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Criminal justice system outcomes of children with child welfare service involvement and special educational needs: analysis of routinely collected data

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ABSTRACT

Children in youth justice systems are disproportionately likely to have special educational needs and prior child welfare interventions. This study examined the odds of criminal justice involvement among children in England (N = 1,708,565) born between 1995 and 1998, using linked education and justice records. Across nine of eleven SEN categories, children with a child welfare intervention had higher odds of a criminal caution or conviction (OR = 1.59–2.58). Among those with justice involvement, odds of receiving a custodial sentence were higher across eight of nine SEN categories (OR = 1.25–1.71). Findings indicate a compound disadvantage: children with both SEN and child welfare involvement face increased odds of criminalisation and custody, underscoring the need for integrated policy responses. Funding: ESRC ADR UK ES/W002345/1.

1. Introduction

Children designated with specific educational needs (SENs) and those subject to child welfare interventions are each heavily over-represented among those who later receive a criminal caution or conviction, including custodial sentences. Despite recognition of vulnerability by statutory children's services, neither system response appears to effectively protect against criminalisation. Where children are involved with both special educational and child welfare systems, the relationship between these experiences and future criminalisation is less clear. This paper provides the first population-level analysis of the overlap between specific categories of SENs and child welfare involvement, drawing on national-level data for England (Gilbert et al., 2009).

1.1. Developmental and learning difficulties, recognition in educational settings

There is strong evidence that developmental, learning and mental health difficulties are highly prevalent among justice-involved children internationally (Borschmann et al., 2020; Hughes et al., 2020). Studies estimate that up to 64% of young people in custody have speech, language and communication needs (SLCN; (Anderson et al., 2016; Chow

et al., 2022; Hughes et al., 2017). Conduct disorder affects more than half of justice-involved youth (56–76%), while ADHD is present in around one-fifth (17–26%) (Ayano et al., 2024; Di Lorenzo et al., 2021; Mohammadi et al., 2021). Rates of depression and anxiety are also elevated, particularly when co-occurring with externalising conditions (Commisso et al., 2024; Copeland et al., 2007). Evidence on autistic spectrum conditions (ASD) is mixed, but some studies suggest over-representation compared to general population prevalence of around 1–2% (Bowden et al., 2022; Cheely et al., 2012).

Different countries categorise and respond to these developmental and learning difficulties in different ways, depending on the setting. In England, recognition in the education system is formalised through the administrative designation of SENs, which identifies children who require additional support. SENs are an umbrella designation covering a wide range of conditions that affect communication, cognition, behaviour, physical health, and socio-emotional functioning (Department for Education & Department for Health, 2015). Special educational need (SEN) categories include; cognition and learning difficulties (moderate, severe, specific); social, emotional and mental health (SEMH) needs; sensory and physical impairments; and ASD (see Box S1 in Supplemental materials for further details). While some categories correspond to internationally recognised diagnoses, others, such as SEMH and SLCN,

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are broader, education-based classifications. SEN designations therefore signal recognition by schools of additional support needs, but they are not synonymous with clinical diagnosis, nor do they guarantee effective or timely intervention.

Children designated as having SENs comprise around 23% of the school population in England and face consistently poorer educational outcomes, including higher rates of absence, exclusion, and low attainment (Department for Education, 2023d; Hutchinson et al., 2020). They are also disproportionately represented in justice populations: in England, 80% of those who committed an offence had been designated with SEN in childhood compared to 45% of non-offenders (Department for Education, 2022b). This recognition of educational needs does not therefore provide protection from criminalisation.

1.2. Early adversity and child welfare involvement

Another well-established risk factor for criminalisation is exposure to early adversity, including abuse, neglect and family instability. Childhood maltreatment has been shown to disrupt neurological development, impair self-regulation, and increase risks of antisocial behaviour and arrest (Hughes et al., 2020). Large-scale studies using the Adverse Childhood Experiences or ACEs framework report that most of the justice-involved youth have experienced some form of significant childhood adversity. One study from the USA found that 96% had at least one ACE, while another suggests that 27% of males and 45% of females in prison in the USA had experienced five or more (Baglivio et al., 2016; Felitti et al., 2019). Meta-analyses confirm robust associations between abuse or neglect and later criminal justice involvement (Gilbert et al., 2009; Widom & Maxfield, 2001).

