, A. L. (2024). Rethinking trauma-related psychopathology in the Hierarchical Taxonomy of Psychopathology (HiTOP). *Journal of Traumatic Stress*, *37*(3), 361–371. https://doi.org/10.1002/jts.23014

Levis, B., Benedetti, A., Levis, A. W., Ioannidis, J. P. A., Shrier, I., Cuijpers, P., Gilbody, S., Kloda, L. A., McMillan, D., Patten, S. B., Steele, R. J., Ziegelstein, R. C., Bombardier, C. H., de Lima Osório, F., Fann, J. R., Gjerdingen, D., Lamers, F., Lotrakul, M., Loureiro, S. R., … Thombs, B. D. (2017). Selective cutoff reporting in studies of diagnostic test accuracy: a comparison of conventional and individual-patient-data meta-analyses of the Patient Health Questionnaire-9 depression screening tool. *American Journal of Epidemiology*, *185*(10), 954–964. https://doi.org/10.1093/aje/kww191

Lewis, S. J., Koenen, K. C., Ambler, A., Arseneault, L., Caspi, A., Fisher, H. L., Moffitt, T. E., & Danese, A. (2021). Unravelling the contribution of complex trauma to psychopathology and cognitive deficits: a cohort study. *The British Journal of Psychiatry: The Journal of Mental Science*, *219*(2), 448–455. https://doi.org/10.1192/bjp.2021.57

Li, M., D'Arcy, C., & Meng, X. (2016). Maltreatment in childhood substantially increases the risk of adult depression and anxiety in prospective cohort studies: systematic review, meta-analysis, and proportional attributable fractions. *Psychological Medicine*, *46*(4), 717–730. https://doi.org/10.1017/S0033291715002743

Li, S.-T., Chien, W.-C., Chung, C.-H., & Tzeng, N.-S. (2024). Increased risk of acute stress disorder and post-traumatic stress disorder in children and adolescents with autism spectrum disorder: a nation-wide cohort study in Taiwan. *Frontiers in Psychiatry*, *15*, 1329836. https://doi.org/10.3389/fpsyt.2024.1329836

Libster, N., Knox, A., Engin, S., Geschwind, D., Parish-Morris, J., & Kasari, C. (2023). Sex differences in friendships and loneliness in autistic and non-autistic children across development. *Molecular Autism*, *14*(1), 9. https://doi.org/10.1186/s13229-023-00542-9

Lim, A., & Young, R. L. (2025). Understanding autistic young adults' perceptions and experiences of traumatic and stressful events. *Journal of Clinical Psychology*, *81*(6), 445–461. https://doi.org/10.1002/jclp.23783

Lindsay, S., Proulx, M., Scott, H., & Thomson, N. (2014). Exploring teachers' strategies for including children with autism spectrum disorder in mainstream classrooms. *International Journal of Inclusive Education*, *18*(2), 101–122. https://doi.org/10.1080/13603116.2012.758320

Liss, M., Mailloux, J., & Erchull, M. J. (2008a). The relationships between sensory processing sensitivity, alexithymia, autism, depression, and anxiety. *Personality and Individual Differences*, *45*(3), 255–259. https://doi.org/10.1016/j.paid.2008.04.009

Liss, M., Mailloux, J., & Erchull, M. J. (2008b). The relationships between sensory processing sensitivity, alexithymia, autism, depression, and anxiety. *Personality and Individual Differences*, *45*(3), 255–259. ScienceDirect. https://doi.org/10.1016/j.paid.2008.04.009

Liu, M., Luong, L., Lachaud, J., Edalati, H., Reeves, A., & Hwang, S. W. (2021). Adverse childhood experiences and related outcomes among adults experiencing homelessness: a systematic review and meta-analysis. *The Lancet Public Health*, *6*(11), e836–e847.

Lockwood Estrin, G., Milner, V., Spain, D., Happé, F., & Colvert, E. (2021). Barriers to autism spectrum disorder diagnosis for young women and girls: a systematic review. *Review Journal of Autism and Developmental Disorders*, *8*(4), 454–470. https://doi.org/10.1007/s40489-020-00225-8

Loewy, R. L., Pearson, R., Vinogradov, S., Bearden, C. E., & Cannon, T. D. (2011). Psychosis risk screening with the Prodromal Questionnaire—Brief version (PQ-B). *Schizophrenia Research*, 129(1), 42–46. https://doi.org/10.1016/j.schres.2011.03.029

Lofthouse, K., Beeson, E., Dalgleish, T., Danese, A., Hodgekins, J., Mahoney-Davies, G., Smith, P., Stallard, P., Wilson, J., & Meiser-Stedman, R. (2024). Characteristics of complex posttraumatic stress disorder (PTSD) in young people with PTSD following multiple trauma exposure. *Journal of Child Psychology and Psychiatry*, *65*(6), 822–831. https://doi.org/10.1111/jcpp.13918

Loizou, S., Pemovska, T., Stefanidou, T., Foye, U., Cooper, R., Kular, A., Greenburgh, A., Baldwin, H., Griffiths, J., Saunders, K. R. K., Barnett, P., Minchin, M., Brady, G., Ahmed, N., Parker, J., Chipp, B., Olive, R. R., Jackson, R., Timmerman, A., … Johnson, S. (2024). Approaches to improving mental healthcare for autistic people: Systematic review. *British Journal of Psychiatry Open*, *10*(4), e128. https://doi.org/10.1192/bjo.2024.707

Loomes, R., Hull, L., & Mandy, W. P. L. (2017). What is the male-to-female ratio in autism spectrum disorder? A systematic review and meta-analysis. *Journal of the American Academy of Child and Adolescent Psychiatry*, *56*(6), 466–474. https://doi.org/10.1016/j.jaac.2017.03.013

Lord, C., Rutter, M., DiLavore, P. C., & Risi, S. (1999). Autism diagnostic observation scale-WPS (ADOS-WPS). *Los Angeles: Western Psychological Services*.

Lord, C., Rutter, M., & Le Couteur, A. (1994). Autism Diagnostic Interview-Revised: a revised version of a diagnostic interview for caregivers of individuals with possible pervasive developmental disorders. *Journal of Autism and Developmental Disorders*, *24*(5), 659–685. https://doi.org/10.1007/bf02172145

Losh, M., & Gordon, P. C. (2014). Quantifying narrative ability in autism spectrum disorder: a computational linguistic analysis of narrative coherence. *Journal of Autism and Developmental Disorders*, *44*(12), 3016–3025. https://doi.org/10.1007/s10803-014-2158-y

Lundström, S., Chang, Z., Kerekes, N., Gumpert, C. H., Råstam, M., Gillberg, C., Lichtenstein, P., & Anckarsäter, H. (2011). Autistic-like traits and their association with mental health problems in two nationwide twin cohorts of children and adults. *Psychological Medicine*, *41*(11), 2423–2433. https://doi.org/10.1017/S0033291711000377

Maclean, M. J., Sims, S., Bower, C., Leonard, H., Stanley, F. J., & O'Donnell, M. (2017). Maltreatment risk among children with disabilities. *Pediatrics*, *139*(4), e20161817. https://doi.org/10.1542/peds.2016-1817

Maercker, A., Cloitre, M., Bachem, R., Schlumpf, Y. R., Khoury, B., Hitchcock, C., & Bohus, M. (2022). Complex post-traumatic stress disorder. *Lancet (London, England)*, *400*(10345), 60–72. https://doi.org/10.1016/S0140-6736(22)00821-2

Magdi, H. M., Abousoliman, A. D., lbrahim, A. M., Elsehrawy, M. G., EL-Gazar, H. E., & Zoromba, M. A. (2025). Attention-deficit/hyperactivity disorder and post-traumatic stress disorder adult comorbidity: a systematic review. *Systematic Reviews*, *14*(1), 41. https://doi.org/10.1186/s13643-025-02774-7

Magruder, K. M., Kassam-Adams, N., Thoresen, S., & Olff, M. (2016). Prevention and public health approaches to trauma and traumatic stress: A rationale and a call to action. *European Journal of Psychotraumatology*, *7*(1), 29715. https://doi.org/10.3402/ejpt.v7.29715

Mak, C., & Wieling, E. (2022). A systematic review of evidence-based family interventions for trauma-affected refugees. *International Journal of Environmental Research and Public Health*, *19*(15), Article 15. https://doi.org/10.3390/ijerph19159361

Mansfield, K. L., Puntis, S., Soneson, E., Cipriani, A., Geulayov, G., & Fazel, M. (2021). Study protocol: the OxWell school survey investigating social, emotional and behavioural factors associated with mental health and well-being. *BMJ Open*, *11*(12), e052717. https://doi.org/10.1136/bmjopen-2021-052717

Manstead, A. S. R. (2018). The psychology of social class: How socioeconomic status impacts thought, feelings, and behaviour. *British Journal of Social Psychology*, *57*(2), 267–291. https://doi.org/10.1111/bjso.12251

