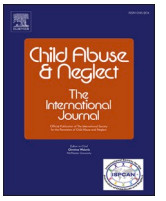
Child Abuse & Neglect 181 (2026) 108289

Contents lists available at ScienceDirect

Child Abuse & Neglect

journal homepage: www.elsevier.com/locate/chiabuneg



Child sexual exploitation in a French child welfare cohort: Maltreatment histories, psychological and behavioural difficulties, and suicidal ideation

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ARTICLE INFO

Keywords:
Child sexual exploitation
Child welfare
Child maltreatment
Suicidal ideation
Psychological distress
Causal mediation analysis

ABSTRACT

Introduction: Quantitative evidence on child sexual exploitation (CSE) in child welfare populations remains limited, particularly in France. This study examined CSE, associated maltreatment and psychological difficulties, and its indirect association with suicidal ideation.

Method: We conducted a retrospective cross-sectional study using case-file data for 1315 youth receiving child protection services in Essonne, France. Logistic regression models were adjusted for age, sex, age at entry into care, and school enrolment. Firth penalized logistic regression was used for restricted comparison, and exploratory mediation analyses used 1000 bootstrap simulations.

Results: CSE was identified in 62 youth (4.72%); 27.4% were boys. Youth with CSE were older, entered care later, and were more frequently not enrolled in school. Childhood sexual abuse showed the strongest adjusted association with CSE (aOR = 11.01, 95% CI [6.13–20.32], $p < .001$). Compared with youth who had experienced sexual abuse without CSE, those with CSE had higher odds of self-harm (Firth OR = 2.89, 95% CI [1.55–5.46]), aggression (Firth OR = 2.76, 95% CI [1.46–5.32]), alcohol use (Firth OR = 9.84, 95% CI [2.10–89.45]), and other substance use (Firth OR = 9.79, 95% CI [3.46–32.68]). In multivariable mediation analysis, CSE statistically accounted for 26.4% of the association between childhood sexual abuse and suicidal ideation (ACME = 0.026, 95% CI [0.007–0.044], $p = .004$).

Conclusion: CSE identifies a subgroup with extensive adversity and substantial psychological and behavioural difficulties, supporting gender-inclusive, trauma-informed, and coordinated assessment and intervention.

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https://doi.org/10.1016/j.chiabu.2026.108289
Received 30 January 2026; Received in revised form 21 July 2026; Accepted 17 August 2026
Available online 28 August 2026

1. Introduction

In recent years, public policies and the scientific community have shown growing interest in understanding and preventing child sexual exploitation (CSE), a pervasive global phenomenon estimated to affect approximately 5% of children worldwide (Laird et al., 2023). CSE refers to situations in which a child or adolescent is involved in sexual activities within an exploitative exchange and under conditions of coercion, manipulation, deception, abuse of power, or vulnerability. The exchange may involve financial, material, emotional, relational, or symbolic benefits received by the child or by another person. According to the international terminology guidelines proposed by Doek and Greijer (2016), CSE constitutes a form of sexual abuse characterized by an exchange element and an imbalance of power. Laird et al. (2023) further identified four core components of CSE: (1) the involvement of a child or adolescent; (2) sexual acts; (3) the presence of abuse, including coercion or manipulation; and (4) an exploitative transactional dimension.

Because CSE frequently remains hidden and disclosure may be hindered by fear, shame, coercive control, emotional dependency, or the normalization of exploitation, identifying affected youth remains a major challenge. Research has therefore sought to identify characteristics and prior experiences associated with an increased likelihood of CSE in order to strengthen early detection and prevention. Although most available studies do not permit firm causal conclusions, a substantial body of international evidence has documented associations between childhood maltreatment and subsequent sexual exploitation during adolescence. Prior sexual abuse has emerged as one of the most consistently identified factors associated with CSE, alongside physical and psychological abuse (Benavente et al., 2021; Choi, 2015; Cobbina & Oselin, 2011; De Vries & Goggin, 2020; Kramer & Berg, 2003; Seng, 1989; Simons & Whitbeck, 1991; Varma et al., 2015; Warf et al., 2013).

Other forms of adversity, including neglect, exposure to domestic or relational violence, familial rejection, isolation, and polyvictimization, have also been associated with CSE (Cimino et al., 2017; English, 1998; Naramore et al., 2017; Patton et al., 2014; Reid et al., 2017). Running away, housing instability, homelessness, substance use, and high-risk sexual behaviours are frequently observed among affected youth, although these characteristics may function as antecedents, correlates, or consequences depending on the developmental trajectory considered (Kramer & Berg, 2003; Stoltz et al., 2007). Youth exposed to social marginalization may face additional vulnerabilities. In particular, LGBTQI adolescents may experience familial rejection and housing instability, increasing their exposure to exploitative exchanges in survival-sex contexts (Cochran et al., 2002; Greene et al., 1999). In a systematic review and meta-analysis, Laird et al. (2020) similarly identified prior sexual abuse, post-traumatic stress symptoms, early exposure to pornography, and high-risk sexual behaviour as major factors associated with CSE.