Child welfare involvement represents the state's response to these risks, through child protection interventions and placement in out-of-home care. As with SENs, child welfare involvement is intended to provide protection, yet evidence strongly suggests it does not reliably protect children from criminalisation. Between one-third and one-half of young people in custody internationally have prior welfare involvement (Brännström et al., 2017; Segal & Amos, 2023). In England, care-experienced children are estimated to be 13 times more likely to be criminalised than their peers (Jay & Gilbert, 2021). Placement instability, disrupted schooling, inconsistent access to specialist services, and the heightened surveillance of children in care all increase the likelihood of exclusionary and punitive systemic responses (Baidawi & Piquero, 2021; Jay & Gilbert, 2021).

This study is informed by the health determinants model of youth criminalisation, which situates criminal justice system (CJS) involvement within the intersection of social disadvantage, health and developmental conditions, and exposure to adversity across childhood (Borschmann et al., 2020; Hughes et al., 2020). Within this framework, SENs and child welfare involvement function as institutional markers of developmental vulnerability and cumulative adversity, rather than as isolated or causal risk factors (Baidawi & Piquero, 2021; Hughes et al., 2020; Jay et al., 2023). Despite strong evidence that developmental difficulties and early adversity are each linked to criminalisation, much less is known about how they overlap. International research shows that children experiencing early adversity are more likely to present with developmental and behavioural difficulties and to experience disrupted education (Gilbert et al., 2009; Romano et al., 2015; Viner & Taylor, 2005). Children in out-of-home care are more likely than their peers to be designated with SENs, particularly the designation of SEMH (Department for Education, 2022a; Ford et al., 2007). Small-scale studies suggest that children with both SEN and child welfare intervention, the so-called “crossover” populations, are especially vulnerable, experiencing earlier, more persistent and more serious CJS contact than those with only one of these factors (Baidawi & Piquero, 2021; Jay & Gilbert, 2021). Yet existing evidence is limited, often based on small or selective samples, focused on single SEN categories, or lacking population-level coverage.

1.3. Hypotheses

This study addresses these gaps using linked administrative data covering the school-aged population in England. We hypothesise that prevalence of recognised SEN designations will differ between children with and without child welfare intervention, and between those who do and do not have contact with the CJS. We also hypothesise that children who are designated as having different categories of SEN and a child welfare intervention will, compared to those without a child welfare intervention, have different odds of having a criminal caution or conviction, and of having a custodial sentence by early adulthood.

2. Methods

2.1. Data sources and sample

This study used linked, longitudinal administrative records for 1,708,570 individuals in England born between September 1995 and August 1998, followed from school entry (2000–2003) to early adulthood (2000–2020). Data were drawn from the Department for Education (Department for Education) and the Ministry of Justice (MoJ) and linked in 2021 using personal identifiers and Department for Education-issued unique pupil numbers (ADR UK, 2023; Dillon et al., 2022). The full dataset comprised over 15 million individuals; the analytic sample was restricted to three adjacent birth cohorts to maximise the overlapping coverage of the education, child welfare, and justice data. The study combines a longitudinal measure of child welfare involvement (any intervention between age 5- and 18-years) with a cross-sectional measure of a SEN primary category in Year 11. This design reflects substantive differences in our operationalisation of the two constructs. Child welfare service intervention is conceptualised here as an exposure and indicator of vulnerability over childhood. The SEN primary category is a functional classification that may change overtime and is more meaningfully interpreted at a developmentally and institutionally salient time point. This approach is also appropriate given data limitations. The child welfare service data has limited episode coverage, and there is no established approach to summarising complete longitudinal SEN exposure histories across multiple categories in a way that preserves interpretability and avoids conflating substantive change with recording practices.

Children educated entirely in independent schools or through home education, and those removed from the education system (e.g., to be home schooled, or those missing from education) before year 11 were not captured in the analysis. Independent schools educated just over half a million children in England in 2015 (517,113), with 47,316 in year 11 (ISC, 2015). Around 45,500 children were home schooled in 2017, with an estimated 30% or 13,650 being in key stage 4 (year 10 and 11), home schooled children are as likely to have identified SENs and more likely have contact with child welfare services (ADCS, 2017, 2019; Department for Education, 2026). Around 216,312 children were missing from education in 2017 equating to an estimated 25,000 15-year olds (year 10 and 11), these children were not enrolled in a school or registered as being home educated and disproportionately were more likely to have SEMH needs and be involved with child welfare services (Crenna-Jennings, 2024). From the data available we estimate that around 86,000 or 5% of children were not in the dataset in the year 11 census from which the SEN status was gathered. A more detailed overview of data coverage, linkage and data access requirements are provided in Fig. S1 in the Supplemental materials.

