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Practitioner Perspectives on Counterterrorism and Neurodivergence

Nadine Salman PhD^a, Zainab Al-Attar PhD^b, and Grace McKenzie PhD^c

^aDepartment of Security and Crime Science, University College London, London, UK; ^bSchool of Psychology, University of Central Lancashire, Preston, UK; ^cDepartment of Psychology, Lancaster University, Lancaster, UK

ABSTRACT

While neurodivergent people are not inherently at greater risk of extremism engagement, there has been increased attention to neurodivergence within preventing and countering violent extremism (PCVE) contexts. Within these cohorts, understanding how neurodivergence may contextualize individuals' pathways into, and resilience against, extremism engagement, can help to inform assessment, support, and intervention. Drawing on focus groups with 38 international PCVE practitioners, this study highlights the importance of understanding neurodivergent characteristics, such as restricted interests, communication styles, and sensory differences, within broader biopsychosocial contexts, including both strengths and challenges. Practitioners emphasised the importance of tailored interventions, neurodivergence-informed practice, and systems-based support.

KEYWORDS

Autism; neurodivergence; terrorism; extremism; ADHD

Neurodivergence is broadly characterized by differences in cognitive function and thinking, and is often used as an umbrella term for a variety of neurodevelopmental diagnoses, including autism spectrum disorder (ASD; hereon referred to as autism, unless as part of a direct quote), attention-deficit/hyperactivity disorder (ADHD), learning difficulties and disabilities, developmental language disorders, tic disorders, and some acquired brain injuries (HM Inspectorate of Prisons et al., 2021). Existing research does not indicate that there is a direct causal link between neurodivergence and engagement in criminality or terrorism in the general population (Druitt et al., 2023; King & Murphy, 2014). The impact of these diagnoses can differ depending on the individual, their symptoms, and their characteristics, which can include strengths and skills as well as difficulties. While the majority of neurodivergent people are law-abiding, there is evidence

CONTACT Nadine Salman  nadine.salman@ucl.ac.uk  Department of Security and Crime Science, University College London, London, UK

The present affiliations for Zainab Al-Attar are Cardiff Metropolitan University, Cardiff, United Kingdom; Victoria University, Melbourne, Australia; Department of Security and Crime Science, University College London, London, United Kingdom; Department of Psychiatry, University of Oxford, Oxford, United Kingdom.

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that a proportion of convicted extremists in the UK are neurodivergent (Kenyon et al., 2023).

Within this subgroup, specific characteristics of neurodivergence may contextualize vulnerability to, and risk of, criminal and extremist engagement (Al-Attar, 2020). In this research, we consider “risk” and “vulnerability” in tandem, where “risk” refers to the likelihood or probability of the outcome under consideration (e.g., terrorist violence; Monahan, 2012), while “vulnerability” is concerned with the process of extremist engagement and radicalization (Lloyd, 2019). We also consider resilience, i.e., a reduced vulnerability or risk (Lösel et al., 2018). Throughout this research, we conceptualize the role of neurodivergence as “contextual” to emphasize how neurodivergent features may affect individuals’ experiences, functioning, and behavior in ways that may, in some individuals, become a context in which their vulnerability or risk unfolds at that specific point in time—rather than directly causing this vulnerability or risk (Al-Attar, 2020). Conversely, these traits can also contextualize resilience and disengagement in ways that differ from neurotypical populations. It is therefore important for practitioners involved in preventing and countering violent extremism (PCVE) to understand vulnerability, risk, and resilience among neurodivergent populations within PCVE contexts, as well as how best to support them to reduce vulnerability, mitigate risk, and encourage disengagement.

Currently, there is limited information and guidance to help practitioners, particularly those with non-clinical backgrounds, to differentiate, contextualize, and manage vulnerability and risk among the neurodivergent individuals they assess and engage with in the PCVE space. This is not limited to the PCVE context; a recent report examining neurodiversity (“the full range of thinking, encompassing both neurotypical and neurodivergent,” p. 75) in the criminal justice system in England and Wales identified key gaps and recommendations (HM Inspectorate of Prisons et al., 2021). These recommendations highlight a need to better understand and screen individuals in criminal justice contexts, raise staff awareness through training, implement adjustments to make environments and communications “neurodiversity-friendly,” and coordinate multi-agency approaches to better understand neurodivergent needs, prevent offending, and improve outcomes for those who do come into contact with the criminal justice system (HM Inspectorate of Prisons et al., 2021). Thus, in line with these recommendations, it is important to understand existing practices and provide evidence-based guidance for practitioners to better understand vulnerability, risk, and resilience among neurodivergent individuals in PCVE contexts. Through doing so, practitioners can improve outcomes for neurodivergent individuals in these contexts.

Existing relevant guidance for practitioners in PCVE includes recommendations for interviewing terrorism suspects and offenders with autism (Al-Attar, 2018b), brief guidance on potentially relevant features and interventions

for individuals with autism in extremism and radicalization contexts (Al-Attar, 2019a), and ethical guidance for mental health professionals in PCVE (Al-Attar et al., 2018; Lloyd, 2021). Guidance is also being developed for ADHD in extremist contexts (Al-Attar & Abbasian, 2022; Al-Attar & Worthington, 2025). Outside the PCVE context, more detailed guidelines exist for practitioners working with offenders with autism (Al-Attar, 2018a; 2019b) and ADHD (Al-Attar, 2021; Al-Attar & Abbasian, 2021). While not all these guidelines are specific to the PCVE context, they provide information to help practitioners understand how specific characteristics can contextualize vulnerability, risk, and resilience across different types of offenses, including terrorism offenses. These guidelines are an important step in raising practitioner awareness of neurodivergence and helping to guide practice based on the best available evidence. However, this evidence is limited, with little published empirical research examining neurodivergence specifically in PCVE contexts.

Across the existing literature, a number of links are drawn between certain characteristics and traits of autism (and, to some extent, other types of neurodivergence) and vulnerability and risk in PCVE contexts. These include links relating to social and communication differences; hyperfixation and restricted interests; rigid thinking; and sensory differences; however, none of these characteristics have been directly linked to extremism vulnerability or risk in isolation; rather, they form some of the many biopsychosocial factors and complex needs that can contextualize an individual's engagement (Salman & Al-Attar, 2025). Importantly, although the existing literature identifies some recurring themes and factors, it is severely limited by a lack of empirical data, the reuse of a limited number of case studies, and superficial descriptions of the presence of symptoms and characteristics, rather than their relevance (Salman & Al-Attar, 2025). Furthermore, the existing literature offers little information on factors that can be protective against extremism engagement or that can facilitate disengagement (Lösel et al., 2020), or interventions that are effective for neurodivergent individuals in these contexts.

Given the limitations and scarcity of existing research, this study aims to address these gaps by conducting an empirical analysis of novel data, specifically through focus groups with practitioners who have worked with neurodivergent individuals in PCVE contexts. A key limitation of existing research is the small number of cases from which information is derived. However, it can be challenging to access extremist populations for research purposes (Schuurman, 2020), and this is an even greater challenge for neurodivergent extremist populations. Among these populations, there may also be additional vulnerabilities or ethical concerns that make it inappropriate for researchers to approach them directly. Indirect insights from practitioners who work directly with them can therefore be a useful resource in gathering knowledge from multiple

cases; a single practitioner who has interacted with several individuals may be able to provide more insights than a single case study. In addition, many practitioners in these contexts will be experienced in clinical and forensic formulations (Logan & Lloyd, 2018), which may provide greater insights into the functional links between specific neurodivergent characteristics and extremism engagement. Importantly, gathering insights from practitioners will enable access to existing knowledge that has been derived through practical experience but will not have been published for others to access (Koehler & Fiebig, 2019), thereby preserving the anonymity of those cases. Finally, by involving practitioners in research, researchers can gain insights into their training experiences, needs, and barriers to implementing best practice (Koehler & Fiebig, 2019; Slokan & Ioannou, 2021).

This study therefore aims to collect and synthesize knowledge from those with direct experience and expertise in assessing, managing, and delivering interventions to individuals with autism and other forms of neurodivergence who present with extremism vulnerabilities or risks. While the existing literature focuses primarily on autism (Salman & Al-Attar, 2025; Worthington et al., 2022), this study will also consider ADHD and neurodivergence more broadly within the PCVE context, given the range of shared characteristics, symptoms, and co-occurrence across different diagnoses (Antshel et al., 2016). Specifically, this research addresses the following research questions:

- (1) What do practitioners know about the functional role of neurodivergent features in the context of extremism-related vulnerability, risk, and/or resilience?
- (2) In the experience of practitioners, which other factors can increase or decrease extremism vulnerability or risk among neurodivergent individuals?
- (3) Which approaches and strategies can be effective in mitigating extremism vulnerability and risk among neurodivergent individuals in at-risk populations?
- (4) What training and resources can be provided to assist practitioners' work with neurodivergent individuals who are vulnerable to extremism?

It is intended that the findings of this research will contribute toward the evidence base for vulnerability, risk, and resilience to extremism among neurodivergent individuals within PCVE contexts, and inform approaches to reduce vulnerability, mitigate risks, and improve outcomes.

Method

Design

This study adopted a semi-structured focus group approach, in which a moderator facilitated a discussion with multiple participants. This method was chosen to enable participants to share their experiences with the researchers and discuss them with each other, thus showing areas of consensus and disagreement. The use of focus groups allowed for a larger number of participants than in individual interviews. This research received ethical approval from Lancaster University's Faculty of Science and Technology Research Ethics Committee (FST21036) and the Center for Research and Evidence on Security Threats (CREST) Security Research Ethics Committee.

