

Calming the Storm: A Systematic Review of Trauma-Informed Scaffolding and De-Escalation Strategies for Children with ASC, ADHD and SEMH Needs in UK Specialist Educational Settings

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ABSTRACT

Childhood trauma is increasingly recognised as a significant factor influencing behavioural and emotional outcomes in educational settings, particularly among pupils with Autism Spectrum Condition (ASC), Attention-Deficit/Hyperactivity Disorder (ADHD), and Social, Emotional and Mental Health (SEMH) needs. Although policies have increasingly endorsed trauma-informed approaches, there is still little understanding of how these approaches are applied in specialist education in the UK. As a result, this study sought to critically explore trauma-informed scaffolding and de-escalation approaches for these pupils.

The study used a qualitative systematic review approach, incorporating eight peer-reviewed articles between 2015 and 2025. Thematic synthesis was employed to analyse the data and identify common themes, inconsistencies, and research gaps.

The study finds that while behavioural dysregulation is commonly associated with trauma, it is better understood as an interaction between trauma, neurodevelopmental factors, and environmental influences. Although scaffolding and de-escalation strategies were commonly viewed as positive, they were not always consistent, well-tailored to neurodiverse students, or unaffected by contextual factors (such as a lack of resources and staffing) that often impact specialist education settings. Furthermore, there was a disconnect between theory and practice with teachers sometimes falling back on behaviourist practices when under stress.

The study concludes that trauma-informed practice remains conceptually strong but operationally underdeveloped within specialist educational settings. It emphasises the need for more specific and contextualised frameworks and robust empirical evidence for better implementation. The study provides a more nuanced and practical perspective on trauma-informed educational approaches.

Keywords: Trauma-informed practice, Trauma-informed education, Scaffolding strategies, De-escalation, Autism Spectrum Condition (ASC), Attention-Deficit/Hyperactivity Disorder (ADHD)

Background of the Study

Childhood trauma has gained considerable acknowledgement as a key issue of concern in public health and education because of its long-term effects on development and learning outcomes. It has been shown that adversity in childhood (ACEs) is very common, and a significant portion of children have been exposed to at least one type of adversity, with a significant minority having more than one type of adversity and sizeable minority endure more than one type of trauma (Goldberg, 2023; Smith, 2025). These experiences are closely linked with the disruptions of cognitive functioning, emotional regulation, and educational achievement, making trauma a key factor affecting learning paths instead of a secondary problem (Senaratne et al., 2024).

In the United Kingdom, the exposure to traumas is also influenced by structural inequalities, with disproportionately high rates in socio-economically disadvantaged groups (Hughes et al., 2017). Consequently,

schools have become an increasingly important location of intervention. Nevertheless, in spite of increasing policy acknowledgment of the concept of trauma-informed approaches, the implementation of the approaches in classroom practice appears to be inconsistent.

Trauma complexity is also compounded by the fact that the condition is more complex when taken together with neurodevelopmental disorders like Autism Spectrum Conditions (ASC) and Attention-Deficit/Hyperactivity Disorder (ADHD). These profiles elevate exposure to negative environments, such as bullying and exclusion, in children, increasing vulnerability to trauma (Darnell et al., 2019). Significantly, behaviours caused by trauma, including emotional dysregulation, hyperarousal, and impulsivity, frequently coincide with traits of ASC and ADHD. This poses major difficulties to teachers because behaviours cannot be understood through a single diagnosis.

Social, Emotional and Mental Health (SEMH) provision is often included in the sets of overlapping needs in an educational setting. Nevertheless, the traditional ways of responding have been based on the behaviourist paradigms that focus on obedience rather than the knowledge of causation. Such a practice has been associated with high levels of exclusion, especially of pupils with SEMH needs (Department for Education, 2023), which have cast questions on the effectiveness and the ethics of the existing practices.

Trauma-informed practice (TIP) has been proposed as a solution to these shortcomings, focusing on safety, relational consistency, and co-regulation. Instead of defining behaviour in terms of defiance, TIP views it as a manifestation of dysregulation which has been influenced by previous adversity. Although the theoretical background of TIP is well developed, there is a lack of understanding on how such principles are applied in the classroom context, especially in the specialist educational context.

The UK has special settings that facilitate the work with children with ASC, ADHD, and SEMH needs, and it is in this environment that this issue can be analyzed critically. These settings demand very specific strategies which not only deal with trauma, but also sensory, communicative and executive functioning variations.

In this context, the de-escalation and trauma-informed scaffolding strategies are viewed as key support strategies. Scaffolding is a structured and responsive type of intervention designed to help learners achieve a goal that they would not be able to do alone, which is then gradually withdrawn as skills are learned (Hammond, 2014; Zinsser et al., 2024). In classrooms, scaffolding can be achieved through strategies like chunking tasks, providing visual cues, modelling and prompting. In trauma-informed practice, scaffolding strategies can also be applied for emotional and behavioural regulation to provide predictability and minimise cognitive load, which is particularly important for learners with ASC, ADHD and SEMH.

Nevertheless, there is a lack of synthesis in the existing literature as few studies have analyzed the implementation and adaptation of these strategies to neurodiverse learners in UK specialist settings. Such a gap limits the capacity of educators to implement the evidence-based approaches.

Problem Statement

Even though there is a growing awareness of the use of trauma-informed practices in education, there remains a great disparity between the policy approval and its application in practice, especially in the context of UK specialist settings. The presence of childhood trauma together with structural disparities leads to intricate behavioural and emotional requirements among pupils (Goldberg, 2023; Hughes et al., 2017).

This is particularly acute with children with ASC, ADHD, and SEMH needs, who tend to develop both trauma and behavioural dysregulation (Darnell et al., 2019). Nevertheless, education reactions tend to be based on behaviourist theories, resulting in a punitive approach over supportive interventions. This is demonstrated in exclusion data, with the percentage of pupils with SEMH needs being disproportionately represented (Department for Education, 2023).