The resulting linkage provides the first whole-population evidence in England on the intersection of SEN, child welfare involvement, and CJS outcomes. Unlike cohort studies, which rely on self-report and are often less representative of minoritised groups (Kennedy et al., 2017), linked administrative records capture close to the full population of state-educated children. Comparable approaches internationally have demonstrated the value of such data for examining long-term outcomes

among those involved with child welfare services or identified with SEN (Bowden et al., 2022; Jay et al., 2023).

2.1.1. Child welfare service data

Child welfare involvement was identified through two statutory datasets: the Children in Need Census and the Children Looked After returns (Department for Education, 2023a, 2023b). These record three categories of state intervention: child in need, child protection plan, and child looked after. For the purposes of this study, these categories were combined to create a binary indicator of any child welfare intervention during compulsory schooling. Coverage does not include children who have been adopted and in the data linkage used in the present study data is only available for children from age five onwards, meaning that any child whose only child welfare interventions started and ended before age 5, or cases of adoption, will be classified as having had no child welfare intervention. The child welfare service data only includes the most recent episode of child welfare service involvement from each year rather than including full episode coverage.

2.1.2. Education data

SENs were measured from the school census using the primary SEN designation recorded in the final year of compulsory schooling (Year 11, age 15–16 years). The school census is a statutory, electronic data collection relating to pupils, such as personal and demographic details, completed in each academic term and forming part of the National Pupil Database. Schools are required to record one primary category, although in practice many children present with multiple or changing needs. Detailed SEN category descriptions and prevalence comparisons are reported in Box S1 of Supplemental materials.

Table 1

Prevalence estimates for each SEN category within the whole sample, and subsamples of child welfare, any CJS involvement and for those with a custodial sentence.

SEN groups and categories	Whole sample	Sample child welfare intervention	Sample no child welfare intervention	CJS sample	Non-CJS sample	CJS sample no custodial ^a	CJS sample custodial
Total N	1,706,760	116,920	1,589,840	145,710	1,561,050	130,490	15,220
No SEN	1,344,480 (79)	52,760 (45)	1,291,720 (81)	82,260 (57)	1,262,220 (81)	75,690 (58)	6570 (43)
Any SEN	362,280 (21)	64,160 (55)	298,120 (19)	63,450 (44)	298,830 (19)	54,800 (42)	8650 (57)
<i>Communication & Interaction</i>							
ASD	17,830 (1)	5140 (4)	12,690 (1)	1300 (1)	16,530 (1)	1160 (1)	140 (1)
SLCN	12,150 (<1)	1980 (2)	10,170 (1)	1270 (1)	10,880 (1)	1110 (1)	160 (1)
<i>Cognition & Learning</i>							
Moderate LD	35,760 (2)	8410 (7)	27,350 (2)	6070 (4)	29,690 (2)	5310 (4)	760 (5)
Severe LD	6990 (<1)	4380 (4)	2610 (<1)	240 (<1)	6750 (<1)	230 (<1)	10 (<1)
Specific LD	20,940 (1)	2540 (2)	18,400 (1)	3080 (2)	17,860 (1)	2760 (2)	320 (2)
<i>Social, emotional, & mental health</i>							
SEMH	56,160 (3)	19,420 (17)	36,740 (2)	22,890 (16)	33,270 (2)	18,690 (14)	4200 (28)
<i>Sensory & Physical</i>							
Vision	2280 (<1)	460 (<1)	1820 (<1)	140 (<1)	2140 (<1)	c	c
Hearing	4360 (<1)	660 (1)	3700 (<1)	310 (<1)	4050 (<1)	290 (<1)	20 (<1)
Physical dis	6150 (<1)	2100 (2)	4050 (<1)	230 (<1)	5920 (<1)	21 (<1)	20 (<1)
<i>Other</i>							
NSA	190,660 (11)	17,000 (15)	173,660 (11)	26,480 (18)	164,180 (11)	23,590 (18)	2890 (19)
Other	9000 (1)	2070 (2)	6930 (<1)	1440 (1)	7560 (<1)	1310 (1)	130 (1)

Notes. No SEN = no identified SEN; ASD = autistic spectrum disorder; SLCN = speech language and communication needs; Moderate LD = moderate learning difficulties; Severe LD = severe learning difficulties; Specific LD = specific learning difficulties; Vision = vision impairment; Hearing = hearing impairment; Physical Dis = Physical Disabilities, NSA = no specialist assessment; c = value censored due to low counts.