In addition to these antecedents and associated vulnerabilities, CSE is linked to substantial psychological, behavioural, and developmental difficulties. Youth affected by CSE frequently report post-traumatic symptoms, depression, anxiety, substance use, self-harm behaviour, relational difficulties, and disruptions in educational and social functioning (Laird et al., 2020; Lanctôt et al., 2018, 2020). Suicidal ideation represents one of the most severe mental health concerns reported in this population. Childhood sexual abuse is itself strongly associated with suicidal thoughts and behaviours (Angelakis et al., 2019; Pérez-González & Pereda, 2015), raising questions about the cumulative burden experienced by youth exposed to both early sexual abuse and sexual exploitation.

The cumulative trauma framework offers a relevant theoretical perspective for examining these associations. This framework conceptualizes maltreatment not as a single isolated event but as a layered process in which repeated or sequential victimization may progressively undermine emotional regulation, interpersonal trust, self-worth, and the sense of personal agency (Courtois & Ford, 2009). Within this perspective, CSE may form part of a broader cumulative victimization pattern among youth with prior histories of sexual abuse. Exposure to both sexual abuse and exploitation may be associated with increased suicidal vulnerability through compounded experiences of coercion, shame, relational disruption, and loss of control. However, given the complexity of these trajectories and the predominance of retrospective or cross-sectional evidence, such pathways should be considered hypothetical rather than established causal mechanisms.

Despite the growing international literature, several gaps remain. First, much of the available evidence is based on retrospective interviews with survivors or professionals, clinical samples, or criminal justice records (Benavente et al., 2021; Laird et al., 2020). Relatively few quantitative studies have been conducted within child welfare populations, even though youth receiving child protection services are likely to experience particularly high levels of maltreatment and cumulative adversity. Second, epidemiological evidence concerning CSE in France remains limited. Third, studies frequently compare sexually exploited youth with broad community or child welfare samples, whereas fewer analyses have examined whether youth with CSE differ from youth who have experienced childhood sexual abuse without CSE. Such comparisons are important for determining whether CSE identifies a subgroup with particularly extensive adversity and psychological and behavioural difficulties beyond those associated with childhood sexual abuse alone. Finally, the indirect statistical association linking childhood sexual abuse, CSE, and suicidal ideation remains insufficiently explored.

The present study therefore aimed to: (1) estimate the proportion of youth with identified CSE within a large sample of youth receiving child protection services in France; (2) compare the sociodemographic characteristics, maltreatment histories, and psychological and behavioural difficulties of youth with and without CSE; (3) conduct a restricted comparison between youth with CSE and youth who had experienced childhood sexual abuse without CSE; and (4) explore whether CSE statistically accounts for part of the associations of childhood sexual, physical, and psychological abuse with suicidal ideation. Consistent with the cumulative trauma framework, we hypothesized that childhood sexual abuse would show the most robust indirect association with suicidal ideation through CSE. Given the retrospective cross-sectional design, the mediation analyses were considered exploratory and were not intended to establish temporal ordering or causal mechanisms.

2. Method

2.1. Study design

This study employed a retrospective, cross-sectional quantitative design based on data collected from the child protection services (CPS) of a department in the Île-de-France region (Essonne) (Essadek et al., 2022).

2.2. Population and sample

The study population included all children and young adults (up to age 21) under CPS care between June and November 2020. Among the 6962 youth followed during this period, 1557 case files were completed by social workers using an online survey, and 1315 cases were retained for analysis after excluding responses with more than 25% missing data. The effective response rate was 19.18%. Although the response rate was modest, the age and sex distribution of the sample was broadly consistent with national statistics on youth receiving child protection services (Pliquet, 2016). However, this similarity does not exclude selection bias regarding unmeasured clinical or care-related characteristics.

2.3. Data collection procedure

Data were collected through a standardized online form based on the Canadian Incidence Study of Reported Child Abuse and Neglect (Trocmé et al., 2010), adapted to the French context and disseminated via LimeSurvey. Each child's assigned social worker was invited to complete the form anonymously based on case file review and professional knowledge. The data were not obtained through direct interviews or standardized psychometric tests, but relied on file-based observations and professional reports.

2.4. Variables

2.4.1. Sociodemographic characteristics

Sociodemographic variables included age, sex, age at entry into child protection care, legal protection status, school enrolment status, parent–child contact, and formal recognition of disability by the *Maison départementale des personnes handicapées* (MDPH; Departmental Centre for Persons with Disabilities).