Participants

Ten focus groups were conducted, with a total of 38 participants. Between two and five participants attended each focus group; this number varied due to participant availability and cancellations. An estimate of 6–12 focus groups with a maximum of eight participants per group had been planned in advance of the study, based on the time available and to ensure that all participants would have opportunities to speak (Krueger & Casey, 2015). The final sample size and number of focus groups were constrained by the number of responses received and participant availability.

This study used purposive sampling to recruit participants; participants were specifically selected based on their experience and expertise as practitioners working with neurodivergent individuals in PCVE contexts. Participants were identified through the researchers' networks, including professional connections and recommendations, and snowball sampling, whereby those who expressed interest in participating were asked to invite other contacts with relevant experience. Aside from the requirement for participants to be adults (over 18) with professional experience in working with neurodivergent individuals in extremism contexts, there were no specific inclusion requirements relating to any other characteristics.

Participants were recruited via e-mail using a template describing the study and its objectives, alongside a participant information sheet. Those who expressed an interest in participating were offered a selection of focus group dates. Prior to their participation, all participants were required to read the participant information sheet and return a signed informed consent form.

Participants had professional experience in six different countries: the UK, Australia, New Zealand, Canada, the United States, and Germany. Participants were all practitioners working in PCVE who had experience working with or assessing neurodivergent individuals in a variety of extremism-related

contexts, including law enforcement, healthcare services, schools, and multi-agency safeguarding contexts encompassing a variety of services (including health and social care and local authorities). Practitioner roles included intervention providers, threat/risk assessors, neurodiversity advocacy and training providers, education providers, operational practitioners, and mental health professionals (e.g., psychologists and psychiatrists). These roles primarily centered on extremism prevention and intervention contexts (pre-crime); however, five participants in the sample stated they had experience working with offenders in prison or young offender institution contexts. The sample also included practitioners who additionally identified as neurodivergent or who had close personal links with neurodivergent individuals (e.g., children) outside of their work in PCVE contexts.

Focus group protocol

The focus group protocol for this study included a template script and guide questions to inform the conduct of the focus groups. These questions were formed in line with the research questions and were based on preexisting research and theories identified through a previous systematic review (Salman & Al-Attar, 2025). The questions focused on practitioners' experiences of working with neurodivergent individuals within extremist populations (e.g., convicted terrorism offenders) and vulnerable populations (e.g., those who had been referred to pre-crime prevention programs but had not yet committed an offense). Where greater clarification was needed, further probes and prompts were used to elicit more detailed responses. The materials used for this study (participant invitation template, information sheet, focus group script, and guidance questions) are available via <https://osf.io/r94d3/>.

The second author chaired all focus groups, while the first and third authors assisted in data recording and transcription. The first author also observed all the focus groups. Focus groups were conducted online using Microsoft Teams and lasted for two hours (with a five-minute break). Transcripts for nine focus groups were created using Microsoft's automated transcription capabilities. These focus groups were also audio recorded to allow the researchers to subsequently check and correct the automated transcripts. One focus group was manually transcribed by the first and third authors due to the sensitive nature of participants' roles, which did not permit audio recording. All transcripts were then checked for accuracy against audio recordings where available. For the manually transcribed focus group, the two manual transcripts were compared and consolidated to improve their accuracy. As part of the transcript editing process, identifying markers and sensitive operational information were removed to maintain the anonymity of participants and the individuals they discussed.

Analysis

This research adopted a reflexive thematic analysis approach (Braun & Clarke, 2006, 2019; Braun et al., 2019), with a focus on identifying and summarizing recurring patterns and themes relevant to the research questions. After familiarization with the data (including observing focus groups, listening to audio recordings, and editing and reading transcripts), codes were applied to the text in the transcripts using Atlas.ti qualitative data analysis software. These codes were compiled into higher-level themes and categories identified through the analysis, broadly aligning with the research questions and recurring patterns in the data. Themes and codes were primarily identified using a semantic-level realist approach, whereby the researchers focused on explicit meanings in participants' comments as reflective of their knowledge and experiences, rather than latent or implicit meanings (Braun & Clarke, 2006; Braun et al., 2019).

The identification of themes was also informed by the theories present in the preexisting literature, as identified through a previous systematic review (Salman & Al-Attar, 2025), as well as the researchers' previous knowledge and expertise. This existing literature was also regularly consulted throughout the analysis to guide the interpretation of the data—both where there were points of alignment as well as contradiction or gaps in the literature. Thus, this research primarily adopted a deductive analytical approach, whereby the existing theory and literature informed the research questions, protocol, and key themes of interest, which were subsequently refined based on the focus group data. Although theme saturation was not formally assessed (see Braun et al., 2019), the patterns and themes identified recurred across the dataset. This recurrence indicated strong evidential support for the themes developed.

Additional themes from the data were also identified, which did not specifically address any research questions, but were identified as recurring patterns using an inductive approach (i.e., driven by the collected data; Braun & Clarke, 2006). Where contradictions and discrepancies were identified between different participants, these were coded within the same theme, enabling them to be compared, discussed, and evaluated as part of the analysis.

The first author coded and developed the analysis of the focus group data. In line with the reflexive thematic analysis approach, the coding process did not include tests of inter-rater reliability or seek to reach consensus between the researchers (Braun & Clarke, 2019, p. 594; Braun et al., 2019, p. 849). Instead, to incorporate reflexivity and improve the nuance and depth of their interpretation, the authors held regular meetings over the course of the analysis, in which the second author was consulted to discuss and refine codes and themes. This enabled themes and codes to be further developed and interpreted collaboratively (Braun et al., 2019).

Positionality and reflexivity statement

No research is free of subjectivity; indeed, researchers' interpretations are an essential component of reflexive thematic analysis, with "researcher subjectivity understood as a resource" (Braun & Clarke, 2019, p. 591). As well as transparency in the methodological and analytical approach, it is therefore also important to acknowledge where the researchers' backgrounds (i.e., their positionality) may have influenced decisions made in relation to data collection, focus group conduct, and subsequent interpretations and coding of the data.

All researchers are based in the UK. The first author is a researcher specializing in terrorism risk assessment and practitioner decision-making, including previous research on mental ill health among violent extremist populations. She also identifies as neurodivergent and thus has lived experience of some of the conditions and symptoms discussed in this research. The second author is an academic and practicing clinician and forensic psychologist who regularly works with neurodivergent terrorism offenders and has authored practitioner guidance and publications focusing on autism and ADHD in offending and extremism contexts. The third author is a researcher with a background in forensic and social psychology. These identities, experiences, and knowledge helped shape the conduct of this research and the coding and interpretation of the analysis in ways that may differ from other researchers.

In line with the principles of reflexivity (Braun & Clarke, 2019), this study adopted additional measures to enable the authors to reflect on their interpretation of the findings throughout this research. During the focus groups, the moderator asked clarifying questions to reflect on and check participants' understanding of the themes presented. This allowed the researchers to reflect on participants' responses, as well as to ensure that the meaning behind participants' comments was adequately understood and interpreted. The moderator took notes during the focus groups to guide subsequent questions and highlight areas for clarification and follow-up. During the data collection phase, the researchers reflected on recurring themes discussed in the groups, which informed the prioritization of questions in subsequent focus groups. The first author also wrote reflective notes while editing and coding transcripts to guide and reflect on their interpretation of the data. These notes were subsequently incorporated into the analysis and discussion.

Results

The results of the thematic analysis are presented by topic in relation to the overarching research questions. Within each topic, key themes and subthemes are identified, as shown in [Table 1](#).

Table 1. Summary table of key themes and subthemes identified through thematic analysis.

Topic	Themes
Neurodivergence, vulnerability, and risk	• Understanding specific circumscribed and restricted interests in extremism engagement • Sensory processing differences and the pursuit of sensory stimulation • Social and communication differences, vulnerability, and grievance formation
Other contributory factors	• Rigid cognitive styles and the need for order • The cumulative impact of multiple and complex needs • Lack of support or understanding around diagnosis • How developmental stages and transitions shape vulnerability and resilience
Strategies, interventions, and protective factors	• Tailoring interventions to individual and neurodivergent needs • Harnessing protective factors • Beyond the individual: systems-based interventions
Practitioner training and resources	• Inconsistencies in existing training • Recommendations for training
Additional themes	• Ideology as secondary • Stigma and stereotyping • Distinguishing between interest, risk, and criminality

Neurodivergence, vulnerability, and risk

Understanding specific circumscribed and restricted interests in extremism engagement

In line with the previous literature (Salman & Al-Attar, 2025), a recurring theme was the role of specific restricted interests in drawing individuals into and keeping them engaged in extremism: “Special interest and . . . circumscribed interest, fascinations, narrow interests . . . features across the entirety of my caseload and it can develop in . . . any topic or subject, but every individual has a different route or pathway into what we call a risky space” (Participant 22).

Participants highlighted the functional role and importance of these interests for neurodivergent individuals beyond the extremism context: “Pursuing your circumscribed interests makes you feel good . . . It lowers your anxiety. It gives you a sense of . . . capability” (Participant 23).

However, participants discussed that specific interests can become linked to risk and vulnerability:

If it was Barbie dolls or Lego or Minecraft, it would be fine, but when it’s a certain cookbook, or when it’s everything to ever have been written about Hitler, or when it’s conspiracy theories, then obviously it’s not necessarily about the content . . . it’s about the influence that’s happening from outside. (Participant 1)

Some participants suggested that individuals may pursue their “niche interests” in online communities targeted by extremist recruiters, which was compared to online sexual grooming: “They’re looking to exploit those vulnerabilities . . . it’s the same with any type of grooming” (Participant 12).