Martini, M. I., Kuja-Halkola, R., Butwicka, A., Du Rietz, E., D'Onofrio, B. M., Happé, F., Kanina, A., Larsson, H., Lundström, S., Martin, J., Rosenqvist, M. A., Lichtenstein, P., & Taylor, M. J. (2022). Sex differences in mental health problems and psychiatric hospitalization in autistic young adults. *JAMA Psychiatry*, *79*(12), 1188–1198. https://doi.org/10.1001/jamapsychiatry.2022.3475

Mavranezouli, I., Megnin-Viggars, O., Daly, C., Dias, S., Stockton, S., Meiser-Stedman, R., Trickey, D., & Pilling, S. (2020). Research Review: Psychological and psychosocial treatments for children and young people with post-traumatic stress disorder: a network meta-analysis. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, *61*(1), 18–29. https://doi.org/10.1111/jcpp.13094

Maynard, B. R., Farina, A., Dell, N. A., & Kelly, M. S. (2019). Effects of trauma-informed approaches in schools: a systematic review. *Campbell Systematic Reviews*, *15*(1–2), e1018. https://doi.org/10.1002/cl2.1018

Mazefsky, C. A., Borue, X., Day, T. N., & Minshew, N. J. (2014). Emotion regulation patterns in adolescents with high-functioning autism spectrum disorder: comparison to typically developing adolescents and association with psychiatric symptoms. *Autism Research*, *7*(3), 344–354. https://doi.org/10.1002/aur.1366

McCafferty, P., & McCutcheon, J. (2021). Parenting a child with autism: considering the stresses, supports and implications for social work practice. *Child Care in Practice*, *27*(4), 389–405. https://doi.org/10.1080/13575279.2020.1765145

McDonnell, C. G., Andrzejewski, T., Batista, S. G., DeLucia, E. A., Dike, J., Breitenfeldt, K. E., & Tassone, A. U. (2025). A pilot proof-of-concept study of telehealth-based trauma-focused cognitive behavioral therapy for autistic youth: initial evidence of efficacy and acceptability. *Child Maltreatment*, 10775595251323215. https://doi.org/10.1177/10775595251323215

McDonnell, C. G., Boan, A. D., Bradley, C. C., Seay, K. D., Charles, J. M., & Carpenter, L. A. (2019). Child maltreatment in autism spectrum disorder and intellectual disability: results from a population-based sample. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, *60*(5), 576–584. https://doi.org/10.1111/jcpp.12993

McDonnell, C. G., Kaya, R. A., Andrzejewski, T., & Batista, S. G. (2025). Autistic adults experience higher PTSD symptoms relating to motor vehicle accidents than non-autistic adults. *Journal of Autism and Developmental Disorders*, *55*(6), 2173–2178. https://doi.org/10.1007/s10803-024-06687-7

McEwen, B. S., & Gianaros, P. J. (2011). Stress- and allostasis-induced brain plasticity. *Annual Review of Medicine*, *62*, 431–445. https://doi.org/10.1146/annurev-med-052209-100430

McKay, M. T., Cannon, M., Chambers, D., Conroy, R. M., Coughlan, H., Dodd, P., Healy, C., O'Donnell, L., & Clarke, M. C. (2021). Childhood trauma and adult mental disorder: a systematic review and meta-analysis of longitudinal cohort studies. *Acta Psychiatrica Scandinavica*, *143*(3), 189–205. https://doi.org/10.1111/acps.13268

McKenzie, R., & Dallos, R. (2017). Autism and attachment difficulties: overlap of symptoms, implications and innovative solutions. *Clinical Child Psychology and Psychiatry*, *22*(4), 632–648. https://doi.org/10.1177/1359104517707323

McKinlay, J., Wilson, C., Hendry, G., & Ballantyne, C. (2022). "It feels like sending your children into the lions' den" – a qualitative investigation into parental attitudes towards ASD inclusion, and the impact of mainstream education on their child. *Research in Developmental Disabilities*, *120*, 104128. https://doi.org/10.1016/j.ridd.2021.104128

McKinnon, A. C., Nixon, R. D. V., & Brewer, N. (2008). The influence of data-driven processing on perceptions of memory quality and intrusive symptoms in children following traumatic events. *Behaviour Research and Therapy*, *46*(6), 766–775. https://doi.org/10.1016/j.brat.2008.02.008

McKnight, P. E., & Kashdan, T. B. (2009). The importance of functional impairment to mental health outcomes: a case for reassessing our goals in depression treatment research. *Clinical Psychology Review*, *29*(3), 243–259. https://doi.org/10.1016/j.cpr.2009.01.005

Meehan, A. J., Latham, R. M., Arseneault, L., Stahl, D., Fisher, H. L., & Danese, A. (2020). Developing an individualized risk calculator for psychopathology among young people victimized during childhood: a population-representative cohort study. *Journal of Affective Disorders*, *262*, 90–98. https://doi.org/10.1016/j.jad.2019.10.034

Mehtar, M., & Mukaddes, N. M. (2011). Posttraumatic stress disorder in individuals with diagnosis of autistic spectrum disorders. *Research in Autism Spectrum Disorders*, *5*(1), 539–546. https://doi.org/10.1016/j.rasd.2010.06.020

Meléndez Guevara, A. M., Cottam, S., Wall, C., & Lindstrom Johnson, S. (2024). Expanding ACES in child and family service systems: incorporating context and resilience. *Child Protection and Practice*, *3*, 100065. https://doi.org/10.1016/j.chipro.2024.100065

Memarzia, J., Walker, J., & Meiser-Stedman, R. (2021). Psychological peritraumatic risk factors for post-traumatic stress disorder in children and adolescents: a meta-analytic review. *Journal of Affective Disorders*, *282*, 1036–1047. https://doi.org/10.1016/j.jad.2021.01.016

Menezes, M., Pappagianopoulos, J., Smith, J. V., Howard, M., Brunt, S., Witte, L., Anderson, S., Boyd, B. A., & Mazurek, M. O. (2025). Prevalence of discrimination experienced by autistic youth as compared to neurotypical youth and youth with other neurodevelopmental diagnoses. *Autism*, 13623613241312445. https://doi.org/10.1177/13623613241312445

Michna, G. A., Trudel, S. M., Bray, M. A., Reinhardt, J., Dirsmith, J., Theodore, L., Zhou, Z., Patel, I., Jones, P., & Gilbert, M. L. (2023). Best practices and emerging trends in assessment of trauma in students with autism spectrum disorder. *Psychology in the Schools*, *60*(2), 479–494. https://doi.org/10.1002/pits.22769

Mineka, S., & Zinbarg, R. (2006). A contemporary learning theory perspective on the etiology of anxiety disorders: it's not what you thought it was. *The American Psychologist*, *61*(1), 10–26. https://doi.org/10.1037/0003-066X.61.1.10

Mingins, J. E., Tarver, J., Waite, J., Jones, C., & Surtees, A. D. (2021). Anxiety and intellectual functioning in autistic children: a systematic review and meta-analysis. *Autism: The International Journal of Research and Practice*, *25*(1), 18–32. https://doi.org/10.1177/1362361320953253

Minnis, H., Macmillan, S., Pritchett, R., Young, D., Wallace, B., Butcher, J., Sim, F., Baynham, K., Davidson, C., & Gillberg, C. (2013). Prevalence of reactive attachment disorder in a deprived population. *The British Journal of Psychiatry*, *202*(5), 342–346. https://doi.org/10.1192/bjp.bp.112.114074

Minnis, H., Messow, C.-M., McConnachie, A., Bradshaw, P., Briggs, A., Wilson, P., & Gillberg, C. (2020). Autism and attachment disorder symptoms in the general population: prevalence, overlap, and burden. *Developmental Child Welfare*, *2*(1), 37–51. https://doi.org/10.1177/2516103220902778

Moffitt, T. E. & E-Risk Study Team. (2002). Teen-aged mothers in contemporary Britain. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, 43(6), 727–742. https://doi.org/10.1111/1469-7610.00082

Moran, H. (2010). Clinical observations of the differences between children on the autism spectrum and those with attachment problems: The Coventry Grid. *Good Autism Practice (GAP)*, *11*(2), 46–59.