2.4.2. Childhood maltreatment

Five forms of childhood maltreatment were coded as binary variables (yes/no): physical abuse, psychological abuse, sexual abuse, neglect, and exposure to domestic violence. Coding was based on information documented in the child's case file and on the professional knowledge of the social worker responsible for the case. These variables referred to maltreatment experiences identified as having occurred before or in relation to the child's entry into care. A cumulative maltreatment score was calculated by summing the number of documented maltreatment types, yielding a score ranging from 0 to 5. Although this score does not account for the frequency, duration, or severity of each form of maltreatment, it provides an indicator of cumulative maltreatment exposure or polyvictimization (Finkelhor et al., 2007).

2.4.3. Psychological and behavioural difficulties

Social workers reported whether each child had displayed the following psychological or behavioural difficulties during the year preceding data collection: depressive symptoms, anxiety symptoms, suicidal ideation, self-harming behaviour, attention-deficit/hyperactivity disorder, attachment-related difficulties, aggressive behaviour, alcohol use, and other substance use. Each variable was coded dichotomously as present or absent on the basis of information available in the case file and the social worker's professional knowledge.

A cumulative psychological and behavioural difficulty score was calculated by summing the nine binary indicators, resulting in a score ranging from 0 to 9. This score reflects the number of difficulties and should not be interpreted as a standardized measure of symptom severity or as a diagnostic assessment.

2.4.4. Child sexual exploitation

Child sexual exploitation was assessed using a behavioural item based on the international terminology guidelines proposed by Doek and Greijer (2016). The item asked whether the child had been involved in sexual acts, activities, or content in exchange for money, gifts, accommodation, protection, affection, services, other benefits, or the promise of a benefit, in a context involving coercion, manipulation, deception, control, abuse of vulnerability, or an imbalance of power. Responses were coded dichotomously as yes or no based on information in the case file and on the social worker's professional knowledge.

2.5. Statistical analysis

All analyses were conducted using R, version 4.2.2. Continuous variable distributions were assessed using the Anderson–Darling test. Because continuous variables were not normally distributed, they were summarized using medians and interquartile ranges (IQRs), and between-group comparisons were performed using Wilcoxon tests. Categorical variables were summarized using

frequencies and percentages and compared using Pearson's chi-square tests or Fisher's exact tests, as appropriate.

The primary analyses compared youth with CSE with all other youth without CSE in the full sample. A complementary restricted comparison was then conducted between youth with CSE and youth who had experienced childhood sexual abuse but had no CSE. This restricted comparison was intended to examine whether youth with CSE presented distinct sociodemographic, psychological, and behavioural characteristics beyond those associated with childhood sexual abuse alone. In the full sample, conventional binary logistic regression models were used to examine associations of maltreatment histories and psychological or behavioural difficulties with CSE. Models were adjusted for age, sex, age at entry into care, and school enrolment. Results are reported as adjusted odds ratios (aORs), 95% confidence intervals (CIs), and *p* values. Multicollinearity was assessed using variance inflation factors, with values below 10 considered acceptable.

For the restricted comparison, psychological and behavioural difficulties were modelled as dependent variables, with CSE status entered as the primary explanatory variable. Because the restricted sample included relatively few CSE cases and some outcomes, particularly alcohol and other substance use, were infrequent, penalized logistic regression using Firth's correction was used to reduce small-sample bias and address potential separation. Firth odds ratios, profile-likelihood 95% confidence intervals, and *p* values were reported. Conventional logistic regression models were also estimated as sensitivity analyses to assess the consistency of the findings.

Exploratory mediation analyses using nonparametric bootstrapping with 1000 simulations and bias-corrected and accelerated 95% confidence intervals were conducted to examine whether CSE statistically accounted for part of the association between childhood maltreatment and suicidal ideation. In Model 1, sexual, physical, and psychological abuse were examined separately. In Model 2, all three forms of maltreatment were entered simultaneously. All mediation models were adjusted for age and sex.

The primary hypothesis was that childhood sexual abuse would show the most robust indirect association with suicidal ideation through CSE, consistent with the cumulative trauma framework. Because of the retrospective cross-sectional design, these analyses were considered exploratory and were not interpreted as establishing temporal ordering or causal mediation. Statistical significance was set at $p < .05$.

3. Results

3.1. Sample characteristics and prevalence of child sexual exploitation

The final analytic sample included 1315 youth receiving child protection services. The sample comprised 731 boys (55.6%) and 584 girls (44.4%), with a median age of 14 years (IQR = 9–17). CSE was identified in 62 cases, corresponding to a prevalence of 4.72% within the analytic sample.