^bSEN designations of multi-sensory impairment and profound & multiple learning difficulty values were all censored due to low counts and have been fully removed.

^a The prevalence of custodial sentences was calculated as the proportion of cases who had one or more custodial sentence(s) from the population who had any caution or conviction, see CJS sample column for within SEN category denominator values.

2.1.3. Criminal justice data

The Police National Computer (PNC) provided records of all convictions and cautions for recordable offences in England and Wales between 2000 and 2020. Data included offence type and disposal type (e.g., community order, custodial sentence). Offences recorded prior to the age of criminal responsibility (10 years) were excluded as false entries. For the analytic cohort, cases with a matching identifier in the PNC were coded as having: one or more cautions or convictions, and zero or one or more custodial sentences, with those not appearing in the PNC coded as having no criminal caution or conviction. The custodial outcome was analysed only within those who had one or more cautions or convictions (those without a criminal caution or conviction were excluded from this analyses).

2.2. Statistical analysis

Descriptive statistics were calculated to examine SEN prevalence by child welfare status and CJS involvement (Table 1), and CJS outcomes by SEN category and child welfare status (Table 2). Each SEN category was analysed as a distinct subgroup, with individuals coded according to CJS involvement (any caution or conviction, or custodial sentence) and exposure to child welfare intervention. Box S1 and Table S1 in Supplemental materials offer current (2023/24) prevalence estimates for the whole population in England and as reported in existing evidence for welfare and CJS involved children. These may be of use in interpreting and grounding the findings of the current study.

In line with methods used in existing evidence from England and internationally, we use odds ratios and confidence intervals calculated using standard logit models, to estimate the relative odds of CJS

Table 2

Prevalence estimates for any CJS involvement and custodial sentences within the whole sample, and subsamples of child welfare intervention; and outcome of odds ratio calculations for each SEN category comparing those with/without child welfare intervention.

SEN groups and categories	Whole sample %		Child welfare intervention %		No child welfare intervention %		Odds of receiving one or more cautions or convictions for those with child welfare involvement			Odds of receiving one or more custodial sentences for those with child welfare involvement ^a		
	CJS	Custodial ^a	CJS	Custodial ^a	CJS	Custodial ^a	OR	SE	LCI, UCI	OR	SE	LCI, UCI
Total	9	10	27	17	7	9						
Any SEN	28	14	32	19	14	12						
No SEN	6	8	22	13	5	7	4.40	0.01	4.38, 4.42	1.86	0.03	1.80, 1.92
<i>Communication & interaction</i>												
ASD	7	11	11	13	6	9	1.83	0.06	1.71, 1.95	1.62	0.19	1.26, 1.98
SLCN	10	13	19	16	9	11	2.11	0.07	1.98, 2.24	1.45	0.18	1.10, 1.80
<i>Cognition & learning^b</i>												
MLD	17	13	26	17	14	10	1.86	0.03	1.80, 1.92	1.70	0.08	1.55, 1.85
SLD	3	4	3	7	4	c	0.75	0.13	0.49, 1.01	c	c	c
SpLD	15	10	32	15	12	9	2.58	0.05	2.49, 2.67	1.67	0.12	1.43, 1.91
<i>Social, emotional, & mental health</i>												
SEMH	41	18	54	24	34	14	1.59	0.02	1.55, 1.63	1.71	0.03	1.64, 1.78
<i>Sensory & Physical</i>												
Vision	6	c	9	c	5	c	1.80	0.19	1.42, 2.18	c	c	c
Hearing	7	6	14	11	6	5	2.33	0.13	2.07, 2.59	2.20	0.47	1.29, 3.11
Physical	4	9	4	c	4	13	1.00	0.14	0.72, 1.28	c	c	c
<i>Other</i>												
NSA	14	11	30	16	12	10	2.50	0.02	2.46, 2.54	1.50	0.05	1.41, 1.59
Other	16	9	29	10	12	8	2.42	0.06	2.30, 2.54	1.25	0.18	0.89, 1.61

Notes. No SEN = no identified SEN; ASD = autistic spectrum disorder; SLCN = speech language and communication needs; MLD = moderate learning difficulties; SLD = severe learning disabilities; SpLD = specific learning disabilities; Vision = vision impairment; Hearing = hearing impairment; Physical = Physical Disabilities, NSA = no specialist assessment; c = value censored due to low counts. Population counts for each cell of Table S3 can be found in Supplemental materials Table S3.