However, other participants discussed concerns that a specific interest does not always translate into a belief in an ideology or an intent to act. For example, Participant 21 asserted that “there’s a difference between an interest in gathering knowledge in an area and actually having an ideology and a belief.” Similarly, Participant 12 noted that “their interest solely is online because that ability . . . or that want to socialize with other people offline isn’t really necessarily there.” These comments suggest that the relationship between interests and extremist engagement is not necessarily linear, and that it is important for practitioners to consider the function that those interests serve for individuals.

The remainder of this theme considers specific interests and behaviors mentioned by participants in relation to vulnerability and risk.

Second World War, Nazis, and Hitler. All 10 focus groups, including international participants, discussed the prevalence of interests in the Second World War, Hitler, and Nazism among cases that they had interacted with, which they hypothesized to be an entry point into far-right extremist ideologies. This is exemplified in one of the cases discussed by Participant 37:

His obsession with all things Hitler . . . was absolutely front and center every day, through to how he dressed, through to the hours that he spent on the Internet, and through to how he projected himself within the group that he was involved in.

Some participants specifically highlighted that this interest often arises in school, when students study the Second World War as part of the curriculum:

They’ve come to the attention of CT police because . . . they’ve been learning about history in school and they’ve just become a bit fixated on the World War II issue, and then delve a little bit deeper into Hitler, and that kind of then spirals a little bit out of control, and . . . a lot of the schools don’t really know how to broach that. (Participant 21)

This could present a challenge for front-line practitioners, such as teachers and intervention providers, whereby the interest may be linked to the school curriculum and therefore difficult to fully disengage from or to distinguish between academic interest and extremist engagement.

Fantasy, role-playing, and gaming. Related to the fascination with wars and history, participants also discussed the role of fantasy, role-playing, and gaming in their cases. This was hypothesized to serve a positive function or coping strategy for the individual: “I’ve had people who dress up in military or survival-type clothes, and it seems to be associated with inducing the feeling of well-being. I think they feel more confident” (Participant 23).

However, participants noted that escalation beyond the realm of fantasy can be indicative of heightened vulnerability. As described by Participant 22:

In some cases, they make the transition from a kind of visual fantasy world into real life. So, I have guys who start dressing up as certain characters, military attire . . . they start mimicking the language and lingo . . . I think at some point, that's when risk is heightened . . . if they can't distinguish between their interest and the fantasy, and the stuff in the online space and reality, if that line gets blurred then I get really, really worried.

Similar role-playing behaviors have been observed in the published literature where cases have escalated to violence (Al-Attar, 2020; Allely & Faccini, 2017; Faccini & Allely, 2016). However, participants' comments reveal some tension between the positive function of fantasy and role-play for those individuals and recognizing the point at which this begins to indicate escalation and vulnerability or risk.

Weapons. Some participants also highlighted the prevalence of interests in weapons, including firearms, knives, and bombs:

One young man had a . . . fascination with gun mechanisms and how the bullet moves through the chambers, and . . . going onto the dark web and actually finding blueprints of guns. And that's where the concerns were, that he would actually then come into contact with other people that may potentially try to sell him a gun. (Participant 2)

Such obsessions with weaponry have also been noted in the previous literature and case studies of known attackers (Allely, 2020; Erlandsson & Meloy, 2018; Faccini, 2010, 2016; Silva et al., 2003). These interests may be linked to access to weapons and an increased capability to enact violence.

Conspiracy theories and politics. Some participants also mentioned interests in conspiracy theories, politics, and anti-government sentiments: "Mistrust in government, mainstream media, is a massive driver towards the Internet for information . . . it depends where they look, who they come into contact with, as to how vulnerable and dangerous that becomes" (Participant 14).

However, some participants noted that the allure of conspiracy theories was not restricted to neurodivergent cases. According to Participant 2: "For young people there's nothing better than a conspiracy theory . . . very often young people seriously believe these conspiracy theories, whether you are neurotypical or not."

Some participants also noted that these beliefs can be exacerbated by wider political events, including responses to the COVID-19 pandemic:

There's been such a significant political polarization with COVID, I think it's been a huge driver for people to start going towards political extremes, and then seeking out material, reproducing material that is around, anti-government conspiracies. (Participant 26)

This may have been an artifact of the time period during which data collection took place; however, this increased engagement in conspiracy theories may

also reflect wider trends in political polarization and anti-government extremism during and post COVID-19 (Murphy et al., 2025). While not unique to neurodivergent individuals, there is evidence that the pull of conspiracy theories may be heightened among those with autism (Georgiou et al., 2021).

Collecting. Participants discussed a tendency for neurodivergent individuals to collect items, images, or videos, often linked to their specific interests. Within extremist contexts, this included weapons, Nazi memorabilia, or gore videos. Participants noted that in some cases, these collecting behaviors became the grounds for subsequent conviction, for example, if they collected illicit materials relating to a proscribed terrorist group:

A young man . . . had the most extraordinary collection of ISIS material . . . He actually wasn't particularly interested in the violence at all . . . We're meeting young autistic men who really didn't have much of an interest in whatever illegal thing they were collecting, but it was a way of displaying their kind of aptitude and skill at the dark web and other things. (Participant 16)

As this quote suggests, however, in some cases, these collections may be a way of demonstrating their technical mastery rather than (or alongside) the interest in the content itself. Again, this suggests the importance of understanding the function of that behavior for the individual.

In addition to terrorism-related materials, participants also mentioned the collection of other types of extreme content, including vast collections of extreme pornography, gore, and violence (e.g., beheading videos and war content). Similar collecting behaviors, such as weapons collections and collections of details about mass murders, have also been described in the previous literature (Al-Attar, 2020; Anaele, 2020; Eagan et al., 2014; Faccini, 2016; White et al., 2017).

Sensory processing differences and the pursuit of sensory stimulation

“Shock and gore,” hyposensitivity, and sensory stimulation. The interest in and collection of extreme content (e.g., beheading videos), often termed “shock and gore” by participants, may indicate a sensory function to some interests, which may act as a driving factor to pursue ever more extreme content. This is exemplified by Participant 2: “they were actively searching out more and more extreme videos . . . then having to find more and more . . . extremist groups . . . the more extreme the videos, the more excited they seem to become.”

A similar observation was made by Participant 22: “the words that they use is ‘it’s exciting’ or ‘it’s pretty cool,’ and I suppose what they’re probably trying to say to me is there’s a sensory need that’s being met there.” Similar ideas around sensory stimulation were also noted specifically in relation to fire, bomb making, and explosions. One participant specifically linked this to

ADHD, echoing some of the findings in the existing literature (Al-Attar & Abbasian, 2022; Al-Attar & Worthington, 2025; McLaughlin et al., 2017):

With ADHD, there's a real draw to adrenaline and excitement and impulsive actions . . . So I see it as that there's a really strong link there with an interest in explosions, war, battles. (Participant 15)

Some participants warned that an interest in extreme content and sensory stimulation may be linked to other types of violent or sexual offending:

The wider diverse interest in destructiveness somehow gets sidelined as not being relevant to what their thinking is. And the intervention focuses on [PCVE] and then, surprise, surprise, in four years' time, there's no [terrorism] related offence, but they do a sexual homicide, or they kill a police officer. (Participant 36)

This quote suggests that the interest in violent content may manifest independently of any extremist ideology, but rather represent a broader vulnerability or risk factor for violent offending. This also raises considerations around the effectiveness of interventions that solely focus on extremism or ideology, without addressing the broader interest in violence.

Some participants also highlighted concerns around addiction and desensitization associated with prolonged exposure to extreme content. For example: "They won't just watch a couple, they'll watch 100, 200 for hours . . . but they've kind of desensitized themselves at that point" (Participant 21).

Participants also often associated gaming with sensory stimulation, as exemplified in a case discussed by Participant 22, who said: "I just wanted the real-life experience of what I got out of gaming." Participants also described how varied sensory elements were linked to some types of interest: "Some guys are really into Greek mythology, very black and white, or there's a . . . gamification type, so it's very colorful, and some are very [into] 'shock and gore,' so very red, and all the colors associated with biology" (Participant 22).

This suggests that even when indirectly linked to extremism, some extremist content, such as extremist propaganda, may have a particular sensory appeal, particularly among neurodivergent subgroups.

Hypersensitivity and sensory overload. Conversely, others highlighted concerns around the overstimulation and sensory overload linked to extreme content. For example, according to Participant 3: "Someone who's fixated and immersed in, let's say, for example, violent gaming, and the impact that's going to have on them . . . we're talking about sensory overload and what that immersion in that space could have." However, this comment may contradict other findings linking prolonged exposure to desensitization and habituation, rather than sensory overload. These impacts may therefore vary between individuals.

Participant 36 also noted the role of neurodivergence in sensory sensitivities and overload, which may link to offending behavior: “Hyper-sensory acuity . . . relates to a different kind of perceptual [sense], either auditory, visual, tactile . . . that’s in a different plane . . . Just as we have arsons that are perpetrated against neighbors because they’re hearing things at a completely different kind of volume and clarity.”

This example suggests that sensory hypersensitivity may contribute to grievances with and violent behavior toward specific people or environments. Participants also noted that, in some cases, they observed self-soothing behaviors, such as engaging in extreme interests, to cope with the overwhelm associated with hypersensitivity: “How painful the world can be for an ASD individual in terms of hypersensitivity . . . finding anything that makes you feel good is a real necessity” (Participant 35). Similarly, some also noted that due to this sensory sensitivity, some neurodivergent individuals may feel “safer” in the online space rather than the offline world, where sensory input can feel overwhelming.