3.2. Sociodemographic and care characteristics

Youth with CSE were older than those without CSE, with a median age of 16 years (IQR = 14–17) versus 14 years (IQR = 9–17; $p <$ .001). They also entered child protection care at a later age, with a median age at entry of 14 years (IQR = 8–15), versus 8 years (IQR =

Table 1
Sociodemographic and care characteristics according to child sexual exploitation status.

Characteristic	No CSE (n = 1253) Median [IQR] or n (%)	CSE (n = 62) Median [IQR] or n (%)	Test	Statistic	p value
Age, years	14 [9–17]	16 [14–17]	Wilcoxon rank-sum	W 1,721,224	<.001
Sex			Pearson χ^2	20.9	<.001
Male	714 (57.0%)	17 (27.4%)			
Female	539 (43.0%)	45 (72.6%)			
Age at entry into care, years	8 [2–14]	14 [8–15]	Wilcoxon rank-sum	W 1,616,939	<.001
Legal protection status			Fisher exact	–	.640
Parental authority	879 (70.2%)	42 (67.7%)			
Young Adult Contract[a]	183 (14.6%)	13 (21.0%)			
Delegation of parental authority	44 (3.5%)	2 (3.2%)			
Ward of the state	33 (2.6%)	1 (1.6%)			
Unaccompanied minor awaiting status	65 (5.2%)	1 (1.6%)			
Other	49 (3.9%)	3 (4.8%)			
Parent–child contact			Fisher exact	–	.590
Permanent	213 (17.0%)	15 (24.2%)			
Frequent	477 (38.1%)	15 (24.2%)			
Rare	246 (19.6%)	14 (22.6%)			
None	317 (25.3%)	18 (29.0%)			
Enrolled in school	1068 (85.2%)	43 (69.4%)	Pearson χ^2	11.4	<.001
Recognised disability[b]	298 (23.8%)	12 (19.4%)	Pearson χ^2	0.643	.420

Legend: Values are median [IQR] or n (%). CSE, child sexual exploitation; IQR, interquartile range.

[a] Young Adult Contract refers to continued child welfare support for young adults transitioning out of care.

[b] Recognised disability refers to formal recognition by the Maison départementale des personnes handicapées (MDPH).

2–14) among youth without CSE ($p < .001$). Girls represented 72.6% of the CSE group and 43.0% of the group without CSE ($p < .001$). However, boys accounted for 27.4% of all CSE cases. Youth with CSE were also more frequently not enrolled in school (30.6% vs. 14.8%, $p < .001$). No significant differences were observed in recognised disability, legal protection status, or frequency of parent–child contact. Full sociodemographic and care characteristics are presented in Table 1.

3.3. Childhood maltreatment

Youth with CSE had higher frequencies of several forms of childhood maltreatment than youth without CSE. Physical abuse was identified in 74.2% of the CSE group and 39.1% of the non-CSE group ($p < .001$), sexual abuse in 67.7% and 12.1%, respectively ($p < .001$), psychological abuse in 82.3% and 53.5% ($p < .001$), and exposure to domestic violence in 62.9% and 44.8% ($p = .005$). Neglect was also more frequent in the CSE group (80.6% vs. 69.5%), although the unadjusted difference did not reach statistical significance ($p = .062$). In separate logistic regression models adjusted for age, sex, age at entry into care, and school enrolment, all five forms of maltreatment were associated with CSE. The strongest association was observed for childhood sexual abuse (aOR = 11.01, 95% CI [6.13–20.32], $p < .001$). CSE was also associated with physical abuse (aOR = 3.44, 95% CI [1.93–6.42], $p < .001$), psychological abuse (aOR = 3.23, 95% CI [1.70–6.67], $p < .001$), exposure to domestic violence (aOR = 2.29, 95% CI [1.32–4.07], $p = .004$), and neglect (aOR = 1.99, 95% CI [1.05–4.05], $p = .045$). These results are reported in Table 2.