^a The prevalence of custodial sentences was calculated as the proportion of cases who had one or more custodial sentence(s) from the population who had any caution or conviction see table S3 for within SEN category denominator values.

^b SEN designations of multi-sensory impairment and profound & multiple learning difficulty values were all censored due to low counts and have been fully removed.

outcomes among individuals with welfare involvement compared to those without, stratified by SEN category (Baidawi & Piquero, 2021; Bender, 2009; Ford et al., 2007). For custodial sentences, the analysis was restricted to the subset who had one or more criminal cautions or convictions. Our research priorities were to clearly describe the CJS outcomes for children with and without a child welfare service intervention for each SEN designation. In this emerging field, both child welfare interventions and SENs are operationalised variably depending on the research question and data limitations (Jay & Gilbert, 2021; Jay et al., 2023). Odds ratio was selected as the most appropriate analytical approach, with efforts made in the results and discussion to make interpretation easier for a range of audiences (Barros & Hirakata, 2003). Further justification and recognition of the limits of our selected methods are discussed in the limitations section below and full details of statistical formulae are provided on page three of the Supplemental materials.

All outputs complied with the data protection requirements set out by the data owners, such that counts below ten were suppressed, all other counts were rounded to the nearest ten, and percentages are reported without decimal places. For help with readability, Table S3 presents percentages only, while the rounded counts are available in Table S3 in Supplemental materials.

3. Results

Table 1 presents prevalence estimates for each SEN category across the whole sample, among children with child welfare interventions, and among those with any criminal caution or conviction, or one or more custodial sentences. Across all child welfare and CJS groups, children

with SEN were consistently overrepresented. The prevalence of SEN was 36% higher among those with a child welfare intervention compared to those without, 25% higher among those with any CJS involvement, and 15% higher among those receiving a custodial sentence relative to other justice outcomes. Elevated odds were most marked for SEMH needs, moderate- and specific-learning difficulties, and cases recorded as no specialist assessment (Category used where the child has been given SEN support before the school has identified the appropriate category of SEN (Department for Education & Department for Health, 2015)) In contrast, children with ASD, SLCN, or sensory and physical impairments showed more variable patterns: SEN prevalence was elevated when these children also had welfare involvement, but odds of CJS involvement were equivalent to or only slightly higher than peers without SEN.

Table 2 summarises the prevalence of CJS involvement for each SEN category and presents the results of odds ratio analyses comparing those with and without child welfare interventions. Across the whole sample, the proportion of children who had a criminal caution or conviction was 22% higher and proportion of custodial sentences was 6% higher for those with any SEN compared to those without. This pattern held for most categories, including SLCN, moderate- and specific-learning difficulties, SEMH, no specialist assessment, and other SEN (Category used where some other difficulty or disability is identified other than the [other named SEN] categories (Department for Education & Department for Health, 2015)). By contrast, children with severe-learning difficulties or physical disabilities had lower proportions of CJS involvement than peers without SEN, while those with ASD, hearing impairment, or vision impairment showed similar proportions, apart from slightly higher custodial outcomes in ASD.

Those involved with a child welfare service experienced heightened

odds of CJS involvement. Among children with any SEN, those with welfare involvement had proportions of CJS contact that were 10% higher for cautions or convictions and 6% higher for custodial sentences than those without welfare involvement. This amplification was evident across nearly all SEN categories, with increases in CJS involvement ranging from 4 to 20% and custodial outcomes from 2 to 10%. Categories with the sharpest contrasts included SLCN, moderate- and specific-learning difficulties, SEMH, *no specialist assessment*, and *other SEN*.

Logistic regression analyses further highlight the association between SEN category and child welfare service involvement for odds of CJS involvement and custodial sentences (Table 2). Children with welfare involvement but no recognised SEN had 4.40 times greater odds of a caution or conviction than those without welfare involvement. For children with SEN, welfare involvement was also associated with increased odds of receiving a criminal caution or conviction, ranging between 1.59 and 2.58 depending on SEN category. The two exceptions were severe learning difficulty, where welfare involvement was associated with a non-significant protective effect, and physical disability where there was no significant effect. All other SEN categories showed significantly greater odds of criminalisation among those with welfare involvement compared to peers with the same SEN but no such involvement.