The findings relating to both hypersensitivity and hyposensitivity, and their link to extremist behavior and interests, are echoed in some of the previous literature (e.g., Al-Attar, 2020; Silva et al., 2003). However, this aspect of neurodivergent functioning is less widely researched in relation to extremism vulnerability or risk.

Social and communication differences, vulnerability, and grievance formation

Social rejection and isolation. A recurring theme mentioned by participants related to difficulties in forming friendships and relationships, experiences of social rejection, and social isolation. These factors were often framed as a consequence of social and communication differences or feelings of “not fitting in.” These difficulties meant that individuals with autism were more likely to turn to online forums to form social connections:

The one thing that kept coming through time and time again was a lack of social connections and young people reaching out online . . . to find a social connection or a sense of meaning and purpose . . . going online was somehow easier for them to find those connections, and I think that that’s where there’s risk. (Participant 2)

Similarly, participants noted that while the decreased offline social interaction during the COVID-19 pandemic appeared to reduce stress, the time spent online increased vulnerability and engagement with harmful interests:

There were some real positives from the neurodivergent community. But the problem was also that, if you have more doom and gloom in your threads, you’re going to start having mental health impacts from that too. And . . . if you’re interested in a specific area, become more interested or find more content. (Participant 1)

As alluded to by these quotes, the subsequent vulnerability or risk associated with online connections was often related to exposure to extreme content and influences. While some participants pointed out that this was not necessarily unique to autism or neurodivergence, overall, participants appeared to suggest that specific communication differences associated with autism may further exacerbate these vulnerabilities.

Some participants emphasized that those experiencing social difficulties may also be particularly targeted or vulnerable to exploitation: “They were being invited to go on countryside walks by far-right groups, and not necessarily being socially aware of what those risk factors were . . . I think again goes back to . . . risk factors of online grooming” (Participant 2).

As suggested by this quote, this vulnerability could be linked to a lack of awareness of the harmful intentions of others. Conversely, experiences of social rejection and “not fitting in” were also linked to feelings of grievance, injustice, and anger with society: “The cardinal event . . . can be rejection from a girl, being laughed at school . . . [then] another ideology gets attached to it. So, what started out as a grievance issue ends up becoming an [incel] ideology issue” (Participant 13).

This link between social difficulties, grievances, and incel ideologies is also echoed in previous studies of autistic incels (e.g., Gheorghe & Yuzva Clement, 2024). Beyond incels, the relationship between social isolation and extremism concerns is also highlighted in the previous literature, including published case studies (e.g., Al-Attar, 2020; Allely & Faccini, 2019).

Social mirroring and mimicry. According to participants, some individuals with autism may mirror or mimic others’ behavior in an attempt to fit in, find a sense of belonging, or seek status within groups. This is exemplified in one of the cases discussed by Participant 14, in which an autistic young man befriended an online group:

This young man tried to match their energy. They were showing pictures of themselves with semi-automatic weapons, etcetera . . . He said ‘I tried to match their energy . . . So, he said . . . ‘I’m looking at making some explosives,’ so he downloaded stuff and shared it with them . . . they came up with some Islamophobic comments and he matched that again without any substance to this whatsoever.

As suggested by this quote, practitioners had noted that in some cases, this mirroring behavior may take place without directly understanding or identifying with the underlying meaning or the wider context. However, this does not necessarily mean that such behaviors are without harm; as shown in this example, this mimicry and attempt to “fit in” can lead to an escalation in behavior, accessing, generating, or sharing illicit or harmful materials, or providing material support to others who may go on to carry out attacks.

Empathy. Despite a historical focus and stereotypes around difficulties with empathy among those with autism (Bjorkly, 2009), few participants highlighted this specifically as a vulnerability or risk factor. As noted by Participant 19:

The fact that empathy may also not be so present at times is another risk factor, but I admit that our psychopathic clients are much more dangerous. They lack a lot of empathy. They're much more problematic than our autistic clients.

However, some did suggest that difficulties in anticipating how others will react to them meant that individuals with autism may say things that are perceived as inappropriate and lead to referrals. This could be linked to differences in *cognitive empathy*, often referred to as “theory of mind” (Bjorkly, 2009)—“the ability to represent the mental states of others” (Blair, 2005, p. 699). For example:

They're probably more likely to get caught rather than their peers for saying the same kind of thing, because they probably said it when they shouldn't have ... almost like a self-referral to services by virtue of not being able to judge the situation. (Participant 32)

Similarly, some participants highlighted that the online space can lead to a sense of disinhibition, particularly for those with autism:

... that lack of social filter which we all normally employ in order not to offend our friends and family. You just don't need to use that online and I think that's particularly appealing for young people on the autism spectrum. (Participant 13)

This form of disinhibition, or a lack of awareness of responses to them, could be considered a form of “leakage,” particularly of support for radicalized violence (Rose & Morrison, 2023). Thus, it could be the case that by leaking their views online or offline, individuals with autism may be more likely to be detected (and therefore referred to PCVE services) than their neurotypical counterparts.

Rigid cognitive styles and the need for order

Participants discussed links between cognitive rigidity, a need for structure, and the attraction of some extremist ideologies, in line with some of the previous literature (e.g., Al-Attar, 2020; Broyd et al., 2022). For example, Participant 6 explained the appeal and the cognitive benefits of the rigid structures offered by extremist ideologies:

It offers some kind of structure and rigidity to thinking, it can be quite logical, black and white—this is the specific belief system, and what we stand for as a group—whether on the right-wing side or Islamist side. Generally, that could be appealing because there is no ambiguity, it appeals to sense of order that might be attractive to an individual with neurodiversity.

Participant 13 further commented on the risks that cognitive rigidity can present in certain contexts: “They’re highly focused as a group. They’re often task completers, which can be fairly scary, where the task is a school shooting.” This may link to fixations on a grievance, where cognitive rigidity may lead to feelings that a grievance cannot be resolved without some restorative action. As described by Participant 32: “They’ve got a grievance somehow about something that’s happened to them that persists more than neurotypical children ... it needs to be balanced up again ... it can’t just be left like that.”

Furthermore, some participants discussed how changes to routines and structures can become a source of grievance, leading to extremist intent. This is exemplified in a case mentioned by Participant 13:

Often ... there’s what seems like a relatively innocuous trigger event. So, one kid who got very far down the line with the wannabe school shooting, had maps, and he had explosives, and he had guns ... his geography teacher changed the lesson plan on the day and he didn’t like that. And that was really all that he could focus on as a ... cause.

Similar grievances and anger relating to changes in routines have been highlighted in the previous literature and case studies (e.g., Anaele, 2020). The fixation on grievances may also relate to a “tendency to overfocus on fine detail ... alongside a tendency to overlook the bigger picture” (Al-Attar, 2020, p. 17). This is exemplified in a case discussed by Participant 38:

[He] was finding it unfair that people had a partner ... he somehow found out that Boko Haram had kidnapped a load of girls ... so he said ‘I’m going to join Boko Haram because I can get a girl’ ... He didn’t understand really the ideology or anything. And that wasn’t actually important to him at all. It was just the fact that they’ve got a load of girls and ‘I want a girlfriend.’

Similarly, some participants noted difficulties in understanding the consequences of actions, particularly in cases where the individual did not feel they had clear rules to follow. This is also highlighted by Participant 38:

I’ve had a couple of cases ... where they have gone to court and narrowly escaped a custodial sentence ... now that they haven’t gone to prison [they’re] pushing it again and again, and it’s very unclear to them at what point they would ... it might have been easier in their minds to know they’ve done wrong, and this was the punishment.

Participants therefore suggested that having clear structures and rules in place may be beneficial, particularly for those with autism.

Other contributory factors

The cumulative impact of multiple and complex needs

Participants emphasized the presence of other comorbidities and complex needs in addition to neurodivergence. These included having multiple diagnoses, mental ill health, family issues, challenges associated with understanding or navigating sexual and gender identity, and difficulties at school or in employment. Participant 15 conceptualized this as “a triad of autism with a specific special interest, alongside mental health, alongside chaotic home lives, and lack of e-safety in the home.” Indeed, such complex needs have been highlighted throughout the violent extremism literature, not just in relation to neurodivergence (Gill et al., 2021).

Anxiety and depression were the two most commonly mentioned comorbidities, often in conjunction with other life stressors. These findings align with findings from previous research (e.g., Broyd et al., 2022; Van Brunt & Taylor, 2020). However, despite previous literature’s emphasis on psychosis (e.g., Wachtel & Shorter, 2013), this was rarely mentioned, and was seen as separate:

I was trying to make comparisons between the kids that I see . . . who are largely autistic and very, very rarely psychotic, with the fixated threat group that . . . are largely psychotic and very rarely anything else . . . And I think that probably does reflect . . . that these are two slightly different groups. (Participant 13)

The presence of complex needs was hypothesized to relate to an “increasing desire to self-medicate with extreme content” (Participant 5) and adopt maladaptive coping strategies. As outlined by Participant 8:

Low mood and other difficulties can make it difficult to hold employment or stay in education. If your mental health difficulties are impacting on those other parts of your life, [extremist engagement] may provide you with that sense of purpose, validation, somewhere to belong, and something to do—all these areas that mental health can impact in other contexts.

The presence of multiple complex needs can also present a diagnostic challenge, where some needs are left undiagnosed, therefore leading to more maladaptive coping strategies. This was particularly mentioned for dual ADHD and autism diagnoses: “Looking at extremist content helps them in some way and may also be one of those coping strategies that they develop . . . if they didn’t have the diagnosis of the other one before” (Participant 4).