Despite the relational and regulatory strategies suggested by trauma-informed practice, there is a lack of empirical studies on the implementation and adaptation of particular strategies, specifically, scaffolding and the use of de-escalation with neurodiverse students. The current literature is frequently disjointed, methodologically unequivocal, and is not adequately contextualised through the UK specialist education (Maynard et al., 2017; Fondren et al., 2020).

This means that teachers are not provided with clear evidence-based guidelines to help them deal with complex behavioural needs, and the synthesis of the available research is therefore necessary in a systematic and critical manner.

Aim

The study aims to systematically review and critically synthesise existing evidence on trauma-informed scaffolding and de-escalation strategies for children with Autism Spectrum Disorder (ASD), Attention-Deficit/Hyperactivity Disorder (ADHD) and Social, Emotional and Mental Health (SEMH) needs within UK specialist educational settings.

Research Question

What trauma-informed scaffolding and de-escalation strategies are effective in supporting children with ASC, ADHD and SEMH needs in UK specialist educational settings?

Research Objectives

- To explore how trauma influence emotional dysregulation and crisis behaviours in children with ASC, ADHD and SEMH needs within educational settings
- To examine the role of environmental factors (classroom structure, sensory conditions and transitions) in either escalating or de-escalating distress.
- To identify and synthesize trauma-informed scaffolding and de-escalation strategies used by practitioners to support co-regulation and behavioural stability
- To evaluate trauma informed approaches in comparison to compliance-based or restrictive behaviour management practices in managing crisis situation.

LITERATURE REVIEW

Trauma and Neurodevelopmental Impact

There is a growing conceptualisation of childhood trauma in the neurodevelopmental context, as studies relate adverse experiences to impairments in brain systems that regulate emotions and executive functions (McLaughlin et al., 2023; Teicher et al., 2024). The findings have been of great importance in trauma-informed practice in education since they highlight biological nature of behavioural dysregulation.

Nevertheless, this view has been condemned as being reductionist. Critics note that the excessive focus on neurobiology may lead to the oversight of social, relationship, and contextual issues that influence the experiences of children and their behaviours (Ellis and Dietz, 2017). In the same way, deterministic conceptualizations of trauma can support the narrative of deficit, restricting the ability to focus on adaptability and recovery (Milton, 2022). Moreover, a significant portion of evidence is still correlational, which calls into doubt the causal relationship and the degree to which neurodevelopmental shifts can be directly attributed to behavioural outcomes (Do and Widom, 2025).

Recent literature also focuses on protective factors, as supportive school environments have been identified to lessen the impact of trauma (Senaratne et al., 2024). This implies that traumatic-related problems are dynamic and dependent on environmental factors. Nevertheless, little is known about how such environments are put into practice especially in specialist educational settings.

In general, although neurodevelopmental research has enhanced the theoretical basis of trauma-informed practice, there is still a gap in how these findings can be translated into practical classroom practices.

Trauma and Neurodiversity ASD and ADHD.

Trauma has become a complex and multidimensional issue in relation to neurodevelopmental disorders, like Autism Spectrum Condition (ASC) and Attention-Deficit/Hyperactivity Disorder (ADHD). It is suggested that these children, especially those who are neuro-diverse, may be more likely to experience adverse life circumstances, such as being bullied, excluded and experiencing relational instability which can increase vulnerability to trauma (Gnanamanickam et al., 2024; Rumball et al., 2023). The relationship is not as simple as that though, since the behaviours that relate to trauma often overlap with behaviours related to ASC and ADHD. This overlap poses a big problem in educational environments. Emotional dysregulation, impulsivity, hyperarousal and attention difficulties could be seen as a response to trauma, or as a part of ADHD (Ford et al., 2018; Sullivan and Knutson, 2022). Also, withdrawal, avoidance and sensory distress in autistic pupils could be due to trauma, sensory overload or both. These experiences are not mutually exclusive, but rather do not always occur in isolation, and simple explanations in terms of behaviour can be misleading.

However, it is proposed that there is a two-way relationship with neurodevelopmental differences contributing to greater exposure to adversity, and traumatic experiences contributing to a greater increase in emotional and behavioural challenges (Green et al., 2024). However, much of the evidence is correlational, and it is not possible to draw strong conclusions about the causes and developmental pathways. That adds to the ongoing confusion over the implementation of trauma-informed practices with neurodiverse learners.

Also in the literature, differences between ASC and ADHD in terms of support needs have been noted as important. Many autistic pupils can benefit from having sensory adjustments and supports and a predictable routine to reduce uncertainty and overstimulation (Ashburner et al., 2022). By contrast, pupils with ADHD may need external structure for regulation, more frequent feedback and smaller, more manageable demands during instruction due to attention and executive functioning difficulties (Barkley, 2023). Relationship-based consistency, emotional containment and co-regulation are often a focus of SEMH support, however. Notwithstanding these differences, there is a lack of distinction between conditions and/or supports in the discussion of neurodiverse learners within a trauma-informed framework.

Yet another issue in the literature is the focus on trauma narratives to frame behaviour. However, a trauma-informed lens is useful for understanding behavioural dysregulation, and there are some scholars who have spoken out against reductionist interpretations that fail to take into account differences in neurodevelopment and surrounding context (Milton, 2022). Overall, the evidence is consistent with the idea that behaviour in the context of specialist education is not solely a consequence of trauma, but rather the result of trauma plus neurodevelopmental features and context.

In general, there has been an increasing awareness of the link between trauma and neurodiversity in the literature, with less guidance on how to differentiate and tailor trauma-informed approaches for learners with ASC, ADHD and SEMH needs in specialist educational contexts.

Education Trauma-Informed Practice.

The practice of trauma-informed practice (TIP) has grown in significance in educational contexts over the past few years, moving away from compliance-based behaviour management to a focus on safety, relationships and emotional regulation (Bath, 2008; Winfrey and Perry, 2021). Trauma-informed approaches focus on more than just seeing behaviour as defiant or misbehaviour; they consider behaviour in the light of previous trauma, emotional distress, and unmet needs.