Analysis of custodial sentences within the subset of children who had any criminal caution or conviction, showed similar patterns. Those without SENs but with welfare involvement had 1.86 times higher odds of a custodial outcome. Across SEN categories, those with welfare involvement had 1.25–1.71 increased odds of custody, with the highest odds for hearing impairment 2.20. The only exception was *other SEN*, where the result was not statistically significant. In every other category, and among those without SEN, welfare involvement significantly increased the odds that a child's justice outcome would be custodial rather than non-custodial.

4. Discussion

This study addressed two questions: the prevalence of SEN among children with and without child welfare or CJS involvement; and whether child welfare involvement is associated with heightened odds of CJS involvement across SEN categories. Using population-level, linked administrative data, we found that SENs were highly prevalent among children with welfare and CJS involvement, and that welfare intervention substantially increased the odds of cautions, convictions, and custody across most SEN groups. These findings extend international evidence, which has largely been based on small samples, selective cohorts, or local datasets, by providing robust, population-level insights into the interaction between developmental difficulties in educational settings, welfare involvement, and CJS outcomes.

Importantly, SEN is not itself a diagnosis but an administrative designation, signalling that schools have identified a primary area of need. Our findings therefore show not only the extent of developmental difficulties among welfare- and justice-involved children, but also the systemic failure to translate recognised need into effective support. Children in this study were already known to education and welfare services, yet recognition did not protect them from disproportionate criminal justice outcomes.

4.1. Variation in CJS involvement within SEN categories

4.1.1. Communication and interaction needs

For children with SLCN the study found higher odds of justice involvement relative to peers without a SEN, consistent with previous evidence (Brownlie et al., 2004; Mouridsen & Hauschild, 2009). Children with SLCN experience difficulties in social processing, self-regulation, and communication, making them particularly vulnerable to exclusionary practices and to the challenges of navigating the justice system (Connolly et al., 2023; Lount et al., 2017; Vergunst et al., 2023).

The odds of justice involvement were greater for those with SLCN who also had welfare involvement. The evidence for ASD was more mixed. Children with ASD and a welfare intervention showed elevated odds of CJS involvement but for those with ASD but without a welfare intervention the odds of CJS involvement was closer to that of children without SEN. These findings echo international debate about the association between ASD and CJS involvement. More robust evidence reports CJS involvement rates that are lower or equal to the general population (Bowden et al., 2022; King & Murphy, 2014); however, individuals with ASD may be more likely to be charged or convicted for committing serious or violent offences (Bowden et al., 2022; Cheely et al., 2012). Our findings also report increased odds of custodial sentences for those with ASD and a welfare intervention, but the proportion of custodial sentences in this population was equal to that in the whole population. Overall recognition through SEN designation does not insulate those with SLCN from involvement with the CJS; furthermore, our findings show that those with welfare involvement experienced greater vulnerability for criminalisation, for children with recognised SLCN and ASD.

4.1.2. Cognition and learning difficulties

For cognition and learning categories, SEN prevalence estimates were broadly consistent with those reported for children supported by welfare services in England (Zarei et al., 2021). Compared with whole-population estimates, prevalence of specific learning difficulties was lower, while prevalence of severe learning difficulties was similar (Department for Education, 2023c). Among justice-involved children, cognition and learning difficulties prevalence rates were lower than those reported in some international studies (Borschmann et al., 2020), reflecting differences in classification systems and thresholds across jurisdictions. Moderate- and specific-learning difficulties were strongly associated with CJS involvement, particularly among children who also had contact with child welfare services. In these groups, the likelihood of receiving a criminal conviction or custodial sentence was substantially higher than for peers with the same SEN designation but no welfare involvement, echoing concerns raised in smaller and international studies (Baidawi & Piquero, 2021; Chitsabesan et al., 2007).

Interpretation of findings for cognition and learning difficulties is complicated by variation in classification systems. In England, SEN categories reflect functional impairment within educational settings and for cognition and learning difficulties include graded classifications (for example, “moderate” and “severe”), whereas international literature often draws on diagnostic definitions of intellectual disability based on cognitive functioning, adaptive behaviour, and developmental delay. Despite these differences, international research consistently reports high prevalence of intellectual and cognitive impairments among children involved in custodial settings, child welfare services, and those exposed to multiple adverse childhood experiences (Borschmann et al., 2020; Chitsabesan et al., 2007; Hellenbach et al., 2017; Holland et al., 2002; Livanou et al., 2019; Ogundele, 2020; Quinn et al., 2005; Zarei et al., 2021).