Indeed, while participants mostly discussed autism, ADHD was also frequently mentioned; it was discussed 52 times within the groups. Where ADHD was mentioned, participants often discussed the additive effect of a dual diagnosis, particularly with experiences of isolation and grievance, and that, as aforementioned, ADHD enhanced behaviors around “sensation seeking, the desire for drama, and excitement” (Participant 28). However, as

demonstrated through this quote, ADHD was often discussed superficially, with a focus on limited considerations around “sensation seeking,” with minimal exploration of the more nuanced ways in which ADHD symptoms and characteristics may be relevant among those who engage in extremism (Al-Attar & Worthington, 2025). This indicates that even among practitioners, the relevance and nuance of ADHD were not fully developed, despite its acknowledgment.

Lack of support or understanding around diagnosis

Even without complex needs, several participants noted that individuals referred to them often initially were undiagnosed, had difficulties accessing a diagnosis, or had limited understanding of what their diagnosis meant for them:

If someone is not really clear on how their autism or their ADHD works, a lot of the work I do is actually explaining in layman’s terms what their diagnosis means . . . they don’t understand what’s limiting their social interaction, and it’s a struggle. And so that’s what makes them vulnerable is their lack of communication about the diversity that they have. (Participant 1)

Furthermore, even for those with a diagnosis, participants emphasized the problems associated with a lack of support services, particularly for those with complex needs: “If you are complex because you have a neurodiverse condition with a serious and enduring mental health condition, nobody wants to know . . . people are falling through the gaps of services” (Participant 12).

How developmental stages and transitions shape vulnerability and resilience

Participants mostly discussed younger age groups; they mentioned the word “young” 332 times. Some participants described additional difficulties during adolescence that may contribute to vulnerability and can be particularly challenging for neurodivergent individuals: “They might not have their diagnosis but have an understanding of their own difficulties, where building relationships is hard. Challenges around neurodiversity as well make that doubly hard” (Participant 8).

Although participants noted that the majority of their caseloads were adolescents, this was often associated with increased access to support: “The majority of neurodiverse individuals we come across are . . . under the age of 21 . . . And actually one of the protective things that comes alongside that is that a plethora of agencies that are available to work with kids” (Participant 21). However, participants also noted vulnerabilities associated with a drop-off of support during the transition to adulthood:

You’re out of school, and then there’s nothing. And so, you might find that actually there’s a huge drop-off in how well an autistic child is doing actually at that point of

transition to adult services . . . you might well be aggrieved with your lot at that point and feeling really let down by the system. (Participant 32)

Some participants also noted that the types of offending and radicalizing influences may differ depending on age. Participant 33 described these differences, where older convicted cases “were also radicalized, but usually it’s by an ideologue that they’ve met face to face, whereas the younger people haven’t met anyone, it’s all been on the online space and sometimes on the dark web.”

These links between age and extremism among neurodivergent individuals specifically are relatively unexplored; however, these findings reflect some of those from the literature on radicalization among adolescents, including those with ADHD (e.g., Campelo et al., 2018).

Strategies, interventions, and protective factors

Tailoring interventions to individual and neurodivergent needs

Participants emphasized the need for approaches and interventions tailored to the individual, their traits, and their experiences. This can involve creativity, flexibility, and adaptability from practitioners and their approaches to intervention: “You need to have an adaptable approach [based on] their learning style, . . . information absorption style and . . . what you’re trying to get across. And so, it’s not just the content, it’s the delivery” (Participant 1).

Conversely, some participants discussed the potential ineffectiveness, or even harms, of some existing interventions. This included not tailoring the approach to the individual, adopting a rigid approach, or overly focusing on countering the extremist ideology. Some highlighted the potential harms of not considering neurodivergence as part of interventions, for example, by removing supports, disrupting structures and routines, or forcing individuals into uncomfortable sensory and social situations:

Sometimes more traditional desistance approaches, where you might encourage someone to increase their integration with the community, but with someone with autism who struggles with social interaction, this may be very anxiety provoking. It’s more to do with the individual traits of the individual, and the traditional approaches we might take can be detrimental in some way. (Participant 8)

This was echoed by Participant 28, who noted that some of the stressors associated with interventions may be linked to the difficulties and grievances that contributed to their vulnerability or risk: “The contributing factors that led up to them going down the rabbit holes . . . probably started in places like school, often primary school, and their experiences . . . in the big bad world offline.”

Similarly, participants noted the importance of taking sensory needs into account when meeting with neurodivergent individuals, and adopting neurodivergent-friendly communication styles: “Sometimes I do storytelling at the

beginning of the session . . . planning the room space, not having somebody directly sat opposite me . . . maybe providing some aids so that they've got the squashies to play with . . . especially for those young people with ADHD" (Participant 5).

Other participants commented on the importance of communicating neurodivergent needs to other professionals interacting with the individual, and clearly communicating information:

We had a young man [with autism] who . . . was being arrested, and we . . . had tactical aid go in and give him a piece of paper . . . and let him read it and explain it to him . . . He really didn't like people touching him . . . So, we talked about how he tended to move his arms quite quickly when he was getting irate, and that was to self soothe . . . we did this for every step of the whole process . . . to make it . . . easier for him. (Participant 12)

Similarly, practitioners also highlighted the importance of being able to build trust with the individuals they worked with, and that this can give insights into protective factors.

However, several participants also noted that "we all have loads of casework, more than we have time . . . that can be a barrier for achieving the best possible outcome for that person" (Participant 10). Therefore, when considering the feasibility of tailored and individualized approaches, it is also important to consider practitioners' workloads and resource availability.

Harnessing protective factors

Participants also discussed leveraging individual protective factors to enhance resilience. Importantly, some noted that protective factors considered relevant for some types of offense, or for their neurotypical counterparts, may not be relevant for neurodivergent individuals with extremism concerns:

[People say] 'he's a really bright kid who is really committed to his studies' . . . is that a useful protective factor in this instance? . . . He can tell you in the most minute detail about the Second World War, but I think that's what got us to where we are today. (Participant 28)

Many of the approaches, strategies, and interventions suggested therefore relate to neurodivergent features, whereby, depending on the context, the vulnerability or risk associated with those features could either be reduced or the traits could instead be harnessed as strengths (Al-Attar, 2020).

Circumscribed or restricted interests. Participants often discussed the need for addressing the interest that may have become linked with extremist engagement or risk. However, as aforementioned, it was often not considered effective to remove or challenge that interest directly; as noted by Participant 8, "where we believe that interest is alleviating some anxiety or negative emotion, we don't want to just rip that away." Some suggested that the interest could instead be diverted into a more prosocial sub-interest or "safe offshoots—the

potential for that individual to pursue that interest in a slightly different way that's just as fulfilling to them" (Participant 6).

Similar approaches were discussed in relation to fantasy and roleplaying:

[We] tease out what function/purpose the roleplay/fantasy is serving for the individual, then ... being creative with what offshoots are available ... Is less roleplay lowering the risk or actually increasing that? Taking away roleplay within the criminal justice system punishment setting can be extremely anxiety inducing, which can be more harmful. (Participant 8)

Other interventions suggested focusing on other interests and supporting them to pursue these over the potentially problematic interest:

Look at all of these other factors that are involved in this kid's life, what are they going to do in terms of education ... job ... interests outside of this? And provide more focus onto those ... If you can get them involved in a football group or in the scouts ... those are going to have much more of a protective outcome for them in the long run than focusing on the ideology. (Participant 21)

Collectively, these examples indicate that rather than forcing disengagement from specific interests or challenging ideologies, finding and encouraging alternative interests or safer offshoots of existing interests may be more effective.

Social and communication differences and candor. Participants mentioned that the candor associated with autism could be protective, in that extreme views were less likely to go unnoticed than in their neurotypical counterparts. This could mean that they are more likely to receive support or may assist in their engagement with interventions. This is exemplified by Participant 6:

I had a few cases where the individual has a willingness to be quite open with people working with them, could be seen as being blunt or direct ... this can be very useful ... You can get good insight into what's going on when they're honest about that behavior. We can use that as a strength in shaping what happens next.

Cognitive rigidity and the need for structure. Some participants suggested that cognitive rigidity can be advantageous in intervention strategies if considered appropriately. For example, some participants found that providing clear rules was useful: "If you give people very clear rules, sometimes they will stick to those rigidly, and I think the rules have to be articulated in such a thoughtful, careful way, because they will stick to them ... that can be protective" (Participant 23).

Other participants suggested that it may be effective to appeal to a clear sense of morality and justice that can be linked to rule-based reasoning, particularly in those with autism (Al-Attar & Worthington, 2024; Dempsey et al., 2020):

We have the biggest success in supporting [autistic clients], because given that they have a very specific perception about morality . . . It's very easy for us to go that moral, good route . . . perceive the badness maybe in making a violent attack, using those moral arguments and they hook on. It makes sense to them. (Participant 19)

Similarly, some participants hypothesized that this sense of morality can make neurodivergent individuals *more* resilient to extremism engagement than their neurotypical counterparts. As noted by Participant 12:

People with neurodiverse conditions, they can actually be very resilient to being radicalized, because they have their views . . . and absolutely nothing, what anyone says can sway that person away from that . . . yes, they might have the vulnerabilities that we see in people that are referred . . . but actually their views are very much against terrorism, against violence, against everything, and actually that that makes them very, very resilient.