One of the key principles of TIP is co-regulation, in which children learn to regulate their emotions more effectively through supportive and consistent relationships, and to feel more safe. Current research indicates that trauma-informed practices can help foster positive school culture and staff awareness and relational practices (Thomas et al., 2024). Evidence of implementation is mixed, but there is less evidence about long-term behavioural outcomes.

A significant issue in the literature is the multifaceted and varied understanding of trauma-informed practice. The concept is often applied to many relational, behavioural and organisational strategies, and can be interpreted and applied differently in contexts of education (Wilson-Ching and Berger, 2024). Some schools may therefore use trauma-informed language without a trauma-informed understanding, or without engaging in the actual process of making their actions and systems trauma-informed.

Significant challenges for implementation are also emphasized in the literature. Time constraints, staff burnout, and inadequate training and resources are frequent barriers, especially in specialist environments where behaviors may be more complex (Stokes et al, 2023). Such pressures can make it hard for practitioners to be consistent between trauma-informed theory and classroom practice and may lead to a shift in approach towards more directive or behaviourist styles of practice when stressed.

Importantly, the effectiveness of trauma-informed practice seems to be very contextually dependent. While relational consistency and emotional safety and predictability are strongly espoused, little advice is provided about how these principles are to be put into practice in specialist education settings for neurodiversity. There may be adaptations that are needed that relate to sensory regulation and/or communication with autistic pupils, and structured external regulation and task support may be more effective with pupils with ADHD. But these distinctions are not always explicitly discussed in trauma-informed approaches.

The body of literature indicates that a conceptual framework of trauma-informed practice is useful when considering behaviour that is dysregulated within educational contexts. However, its use in practice is flexible and especially in specialist settings where students have ASC and/or ADHD and SEMH needs. This underlines the importance of context-sensitive, operationally clear methods which can be used to accommodate the complexity of neurodiverse educational settings.

Trauma-Informed Scaffolding

The concept of scaffolding, originally from Vygotskian learning theory, has emerged as a practice that is used in trauma-informed learning as a teaching and learning and regulatory technique. Scaffolding is a type of instructional support designed to help students achieve task completion and progress towards independence in educational settings (Hammond, 2014; Zinsser et al., 2024). In trauma-informed practice scaffolding is not just about academic help; it is also about emotional regulation, predictability and behavioural stability.

Structured routines, visual supports, modelling and task chunking are suggested to decrease cognitive overload and emotional distress for trauma-affected learners (Cefai et al., 2017). Predictability in the classroom can help minimise uncertainty, improve engagement, especially for those pupils who are emotionally dysregulated. Although scaffolding is well known to be effective, however, there is not a clear consensus as to what scaffolding actually means in practice in the literature.

A critical question is related to the adaptation of the scaffolding strategies to the needs of neurodiverse learners. Visual schedules, sensory regulation and communication scaffolds which reduce unpredictability and/or over-stimulation can be helpful for pupils with autism (Ashburner et al., 2022). Pupils with ADHD, on the other hand, might need shorter instructional sequences, some external organisation and more frequent feedback to help their attention and self-regulation (Barkley, 2023). A different approach, however, is one that prioritises emotional containment and relational reassurance, which is typical of an SEMH approach. Although there are these differences, many of the trauma-informed models speak generally about scaffolding, rather than distinguishing how it will be adapted among learner groups.

This lack of differentiation may reduce intervention effectiveness because learners with ASC, ADHD, and SEMH needs often require distinct forms of support. For example, autistic learners may benefit more from sensory predictability and communication scaffolds, whereas pupils with ADHD may require external regulation, movement opportunities, and reduced instructional load. SEMH-focused approaches may place greater emphasis on relational consistency and emotional containment.

Authenticity and reliance are also noted in the literature. Having too little support can lead to frustration, disengagement and escalation, while too much scaffolding can unwittingly have a negative effect on learner independence (Zinsser et al., 2024). This indicates that scaffolding must be flexible, not rigid, and responsive in order to be effective. However, there is very little practical guidance available in the literature on the issue of balance between support and autonomy in specialist contexts.

A further constraint is that there is limited empirical evidence about scaffolding as a trauma informed intervention. The majority of literature is of a conceptual or descriptive nature, and comparatively little research was conducted on the longer-term implications or classroom implementation processes. In addition, scaffolding is often discussed without any connection to de-escalation, although both of them have ground or foundations in relation and regulation.

In general, the literature suggests that scaffolding can be a potentially valuable tool in trauma-informed education especially in specialist settings for ASC, ADHD and SEMH learners. More clarity of concepts and more specific evidence, however, is needed to ensure consistent and differentiated implementation in practice.

De-escalation in Education

De-escalation is an integral part of trauma-informed practice in Education, especially when supporting pupils in emotional distress or behavioural regulation. Historically, de-escalation focused mainly on reducing aggression and/or preventing crisis scenarios. However, over the last few years, trauma-informed thinking has started to reimagine de-escalation as a preventative, relational and regulatory practice, not just a behaviour reduction approach (Price and Baker, 2012; Milton, 2022).

An early identification of stress symptoms such as agitation, withdrawal, sensory overload and emotional deregulation is highlighted. A few common factors that are reported to be part of good de-escalation skills are calm communication, non-threatening body language, reduced demands and co-regulation (Nunno et al., 2019). The goal of these strategies is to lessen the threat level and create an emotional safe space in the classroom setting.

Although there is general agreement on the concept of de-escalation, there is not a uniform approach to de-escalation in the education system. It has been found in several studies that practitioners will return to more directive and compliance based approaches in times of stress, especially when working in settings where there is little staffing, time constraints, and behavioural complexity (Stokes et al., 2023). This points to a persistent conflict between theory and practice in specialist classrooms around managing trauma. This illustrates a longstanding dichotomy between trauma-informed theory and trauma-informed practice, in specialist classrooms.