Morgan, J. F., Reid, F., & Lacey, J. H. (1999). The SCOFF questionnaire: assessment of a new screening tool for eating disorders. *British Medical Journal (Clinical Research Ed.)*, 319(7223), 1467–1468. https://doi.org/10.1136/bmj.319.7223.1467

Morison, L., Simonds, L., & Stewart, S.-J. F. (2022). Effectiveness of creative arts-based interventions for treating children and adolescents exposed to traumatic events: a systematic review of the quantitative evidence and meta-analysis. *Arts & Health*, *14*(3), 237–262. https://doi.org/10.1080/17533015.2021.2009529

Moss, R. H., Kelly, B., Bird, P. K., & Pickett, K. E. (2023). Examining individual social status using the MacArthur Scale of Subjective Social Status: findings from the Born in Bradford study. *SSM - Population Health*, *23*, 101463. https://doi.org/10.1016/j.ssmph.2023.101463

Mottron, L., & Bzdok, D. (2020). Autism spectrum heterogeneity: fact or artifact? *Molecular Psychiatry*, *25*(12), 3178–3185. https://doi.org/10.1038/s41380-020-0748-y

Muhl, C., Cornish, E., Zhou, X. A., Mulligan, K., Bayoumi, I., Ashcroft, R., Ross-White, A., & Godfrey, C. (2025). Social prescribing for children and youth: a scoping review. *Health & Social Care in the Community*, *2025*(1), 5265529. https://doi.org/10.1155/hsc/5265529

Muthén, L., & Muthén, B. (2017). *MPlus User's Guide* (8th ed.). Muthén & Muthén.

Nanni, V., Uher, R., & Danese, A. (2012). Childhood maltreatment predicts unfavorable course of illness and treatment outcome in depression: a meta-analysis. *American Journal of Psychiatry*, *169*(2), 141–151. https://doi.org/10.1176/appi.ajp.2011.11020335

National Autistic Society. (2023). *Supporting autistic children to stay in mainstream education*. https://www.autism.org.uk/advice-and-guidance/professional-practice/supporting-autistic-children-to-stay-in-mainstream

Naylor, P. B., Cowie, H. A., Walters, S. J., Talamelli, L., & Dawkins, J. (2009). Impact of a mental health teaching programme on adolescents. *The British Journal of Psychiatry*, *194*(4), 365–370. https://doi.org/10.1192/bjp.bp.108.053058

Nelson, J., Klumparendt, A., Doebler, P., & Ehring, T. (2017). Childhood maltreatment and characteristics of adult depression: meta-analysis. *The British Journal of Psychiatry*, *210*(2), 96–104. https://doi.org/10.1192/bjp.bp.115.180752

Neria, Y., Nandi, A., & Galea, S. (2008). Post-traumatic stress disorder following disasters: a systematic review. *Psychological Medicine*, *38*(4), 467–480. https://doi.org/10.1017/S0033291707001353

Newton, L., Keane, C. A., & Byrne, M. K. (2024). Trauma-informed programs in Australian schools: a systematic review of design, implementation and efficacy. *Children and Youth Services Review*, *156*, 107368. https://doi.org/10.1016/j.childyouth.2023.107368

Ng-Cordell, E., Wardell, V., Stewardson, C., & Kerns, C. M. (2022). Anxiety and trauma-related disorders in children on the autism spectrum. *Current Psychiatry Reports*, *24*(3), 171–180. https://doi.org/10.1007/s11920-022-01331-6

NHS Education for Scotland. (2020). *Trauma-Informed Practice: A Toolkit for Scotland.* NHS Education for Scotland. www.nes.scot.nhs.uk

NHS England. (2023). *Meeting the needs of autistic adults in mental health services*. https://www.england.nhs.uk/long-read/meeting-the-needs-of-autistic-adults-in-mental-health-services/

NICE. (2018, December 5). *Recommendations: post-traumatic stress disorder*. National Institute for Health and Care Excellence (NICE); NICE. https://www.nice.org.uk/guidance/ng116/chapter/recommendations

Nimmo-Smith, V., Heuvelman, H., Dalman, C., Lundberg, M., Idring, S., Carpenter, P., Magnusson, C., & Rai, D. (2020). Anxiety disorders in adults with autism spectrum disorder: a population-based study. *Journal of Autism and Developmental Disorders*, *50*(1), 308–318. https://doi.org/10.1007/s10803-019-04234-3

Norlén, A., Bäccman, C., Thorén, A., & Almqvist, K. (2025). The effectiveness of child-parent psychotherapy on traumatized preschoolers and their caregivers: a swedish multi-site study. *Evidence-Based Practice in Child and Adolescent Mental Health*, *10*(1), 106–121. https://doi.org/10.1080/23794925.2024.2358486

Norris, A. L., & Orchowski, L. M. (2020). Peer victimization of sexual minority and transgender youth: a cross-sectional study of high school students. *Psychology of Violence*, *10*(2), 201–211. https://doi.org/10.1037/vio0000260

Norris, J. E., Harvey, R., & Hull, L. (2025). Post-diagnostic support for adults diagnosed with autism in adulthood in the UK: a systematic review with narrative synthesis. *Autism*, *29*(2), 284–309. https://doi.org/10.1177/13623613241273073

Novin, S., Broekhof, E., & Rieffe, C. (2019). Bidirectional relationships between bullying, victimization and emotion experience in boys with and without autism. *Autism: The International Journal of Research and Practice*, *23*(3), 796–800. https://doi.org/10.1177/1362361318787446

O'Dea, Á., Stanley, M., Coote, S., & Robinson, K. (2021). Children and young people's experiences of living with developmental coordination disorder/dyspraxia: a systematic review and meta-ethnography of qualitative research. *PLOS ONE*, *16*(3), e0245738. PLoS Journals. https://doi.org/10.1371/journal.pone.0245738

Odgers, C. L., Caspi, A., Bates, C. J., Sampson, R. J., & Moffitt, T. E. (2012). Systematic social observation of children's neighborhoods using Google Street View: A reliable and cost-effective method. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, 53(10), 1009–1017. https://doi.org/10.1111/j.1469-7610.2012.02565.x

Okoye, C., Obialo-Ibeawuchi, C. M., Obajeun, O. A., Sarwar, S., Tawfik, C., Waleed, M. S., Wasim, A. U., Mohamoud, I., Afolayan, A. Y., & Mbaezue, R. N. (2023). Early diagnosis of autism spectrum disorder: a review and analysis of the risks and benefits. Cureus, 15(8), e43226. https://doi.org/10.7759/cureus.43226

Øksendal, E., Brandlistuen, R., Holte, A., & Wang, M. (2022). Associations between poor gross and fine motor skills in pre-school and peer victimization concurrently and longitudinally with follow-up in school age—results from a population-based study. *The British Journal of Educational Psychology*, *92*(2). https://doi.org/10.1111/bjep.12464

Oliveira, P., Barge, L., Stevens, E., Byford, S., Shearer, J., Spies, R., Comyn, J., Langley, K., Ramchandani, P., Wright, B., Woolgar, M., Kennedy, E., Scott, S., Barlow, J., Glaser, D., Senior, R., Fonagy, P., & Fearon, P. (2022a). Children in foster care with symptoms of reactive attachment disorder: feasibility randomised controlled trial of a modified video-feedback parenting intervention. *British Journal of Psychiatry Open*, *8*(4), e134. https://doi.org/10.1192/bjo.2022.538

Oliveira, P., Stevens, E., Barge, L., Comyn, J., Langley, K., Ramchandani, P., Wright, B., Woolgar, M., Kennedy, E., Byford, S., Shearer, J., Scott, S., Barlow, J., Glaser, D., Senior, R., Fonagy, P., & Fearon, P. (2022b). A modified video-feedback intervention for carers of foster children aged 6 years and under with reactive attachment disorder: a feasibility study and pilot RCT. *Health Technology Assessment (Winchester, England)*, *26*(35), 1–106. https://doi.org/10.3310/SLIZ1119

Oliver, M. (1983). *Social Work with Disabled People*. Macmillan Education UK. https://doi.org/10.1007/978-1-349-86058-6

Overton, G. L., Marsà-Sambola, F., Martin, R., & Cavenagh, P. (2024). understanding the self-identification of autism in adults: a scoping review. *Review Journal of Autism and Developmental Disorders*, *11*(4), 682–702. https://doi.org/10.1007/s40489-023-00361-x

Parker, M. M., Hergenrather, K., Smelser, Q., & Kelly, C. T. (2021). Exploring child-centered play therapy and trauma: a systematic review of literature. *International Journal of Play Therapy*, *30*(1), 2–13. https://doi.org/10.1037/pla0000136

Parsons, S., McCullen, A., Emery, T., & Kovshoff, H. (2019). Awareness within local authorities in England of autism spectrum diagnoses of looked-after children. *British Educational Research Journal*, *45*(1), 99–116. https://doi.org/10.1002/berj.3485

Paul, A., Gallot, C., Lelouche, C., Bouvard, M., & Amestoy, A. (2018). Victimisation in a French population of children and youths with autism spectrum disorder: a case control study. *Child and Adolescent Psychiatry and Mental Health, 12, 4*. https://doi.org/10.1186/s40359-020-00491-5

Perfect, M. M., Turley, M. R., Carlson, J. S., Yohanna, J., & Saint Gilles, M. P. (2016). School-related outcomes of traumatic event exposure and traumatic stress symptoms in students: a systematic review of research from 1990 to 2015. *School Mental Health*, *8*(1), 7–43. https://doi.org/10.1007/s12310-016-9175-2