3.4. Psychological and behavioural difficulties

Youth with CSE displayed higher frequencies of most psychological and behavioural difficulties than youth without CSE. Suicidal ideation was identified in 43.5% of the CSE group compared with 10.5% of the non-CSE group ($p < .001$), while self-harming behaviour was identified in 61.3% and 19.5%, respectively ($p < .001$). The CSE group also had higher frequencies of depressive symptoms (61.3% vs. 40.9%, $p = .001$), anxiety symptoms (85.5% vs. 72.4%, $p = .023$), attachment-related difficulties (79.0% vs. 53.9%, $p < .001$), aggressive behaviour (53.2% vs. 27.1%, $p < .001$), alcohol use (16.1% vs. 1.1%, $p < .001$), and other substance use (33.9% vs. 3.9%, $p < .001$). The unadjusted difference in ADHD was not statistically significant. After adjustment for age, sex, age at entry into care, and school enrolment, CSE remained associated with all nine psychological and behavioural indicators. The strongest associations were observed for alcohol use (aOR = 9.15, 95% CI [3.37–24.06], $p < .001$), other substance use (aOR = 8.33, 95% CI [4.09–16.90], $p < .001$), and self-harming behaviour (aOR = 5.40, 95% CI [3.13–9.45], $p < .001$). CSE was also associated with suicidal ideation (aOR = 3.75, 95% CI [2.10–6.61], $p < .001$), attachment-related difficulties (aOR = 3.70, 95% CI [2.00–7.34], $p < .001$), aggressive behaviour (aOR = 3.57, 95% CI [2.07–6.18], $p < .001$), ADHD (aOR = 2.27, 95% CI [1.28–4.03], $p = .005$), anxiety symptoms (aOR = 2.17, 95% CI [1.10–4.82], $p = .038$), and depressive symptoms (aOR = 1.76, 95% CI [1.03–3.06], $p = .041$). The cumulative psychological and behavioural difficulty score was also higher among youth with CSE. Full results are presented in Table 3.

3.5. Restricted comparison with youth who experienced sexual abuse without CSE

To determine whether CSE identified a subgroup with greater psychological and behavioural difficulties beyond those associated with childhood sexual abuse alone, youth with CSE were compared with 152 youth who had experienced sexual abuse but had no CSE. The groups did not differ significantly in sex distribution, depressive symptoms, anxiety symptoms, ADHD, or attachment-related difficulties. However, youth with CSE were more frequently not enrolled in school (30.6% vs. 12.5%, $p = .002$) and had higher unadjusted frequencies of suicidal ideation (43.5% vs. 23.0%, $p = .003$), self-harming behaviour (61.3% vs. 30.3%, $p < .001$), aggressive behaviour (53.2% vs. 30.3%, $p = .002$), alcohol use (16.1% vs. 0.7%, $p < .001$), and other substance use (33.9% vs. 3.3%, $p < .001$).

In Firth penalized logistic regression models adjusted for age, sex, age at entry into care, and school enrolment, CSE was associated with higher odds of self-harming behaviour (Firth OR = 2.89, 95% CI [1.55–5.46], $p < .001$), aggressive behaviour (Firth OR = 2.76, 95% CI [1.46–5.32], $p = .002$), alcohol use (Firth OR = 9.84, 95% CI [2.10–89.45], $p = .003$), and other substance use (Firth OR = 9.79, 95% CI [3.46–32.68], $p < .001$). The association with suicidal ideation was elevated but did not reach statistical significance after

Table 2
Childhood maltreatment according to child sexual exploitation status.

Maltreatment	No CSE (n = 1253) n (%) or median [IQR]	CSE (n = 62) n (%) or median [IQR]	p value	Adjusted OR (95% CI)[a]	p value
Physical abuse	490 (39.1%)	46 (74.2%)	<.001	3.44 [1.93–6.42]	<.001
Sexual abuse	152 (12.1%)	42 (67.7%)	<.001	11.01 [6.13–20.32]	<.001
Neglect	871 (69.5%)	50 (80.6%)	.062	1.99 [1.05–4.05]	.045
Psychological abuse	670 (53.5%)	51 (82.3%)	<.001	3.23 [1.70–6.67]	<.001
Exposure to domestic violence	561 (44.8%)	39 (62.9%)	.005	2.29 [1.32–4.07]	.004
Cumulative maltreatment score	2 [1–3]	4 [3–5]	<.001	1.93 [1.56–2.42]	<.001

Legend: Values are n (%) or median [IQR]. The first p value refers to the unadjusted between-group comparison. CSE, child sexual exploitation; CI, confidence interval; IQR, interquartile range; OR, odds ratio.

[a] Adjusted odds ratios are from separate logistic regression models with CSE as the outcome, adjusted for age, sex, age at entry into care, and school enrolment. For the cumulative maltreatment score, the OR represents the change in odds of CSE associated with each additional maltreatment type.

Table 3
Psychological and behavioural difficulties according to child sexual exploitation status.