It can also be seen in the literature that de-escalation strategies do not work equally well for all groups of learners. There is a need for pupils with sensory sensitivities who may need to be approached in a less sensory-overloading way, and for pupils with communication impairments who may need support to communicate (Ashburner et al., 2022; Griffin et al., 2025) while pupils with ADHD may require shorter instructions, movement opportunities and externally supported regulation (Ashburner et al., 2022; Griffin et al., 2025). Relationships, emotional reassurance and trust-building may be more important elements of approaches that focus on SEMH. Many trauma-informed models are not explicit about these needs, however, and generalised de-escalation models are not always as practically applicable.

Another restriction relates to the evidence base itself. Research on de-escalation tends to come from a clinical and residential or therapeutic setting, and less so from mainstream and specialist educational settings. Thus, the adaptability of some methods in the classroom is still unclear. Furthermore, collaborative and relationship-focused strategies have potential but may require a significant amount of resources and are challenging to maintain across all time periods in under-resourced schools (Silverman et al., 2021).

In general, literature suggests that de-escalation is a key component of trauma-informed practices in education, yet context, relationship, and neurodevelopmental influences can impact the effectiveness of de-escalation practices. This highlights the need to have more targeted and more practically relevant interventions in specialist educational settings that support pupils with ASC, ADHD and SEMH needs.

Synthesis and Research Gap.

Some of the key gaps are pointed out in the literature. To begin with, the empirical research on trauma and neurodiversity has not been interrelated, which leads to the piecemeal methods of dealing with the complexity of the needs of learners. Second, actionable, detailed strategies in classroom settings are lacking, especially in terms of scaffolding and de-escalation. Third, the current evidence base is methodologically poor, which makes it hard to be confident in the effectiveness claims.

Also, the research on UK specialist educational settings is essentially deficient, which raises the question of applicability of the findings. Although practice in these environments can be novel, it is frequently informal, and not well-documented.

There are practical implications of these gaps. In the absence of clear and evidence-based guidance, educators might turn to inconsistent or ineffective strategies, which might even support exclusionary practices. Thus, the systematic and critical review of the literature is required to determine the effective trauma-informed scaffolding and de-escalation strategies in UK specialist education.

METHODOLOGY

Research Design

This study used a qualitative systematic review design to critically synthesise evidence relating to the use of scaffolding and de-escalation approaches when working with children with Autism Spectrum Condition (ASC), Attention-Deficit/Hyperactivity Disorder (ADHD) and Social, Emotional and Mental Health (SEMH) needs in specialist educational settings in the UK. Systematic reviews provide a rigorous and transparent approach for identifying, appraising and synthesising evidence while reducing bias (Snyder, 2019; Page et al., 2021).

Since the study was not just to measure the effectiveness of trauma-informed practices, a qualitative approach was chosen to explore how trauma-informed practices are experienced and implemented in the education context. Qualitative evidence is also suitable, as it is relational and context dependent, and is particularly suitable for the purpose of examining practitioner experiences, behavioural interpretations and environmental influences in specialist settings (Creswell and Poth, 2018).

While there are quantitative and mixed-methods studies, qualitative studies provide depth of understanding into the complex relationship between trauma, neurodevelopmental differences and classroom practice. The review thus focused on contextual understanding rather than statistical generalisability.

Patterns, similarities and contradictions among the included studies were identified using thematic synthesis (Thomas and Harden, 2008). This strategy allowed for the review to go beyond description and critically discuss the implementation of trauma-informed strategies. The limited number of studies included is indicative of the fledgling nature of research specifically on trauma-informed practice with neurodiverse learners in specialist educational settings in the UK.

Search Strategy

A systematic search process was created to locate relevant qualitative studies that looked at scaffolding and de-escalation practices in specialist educational contexts. A variety of databases have been searched (Scopus, Web of Science, ERIC, PsycINFO and Google Scholar) to cover a wide range of education, psychology and behavioural research literature.

The key concepts outlined in the research objectives were used to generate search terms, which included trauma-informed practice, scaffolding, de-escalation, ASD, ADHD, SEMH, and specialist education. Boolean operators (AND/OR) were used to combine terms and increase search sensitivity and specificity.

An example search string was:

("trauma-informed practice" OR "trauma-informed education") AND ("scaffolding" OR "instructional support") AND ("de-escalation" OR "behaviour management") AND (ASC OR autism OR ADHD OR SEMH) AND (qualitative OR interviews OR "case study") AND ("United Kingdom" OR UK)

The search was limited to peer-reviewed studies published between 2015 and 2025 to capture contemporary developments in trauma-informed educational practice. Additional strategies, including manual reference list searches and citation tracking, were used to identify relevant studies that may not have been captured through database searches alone (Brunton et al., 2017). Google Scholar was employed as an additional search tool, although there are limitations in transparency and reproducibility in the use of this tool.

Eligibility Criteria

Inclusion Criteria

- Studies published between 2015 and 2025
- Peer-reviewed journal articles
- Studies employing qualitative research designs
- Research conducted within educational settings
- Studies involving children with Autism Spectrum Condition (ASC), Attention-Deficit/Hyperactivity Disorder (ADHD) or Social, Emotional and Mental Health (SEMH) needs.
- Studies examining trauma-informed scaffolding and/or de-escalation strategies
- Studies conducted in or clearly relevant to the United Kingdom context

Exclusion Criteria

- Quantitative only or purely statistical studies
- Non-English language publications
- Studies conducted exclusively in clinical, therapeutic or residential settings
- Editorials or non-empirical papers
- Studies focusing solely on adult populations
- Studies not explicitly addressing trauma-informed approaches

Study Selection

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework was used to guide the study selection process (Page et al., 2021). The first search of the database identified a total of 840 records. After eliminating duplicate studies and initial screening of titles and abstracts, 586 studies were left for review.