Perry, D. L., & Daniels, M. L. (2016). Implementing trauma—informed practices in the school setting: a pilot study. *School Mental Health*, *8*(1), 177–188. https://doi.org/10.1007/s12310-016-9182-3

Peterson, J., Earl, R., Fox, E., Ma, R., Haidar, G., Pepper, M., Berliner, L., Wallace, A., & Bernier, R. (2019). Trauma and autism spectrum disorder: review, proposed treatment adaptations and future directions. *Journal of Child and Adolescent Trauma*, *12*(4), 529–547. https://doi.org/10.1007/s40653-019-00253-5

Pezzimenti, F., Han, G. T., Vasa, R. A., & Gotham, K. (2019). Depression in youth with autism spectrum disorder. *Child and Adolescent Psychiatric Clinics of North America*, *28*(3), 397–409. https://doi.org/10.1016/j.chc.2019.02.009

Pickard, H., Hirsch, C., Simonoff, E., & Happé, F. (2020). Exploring the cognitive, emotional and sensory correlates of social anxiety in autistic and neurotypical adolescents. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, *61*(12), 1317–1327. https://doi.org/10.1111/jcpp.13214

Pigeon, S., Fernet, M., Brassard, A., & Langevin, R. (2025). Rebuilding what has been ruined: Navigating the impacts of child maltreatment for romantic relationships and friendships in emerging adulthood. *Child Abuse & Neglect*, *165*, 107478. https://doi.org/10.1016/j.chiabu.2025.107478

Polanczyk, G., Moffitt, T. E., Arseneault, L., Cannon, M., Ambler, A., Keefe, R. S. E., Houts, R., Odgers, C. L., & Caspi, A. (2010). Etiological and clinical features of childhood psychotic symptoms: results from a birth cohort. *Archives of General Psychiatry*, 67(4), 328–338. https://doi.org/10.1001/archgenpsychiatry.2010.14

Posserud, M.-B., Lundervold, A. J., & Gillberg, C. (2006). Autistic features in a total population of 7-9-year-old children assessed by the ASSQ (Autism Spectrum Screening Questionnaire). *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, *47*(2), 167–175. https://doi.org/10.1111/j.1469-7610.2005.01462.x

Power, L., Davidson, G., Jacobs, P., McCusker, P., McCartan, C., & Devaney, J. (2024). Identifying core measures to be used in mental health research with care experienced young people: a delphi study. *Children and Youth Services Review*, *157*, 107380. https://doi.org/10.1016/j.childyouth.2023.107380

Prinz, R. J. (2016). Parenting and family support within a broad child abuse prevention strategy. *Child Abuse & Neglect*, *51*, 400–406. https://doi.org/10.1016/j.chiabu.2015.10.015

Putnam, O. C., Eddy, G., Crowley LaPoint, S., Swisher, M., & Harrop, C. (2025). "I'm excited to have my voice heard": understanding autism research participation from the perspective of autistic women, non-binary adults, and parents of autistic girls. *Neurodiversity*, *3*, https://doi.org/10.1177/27546330251324007

Qassem, T., Aly-ElGabry, D., Alzarouni, A., Abdel-Aziz, K., & Arnone, D. (2021). Psychiatric co-morbidities in post-traumatic stress disorder: detailed findings from the adult psychiatric morbidity survey in the english population. *Psychiatric Quarterly*, *92*(1), 321–330. https://doi.org/10.1007/s11126-020-09797-4

Quan, L., Zhang, K., & Chen, H. (2025). The relationship between childhood trauma and romantic relationship satisfaction: the role of attachment and social support. *Frontiers in Psychiatry*, *15*. https://doi.org/10.3389/fpsyt.2024.1519699

Quinton, A. M. G., Ali, D., Danese, A., Happé, F., & Rumball, F. (2024). The assessment and treatment of post-traumatic stress disorder in autistic people: a systematic review. *Review Journal of Autism and Developmental Disorders*. Springer Link. https://doi.org/10.1007/s40489-024-00430-9

Quinton, A. M. G., Rumball, F., Ronald, A., Fisher, H. L., Arseneault, L., Happé, F., & Danese, A. (2025). Autistic traits in childhood and post-traumatic stress disorder as young adults: a cohort study. *Journal of Child Psychology and Psychiatry*, *n/a*(n/a). https://doi.org/10.1111/jcpp.14163

Radez, J., Waite, P., Chorpita, B., Creswell, C., Orchard, F., Percy, R., Spence, S. H., & Reardon, T. (2021). Using the 11-item version of the RCADS to identify anxiety and depressive disorders in adolescents. *Research on Child and Adolescent Psychopathology*, *49*(9), 1241–1257. https://doi.org/10.1007/s10802-021-00817-w

Raissouni, M., Benhammou, S., & Belbachir, S. (2023). The place of EMDR in children: a review of the literature. *European Psychiatry*, *66*(S1), S734–S734. https://doi.org/10.1192/j.eurpsy.2023.1541

Rajotte, E., Grandisson, M., Couture, M. M., Desmarais, C., Chrétien-Vincent, M., Godin, J., & Thomas, N. (2025). A neuroinclusive school model: focus on the school, not on the child. *Journal of Occupational Therapy, Schools, & Early Intervention*, *18*(2), 281–299. https://doi.org/10.1080/19411243.2024.2341643

Recio, P., Molero, F., García-Ael, C., & Pérez-Garín, D. (2020). Perceived discrimination and self-esteem among family caregivers of children with autism spectrum disorders (ASD) and children with intellectual disabilities (ID) in Spain: the mediational role of affiliate stigma and social support. *Research in Developmental Disabilities*, *105*, 103737. https://doi.org/10.1016/j.ridd.2020.103737

Redmayne, B., Allain, L., Carter, S., Healy, M., Islaam, L., Portway, L., Thompson, G., Cooper, K., Mandy, W., & Davies, J. (2023). *Research on post-diagnostic support for autistic young people*. https://discovery.ucl.ac.uk/id/eprint/10178344/

Reed, P., Osborne, L. A., & Waddington, E. M. (2012). A comparative study of the impact of mainstream and special school pla cement on the behaviour of children with autism spectrum disorders. *British Educational Research Journal*, *38*(5), 749–763. https://doi.org/10.1080/01411926.2011.580048

Reiss, S., Levitan, G. W., & Szyszko, J. (1982). Emotional disturbance and mental retardation: diagnostic overshadowing. *American Journal of Mental Deficiency*, *86*(6), 567–574.

Restoy, D., Oriol-Escudé, M., Alonzo-Castillo, T., Magán-Maganto, M., Canal-Bedia, R., Díez-Villoria, E., Gisbert-Gustemps, L., Setién-Ramos, I., Martínez-Ramírez, M., Ramos-Quiroga, J. A., & Lugo-Marín, J. (2024). Emotion regulation and emotion dysregulation in children and adolescents with autism spectrum disorder: a meta-analysis of evaluation and intervention studies. *Clinical Psychology Review*, *109*, 102410. https://doi.org/10.1016/j.cpr.2024.102410

Richards, N., & Crane, L. (2020). The development and feasibility study of a multimodal 'talking wall' to facilitate the voice of young people with autism and complex needs: a case study in a specialist residential school. *Journal of Autism and Developmental Disorders*, *50*(12), 4267–4279. https://doi.org/10.1007/s10803-020-04476-6

Rickwood, D. J., & Coleman-Rose, C. L. (2023). The effect of survey administration mode on youth mental health measures: Social desirability bias and sensitive questions. *Heliyon*, *9*(9). https://doi.org/10.1016/j.heliyon.2023.e20131

Rindskopf, D., & Rose, T. (1988). Some Theory and Applications of Confirmatory Second-Order Factor Analysis. *Multivariate Behavioral Research*, 23(1), 51–67. https://doi.org/10.1207/s15327906mbr2301_3

Rieske, R. D., Matson, J. L., & Davis, T. E. (2013). The moderating effect of autism symptomatology on anxiety symptoms. *Journal of Developmental and Physical Disabilities*, *25*(5), 517–531. https://doi.org/10.1007/s10882-012-9330-0

Robins, L., Cottler, L., Bucholz, K., & Compton, W. (1995). Diagnostic Interview Schedule for DSM-IV. Washington University School of Medicine.