Providing routines and structure was also considered a supportive and effective intervention by participants. Some participants, such as Participant 12, pointed to some benefits of prison environments in facilitating this structure: "Some people function so well in segregation . . . this is how they feel calm, they're articulating themselves, there's no self-harm anymore, there's no violence. It's very much a controlled and safe environment." However, participants had mixed perspectives on the overall helpfulness of the prison environment. While some considered the structure and routine to be supportive, others emphasized the difficulties associated with these environments. For example, Participant 23 described some of these experiences: "They made themselves so unpopular, and grass off the other prisoners . . . the rules are the rules and that's it."

However, it is worth noting that only five participants in the sample stated that they had experience working with offenders in prison or young offender institution contexts. These findings may therefore not fully capture the range of views of practitioners working in prison counterterrorism contexts. Nevertheless, some of the challenges related to the prison environment for neurodivergent individuals, such as sensory challenges and difficulties with changes to routines, were echoed in a report examining neurodiversity in the criminal justice system (HM Inspectorate of Prisons et al., 2021).

Beyond the individual: Systems-based interventions

Participants emphasized the need for interventions in wider systems around the individuals, such as school, mental healthcare, and family-based interventions.

School-based interventions. Participants noted that some individuals benefited from being able to debate and discuss the political issues that they had become

interested in, rather than refusing to engage with them, although this presented challenges for schools:

Having politics and debating opportunities for students so they can explore some of these issues in a kind of safe way within the education system . . . use thinking skills rather than that rigidity of thought. So autistic children, yes, they struggle with all those things. That's where they need more. (Participant 15)

School-based interventions were also often linked to more general system-level interventions around building cognitive and critical thinking skills: “working with the systems . . . family if available, and a lot of stuff with education . . . because that's where they're learning critical appraisal skills . . . to enable them to filter some of the stuff that they're encountering online” (Participant 13).

Diagnosis, treatment, and multi-agency support. Participants also suggested facilitating diagnoses, support, and treatments for those who may not have adequate support. A diagnosis was described as “an important first step” (Participant 23), while Participant 1 suggested that “if . . . they don't understand it, try and connect them with a youth service that does.” However, some participants noted the challenges of treating individuals with multiple diagnoses: “If you give them medication to reduce the delusions of grandeur, you increase the depression, and then you increase the risk for acting out. So, you have to work on the two levels at the same time” (Participant 19).

Participants highlighted the protective role of holistic multi-agency support, suggesting that if this support is in place, individuals are less vulnerable. As noted by Participant 13, “cases that . . . worked out best are those ones where we've had buy-in from lots of different agencies.” This was particularly relevant in relation to the services available in childhood and adolescence:

A huge protective factor has been that they've often had lots of services involved from a young age . . . they're so focused on the welfare of that young person that even if that young person did want to do something, there's enough eyes and ears on them, it's not just reliant on education, or their family environment, or home environment. (Participant 29)

Conversely, as discussed previously, if this support drops off (for example, when the individual is no longer eligible for youth support), this can create additional vulnerability. Similarly, participants often commented on the lack of cooperation between different agencies and services as a barrier to interventions and support: “With so many agencies involved, with so much expertise, there's so much time is spent ping-ponging people about . . . it's about them moving through the system rather than the system being wrapping around them” (Participant 11).

Family support and supervised internet access. Participants commented that “multidisciplinary teams are very important, because you need to support the family environment ... but it’s very tough ... families are just exhausted” (Participant 19). Some suggested that a lack of this support can be a barrier to interventions:

All of my work that hasn’t succeeded has been where family are obstructive to intervention. So, it doesn’t matter if school are on board ... if parents allow their child not to attend school on the days you’re meant to be meeting, it’s a nonstarter. If everything you’re suggesting as an alternative viewpoint is countermanded in their home environment, you’re not going to get very far. (Participant 1)

The potential usefulness of family members in the disengagement process is echoed in the existing literature (Morrison et al., 2021). However, some participants noted that even when families wanted to provide support, they often experienced difficulties in supervising their children due to a lack of technical skills or awareness about potential online risks. Participant 15 highlighted the importance of “educating families around e-safety and how to use technology in the home ... families just ... don’t have some very basic protections in place.” Other participants also noted that “upskilling” and having a better awareness add “a really robust protective layer ... also as a means of escalating and relating any concerns” (Participant 3). Increased supervision of internet use is also recommended in the existing literature (e.g., Higham et al., 2021; Wachtel & Shorter, 2013; White et al., 2017). However, other participants countered that even with these skills, “young people know exactly how to hide their activities online” (Participant 28), and regulating internet access is challenging:

There’s no parental control that you can use that will prevent your kids from accessing this stuff ... the only thing you can do is turn the internet off and then, because the parents and the rest of the family are dependent on the internet for various things, it’s very difficult to do. (Participant 16)

Social networks. Participants also suggested encouraging individuals to build healthy relationships outside of extremist groups, as reflected in the wider disengagement literature (Morrison et al., 2021). This included “befriending programs” to facilitate social inclusion. However, as previously noted, this can create additional difficulties:

[Others] think you can draw a person away from that context that has been positive and validating for them, but not understanding what that might mean to put them into a different context and encourage lots of social interactions and relationships. It’s anecdotal, where it’s worked was to look at building those social networks and relationships specifically within peer groups of other neurodiverse individuals. (Participant 6)

This suggests that even where similar approaches may be relevant for both neurodivergent and neurotypical cases, consideration and adaptation to neurodivergent needs are important.

Practitioner training and resources

Inconsistencies in existing training

Participants reported that the training they received was inconsistent, with some saying that they received “little to none” (Participant 7), while others only received a one-off workshop or e-learning: “We don’t have formal training . . . to do with neurodiversity, specifically, autism” (Participant 12). Those who received more training gave mixed reviews. For example, according to Participant 14, “I found them not great, to be honest. They were very specific and made every autistic young person sound as though they were going to be the same.” Other participants commented on the lack of practical utility of some of the training: “[It] was very theory-based and not sufficient in terms of practicality. I think it’s better if you’re talking among colleagues about what’s worked or not worked and utilizing people who know the field more” (Participant 1).

Participant 11 also noted that the training itself was not neurodivergent-friendly, recognizing the importance of accounting for lived experiences of neurodivergent individuals: “They are overpopulated . . . which is not neurodivergent-friendly . . . it has to have people who are neurologically different front and centre of any project. Nothing about us, without us, and the concept of that.”

However, those who reported positive training experiences noted the usefulness of training with a practical focus, including case studies:

... we have really practical advice and support and one of the things that we found quite useful was having case studies that we can then unpick and really fully understand: this is what was happening in that young person’s life, and this was the trajectory that they went on, and these are the things that that particular person found helpful. (Participant 3)

Participants also noted the usefulness of specific training on complex presentations. For example, Participant 3 commented, “I think there’s been . . . learning to the intersect between autism and ADHD now, which I was unaware of beforehand.”

Among the participants were some who delivered training. One of these participants, Participant 11, noted that some of the challenges arose from organizations’ lack of resources, time, and investment: “Somebody needs to go away and go, ‘What’s the relevance to me?’ That person needs to be able to learn. It’s not just about ‘can we have an hour’s webinar?’”

Participants reported that a consequence of insufficient training led to knowledge gaps, in some cases leading practitioners to make decisions with

little guidance. For example, Participant 13 noted, “No one told me what to do, so I’ve just sort of made it up as I’ve gone along, done what I thought was best.” Similarly, other participants noted that the lack of training resulted in a lack of standardization in approaches:

The way that I deal with something may be different to how someone else does on my team or on other teams. What we think is relevant is going to be different, especially with the lack of training; there’s no baseline, so it’s up to individuals to understand it. There’s a lot of ways things can slip through the gaps. (Participant 10)

Furthermore, some participants highlighted potential harms caused by a lack of awareness in some sectors:

Security personnel have absolutely no idea that these people are neurodiverse, and they behave in ways that trigger a very, very strong response. So, for example, they will touch them, or they will just say some things that are completely disruptive . . . they have to be sensitive to cultural issues just as much as they have to be sensitive to mental health issues. (Participant 19)

Recommendations for training

Some participants suggested that initially, training should improve awareness of neurodivergence and diagnostic processes: “Even just at a basic level for me, understanding what happens in the diagnostic process . . . Are they receiving a diagnosis and becoming self-aware of what this means for them?” (Participant 7). Going beyond this, as noted previously, participants valued training with practical applications and case studies, particularly in relation to risk assessment. Several participants highlighted a training need to understand risk factors among neurodivergent individuals, behaviors to monitor, and whether these may differ from those of their neurotypical counterparts. For example, Participant 31 queried “whether or not we need to have different indicators . . . So, with neurodiversity . . . what are the indicators of escalating concern in this group? Because it may not be the same as neurotypical groups.”

Several participants also noted training needs for interventions, specifically, going beyond basic understandings of neurodivergent symptomology. According to Participant 4, “We need to have the autism knowledge and then . . . provide the training around, ‘So, what do we now do?’” As further discussed by Participant 8, there is a need for training on specific measures that may be more suitable for those with neurodivergent needs:

One thing critically useful to understand is the best way in dealing with getting the individual back on the right path. We have a very limited toolkit that doesn’t always lend itself to individuals with autism and moving them off that path, we don’t have a good enough understanding of the different solutions.

Participant 12 also emphasized that the training should be tailored to different roles: “team-specific [training] is really important, because what I would

deliver . . . [for pre-crime intervention] will be very, very different to investigation staff.”

This also included specific recommendations for safeguarding in schools to facilitate preventive discussions: “We’re told when to escalate the concern, but usually that’s not preventative; that’s reactive . . . give school staff scripts on how to have some of those safe conversations and strategies to use” (Participant 15).