During screening, studies that did not address the research focus were categorized as not eligible, leaving 100 full-text articles to be evaluated in eligibility. Of these, 92 studies were excluded after full-text review for lack of meeting inclusion criteria such as not being qualitative, not being conducted in a UK school context, or not focusing on scaffolding and de-escalation in response to trauma.

There were eight total studies selected for final review. The number of included studies was comparatively small, but this is due to the limited and emerging evidence base specifically around trauma-informed practice for neurodiverse learners in specialist educational settings within the UK. The entire screening process is described in the PRISMA flow diagram (Appendix 1).

Quality Appraisal

The Critical Appraisal Skills Programme (CASP, 2018) qualitative checklist was used to assess the methodological quality of the included studies. It assesses major aspects such as clarity of research goals, methodology appropriateness, recruitment process, data collection, ethical issues, and analytical rigor (Creswell & Poth, 2018).

The studies were not subject to numerical scoring but rather were critically appraised for methodological strengths and weaknesses. This helped to incorporate contextually relevant studies and to critically evaluate the evidence base (Booth et al., 2021). The appraisal process also facilitated a more balanced interpretation of the findings across studies with different methodological quality.

Data Extraction

The study adopted a data extraction framework to guide data extraction. Data extracted included authors and date, purpose of study, study design, participants, educational context, trauma-informed scaffolding strategies, de-escalation strategies, results and limitations. This allowed comparisons between studies and a systematic synthesis of the evidence (Petticrew and Roberts, 2006; Booth et al., 2021). Extracted information was summarised in a table for clarity. See Appendix 2

Data Synthesis

The findings from the studies included were analysed and synthesized thematically, using the approach described by Thomas and Harden (2008). Initial coding was conducted to identify key concepts and recurring patterns within the data. The codes were then sorted into descriptive themes that have similarities and differences between studies.

The last step was the creation of analytical themes that would yield overarching interpretive understanding of how scaffolding and de-escalation practices can be trauma-informed in specialist educational settings. Through this process, the review became more than a description, and focused on critically analyzing relationships, contradictions and contextual influences within the evidence base.

The synthesis was iterative and comparative, considering differences in educational settings, practitioner views and learner attributes to help inform a deeper understanding of trauma-informed practice.

Ethical Considerations

This study did not require ethical approval as there was no direct involvement of participants and only involved review of previously published literature. However, ethical considerations were adhered to throughout the review process.

Only published, peer-reviewed studies were included and all of these studies had been previously ethically considered by the original authors. Findings were accurately cited and presented in a transparent manner, thus supporting the responsible representation of findings and reducing reporting bias (Booth et al., 2021).

The review was also conducted on the PRISMA principles that ensure transparency, rigour and accountability in the reporting of the review (Page et al., 2021).

RESULT AND FINDINGS

The synthesis of eight studies published from 2015-2025 resulted in four interconnected themes: (1) trauma as a driver of behavioural dysregulation, (2) environmental influences on escalation and de-escalation, (3) trauma-informed scaffolding, and (4) de-escalation as a relational and preventative practice.

Theme 1: Trauma as a driver of Behavioural Dysregulation

All studies identified behavioural dysregulation in pupils with ASC, ADHD and SEMH needs as being linked with trauma (Day, 2025; Bromfield, 2025; Fox et al., 2025). One notable theme is a shift in perspective from viewing behaviour through the lens of wilful misconduct and instead viewing it through the lens of distress. In these situations, behaviour is often viewed as a "survival response" resulting from previous trauma (Bromfield, 2025).

This view aligns with the broader trend towards trauma-informed approaches, which focus on the purpose of behaviour rather than the symptoms. A number of studies point out that practitioners are increasingly aware of the influence of unmet emotional needs in behaviour (Fox et al., 2025). Yet, while this recognition is increasing, there is a degree of variability in the prioritisation of trauma. For example, some studies suggest that trauma is the primary model used to explain dysregulation (Cook and Ogden, 2022), while others take a more holistic approach, recognising the interplay between trauma and neurodevelopmental disorders. This is especially apparent when ADHD and ASC are discussed due to the shared behavioural traits.

An identified problem is misattribution. Impulsivity, hyperactivity and emotionally reactive behaviours may be misinterpreted as ADHD symptoms, when they may also be related to hyperarousal associated with trauma (Waite, 2025; Stokes et al., 2025). Similarly, avoidance behaviours in autistic students may reflect sensory sensitivities, trauma, or both. While this overlap is being recognised, some studies do not offer specific guidance on how educators can navigate this intersection.

Moreover, there are variations in the classroom reactions to this knowledge. Some indicate a shift towards more emotionally supportive responses, focusing on co-regulation and emotional containment rather than behaviour correction (Emsley et al., 2022). However, other research suggests that, when it comes to practice, staff may revert to directive or punitive approaches, especially in stressful contexts (Fox et al., 2025).

This finding points to a disconnect between theory and practice. Although trauma-informed approaches are increasingly recognised, these approaches seem to be moderated by factors such as staff training, confidence, and expectations. In summary, the results suggest while trauma is readily recognised as a contributing factor of behavioural dysregulation, its application appears inconsistent.

Theme 2: Impact of Environment on Escalation and De-escalation

The environment was a consistent theme in the escalation and de-escalation of behaviour. The studies shift the focus from viewing dysregulation as a trait of the child to the interaction between the child and their environment.

A common theme in many of the studies is the importance of structure and predictability. A lack of routine, clear expectations and unexpected events were often linked to heightened anxiety and distress, especially for autistic students (Emsley et al., 2022; Day, 2025). In these cases, the unpredictability seems to have exacerbated uncertainty and thus, the risk of distress.

Environmental sensory factors were also highlighted. Noise, light and crowding were consistently identified as potential sources of distress (Fox et al., 2025). But these factors were also described as being neglected in the classroom environment, indicating a disconnect between recognition and adjustment.