Rokeach, A., & Wiener, J. (2020). Friendship quality in adolescents with ADHD. *Journal of Attention Disorders*, *24*(8), 1156–1168. https://doi.org/10.1177/1087054717735380

Romano, E., Babchishin, L., Marquis, R., & Fréchette, S. (2015). Childhood maltreatment and educational outcomes. *Trauma, Violence, & Abuse*, *16*(4), 418–437. https://doi.org/10.1177/1524838014537908

Romney, J. S., & Garcia, M. (2021). TF-CBT informed teletherapy for children with autism and their families. *Journal of Child & Adolescent Trauma*, *14*(3), 415–424. https://doi.org/10.1007/s40653-021-00354-0

Rong, Y., Yang, C.-J., Jin, Y., & Wang, Y. (2021). Prevalence of attention-deficit/hyperactivity disorder in individuals with autism spectrum disorder: a meta-analysis. *Research in Autism Spectrum Disorders*, *83*, 101759. https://doi.org/10.1016/j.rasd.2021.101759

Roseby, S., & Gascoigne, M. (2021). A systematic review on the impact of trauma-informed education programs on academic and academic-related functioning for students who have experienced childhood adversity. *Traumatology*, *27*(2), 149–167. Scopus. https://doi.org/10.1037/trm0000276

Ross, A., Grove, R., & McAloon, J. (2023). The relationship between camouflaging and mental health in autistic children and adolescents. *Autism Research*, *16*(1), 190–199. https://doi.org/10.1002/aur.2859

Rumball, F. (2019). A systematic review of the assessment and treatment of posttraumatic stress disorder in individuals with autism spectrum disorders. *Review Journal of Autism and Developmental Disorders*, *6*(3), 294–324. https://doi.org/10.1007/s40489-018-0133-9

Rumball, F., Antal, K., Happé, F., & Grey, N. (2021a). Co-occurring mental health symptoms and cognitive processes in trauma-exposed ASD adults. *Research in Developmental Disabilities*, *110*, 103836. https://doi.org/10.1016/j.ridd.2020.103836

Rumball, F., Brook, L., Happé, F., & Karl, A. (2021b). Heightened risk of posttraumatic stress disorder in adults with autism spectrum disorder: the role of cumulative trauma and memory deficits. *Research in Developmental Disabilities*, *110*, 103848. https://doi.org/10.1016/j.ridd.2020.103848

Rumball, F., Happé, F., & Grey, N. (2020). Experience of trauma and PTSD symptoms in autistic adults: risk of PTSD development following DSM-5 and non-DSM-5 traumatic life events. *Autism Research*, *13*(12), 2122–2132. https://doi.org/10.1002/aur.2306

Russell, G., Rodgers, L. R., Ukoumunne, O. C., & Ford, T. (2014). Prevalence of parent-reported ASD and ADHD in the UK: findings from the Millennium Cohort Study. *Journal of Autism and Developmental Disorders*, *44*(1), 31–40. https://doi.org/10.1007/s10803-013-1849-0

Rutter, M., Andersen-Wood, L., Beckett, C., Bredenkamp, D., Castle, J., Groothues, C., Kreppner, J., Keaveney, L., Lord, C., O'Connor, T. G., & Team, E. and R. A. (ERA) S. (1999). Quasi-autistic patterns following severe early global privation. *The Journal of Child Psychology and Psychiatry and Allied Disciplines*, *40*(4), 537–549. https://doi.org/10.1111/1469-7610.00472

Sachser, C., Keller, F., & Goldbeck, L. (2017). Complex PTSD as proposed for ICD-11: validation of a new disorder in children and adolescents and their response to Trauma-Focused Cognitive Behavioral Therapy. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, *58*(2), Article 2. https://doi.org/10.1111/jcpp.12640

Saito, M., Hirota, T., Sakamoto, Y., Adachi, M., Takahashi, M., Osato-Kaneda, A., Kim, Y. S., Leventhal, B., Shui, A., Kato, S., & Nakamura, K. (2020). Prevalence and cumulative incidence of autism spectrum disorders and the patterns of co-occurring neurodevelopmental disorders in a total population sample of 5-year-old children. *Molecular Autism*, *11*(1), 35. https://doi.org/10.1186/s13229-020-00342-5

Sakman, E., Solak, N., & Sümer, N. (2023). Socioeconomic Disadvantage as a Risk Factor for Attachment Insecurity: The moderating role of gender. *Journal of Family Issues*, *44*(10), 2774–2795. https://doi.org/10.1177/0192513X221105250

Sandelowski, M. (2001). Real qualitative researchers do not count: the use of numbers in qualitative research. *Research in Nursing & Health*, *24*(3), 230–240. https://doi.org/10.1002/nur.1025

Sanders, M. R., Kirby, J. N., Tellegen, C. L., & Day, J. J. (2014). The Triple P-Positive Parenting Program: a systematic review and meta-analysis of a multi-level system of parenting support. *Clinical Psychology Review*, *34*(4), 337–357. https://doi.org/10.1016/j.cpr.2014.04.003

Sarr, R., Quinton, A., Spain, D., & Rumball, F. (2024). A systematic review of the assessment of icd-11 complex post-traumatic stress disorder (CPTSD) in young people and adults. *Clinical Psychology & Psychotherapy*, *31*(3), e3012. https://doi.org/10.1002/cpp.3012

Sarr, R., Spain, D., Quinton, A. M. G., Happé, F., Brewin, C. R., Radcliffe, J., Jowett, S., Miles, S., González, R. A., Albert, I., Scholwin, A., Stirling, M., Markham, S., Strange, S., & Rumball, F. (2024). Differential diagnosis of autism, attachment disorders, complex post-traumatic stress disorder and emotionally unstable personality disorder: a delphi study. *British Journal of Psychology*, *n/a*(n/a). https://doi.org/10.1111/bjop.12731

Satherley, D., & Norwich, B. (2022). Parents' experiences of choosing a special school for their children. *European Journal of Special Needs Education*, *37*(6), 950–964. https://doi.org/10.1080/08856257.2021.1967298

Sayed, S., Iacoviello, B. M., & Charney, D. S. (2015). Risk Factors for the development of psychopathology following trauma. *Current Psychiatry Reports*, *17*(8), 70. https://doi.org/10.1007/s11920-015-0612-y

Scattoni, M. L., Shih, A., & Schendel, D. (2023). Editorial: Pathway of care and gaps in services for children and adults with autism spectrum disorder. *Frontiers in Psychiatry*, *14*, 1193166. https://doi.org/10.3389/fpsyt.2023.1193166

Schaefer, J. D., Moffitt, T. E., Arseneault, L., Danese, A., Fisher, H. L., Houts, R., Sheridan, M. A., Wertz, J., & Caspi, A. (2018). Adolescent Victimization and Early-Adult Psychopathology: Approaching Causal Inference Using a Longitudinal Twin Study to Rule Out Noncausal Explanations. *Clinical Psychological Science*, 6(3), 352–371. https://doi.org/10.1177/2167702617741381

Schilpzand, E. J., Sciberras, E., Alisic, E., Efron, D., Hazell, P., Jongeling, B., Anderson, V., & Nicholson, J. M. (2018). Trauma exposure in children with and without ADHD: Prevalence and functional impairment in a community-based study of 6–8-year-old Australian children. *European Child & Adolescent Psychiatry*, *27*(6), 811–819. https://doi.org/10.1007/s00787-017-1067-y

Scurich, N. (2025). Maltreatment of children with disabilities in the United States. *Journal of Public Child Welfare*, 1–16. https://doi.org/10.1080/15548732.2025.2469168

Sebalo, I., Königová, M. P., Sebalo Vňuková, M., Anders, M., & Ptáček, R. (2023). The associations of adverse childhood experiences (ACEs) with substance use in young adults: a systematic review. *Substance Abuse: Research and Treatment*, *17*. https://doi.org/10.1177/11782218231193914

Sedgewick, F., Hill, V., & Pellicano, E. (2019). ‘It’s different for girls’: gender differences in the friendships and conflict of autistic and neurotypical adolescents. *Autism*, *23*(5), 1119–1132. https://doi.org/10.1177/1362361318794930

Sedgewick, F., Hill, V., Yates, R., Pickering, L., & Pellicano, E. (2016). Gender differences in the social motivation and friendship experiences of autistic and non-autistic adolescents. *Journal of Autism and Developmental Disorders*, *46*(4), 1297–1306. https://doi.org/10.1007/s10803-015-2669-1

Seery, C., Bramham, J., & O’Connor, C. (2021). Effects of a psychiatric diagnosis vs a clinical formulation on lay attitudes to people with psychosis. *Psychosis*, *13*(4), 361–372. https://doi.org/10.1080/17522439.2021.1901302

Shah, P., & Holmes, J. (2023). Neurodiversity: towards an interdisciplinary approach. *Neurodiversity*, *1*, https://doi.org/10.1177/27546330231187565

Shahid Khan, Md., Alamgir Kabir, M., & Mohammad Tareq, S. (2024). Socio-economic status and autism spectrum disorder: a case-control study in Bangladesh. *Preventive Medicine Reports*, *38*, 102614. https://doi.org/10.1016/j.pmedr.2024.102614

Shapiro, F. (1989). Eye movement desensitization: a new treatment for post-traumatic stress disorder. *Journal of Behavior Therapy and Experimental Psychiatry*, *20*(3), 211–217. https://doi.org/10.1016/0005-7916(89)90025-6

Sheikh, M. A. (2018). The potential protective effect of friendship on the association between childhood adversity and psychological distress in adulthood: a retrospective, preliminary, three-wave population-based study. *Journal of Affective Disorders*, *226*, 21–27. https://doi.org/10.1016/j.jad.2017.09.015

Sikora, D., Moran, E., Orlich, F., Hall, T. A., Kovacs, E. A., Delahaye, J., Clemons, T. E., & Kuhlthau, K. (2013). The relationship between family functioning and behavior problems in children with autism spectrum disorders. *Research in Autism Spectrum Disorders*, *7*(2), 307–315. https://doi.org/10.1016/j.rasd.2012.09.006

Simonoff, E., Pickles, A., Charman, T., Chandler, S., Loucas, T., & Baird, G. (2008). Psychiatric Disorders in Children With Autism Spectrum Disorders: prevalence, comorbidity, and associated factors in a population-derived sample. *Journal of the American Academy of Child & Adolescent Psychiatry*, *47*(8), 921–929. https://doi.org/10.1097/CHI.0b013e318179964f

Singer, J. (2017). *Neurodiversity: The birth of an idea*.