In contrast to other cognition and learning categories, children with severe learning difficulties did not show elevated rates of CJS involvement associated with child welfare contact. The direction of association suggested lower odds of cautions and convictions among those with welfare involvement; however, estimates were imprecise, and confidence intervals marginally crossed unity (OR CI: 0.49–1.01). This pattern has been found in some international evidence indicating that young people with significant cognitive impairments are less frequently represented in the justice system (Holland et al., 2002), although overall the evidence base does not consistently reflect this effect and firm conclusions cannot be drawn from the present analysis. Most children with severe-learning difficulties in this cohort had contact with child welfare services, reflecting the complexity of needs within this group. Further research would benefit from data on the reasons for child welfare involvement, greater capacity to model comorbidity and SEN

trajectories, and linkage to health records to better characterise heterogeneity within cognition and learning categories. (Department for Education, 2023c).

4.1.3. Social, emotional, and mental health needs

The SEMH category demonstrated the starkest disparities. Prevalence of justice involvement among these children was high, with particularly elevated odds of custodial sentences, and these odds were even greater where a welfare intervention had occurred. Previous studies have documented strong associations between externalising conditions (e.g., ADHD, conduct disorder) and justice involvement (Borschmann et al., 2020; Di Lorenzo et al., 2021). Our results align with this evidence, while also showing that children who are recognised as having SEMH needs and receive a welfare intervention have considerably higher odds of poor CJS outcomes. Although the SEMH category is broad and sometimes lacks diagnostic specificity, its overlap with both internalising and externalising difficulties makes it a critical group for intervention. Children with these needs often experience school exclusion, self-regulation challenges, and higher levels of social adversity (Aebi et al., 2014; Jull, 2008). The finding underscores that SEMH needs, often shaped by trauma and adversity, are not met with therapeutic support, but instead are frequently punished, driving school exclusion and justice involvement (Antalek et al., 2025; Jay & Gilbert, 2021).

4.1.4. Sensory and physical needs

Evidence concerning sensory and physical SEN showed higher odds of child welfare involvement for children with hearing impairments and physical disabilities, but not for those with vision impairments. Justice involvement did not differ substantially by SEN designation overall, yet children with hearing impairments who also had a welfare intervention faced notably higher odds of custodial sentencing. These findings are difficult to interpret given the limited prior literature (Penner, 1982; Stevenson et al., 2015; Villadsen et al., 2023). It is possible that sensory and physical conditions are underreported as primary SEN categories, particularly when comorbid with difficulties that more directly affect schooling, such as SEMH. Further empirical research is needed to clarify whether these children are at elevated risk of criminalisation or whether observed differences reflect recording practices.

4.1.5. Other and unclassified SEN

The *other* SEN designation encompasses both children without a specialist assessment and those whose needs fall outside standard categories. In our sample, this group was disproportionately represented among those with welfare intervention and among those with CJS involvement. Overrepresentation of this group in justice outcomes suggests potential systemic inequities, where children from disadvantaged backgrounds or with complex needs are less likely to receive formal assessment and support (Berry et al., 2023). While use of this designation has declined over time (Department for Education, 2023c), our findings highlight its significance as a marker of unmet or unrecognised needs. This warrants further exploration in more recent datasets as the high levels of CJS involvement in these categories illustrate most starkly the consequences of recognition without protection. Children are known to services, but the failure to secure accurate or timely assessment leaves them exposed to the highest levels of vulnerability.