On the other hand, factors such as predictability and consistency were linked with improved behaviour. Routines, visual schedules and transitions were found to promote emotional regulation and prevent escalation (Bitanirwe and Imad, 2023). These methods likely work by decreasing the cognitive and emotional demands, allowing learners to focus on the task at hand.

While the above studies report positive outcomes, there are notable differences between approaches. Some studies report proactive strategies, where environmental changes are integrated into the classroom and the curriculum (Bromfield, 2025; Stokes et al., 2025). Other studies reflect a reactive approach, with adjustments made only in response to challenging behaviours (Waite, 2025; Day, 2025). Challenges in adapting the environment were also identified. Staffing, time and space constraints were often mentioned as barriers (Fox et al., 2025). This may impact schools' ability to adopt proactive practices.

Activity transitions were identified as critical times. Poorly managed transitions were linked to increased incidents of behaviour problems, particularly among children with special needs. This highlights the need for transition plans as part of a trauma-informed approach. Generally, the study findings suggest the environment is a key factor in behaviour. But the extent to which these factors are being managed varies.

Theme 3: Trauma-Informed Scaffolding

Scaffolding was identified as a strategy for learning and emotion regulation. In the studies reviewed, scaffolding was defined not just as an educational strategy, but also as a behavioural management strategy.

A common theme is that support minimises overwhelm and facilitates engagement. Techniques including task chunking, clear instructions and routine were shown to reduce cognitive demand and escalation (Day, 2025; Waite, 2025). These strategies seem to be particularly helpful for students who have difficulties with executive functioning and emotional regulation.

Visual supports were also common, such as visual timetables, task prompts and cue cards (Fox et al., 2025). These were found to increase predictability and provide structure, thus decreasing anxiety and stress.

However, variation exists in how scaffolding is adapted to meet the needs of different groups. Some research stresses the need for individualised support for autistic children, such as adaptations for sensory sensitivities and communication styles (Stokes et al., 2025). Others point to the importance of planned external regulation for pupils with ADHD, who may require more frequent and regular feedback (Emsley et al., 2022). While these studies give guidance, not all detail how scaffolding strategies are tailored. This may reflect a lack of standardisation in applying trauma-informed principles.

A further concern identified is the need for balance between support and independence. Although scaffolding is needed to engage, too much support may reduce autonomy (Bitanirwe and Imad, 2023). On the other hand, too little scaffolding may result in frustration, disengagement and escalation of behaviours. Consequently, the balance between support and independence remains a delicate task.

Some studies also emphasised the relational aspect of scaffolding. Here, scaffolding did not only involve organising tasks but also provided emotional support and co-regulation, highlighting the need for trust and rapport (Bromfield, 2025). But this relational dimension is not always emphasised.

In sum, scaffolding is generally regarded as a successful approach but its execution differs in relation to adaptability, continuity and integration into relationships.

Theme 4: De-escalation as Relational and Preventative

De-escalation was recognised as a key element of trauma-informed practice, but there is a shift from viewing it as a reactive measure to a preventative and relational practice. Early recognition of distress and danger signs was identified across the studies. Health professionals reported to be attentive to subtle cues, such as changes in body

posture, withdrawal or agitation, as signs of escalation (Cook and Ogden, 2022). Early intervention strategies were shown to prevent situations escalating to crisis.

Strategies to de-escalate situations involved speaking calmly, minimising demand and avoiding non-threatening gestures (Day, 2025; Cook and Ogden, 2022). These strategies are designed to reduce threat perception and enhance regulation of emotions.

Yet, while these strategies are widely endorsed, there appears to be little evidence of their sustained use. A number of studies indicate that under stress, staff may fall back into more controlling strategies (Stokes et al., 2023). This may indicate that logistical and emotional factors may impact the use of trauma-informed approaches.

The role of relationships was also emphasised. Positive relationships between staff and pupils were linked to successful de-escalation (Bitanihirwe and Imad, 2023). This may make pupils more open to support and less inclined to escalate. But other studies emphasise techniques over relationships, suggesting a level of variability. There were also variations between proactive and reactive de-escalation. While some studies report preventative practices that occur throughout ongoing interactions (Emsley et al., 2022), other studies suggest de-escalation is used reactively.

Factors that hinder the use of de-escalation include staff stress, lack of training, and a lack of resources (Fox et al., 2025). Further, failure to accommodate for neurodiverse communication and sensory needs may limit the effectiveness of typical approaches (Waite, 2025). In all, the evidence points to de-escalation being recognised as critical but its use is contextual and varies between contexts.

DISCUSSION

This review examined evidence for trauma-informed approaches for addressing behavioural dysregulation in children with ASC and ADHD, and in those with SEMH needs, and identified both areas of alignment with and contradictions within the literature. Although the review confirms the shift from behaviourist to trauma-informed approaches to understanding behaviour, it also reveals important conceptual, practical and methodological limitations that limit the effectiveness of these approaches in education.

One key area of convergence with the literature is the role of trauma in behaviour dysregulation. This aligns with studies in the field of neurodevelopment that show adverse childhood experiences (ACEs) are associated with dysregulations in the emotional regulation system (McLaughlin et al., 2023; Teicher et al., 2024). But this study adds to this conversation by showing that behaviour is not just attributable to trauma. Rather, behaviours seem to result from an interaction between trauma, neurodevelopmental factors, and environmental factors. This reinforces the critiques by Ellis and Dietz (2017) and Milton (2022) that reductionist approaches should be avoided in trauma discourse.

Specifically, the overlap between behavioural responses to trauma and ADHD and ASC is a continuing issue. Although this overlap is recognised in the literature (Ford et al., 2018; Sullivan and Knutson, 2022), it offers little direction on how to untangle these factors in practice. The results suggest that this ambiguity leads to variable interpretations of behaviour that may influence the suitability and impact of interventions. Therefore, although theoretically robust, trauma-informed approaches may be applied in a manner that oversimplifies behaviour.