Singer, J. (2019). Reflections on the neurodiversity paradigm: neurodiversity: definition and discussion. *Reflections on the Neurodiversity Paradigm*. https://neurodiversity2.blogspot.com/p/what.html

Smith, M., Roberts, A., Elahi, S., Eihentale, L., O’Rourke, M., Meldrum, M., Ramos, B., Holley, C., Baker, S., Bustos, Y., Snider, M., Cicchetti, C., & Raviv, T. (2025). Efforts to improve and expand implementation of trauma-responsive schools: findings from a randomized pilot of the Trauma Education to Advance Community Healing (TEACH) Program. *School Mental Health*. https://doi.org/10.1007/s12310-024-09739-6

Soler-Gutiérrez, A.-M., Pérez-González, J.-C., & Mayas, J. (2023). Evidence of emotion dysregulation as a core symptom of adult ADHD: a systematic review. *PloS One*, *18*(1), e0280131. https://doi.org/10.1371/journal.pone.0280131

Song, J., Fogarty, K., Suk, R., & Gillen, M. (2021). Behavioral and mental health problems in adolescents with ADHD: exploring the role of family resilience. *Journal of Affective Disorders*, *294*, 450–458. https://doi.org/10.1016/j.jad.2021.07.073

Song, Y., Zhao, Y., Baranova, A., Cao, H., Yue, W., & Zhang, F. (2024). Causal association of attention-deficit/hyperactivity disorder and autism spectrum disorder with post-traumatic stress disorder. *Psychiatric Genetics*, *34*(2), 37. https://doi.org/10.1097/YPG.0000000000000357

Sonuga-Barke, E., & Thapar, A. (2021). The neurodiversity concept: is it helpful for clinicians and scientists? *The Lancet Psychiatry*, *8*(7), 559–561. https://doi.org/10.1016/S2215-0366(21)00167-X

Sood, S., Kostizak, K., Stevens, S., Cronin, C., Ramaiya, A., & Paddidam, P. (2022). Measurement and conceptualisation of attitudes and social norms relate d to discrimination against children with disabilities: a systematic review. *International Journal of Disability, Development and Education*, *69*(5), 1489–1504.. https://doi.org/10.1080/1034912X.2020.1786022

Sreckovic, M. A., Brunsting, N. C., & Able, H. (2014). Victimization of students with autism spectrum disorder: a review of prevalence and risk factors. *Research in Autism Spectrum Disorders*, *8*(9), 1155–1172. https://doi.org/10.1016/j.rasd.2014.06.004

Stark, E., Stacey, J., Mandy, W., Kringelbach, M. L., & Happé, F. (2021). Autistic cognition: charting routes to anxiety. *Trends in Cognitive Sciences*, *25*(7), 571–581. https://doi.org/10.1016/j.tics.2021.03.014

Stavropoulos, K. K.-M., Bolourian, Y., & Blacher, J. (2018). Differential Diagnosis of Autism spectrum disorder and post traumatic stress disorder: two clinical cases. *Journal of Clinical Medicine*, *7*(4), 71. https://doi.org/10.3390/jcm7040071

Stern, A., Agnew-Blais, J., Danese, A., Fisher, H. L., Jaffee, S. R., Matthews, T., Polanczyk, G. V., & Arseneault, L. (2018). Associations between abuse/neglect and ADHD from childhood to young adulthood: A prospective nationally-representative twin study. *Child Abuse & Neglect*, *81*, 274–285. https://doi.org/10.1016/j.chiabu.2018.04.025

Stevens, J. S., van Rooij, S. J. H., & Jovanovic, T. (2018). Developmental contributors to trauma response: the importance of sensitive periods, early environment, and sex differences. *Current Topics in Behavioral Neurosciences*, *38*, 1–22. https://doi.org/10.1007/7854_2016_38

Stewart, G. R., Corbett, A., Ballard, C., Creese, B., Aarsland, D., Hampshire, A., Brooker, H., Charlton, R. A., & Happé, F. (2023). The cognitive profile of middle-aged and older adults with high vs. low autistic traits. *Autism Research*, *16*(2), 429. https://doi.org/10.1002/aur.2866

Stewart, G. R., Corbett, A., Ballard, C., Creese, B., Aarsland, D., Hampshire, A., Charlton, R. A., & Happé, F. (2020). Sleep problems and mental health difficulties in older adults who endorse high autistic traits. *Research in Autism Spectrum Disorders*, *77*, 101633. https://doi.org/10.1016/j.rasd.2020.101633

Stewart, G. R., Corbett, A., Ballard, C., Creese, B., Aarsland, D., Hampshire, A., Charlton, R. A., & Happé, F. (2022). Traumatic life experiences and post-traumatic stress symptoms in middle-aged and older adults with and without autistic traits. *International Journal of Geriatric Psychiatry*, *37*(2). https://doi.org/10.1002/gps.5669

Stewart-Brown, S., Tennant, A., Tennant, R., Platt, S., Parkinson, J., & Weich, S. (2009). Internal construct validity of the Warwick-Edinburgh Mental Well-being Scale (WEMWBS): a rasch analysis using data from the Scottish Health Education Population Survey. *Health and Quality of Life Outcomes*, *7*(1), 15. https://doi.org/10.1186/1477-7525-7-15

Sticca, F., Gasser-Haas, O., & Wustmann Seiler, C. (2023). The interplay among familial risk, narrative coherence, and emotional problems from early to middle childhood. *Frontiers in Psychology*, *14*. https://www.frontiersin.org/articles/10.3389/fpsyg.2023.969974

Stimpson, N. J., Hull, L., & Mandy, W. (2021). The association between autistic traits and mental well-being. *Journal of Happiness Studies*, *22*(1), 287–304. https://doi.org/10.1007/s10902-020-00229-5

Stock, S. E., Lacey, R. E., Arseneault, L., Caspi, A., Crush, E., Danese, A., Latham, R. M., Moffitt, T. E., Newbury, J. B., Schaefer, J. D., Fisher, H. L., & Baldwin, J. R. (2025). Can a warm and supportive adult protect against mental health problems amongst children with experience of adversity? A twin-differences study. *Journal of Child Psychology and Psychiatry*, *66*(5), 650–658. https://doi.org/10.1111/jcpp.14070

Strang, J. F., McClellan, L. S., Raaijmakers, D., Caplan, R., Klomp, S. E., Reutter, M., Lai, M.-C., Song, M., Gratton, F. V., Dale, L. K., Schutte, A., de Vries, A. L. C., Gardiner, F., Edwards-Leeper, L., Minnaard, A. L., Eleveld, N. L., Corbin, E., Purkis, Y., Lawson, W., … van der Miesen, A. I. R. (2023). The Gender-Diversity and Autism Questionnaire: a community-developed clinical, research, and self-advocacy tool for autistic transgender and gender-diverse young adults. *Autism in Adulthood: Challenges and Management*, *5*(2), 175–190. https://doi.org/10.1089/aut.2023.0002

Strang, J. F., Wallace, G. L., Michaelson, J. J., Fischbach, A. L., Thomas, T. R., Jack, A., Shen, J., Chen, D., Freeman, A., Knauss, M., Corbett, B. A., Kenworthy, L., Tishelman, A. C., Willing, L., McQuaid, G. A., Nelson, E. E., Toomey, R. B., McGuire, J. K., Fish, J. N., … Yang, J. S. (2023). The Gender Self-Report: A multidimensional gender characterization tool for gender-diverse and cisgender youth and adults. *The American Psychologist*, *78*(7), 886–900. https://doi.org/10.1037/amp0001117

Sullivan, T. N., Farrell, A. D., & Kliewer, W. (2006). Peer victimization in early adolescence: association between physical and relational victimization and drug use, aggression, and delinquent behaviors among urban middle school students. *Development and Psychopathology*, *18*(1), 119–137. https://doi.org/10.1017/S095457940606007X