Characteristic	No CSE (n = 1253) n (%) or median [IQR]	CSE (n = 62) n (%) or median [IQR]	p value	Adjusted OR (95% CI)[a]	p value
Depressive symptoms	512 (40.9%)	38 (61.3%)	.001	1.76 [1.03–3.06]	.041
Anxiety symptoms	907 (72.4%)	53 (85.5%)	.023	2.17 [1.10–4.82]	.038
Suicidal ideation	132 (10.5%)	27 (43.5%)	<.001	3.75 [2.10–6.61]	<.001
Self-harming behaviour	244 (19.5%)	38 (61.3%)	<.001	5.40 [3.13–9.45]	<.001
ADHD	448 (35.8%)	25 (40.3%)	.464	2.27 [1.28–4.03]	.005
Attachment-related difficulties	675 (53.9%)	49 (79.0%)	<.001	3.70 [2.00–7.34]	<.001
Aggressive behaviour	340 (27.1%)	33 (53.2%)	<.001	3.57 [2.07–6.18]	<.001
Alcohol use	14 (1.1%)	10 (16.1%)	<.001	9.15 [3.37–24.06]	<.001
Other substance use	49 (3.9%)	21 (33.9%)	<.001	8.33 [4.09–16.90]	<.001
Cumulative difficulty score	3 [1–4]	5 [3–6.75]	<.001	1.60 [1.40–1.86] per point	<.001

Legend: Values are n (%) except for the cumulative difficulty score, which is reported as median [IQR]. The first p value refers to the unadjusted between-group comparison. ADHD, attention-deficit/hyperactivity disorder; CSE, child sexual exploitation; CI, confidence interval; IQR, interquartile range; OR, odds ratio.

[a] Adjusted odds ratios are from separate logistic regression models with CSE as the outcome, adjusted for age, sex, age at entry into care, and school enrolment. For the cumulative difficulty score, the OR represents the change in odds of CSE associated with each additional difficulty.

adjustment (Firth OR = 1.84, 95% CI [0.94–3.57], $p = .077$). Youth with CSE also had a higher cumulative psychological and behavioural difficulty score than youth with sexual abuse without CSE, with an adjusted mean difference of 1.19 points (95% CI [0.57–1.81], $p < .001$). Results of the restricted comparison are presented in Table 4.

3.6. Exploratory mediation analyses

In the univariate mediation analyses, CSE statistically accounted for part of the association between each form of maltreatment and suicidal ideation. Significant average indirect effects were observed for sexual abuse (ACME = 0.031, 95% CI [0.010–0.058], $p < .001$), physical abuse (ACME = 0.015, 95% CI [0.005–0.023], $p < .001$), and psychological abuse (ACME = 0.010, 95% CI [0.003–0.020], $p = .002$).

When sexual, physical, and psychological abuse were entered simultaneously in the multivariable mediation model, only sexual abuse retained a statistically significant indirect association with suicidal ideation through CSE. The average indirect effect for sexual abuse was 0.026 (95% CI [0.007–0.044], $p = .004$). The average direct effect also remained significant (ADE = 0.073, 95% CI [0.019–0.133], $p = .004$), as did the total effect (0.098, 95% CI [0.041–0.156], $p < .001$). The estimated proportion of the association statistically accounted for by CSE was 26.4% (95% CI [7.7%–69.9%], $p = .004$). The indirect associations were no longer significant for physical abuse (ACME = 0.004, 95% CI [−0.001–0.012], $p = .224$) or psychological abuse (ACME = 0.003, 95% CI [−0.001–0.011], $p = .196$) in the multivariable model. Psychological abuse nevertheless retained a significant direct association with suicidal ideation

Table 4
Restricted comparison of child sexual exploitation with sexual abuse without child sexual exploitation.

Characteristic	Sexual abuse without CSE (*n* = 152) n (%) or median [IQR]	CSE (*n* = 62) n (%) or median [IQR]	Unadjusted p value	Adjusted estimate (95% CI)[a]	Adjusted p value
Sex, Female	101 (66.4%)	45 (72.6%)	.382	–	–
Not enrolled in school	19 (12.5%)	19 (30.6%)	.002	–	–
Depressive symptoms	75 (49.3%)	38 (61.3%)	.112	1.25 [0.67–2.35]	.490
Anxiety symptoms	126 (82.9%)	53 (85.5%)	.642	1.15 [0.52–2.75]	.733
Suicidal ideation	35 (23.0%)	27 (43.5%)	.003	1.84 [0.94–3.57]	.077
Self-harming behaviour	46 (30.3%)	38 (61.3%)	<.001	2.89 [1.55–5.46]	<.001
ADHD	66 (43.4%)	25 (40.3%)	.677	1.19 [0.61–2.31]	.606
Attachment-related difficulties	103 (67.8%)	49 (79.0%)	.099	1.70 [0.85–3.58]	.139
Aggressive behaviour	46 (30.3%)	33 (53.2%)	.002	2.76 [1.46–5.32]	.002
Alcohol use	1 (0.7%)	10 (16.1%)	<.001	9.84 [2.10–89.45]	.003
Other substance use	5 (3.3%)	21 (33.9%)	<.001	9.79 [3.46–32.68]	<.001
Cumulative difficulty score	3 [2–5]	5 [3–6.75]	<.001	Mean difference: 1.19 [0.57–1.81]	<.001

Legend: Values are n (%) except for the cumulative difficulty score, which is reported as median [IQR]. ADHD, attention-deficit/hyperactivity disorder; CSE, child sexual exploitation; CI, confidence interval; IQR, interquartile range.