This study also supports the importance of environmental factors, consistent with existing literature that stresses the importance of structural, predictable, and sensory aspects of the classroom environment in regulating emotions (Hammond, 2014; Senaratne et al., 2024). Yet, this apparent consensus conceals complexities. Structured environments are advocated as beneficial, but this study suggests the benefits are not consistent and are constrained by contextual factors, such as resources, staffing and classroom issues. This highlights the need to move beyond the tendency in the literature to promote environmental strategies as universally relevant without acknowledging the complexities of implementation.

Furthermore, while sensitivities (especially in relation to ASD) are well reported (Ashburner et al., 2022), the findings demonstrate a disconnect between theory and practice. Adaptations to the teaching environment are not always considered within the classroom, indicating that current recommendations may not fully account for the challenges of implementation. Likewise, although transitions are often cited as risk periods, the literature offers little practical insight, limiting its effectiveness.

The second insight concerns the use of scaffolding as an instructional strategy and as a self-regulatory strategy. In line with the literature, the data show that support can decrease cognitive load and de-escalate behaviour (Hammond, 2014; Cefai et al., 2017). However, the literature's treatment of scaffolding remains conceptually vague, often referencing it without clearly defining or operationalising its application within trauma-informed contexts. This ambiguity is mirrored in practice, where scaffolding is inconsistently used and lacks differentiation for neurodiverse students.

While the need for differentiation for children with ASD and ADHD is recognised (Barkley, 2023; Ashburner et al., 2022), this study suggests differentiation is not applied consistently. Rather, scaffolding is often used in a blanket manner, reducing its impact. Moreover, the issue of support versus autonomy is unclear. While excessive scaffolding may limit independence (Zinsser et al., 2024), insufficient scaffolding can lead to disengagement and escalation. This balance is not explicitly discussed in terms of how to achieve it, further highlighting the disconnect between theory and practice.

Crucially, the study highlights the relational aspect of good practice. Although trauma-informed approaches emphasise trust, safety and connectedness (Bath, 2008), these relational aspects are not always considered in strategy development. Structural models of scaffolding and behavioural interventions are frequently used, with less emphasis on the relational context. The results suggest relational factors play an important role in intervention efficacy, and as such, may be under-represented in existing models.

This finding is also seen in the use of de-escalation. The growing trend in the literature to conceptualise de-escalation as preventative and relational is supported by the findings (Nunno et al., 2019; Milton, 2022). Early recognition of distress cues and adopting a non-threatening and calm approach are linked to better outcomes. But not all of these approaches work equally. The results indicate they are context sensitive, highly reliant on practitioner skills and effective staff-student relationships.

In reality, the demands of the classroom environment may limit the ability to consistently implement trauma-informed strategies, with practitioners falling back on more directive or reactive strategies (Stokes et al., 2023). This suggests a gap between the models based on proactive and relational approaches, and the practice of classroom management. In addition, typical approaches to de-escalation are not always sensitive to the sensory and communicative needs of neurodiverse students (Price and Baker, 2012), which is problematic in terms of inclusivity and efficacy.

Across all themes, there is a concern about the diversity of research designs, contexts and approaches. Variations in study participants, school contexts and strategies used to support children result in diverse findings and limit generalisability. This is likely a reflection of the complexity of trauma and lack of clear frameworks to guide trauma-informed practice. Further, the small number of studies suggests that this area of research is in its infancy, and that evidence is still developing.

Overall, the findings confirm and supplement existing evidence. The literature is aligned to trauma-informed principles, but the review identifies gaps in clarity, guidance and research. Specifically, the literature tends to favour theoretical conceptualisation at the expense of acknowledging the complexities of implementation in resource-limited educational environments. Consequently, while trauma-informed practice is often espoused, it is not consistently implemented and lacks strategies to address the challenges of neurodiverse classrooms.

CONCLUSION

This research shows that behavioural dysregulation in children with ASC, ADHD and SEMH needs is

determined by a complex interplay between trauma, neurodevelopmental differences, and other environmental factors. Although trauma-informed approaches provide valuable insights, they are inconsistent and context-specific.

While approaches like scaffolding and de-escalation hold promise, they are often piecemeal, not tailored to neurodiverse learners, and limited by practical constraints. As a result, trauma-informed strategies are well theorised but underdeveloped.

Importantly, this review contributes to current debates by challenging universalised applications of trauma-informed practice and emphasising the need for differentiated approaches responsive to neurodevelopmental diversity. The findings suggest that effective trauma-informed practice requires more than trauma awareness alone; it also requires context-sensitive adaptations that recognise the sensory, communicative, and regulatory differences associated with ASC, ADHD, and SEMH needs.

RECOMMENDATIONS

Context-specific guidelines are needed for the application of trauma-informed approaches in education. This should include trauma- and neurodiversity-informed approaches, which consider the sensory, communication and regulatory challenges faced by children with ASC and ADHD.

Staff training should be actionable, providing strategies that can be sustained under pressure. Schools should also take a proactive approach to the environment, with appropriate resourcing and commitment.

Relationships should be at the forefront of all ecologies, with a focus on trust and predictability to support regulation. Finally, more research is needed to build on practice-based evidence to inform trauma-informed approaches.

Limitations of the Study

The review is limited by its small sample size, which may limit the conclusions that can be drawn. Differences in study designs, settings and characteristics of participants also pose a synthesis challenge.

Moreover, the use of published studies raises the potential for publication bias. The review identifies the intersection between trauma and neurodevelopmental conditions, but does not provide guidance on how to distinguish between these factors, which remains an area for future research.