Sutherland, S., & Scherl, D. J. (1970). Patterns of response among victims of rape. *The American Journal of Orthopsychiatry*, *40*(3), 503–511. https://doi.org/10.1111/j.1939-0025.1970.tb00708.x

Sweeney, A., Filson, B., Kennedy, A., Collinson, L., & Gillard, S. (2018). A paradigm shift: Relationships in trauma-informed mental health services. *British Journal of Psychiatry Advances*, *24*(5), 319–333. https://doi.org/10.1192/bja.2018.29

Taels, L., Feyaerts, J., Lizon, M., De Smet, M., & Vanheule, S. (2023). 'I felt like my senses were under attack': an interpretative phenomenological analysis of experiences of hypersensitivity in autistic individuals. *Autism*, *27*(8), 2269–2280. https://doi.org/10.1177/13623613231158182

Talmón-Knuser, F., González-Sala, F., Lacomba-Trejo, L., & Samper-García, P. (2023). Reactive attachment disorder and its relationship to psychopathology: a systematic review. *Children*, *10*(12), Article 12. https://doi.org/10.3390/children10121892

Teague, S. J., Gray, K. M., Tonge, B. J., & Newman, L. K. (2017). Attachment in children with autism spectrum disorder: a systematic review. *Research in Autism Spectrum Disorders*, *35*, 35–50. https://doi.org/10.1016/j.rasd.2016.12.002

Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S., Weich, S., Parkinson, J., Secker, J., & Stewart-Brown, S. (2007). The Warwick-Edinburgh Mental Well-being Scale (WEMWBS): development and UK validation. *Health and Quality of Life Outcomes*, *5*(1), 63. https://doi.org/10.1186/1477-7525-5-63

Thielemann, J. F. B., Kasparik, B., König, J., Unterhitzenberger, J., & Rosner, R. (2024). Stability of treatment effects and caregiver-reported outcomes: a meta-analysis of Trauma-Focused Cognitive Behavioral Therapy for children and adolescents. *Child Maltreatment*, *29*(2), 375–387. https://doi.org/10.1177/10775595231167383

Thiele-Swift, H. N., & Dorstyn, D.-S. (2024). Anxiety prevalence in youth with autism: a systematic review and meta-analysis of methodological and sample moderators. *Review Journal of Autism and Developmental Disorders*. https://doi.org/10.1007/s40489-023-00427-w

Thombs, B. D., Levis, B., Lyubenova, A., Neupane, D., Negeri, Z., Wu, Y., Sun, Y., He, C., Krishnan, A., Vigod, S. N., Bhandari, P. M., Imran, M., Rice, D. B., Azar, M., Chiovitti, M. J., Saadat, N., Riehm, K. E., Boruff, J. T., Cuijpers, P., … Benedetti, A. (2020). Overestimation of postpartum depression prevalence based on a 5-item version of the EPDS: systematic review and individual participant data meta-analysis. *The Canadian Journal of Psychiatry*, *65*(12), 835–844. https://doi.org/10.1177/0706743720934959

Thurm, A., Farmer, C., Salzman, E., Lord, C., & Bishop, S. (2019). State of the field: differentiating intellectual disability from autism spectrum disorder. *Frontiers in Psychiatry*, *10*. https://doi.org/10.3389/fpsyt.2019.00526

Tick, B., Bolton, P., Happé, F., Rutter, M., & Rijsdijk, F. (2016). Heritability of autism spectrum disorders: a meta-analysis of twin studies. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, *57*(5), 585–595. https://doi.org/10.1111/jcpp.12499

Tippett, N., & Wolke, D. (2014). Socioeconomic status and bullying: a meta-analysis. *American Journal of Public Health*, *104*(6), e48–e59. https://doi.org/10.2105/AJPH.2014.301960

Toft, G., Liu, C., Menon, J., Schendel, D., Loss, G., & Ehrenstein, V. (2021). Assessment of educational attainment and employment among individuals with autism spectrum disorder in Denmark. *JAMA Pediatrics*, *175*(6), 601–608. https://doi.org/10.1001/jamapediatrics.2021.0124

Tomlinson, C., Bond, C., & Hebron, J. (2020). The school experiences of autistic girls and adolescents: a systematic review. *European Journal of Special Needs Education*, *35*(2), 203–219. https://doi.org/10.1080/08856257.2019.1643154

Trickey, D., Siddaway, A. P., Meiser-Stedman, R., Serpell, L., & Field, A. P. (2012). A meta-analysis of risk factors for post-traumatic stress disorder in children and adolescents. *Clinical Psychology Review*, *32*(2), 122–138. https://doi.org/10.1016/j.cpr.2011.12.001

Trouton, A., Spinath, F. M., & Plomin, R. (2002). Twins early development study (TEDS): A multivariate, longitudinal genetic investigation of language, cognition and behavior problems in childhood. *Twin Research*, *5*(5), 444–448. https://doi.org/10.1375/136905202320906255

Trundle, G., Jones, K. A., Ropar, D., & Egan, V. (2023). Prevalence of victimisation in autistic individuals: a systematic review and meta-analysis. *Trauma, Violence & Abuse*, *24*(4), 2282–2296. https://doi.org/10.1177/15248380221093689

Trzesniewski, K. H., Moffitt, T. E., Caspi, A., Taylor, A., & Maughan, B. (2006). Revisiting the association between reading achievement and antisocial behavior: new evidence of an environmental explanation from a twin study. *Child Development*, *77*(1), 72–88. https://doi.org/10.1111/j.1467-8624.2006.00857.x

Turner, M. G., Exum, M. L., Brame, R., & Holt, T. J. (2013). Bullying victimization and adolescent mental health: general and typological effects across sex. *Journal of Criminal Justice*, *41*(1), 53–59. https://doi.org/10.1016/j.jcrimjus.2012.12.005

Turnock, A., Langley, K., & Jones, C. R. G. (2022). Understanding stigma in autism: a narrative review and theoretical model. *Autism in Adulthood: Challenges and Management*, *4*(1), 76–91. https://doi.org/10.1089/aut.2021.0005

Turunen, T., Poskiparta, E., & Salmivalli, C. (2017). Are reading difficulties associated with bullying involvement? *Learning and Instruction*, *52*, 130–138. https://doi.org/10.1016/j.learninstruc.2017.05.007

Twyman, K. A., Saylor, C. F., Saia, D., Macias, M. M., Taylor, L. A., & Spratt, E. (2010). Bullying and ostracism experiences in children with special health care needs. *Journal of Developmental & Behavioral Pediatrics*, *31*(1), 1. https://doi.org/10.1097/DBP.0b013e3181c828c8

UK Government. (2022, November 2). *Working definition of trauma-informed practice*. Office for Health Improvement & Disparities. https://www.gov.uk/government/publications/working-definition-of-trauma-informed-practice/working-definition-of-trauma-informed-practice

Underhill, R., & Foulkes, L. (2024). Self-diagnosis of mental disorders: a qualitative study of attitudes on reddit. *Qualitative Health Research*, 10497323241288785. https://doi.org/10.1177/10497323241288785

Vaiouli, P., Luminet, O., & Panayiotou, G. (2022). Alexithymic and autistic traits in children and adolescents: a systematic review of the current state of knowledge. *Autism: The International Journal of Research and Practice*, *26*(2), 308–316. https://doi.org/10.1177/13623613211058512

van Harmelen, A.-L., Blakemore, S. J., Goodyer, I. M., & Kievit, R. A. (2021). The interplay between adolescent friendship quality and resilient functioning following childhood and adolescent adversity. *Adversity and Resilience Science*, *2*(1), 37–50. https://doi.org/10.1007/s42844-020-00027-1

Varcin, K. J., Herniman, S. E., Lin, A., Chen, Y., Perry, Y., Pugh, C., Chisholm, K., Whitehouse, A. J. O., & Wood, S. J. (2022). Occurrence of psychosis and bipolar disorder in adults with autism: a systematic review and meta-analysis. *Neuroscience & Biobehavioral Reviews*, *134*, 104543. https://doi.org/10.1016/j.neubiorev.2022.104543

Varese, F., Smeets, F., Drukker, M., Lieverse, R., Lataster, T., Viechtbauer, W., Read, J., van Os, J., & Bentall, R. P. (2012). Childhood adversities increase the risk of psychosis: a meta-analysis of patient-control, prospective- and cross-sectional cohort studies. *Schizophrenia Bulletin*, *38*(4), 661–671. https://doi.org/10.1093/schbul/sbs050

Vasquez, M., & Stensland, M. (2016). Adopted children with reactive attachment disorder: a qualitative study on family processes. *Clinical Social Work Journal*, *44*(3), 319–332. https://doi.org/10.1007/s10615-015-0560-3