[a] For binary outcomes, adjusted estimates are odds ratios from Firth logistic regression models adjusted for age, sex, age at entry into care, and school enrolment. For the cumulative difficulty score, the adjusted estimate is a mean difference from a linear regression model with the same covariates. Firth estimation was used because some outcomes, particularly alcohol and other substance use, were infrequent.

(ADE = 0.057, 95% CI [0.019–0.094], $p = .006$). These mediation findings represent exploratory statistical indirect associations and do not establish temporal ordering or causal pathways. Complete mediation estimates are presented in Table 5.

4. Discussion

This study examined the prevalence and correlates of CSE in a large sample of youth receiving child protection services in France. It also investigated whether youth with CSE differed not only from the broader child welfare population, but also from youth with childhood sexual abuse without CSE. Finally, exploratory mediation analyses examined whether CSE statistically accounted for part of the association between childhood maltreatment and suicidal ideation. To our knowledge, this is the first French study to examine these questions in a child welfare cohort of this size using systematically collected case-file and professional-report data.

CSE was identified in 4.72% of the analytic sample, a proportion close to international prevalence estimates (Laird et al., 2023). Girls represented the majority of cases, but boys accounted for 27.4% of the CSE group. This proportion supports concerns that male victims may remain insufficiently recognised in both research and practice, particularly when screening and prevention approaches are implicitly oriented toward girls (Kavenagh & Buller, 2023; Poirson et al., 2023). These findings reinforce the importance of gender-inclusive identification strategies and challenge the assumption that CSE follows a single gendered profile.

Youth with CSE were also older, entered care later, and were more frequently disengaged from school. These findings are consistent with previous research linking CSE to increasing vulnerability during adolescence, delayed identification, and disrupted educational trajectories (Mainaud, 2011; Reid, 2018). They suggest that adolescence and school disengagement may represent particularly important contexts for detection and prevention within child welfare services.

The maltreatment findings indicate that CSE occurred within a broader context of cumulative adversity. Youth with CSE had substantially higher frequencies of physical abuse, sexual abuse, psychological abuse, and exposure to domestic violence. Childhood sexual abuse showed the strongest adjusted association with CSE, with an odds ratio of approximately 11. Although this estimate is higher than those reported in some previous meta-analyses, the difference may reflect the particularly vulnerable composition of the present child welfare population and the density of overlapping maltreatment histories within this group (Laird et al., 2020).

These findings support the importance of identifying complex maltreatment profiles in youth receiving child protection services. A history of sexual abuse combined with other forms of maltreatment, school disengagement, self-harm behaviour, or substance use may signal the need for a more comprehensive assessment of possible exploitation. Such characteristics should not be considered diagnostic in isolation, but their co-occurrence may help professionals identify youth requiring closer attention and more intensive support.

Youth with CSE also presented a substantially greater psychological and behavioural burden than youth without CSE. Higher frequencies were observed for suicidal ideation, self-harm behaviour, depressive and anxiety symptoms, attachment-related difficulties, aggressive behaviour, alcohol use, and other substance use. These findings are consistent with previous studies showing that CSE is associated with complex trauma-related, behavioural, and relational difficulties (Laird et al., 2020; Lanctôt et al., 2018, 2020). They confirm that youth with CSE constitute a subgroup with particularly extensive clinical and psychosocial needs within the child welfare population.

The restricted comparison with youth who had experienced childhood sexual abuse without CSE provides an important extension of previous work. Compared with this more clinically relevant group, youth with CSE continued to show higher odds of self-harming behaviour, aggressive behaviour, alcohol use, and other substance use after adjustment using Firth penalized logistic regression. They also had a higher cumulative psychological and behavioural difficulty score. These findings suggest that CSE identifies a subgroup with broader behavioural and clinical complexity beyond that associated with childhood sexual abuse alone.

The association with suicidal ideation was elevated in the restricted comparison but did not remain statistically significant after adjustment. This attenuation provides a more nuanced interpretation than the comparison with the full non-CSE group. It suggests that some of the difference in suicidal ideation may be shared with prior sexual abuse and sociodemographic characteristics, whereas the associations with self-harm behaviour, aggression, alcohol use, and other substance use remained more clearly differentiated. CSE therefore appears to be associated with a specific pattern of cumulative behavioural and clinical difficulties rather than with uniformly

Table 5
Exploratory mediation of maltreatment–suicidal ideation associations through child sexual exploitation.