4.2. System-level implications

Across SEN categories, children with recorded involvement in children's welfare services experienced consistently higher odds of CJS contact than those without such involvement. At population scale, these findings demonstrate that recognition alone is not protective. Identification of SEN needs and contact with welfare services were, in most cases, associated with higher rather than lower odds of conviction and custodial sentencing. Importantly, these associations should not be

interpreted as evidence that welfare or education services cause criminalisation. Children known to child welfare services are disproportionately exposed to adversity, including abuse, neglect, family instability, and cumulative trauma, all of which are independently associated with heightened CJS system contact. The findings are therefore consistent with a growing body of evidence indicating that developmental and health-related needs, when compounded by adverse childhood experiences, substantially increase vulnerability to criminalisation (Borschmann et al., 2020; Hughes et al., 2020). Nevertheless, it is important to consider the extent to which we expect our welfare and education services to protect children who have had such exposures and present with SENs, from cumulative and ongoing disadvantages, including criminalisation. The data used in the present study does not support the disentanglement of factors relating to child development and exposure to adversity, from those at the structural or system level. Importantly, the data do not allow comparison with children experiencing similar adversities who are not known to child welfare services; such children are not identifiable within administrative records. Similarly, the study cannot account for the nature, timing, intensity, or uptake of child welfare interventions, which are known to vary widely across local authorities and over time (MacAlister, 2022). Engagement with services may also be shaped by factors beyond institutional control, including family circumstances, mistrust of services, competing needs, and resource constraints. As such, the observed associations cannot be used to infer whether or how specific child welfare practices mitigate or exacerbate CJS involvement.

The findings nevertheless underscore the importance of disaggregating SEN categories. Marked heterogeneity in CJS outcomes across SEN designations indicates that broad classifications may obscure important differences in vulnerability. While children with SEMH needs and specific and moderate learning difficulties were disproportionately represented in justice outcomes, those with severe learning difficulties were not, and sensory impairments showed more variable associations. Such differentiation is essential for informing proportionate, and developmentally appropriate responses across education, welfare, and justice systems.

We propose greater use of the linked administrative dataset to further understand associations between SEN, child welfare service involvement and CJS contact and exploration of the potential for the data to be used operationally, for example routine tracking of local variation in recognition, provision, and outcomes. We suggest that further analyses explore causal associations between service involvement and CJS outcomes and report the variation in outcomes arising from different education, SEN, and child welfare service involvement pathways.

4.3. Limitations

Limitations of the study include reliance on the primary SEN designation recorded by schools, which may not fully capture children's health needs or comorbidities. SEN categories can change over time, and some needs may remain unrecognised. Nevertheless, the use of whole-population administrative data enabled robust analysis across SEN categories, including less prevalent designations, and their intersection with child welfare service involvement. The data were also subject to coverage constraints. Education data exclude an estimated 5% of children, and the child welfare service data available in the data linkage used in the present study does not capture any intervention or welfare contact occurring before aged five. The analytic approach was intentionally descriptive and univariate, consistent with the study's aim to characterise justice system outcomes for children at the intersection of SEN and children's welfare service involvement. Multivariate adjustment for potential confounding factors (for example, socioeconomic disadvantage, ethnicity, or educational characteristics) was not undertaken, in part due to the small cell sizes that would arise from further dissection of the disaggregated SEN categories not meeting the

requirements for statistical disclosure control. The research design did not support inference about the temporal ordering of SEN identification, children's welfare service involvement, and justice system contact, nor does it capture complexity of need over time, severity of need, or intensity of educational or welfare support. The national scope of the study precludes examination of local variation in education, welfare, and justice practices. The focus on custodial sentences provides insight into the most severe justice outcomes in England but does not capture the full spectrum of CJS outcomes.

5. Conclusion

Children with SEN were disproportionately represented among those with child welfare and CJS involvement, and odds of CJS involvement were higher across most SEN categories where there was also a child welfare service intervention. These children were already recognised as having educational needs, and already known to welfare services, yet still experienced worse outcomes in the justice system. It demonstrates that children with SEN, particularly those with learning difficulties, SEMH needs, and unassessed SEN, face significantly heightened risks of justice involvement, which are further heightened where there is also a welfare intervention. The findings underscore the importance of timely identification, cross-system support, and diversionary strategies to prevent the criminalisation of vulnerable children.

CRedit authorship contribution statement

A. Leyland: Conceptualization, Methodology, Formal analysis, Data curation, Writing – original draft, Visualization, Project administration. **C.J.R. Webb:** Conceptualization, Methodology, Formal analysis, Data curation, Writing – review & editing, Visualization. **N. Hughes:** Conceptualization, Writing – review & editing, Supervision.

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Declaration of competing interest

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conventions over time and cannot be compared to Data First linked datasets."For the purpose of open access, the authors have applied a Creative Commons Attribution (CC BY) licence to any Author Accepted Manuscript version arising from this submission.

Appendix A. Supplementary material

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.chilyouth.2026.108850>.

Data availability

The authors do not have permission to share data.

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