Vedechkina, M., & Holmes, J. (2024). Cognitive difficulties following adversity are not related to mental health: findings from the ABCD study. *Development and Psychopathology*, *36*(4), 1876–1889. https://doi.org/10.1017/S0954579423001220

Venter, M. D., Elzinga, B. M., Eede, F. V. D., Wouters, K., Hal, G. F. V., Veltman, D. J., Sabbe, B. G. C., & Penninx, B. W. J. H. (2020). The associations between childhood trauma and work functioning in adult workers with and without depressive and anxiety disorders. *European Psychiatry*, *63*(1), e76. https://doi.org/10.1192/j.eurpsy.2020.70

Vibhakar, V., Allen, L. R., Gee, B., & Meiser-Stedman, R. (2019). A systematic review and meta-analysis on the prevalence of depression in children and adolescents after exposure to trauma. *Journal of Affective Disorders*, *255*, 77–89. https://doi.org/10.1016/j.jad.2019.05.005

Villada, C., Hidalgo, V., Almela, M., & Salvador, A. (2016). Individual differences in the psychobiological response to psychosocial stress (trier social stress test): the relevance of trait anxiety and coping styles. *Stress and Health: Journal of the International Society for the Investigation of Stress*, *32*(2), 90–99. https://doi.org/10.1002/smi.2582

Villiers, J. de. (2021). The case against removing intellectual disability and autism from the Mental Health Act. *The British Journal of Psychiatry*, *218*(1), 63–63. https://doi.org/10.1192/bjp.2020.181

Walsh, D., McCartney, G., Smith, M., & Armour, G. (2019). Relationship between childhood socioeconomic position and adverse childhood experiences (ACEs): a systematic review. *Journal of Epidemiology and Community Health*, *73*(12), 1087–1093. https://doi.org/10.1136/jech-2019-212738

Wang, J. H., Merrin, G. J., Kiefer, S. M., Jackson, J. L., Huckaby, P. L., Pascarella, L. A., Blake, C. L., Gomez, M. D., & Smith, N. D. W. (2024). Peer relations of adolescents with adverse childhood experiences: a systematic literature review of two decades. *Adolescent Research Review*, *9*(3), 477–512. https://doi.org/10.1007/s40894-023-00226-8

Wang, Y., Chung, M. C., Wang, N., Yu, X., & Kenardy, J. (2021). Social support and posttraumatic stress disorder: a meta-analysis of longitudinal studies. *Clinical Psychology Review*, *85*, 101998. https://doi.org/10.1016/j.cpr.2021.101998

Wang, Y., Zhang, Y., Liu, L., Cui, J., Wang, J., Shum, D. H. K., Amelsvoort, T., & Chan, R. C. K. (2017). A meta-analysis of working memory impairments in autism spectrum disorders. *Neuropsychology Review*, *27*(1), 46–61. Springer Link. https://doi.org/10.1007/s11065-016-9336-y

Warrier, V., Greenberg, D. M., Weir, E., Buckingham, C., Smith, P., Lai, M.-C., Allison, C., & Baron-Cohen, S. (2020). Elevated rates of autism, other neurodevelopmental and psychiatric diagnoses, and autistic traits in transgender and gender-diverse individuals. *Nature Communications*, *11*(1), 3959. https://doi.org/10.1038/s41467-020-17794-1

Weathers, F. W., & Keane, T. M. (2007). The criterion a problem revisited: controversies and challenges in defining and measuring psychological trauma. *Journal of Traumatic Stress*, *20*(2), 107–121. https://doi.org/10.1002/jts.20210

Webb, E., Lupattelli Gencarelli, B., Keaveney, G., & Morris, D. (2024). Is trauma research neglecting neurodiverse populations? A systematic review and meta-analysis of the prevalence ACEs in adults with autistic traits. *Advances in Autism*, *10*(3), 104–119. https://doi.org/10.1108/AIA-07-2023-0037

Weiland, R. F., Polderman, T. J., Hoekstra, R. A., Smit, D. J., & Begeer, S. (2020). The Dutch Sensory Perception Quotient-Short in adults with and without autism. *Autism*, *24*(8), 2071–2080. https://doi.org/10.1177/1362361320942085

White, S. J., Sin, J., Sweeney, A., Salisbury, T., Wahlich, C., Montesinos Guevara, C. M., Gillard, S., Brett, E., Allwright, L., Iqbal, N., Khan, A., Perot, C., Marks, J., & Mantovani, N. (2024). global prevalence and mental health outcomes of intimate partner violence among women: a systematic review and meta-analysis. *Trauma, Violence, & Abuse*, *25*(1), 494–511. https://doi.org/10.1177/15248380231155529

White, S. W., Oswald, D., Ollendick, T., & Scahill, L. (2009). Anxiety in children and adolescents with autism spectrum disorders. *Clinical Psychology Review*, *29*(3), 216–229. https://doi.org/10.1016/j.cpr.2009.01.003

Williams, D. R., Yu, Y., Jackson, J. S., & Anderson, N. B. (1997). Racial differences in physical and mental health: socio-economic status, stress and discrimination. *Journal of Health Psychology*, *2*(3), 335–351. https://doi.org/10.1177/135910539700200305

Williams, K. L., Campi, E., & Baranek, G. T. (2021). Associations among sensory hyperresponsiveness, restricted and repetitive behaviors, and anxiety in autism: an integrated systematic review. *Research in Autism Spectrum Disorders*, *83*, 101763. https://doi.org/10.1016/j.rasd.2021.101763

Willis, J., Harrison, A., & Allen, J. L. (2021). Pupils with social, emotional and mental health special needs: perceptions of how restrictive physical interventions impact their relationships with teaching staff. *Teaching and Teacher Education*, *97*, 103219. https://doi.org/10.1016/j.tate.2020.103219

Wilmot, A., Pizzey, H., Leitão, S., Hasking, P., & Boyes, M. (2023). Growing up with dyslexia: child and parent perspectives on school struggles, self-esteem, and mental health. *Dyslexia*, *29*(1), 40–54. https://doi.org/10.1002/dys.1729

Wislocki, K. E., & Zalta, A. K. (2024). Assessing the existence of trauma-related diagnostic overshadowing in adult populations. *Psychological Trauma: Theory, Research, Practice, and Policy*, *16*(8), 1367–1373. https://doi.org/10.1037/tra0001484

Wolcott, M. D., & Lobczowski, N. G. (2021). Using cognitive interviews and think-aloud protocols to understand thought processes. *Currents in Pharmacy Teaching and Learning*, *13*(2), 181–188. https://doi.org/10.1016/j.cptl.2020.09.005

Wright, S. L., Karyotaki, E., Cuijpers, P., Bisson, J., Papola, D., Witteveen, A., Suliman, S., Spies, G., Ahmadi, K., Capezzani, L., Carletto, S., Karatzias, T., Kullack, C., Laugharne, J., Lee, C. W., Nijdam, M. J., Olff, M., Ostacoli, L., Seedat, S., & Sijbrandij, M. (2024). EMDR v. other psychological therapies for PTSD: a systematic review and individual participant data meta-analysis. *Psychological Medicine*, *54*(8), 1580–1588. https://doi.org/10.1017/S0033291723003446

Zachor, D. A., & Ben-Itzchak, E. (2020). From toddlerhood to adolescence, trajectories and predictors of outcome: long-term follow-up study in autism spectrum disorder. *Autism Research*, *13*(7), 1130–1143. https://doi.org/10.1002/aur.2313

Zeanah, C. H., & Gleason, M. M. (2015). Annual research review: attachment disorders in early childhood – clinical presentation, causes, correlates, and treatment. *Journal of Child Psychology and Psychiatry*, *56*(3), 207–222. https://doi.org/10.1111/jcpp.12347

Zeidan, J., Fombonne, E., Scorah, J., Ibrahim, A., Durkin, M. S., Saxena, S., Yusuf, A., Shih, A., & Elsabbagh, M. (2022). Global prevalence of autism: a systematic review update. *Autism Research*, *15*(5), 778–790. https://doi.org/10.1002/aur.2696

Zhao, M., Huang, C.-C., Mendoza, M., Tovar, X., Lecca, L., & Murray, M. (2023). Subjective socioeconomic status: an alternative to objective socioeconomic status. *BMC Medical Research Methodology*, *23*(1), 73. https://doi.org/10.1186/s12874-023-01890-z

Zheng, Z., Zheng, P., & Zou, X. (2018). Association between schizophrenia and autism spectrum disorder: a systematic review and meta-analysis. *Autism Research*, *11*(8), 1110–1119. https://doi.org/10.1002/aur.1977

Zorzella, K. P. M., Muller, R. T., Cribbie, R. A., Bambrah, V., & Classen, C. C. (2020). The role of alexithymia in trauma therapy outcomes: examining improvements in PTSD, dissociation, and interpersonal problems. *Psychological Trauma: Theory, Research, Practice and Policy*, *12*(1), 20–28. https://doi.org/10.1037/tra0000433