Additional themes

Ideology as secondary

Participants often considered specific extremist ideologies to be secondary to the individuals they had worked with: “Most of the time for these sorts of clients, the ideology is not the thing. And the more that you focus on it, the more that they’re going to be fixated on it” (Participant 21). Instead, some participants emphasized the importance of considering the underlying function and relevance of the ideology for that individual: “ . . . understanding the relevance and meaning and place of it in the person . . . connecting or relating to that. That’s the more interesting question, not the subject itself, that’s just the outlet that it’s pinned on” (Participant 20).

This was also emphasized in discussions of mixed, unstable, or unclear (“MUU”) ideologies among neurodivergent individuals, or “ideology hopping”:

The biggest concern for autistic people would be around that hyperfocus . . . this is something that I can read, and learn, and research forever more, and the internet is great for that . . . that leads in as well to the mixed or unclear ideologies . . . which is why this looks like kind of scatter gun because I’m interested in the topic rather than the ideology. (Participant 4)

Participant 3 also suggested that ADHD was linked to less clearly defined ideologies:

In those cases where ADHD has featured . . . there’s a much stronger vocalizing of opinion when it comes to extremism and . . . it’s a lot less coherent. It does jump between different types of extremism and different fields and things that don’t really make sense. So, it’s a lot less politically and ideologically coherent.

However, Participant 31 noted that far-right ideologies were more prevalent in their caseload, and that mixed and unclear ideologies were not specific to neurodivergent cohorts:

Islamist extremism was linked more to psychosis, and far right was linked more to ASC [Autism Spectrum Condition] . . . then there’s the sort of mixed, unclear, undefined . . .

a new thing, but I think it is across the board. I don't think it is just with neurodiverse cohorts.

Most participants agreed that where an ideology was present, it broadly appeared to be in the far-right sphere; this was mentioned 57 times, whereas Islamist ideologies were mentioned only 17 times. Meanwhile, “incel” ideologies were mentioned 24 times, while mixed/unclear ideologies were mentioned 26 times.

Participant 29 specifically highlighted that they had seen a recent shift toward the far right, and with this, a shift in the characteristics of terrorism-related offenders: “We’re seeing younger and younger individuals . . . it is more of this kind of right wing, and kind of school shooter threats . . . And in this group, we’re getting diagnoses of ASD, and often combined with oppositional disorder and ADHD.”

Indeed, the comments describing a shift to far-right extremism, as well as multiple ideologies, fascination with extreme violence and mass casualty attacks, and younger age groups, are reflected in the wider data trends found in UK Prevent referrals (Home Office, 2025). However, the prevalence of neurodivergence among these cases, compared with historic Islamist cases, could also represent diagnostic issues, whereby historically neurodivergence was undiagnosed, particularly for those from minority ethnic groups (Tromans et al., 2021). Similarly, it is important to note that, overall, most participants’ experience had been derived from the pre-crime space, and hence, they may not have worked with the range of ideological groups in higher-risk populations.

Stigma and stereotyping

Several participants raised concerns about the risks and harms of stigmatizing neurodivergent individuals, overly pathologizing extremist populations, and overattributing their extremist behavior to their diagnosis. As summarized by Participant 3, “Is there a bias actually, in that are we attributing everything to their condition?” Participant 12 further pointed out that this is also a challenge in public discourse:

In general media, they are starting to link this autism and counterterrorism risk . . . and actually what made them vulnerable to radicalization may not have been that neurodiverse condition. It may have been something completely separate.

Some also emphasized that similar vulnerabilities and behaviors are not unique to autism, but may rather be a product of marginalization and stigma:

Other characteristics are not so much specific to autism. They are specific to the psychosocial distress associated with somebody who . . . is suffering from mental health issues, which is marginalization, stigmatization, isolation . . . not being able to have a couple relationship, not being able to maintain stable work, suffering from poverty . . .

putting so much of the spotlight on the autistic characteristic is kind of producing a stigmatization effect. (Participant 19)

These considerations are important for contextualizing vulnerability and risk among neurodivergent extremist populations, and indeed, the findings presented here. This nuance is summarized by Participant 20: “I think autism comes with a number of vulnerabilities, but it’s the context in which those vulnerabilities take shape and come to the surface, or how they’re managed that leads to [an] outcome.”

Relatedly, some participants discussed that the overrepresentation of individuals with autism seen in PCVE referrals may be due to societal stigmas and stereotyping, where they may not have any violent intent:

... there’s almost a sort of ... confirmatory bias. So, people think that ASD is relevant to CT, so we get more referrals about people with ASD. There’s a lower threshold for accepting them. So, all you have to do is have an interest in Hitler and have ASD and you’re in. (Participant 31)

Similarly, some participants raised concerns about seeing individuals as purely vulnerable and ignoring their agency: “I think there’s also a worry ... about some autistic people being really uncomfortable about people saying that they’re vulnerable. And seeing that as a real insult” (Participant 4).

Distinguishing between interest, risk, and criminality

Relatedly, participants discussed how some behaviors, such as collecting and having a specific interest, may in some cases be misinterpreted as an intent to act:

Having information or collecting information on a topic has been seen as an indicator that you’ve got an intent to act, whereas that isn’t necessarily what we see ... I think we need to do some more research ... on what are the factors that would indicate an intent to act on the information rather than just ... an interest. (Participant 31)

Participant 17 cautioned about the potential harms of assuming violent intent “where the level of engagement is benign.” According to this participant, “We’re dealing with not an intrinsically high risk group of individuals ... there is a danger that many are getting captured inappropriately and convicted unnecessarily, which is not good for the public or for those individuals.” They further clarified that “the autism background ... contextualizes it all ... if you take it at face value then that can trigger a charge because there are so many pre-crime behaviors that are now actually criminalized.”

The point that behaviors such as collecting can reach the threshold of criminality was also noted by other participants:

If you were not really leaving your house and staying at home 20 years ago, it would be very difficult for you to implicate yourself in such serious crimes ... These days, if you

share that information widely, incitement is a crime. Being friends like on terrorist networks, that's a crime . . . a lot of the images are crime and so this massive upsurge in capturing these behaviors in this cohort. (Participant 16)

While participants raise important considerations around the distinction between interests, collections, and violent intent, as well as the changing legislative landscape, there appear to be contradictions where harms and offenses associated with online activity are considered “benign” or “pre-crime behaviors.” However, it is important to acknowledge that online behaviors, including collecting or sharing extreme content, can still constitute offenses and cause harm (Human Digital et al., 2025).

Two of the focus groups also discussed different subgroups within the neurodivergent cohort. This is summarized by Participant 28:

We tend to have what seems to be two very distinct groups . . . those awkward, interpersonally difficult, isolative, bullied, slightly kooky, teenage boys who retreat to their bedroom and spend all their time playing online games, building their own little worlds, struggling to merge fantasy with reality, and getting stuck and wandering down rabbit holes and not coming back anytime soon. Those are the ones that typically get referred to us because those are the ones that clearly have . . . if not an already confirmed diagnosis of, childhood autism.

The other cohort are . . . the kids that go online, spout off, love the drama, love the excitement, love to say things and end up getting trapped in little echochambers with their mates, and using some extreme language . . . those types of kids are largely conduct disordered with antisocial difficulties . . . they fall foul of the law online . . . there's no intent, there's no capability, but they love causing a drama . . . They might need ADHD medication along the line.

Participant 31 further elaborated on the different groups they encountered. In the first, an extremist ideology offers “a clear explanation” that they are “wedded to” and thus engage in extremist activities in support of it. The second group's behavior involves “knowing and talking facts . . . malicious communications or . . . they just say it at the wrong time.” The third subgroup “are specifically targeted and exploited,” for example, for financial support. The fourth group are motivated by “group membership,” while in the final group, “their lives are really rubbish and it just improves them in some way.” While these subgroups are based on anecdotal evidence from a small number of participants, they suggest that even for those with similar neurotypes, different motivations, behaviors, vulnerabilities, and risks may arise.

Some participants consequently discussed concerns that the same behaviors may lead to different outcomes depending on whether they fit under the remit of terrorism legislation:

If you've got a school shooter who has got a personal grievance because they've got ASD and they're being bullied or whatever, and they threaten to shoot up the school, it's dealt

with one way, but if there's any link with an ideology or religion . . . then it opens up in terms of policing . . . a much more serious consequence. (Participant 27)

These considerations appear to lead to a split in opinion among the sample. Some participants argued that risk can be overestimated in these populations. For example, according to Participant 14, "So many young people are getting criminalized . . . for content they've shared, things they've said, when there is really no substance to it and no need for us to be afraid of these individuals." Conversely, other participants, such as Participant 37, warned that these offenses may be indicative of risk that should not be underplayed:

We see more types of offences in terms of . . . possession of publications . . . whereas for other types of offense we may see more overt violence . . . But something I'm very mindful of is . . . is risk related to that as well? . . . There can be a danger, I think, of when we see ASD, and certainly within the terrorism field, sometimes risk can be underplayed.

Similarly, Participant 29 noted a concern that practitioners in some services may downplay behaviors that could be indicative of risk:

Services have heard or seen some behaviors that, from a CVE perspective, I'd see as being quite concerning, but they would just kind of fob it off and say, 'That's just him, this is just how he is, this how he speaks, that's what he's interested in, it's fine, we don't need to have any concern around the risk of this.'

In line with these concerns, Participant 36 concluded with a "plea" for practitioners to consider the gravity of the potential offenses under consideration: "I just get concerned about whether we really understand what we're facing sometimes . . . And I think our measures have to begin with . . . an understanding of what the offense is, or the ideology is, that we're trying to intervene for."