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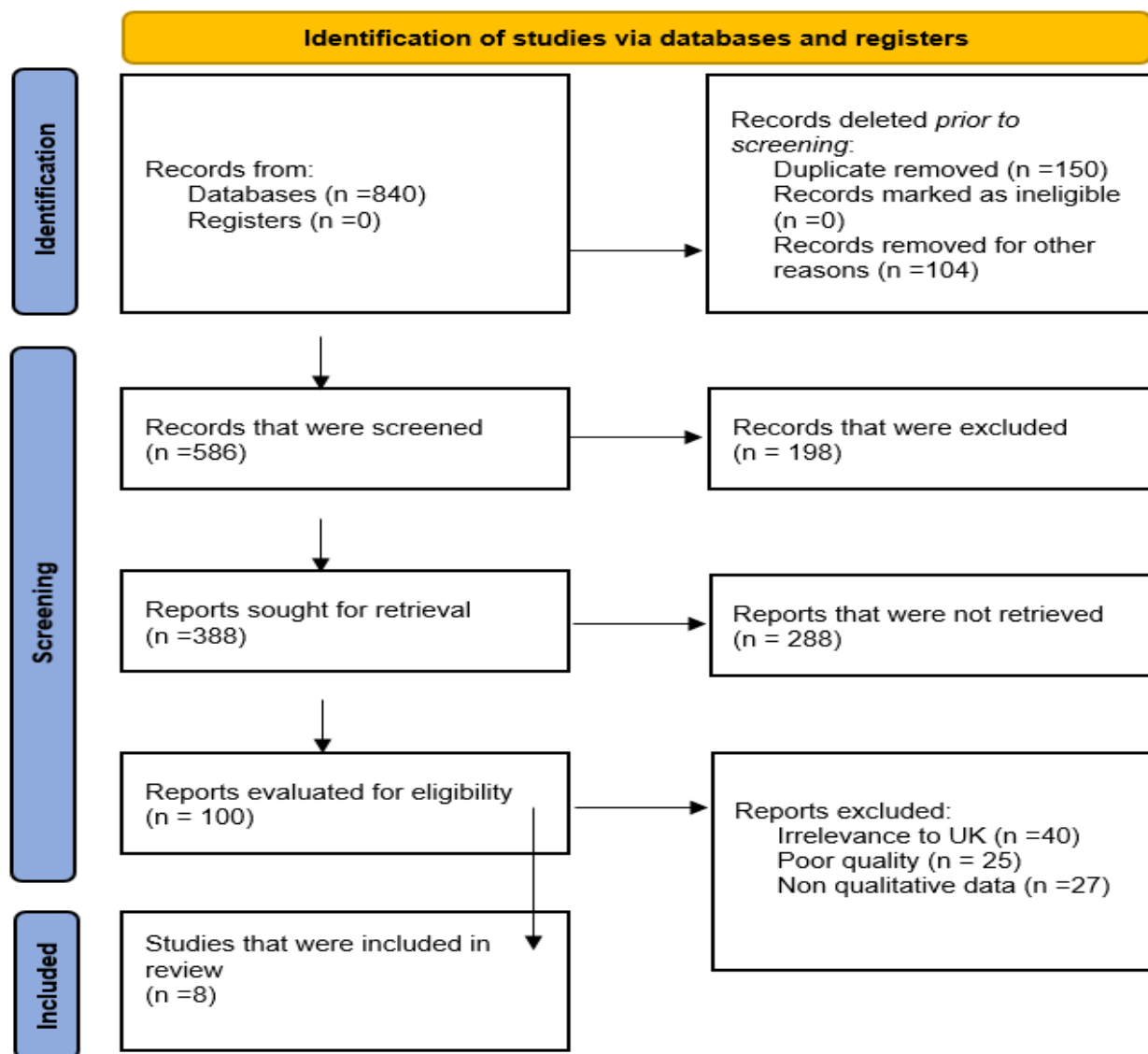
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APPENDIX 1

Prisma Flow Chart



The systematic reviews' PRISMA 2020 flow diagram included database and identification searches

Appendix 2

Data Extraction Table

Author & Year	Study Aim	Methodology	Participants/ Settings	Key Strategies identified	Key Findings	Limitation
Day (2025)	To explore trauma informed support for neurodivergent people at risk of exclusion	Qualitative (Interpretative study)	UK school staff working with SEMH pupils	Structured routines, relational support, de-escalation	Trauma linked to behavioural dysregulation; routines reduce escalation	Small sample size; context-specific findings

Fox et al (2025)	To examine staff experiences supporting SEMH needs	Qualitative (IPA)	School staff in UK educational settings	Visual supports, emotional regulation strategies	Behaviour seen as communication of unmet need; inconsistency in practice	Self-reported data; limited generalisability
Bromfield (2025)	To investigate perceptions of trauma-informed approaches in secondary education	Qualitative cohort study	Students, staff, caregivers in UK	Relationship-based approaches, environmental adjustments	Shift from punitive to supportive responses; trauma shapes behaviour	Cross-sectional design; lacks longitudinal insight
Waite (2025)	To explore trauma-informed education in SEMH schools	Qualitative (IPA)	Headteachers in UK SEMH schools	Scaffolding, structured transitions, relational practice	Trauma-informed awareness high but inconsistent application	Leadership perspective only; lacks classroom-level data
Emsley et al. (2022)	To examine trauma-informed care implementation in UK	Qualitative policy and professional perspectives	Professionals across services	Co-regulation, environmental consistency	Implementation gaps between policy and practice	Broad focus; not education-specific
Bitanirwe & Imad (2023)	To explore trauma-informed pedagogy	Qualitative case study	UK higher education context	Predictability, emotional safety, relational support	Safe environments reduce distress and improve engagement	Not specific to school age children
Cook & Ogden (2022)	To examine teacher strategies for autistic pupils	Qualitative study	Teachers in UK schools	Structured environments, scaffolding, sensory adjustments	Predictability reduces anxiety; transitions are high-risk	Focus on ASD; limited trauma-specific analysis
Stokes et al. (2025)	To explore barriers to trauma-informed practice	Qualitative study	Education and care professionals	De-escalation, relational approaches	Staff revert to punitive methods under stress; resource constraints	Highlights barriers more than outcomes