Discussion

This analysis discussed a range of considerations around neurodivergence and extremism vulnerability and risk in individuals in PCVE contexts. Most participants spoke from their experiences of working with individuals with autism; however, they also discussed some features of ADHD and neurodivergence in general. These findings build upon the existing literature by synthesizing findings from the experiences of practitioners who have worked with neurodivergent populations in extremism contexts, thus contributing knowledge from a large number of sources and cases.

First, participants discussed the role of specific restricted interests and collecting materials in terrorism-related areas, such as the Second World War, Nazis, and Hitler; weapons; and conspiracy theories. Second, participants discussed the role of sensory differences and stimulation seeking,

particularly as a pull factor toward extremist materials and “shock and gore” content. Third, participants highlighted how in some cases, social and communication differences may contribute to social rejection and isolation, which may, in combination with other factors, increase vulnerability to online exploitation. Finally, participants discussed the relationship between neurodivergent cognitive styles, such as cognitive rigidity and a need for structure, and the pull toward extremist ideologies. These findings corroborate many of the findings and hypotheses presented in the existing literature discussing vulnerabilities, risk, and protection among neurodivergent populations (Al-Attar, 2019a; 2020; Salman & Al-Attar, 2025).

Beyond neurodivergent-specific features, participants highlighted the relevance of other factors in contributing to vulnerability and risk, such as the presence of other comorbidities, social isolation and rejection, transition periods, extended time online during and after the pandemic, and a lack of support. Many of these findings are echoed in the existing literature examining mental health in violent extremism contexts (e.g., Gill et al., 2021). Based on the discussed vulnerabilities and contributors to risk, the findings suggest some implications for interventions, such as the importance of tailored approaches that consider neurodivergent needs, harnessing protective factors, and systems-based and environmental interventions. While these findings were often anecdotal, they echo some of the intervention approaches and considerations discussed in the existing literature (Al-Attar, 2019a, 2020; HM Inspectorate of Prisons et al., 2021; Morrison et al., 2021).

This analysis also included suggestions for training for practitioners involved in interventions. The findings suggest that existing training is inconsistent, and in many cases insufficient, superficial, or impractical. This implies practitioners would benefit from more in-depth and practical training to guide them in understanding neurodivergent needs in extremism contexts and provide guidance on appropriate tailored interventions.

Finally, this study identified other overarching themes, namely, the relevance of extremist ideologies to neurodivergent individuals, considerations around stigma and stereotyping, discussions around different types of offenses, and the poorly understood gap between interest and action. Some of the themes identified here are also present in the existing literature. Similar concerns regarding stigma and stereotyping have been raised previously; for example, Bronner (2014) and Meeks (2020) highlighted that overemphasizing neurodivergence as an explanatory factor can stray into profiling, at the expense of other behavioral or risk factors. Similarly, Woodbury-Smith et al. (2022) suggested that focusing on diagnostic labels rather than true risk factors may produce “red herrings”—i.e., emphasizing characteristics that are not necessarily relevant to risk. These papers, and the findings presented here, therefore raise important considerations for how the interaction between neurodivergence, vulnerability, and risk is conceptualized. We therefore

emphasize that neurodivergent features should be viewed as *contextual* rather than *causal*, and that their role should be considered dynamic rather than permanent (Al-Attar, 2020). Similarly, the links between neurodivergence and extremism risk and vulnerability are only relevant to those who exhibit both, and not to the general neurodivergent population (Al-Attar, 2020).

Other themes are less prevalent in, or may even contradict, the existing literature. This is particularly the case for the considerations around extremist ideologies. The results suggest that the precise ideology may, in some cases, not be particularly relevant to the individuals' behavior—and may often present as a mixed or unclear ideology. This may raise considerations for interventions that focus on the ideology of the individual, or indeed their classification within counterterrorism systems. This area remains under-researched and may present a challenge for practitioners as well as a need for greater clarity on what is meant by an “ideology” and its function in practice.

Finally, the additional theme relating to offending behaviors and the gap between interest and action raises potential considerations around how risk is assessed among neurodivergent populations and the implications for the criminalization of certain behaviors. However, as noted in the analysis, this remained a contentious topic, where participants disagreed as to whether the risks were overstated or underplayed. Thus, an important area for future research may be to examine whether there are differences in behaviors between those with violent intent, compared with those who engage in other extremism-related behaviors and offenses.

Considerations for practice

The findings raise some important considerations for practice, particularly assessments and interventions with neurodivergent cases within PCVE contexts. First, the findings suggest adapting or supplementing risk and vulnerability assessments and formulations with neurodivergent individuals to consider and account for the ways in which their symptoms, characteristics, and experiences may shape behavior and extremism engagement. As demonstrated throughout this research, it is important to consider the function that behaviors and extremist engagement serve for individuals, which may not immediately be apparent from their behavior. However, the findings presented here should not be considered “risk factors” indicative of extremist risk, as there is insufficient evidence to attribute a direct causal link between the traits presented here and extremism risk.

Second, the findings suggest tailoring engagement and interventions to individual and neurodivergent needs. Existing intervention approaches may require adaptation to ensure their accessibility to neurodivergent cognitive

styles, needs, as well as strengths—for example, adapting to neurodivergent communication and sensory needs, accounting for the need for structure and predictability, and harnessing strengths in moral and logic-based reasoning. As discussed by participants, these strengths and needs can differ between individuals.

Third, the findings point to the importance of multi-agency and whole-system approaches, including diagnostic support, and where available, school-based and family support, as well as prosocial networks and groups. Such approaches should consider needs including and beyond neurodivergence, particularly where the individual has multiple and complex needs.

Limitations and future research

We previously identified the positionality of the researchers and the potential limitations associated with this; however, it is also important to consider the positionality of the practitioners consulted for this research. The majority worked in pre-crime contexts, while few worked in post-crime contexts or directly with high-risk or convicted terrorists. Similarly, few practitioners were trained as risk assessors. This could mean that the data collected may have primarily related to “lower-risk” and younger individuals who were referred to pre-crime prevention programs, or individuals involved in nonviolent extremist engagement (e.g., online offenses or incitement), and may not generalize to those who are at higher risk of enacting a violent attack. Furthermore, practitioners such as mental health professionals may not necessarily be fully aware of their clients’ offending behaviors. Thus, future research investigating the behaviors that may relate to intent, particularly violent intent, would benefit from sampling higher-risk or convicted offenders, or practitioners working with them.

Similarly, participants were not from this population themselves; rather, they were relaying their knowledge through their practitioner lens. Some participants revealed that they were neurodivergent themselves, had neurodivergent family members, or worked in other neurodivergent advocacy roles. However, other participants may not have had any lived experience with neurodivergence. It is important to consider that the lens through which these practitioners interpret behaviors and neurodivergent narratives may not necessarily reflect the views of the neurodivergent individuals they work with. While it is difficult to gain direct access to extremist populations (Schuurman, 2020), future research would benefit from directly sampling neurodivergent individuals within these populations to gain more direct insights into their experiences.

Although this research was able to include practitioners from different countries and backgrounds, they were all practitioners in specific socio-political environments and countries. It is likely that the findings presented

here may not be generalizable to other contexts, such as other countries or regions, or other types of terrorism, such as state-sponsored terrorism, militias, and armed insurgent groups. As well as generalizability, it is also important to consider the specificity of these findings—i.e., the extent to which they are unique to neurodivergent individuals, rather than the wider extremist cohort (Woodbury-Smith et al., 2022). Some of the themes identified, such as social isolation, adolescence, and complex needs (e.g., Gill et al., 2021), as well as the types of strategies and interventions (Morrison et al., 2021), are not entirely unique to neurodivergent individuals. However, a key finding of this research is the importance of tailoring such considerations and interventions to neurodivergent needs. Nevertheless, it may therefore be relevant for future research to consider these different areas and the generalizability and specificity of the present findings.

Some methodological choices may also have influenced the findings. Many participants were familiar with the second author and her guidance and frameworks, which may have shaped how they interpreted cases and the views they felt comfortable sharing. Additionally, as outlined in the Method section, coding was undertaken by one researcher, which will have implications for the subjectivity of the analysis.

Finally, the scope of this research may present a limitation to the findings presented here, as well as some avenues for future research. While neurodivergence was considered more broadly, the majority of participants referred to autism specifically. However, an emerging trend appeared to be the relevance of ADHD, which in many cases was present alongside autism, and was hypothesized by some participants to exacerbate some risky behaviors. ADHD remains under-researched in the context of violent extremism (Salman & Al-Attar, 2025; Worthington et al., 2022); thus, an area for future research could be to focus on ADHD specifically within extremism contexts.

Conclusion

Overall, this research goes beyond evaluating the presence of neurodivergence among extremist populations to examining the relevance of neurodivergent features to vulnerability, risk, and resilience. The findings suggest that neurodivergent features alone do not directly cause vulnerability or risk of extremism; rather, they can combine with or exacerbate other vulnerabilities, such as those associated with social isolation and rejection; comorbidities and complex needs; difficulties in transitional periods; a lack of support from support systems; and socio-environmental factors such as increased political polarization and the time spent online.

These findings raise important considerations for research and practice regarding neurodivergent populations, particularly those with autism, in extremist contexts. The findings suggest that tailored approaches, particularly those that harness potential protective factors associated with neurodivergence, as well as neurodivergent-friendly and systems-based approaches, are important considerations for strategies to enhance resilience against extremism engagement. The findings also indicate that practitioners would benefit from more in-depth and practical training to guide them in understanding neurodivergent needs in these contexts and appropriate, tailored interventions. As well as the potential implications for risk assessment, interventions, and training, this research also suggests potential avenues for future research to improve our understanding of this under-researched field.

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