Model	Exposure	Average indirect effect (95% CI)	p value	Average direct effect (95% CI)	p value	Total effect (95% CI)	Proportion statistically mediated (95% CI)
Univariate	Sexual abuse	0.031 [0.010–0.058]	<.001	0.095 [0.040–0.156]	.002	0.126 [0.071–0.187]	24.7% [9.1–53.2%]
	Physical abuse	0.015 [0.005–0.023]	<.001	0.052 [0.019–0.089]	<.001	0.067 [0.030–0.103]	22.0% [8.7–50.9%]
	Psychological abuse	0.010 [0.003–0.020]	.002	0.070 [0.039–0.102]	<.001	0.080 [0.048–0.113]	12.1% [4.8–28.0%]
Multivariable	Sexual abuse	0.026 [0.007–0.044]	.004	0.073 [0.019–0.133]	.004	0.098 [0.041–0.156]	26.4% [7.7–69.9%]
	Physical abuse	0.004 [−0.001–0.012]	.224	0.011 [−0.027–0.052]	.598	0.015 [−0.024–0.055]	Not interpreted
	Psychological abuse	0.003 [−0.001–0.011]	.196	0.057 [0.019–0.094]	.006	0.060 [0.022–0.098]	5.1% [−0.9–30.7%]

Legend: Average indirect effects represent indirect associations on the probability scale. Multivariable models simultaneously included sexual, physical, and psychological abuse and were adjusted for age and sex. Because the study was retrospective and cross-sectional, these estimates should not be interpreted as establishing temporal or causal mediation. CSE, child sexual exploitation; CI, confidence interval.

higher levels across all psychological outcomes.

The strong associations with alcohol and other substance use are particularly noteworthy. Substance use may represent a coping strategy, a marker of social vulnerability, or a feature of environments in which exploitation occurs. These findings are consistent with research describing close links between mental health difficulties, substance use, and sexual vulnerability among young people (Essadek et al., 2023; Harmanci et al., 2023). They support the integration of substance-use assessment and intervention into care pathways for youth affected by CSE.

The exploratory mediation analyses further refined the study's main hypothesis. In univariate models, CSE statistically accounted for part of the associations between sexual, physical, and psychological abuse and suicidal ideation. However, when the three forms of maltreatment were entered simultaneously, only childhood sexual abuse retained a significant indirect association through CSE. Approximately 26.4% of the association between childhood sexual abuse and suicidal ideation was statistically accounted for by CSE, while a significant direct association remained.

This pattern is consistent with the cumulative trauma framework, which proposes that repeated or sequential victimization may contribute to increasingly severe psychological difficulties (Courtois & Ford, 2009). Sexual exploitation may compound the effects of prior sexual abuse through renewed experiences of coercion, shame, relational betrayal, and loss of control. The persistence of a significant direct association between sexual abuse and suicidal ideation nevertheless indicates that CSE represents only one pathway among several linking sexual victimization to suicidality.

The absence of significant multivariable indirect effects for physical and psychological abuse is also informative. Their univariate indirect associations may have reflected shared variance with sexual abuse or broader polyvictimization rather than independent pathways through CSE. Psychological abuse nevertheless retained a direct association with suicidal ideation, suggesting that it may contribute to suicidality through processes not captured by the CSE pathway. These findings support a differentiated cumulative trauma perspective in which different forms of maltreatment may be associated with suicidal ideation through partly distinct processes.

From a clinical and child welfare perspective, the results support systematic assessment of maltreatment history, school disengagement, self-harm behaviour, substance use, and possible exploitation among youth in care. Intervention should not focus solely on the exploitative episode but should address the broader pattern of adversity and psychological difficulties surrounding it. Youth with CSE may require integrated responses targeting prior sexual abuse, suicidality, self-harm behaviour, substance use, relational difficulties, and educational disruption (Robin et al., 2024).

Such assessment and intervention strategies should be gender-inclusive, trauma-informed, and coordinated across child welfare, mental health, educational, and substance-use services. Early identification of youth with complex maltreatment histories may facilitate timely assessment and support, while comprehensive care may better address their persistent psychological and behavioural needs.

Overall, the study provides confirmatory and context-specific evidence concerning CSE within the French child welfare system. Its main contribution lies in examining CSE in a large cohort, distinguishing youth with CSE from those with childhood sexual abuse alone, and showing that the indirect statistical association with suicidal ideation is most robust for childhood sexual abuse when several forms of maltreatment are considered simultaneously.

4.1. Limitations

This study presents several limitations that should be considered when interpreting the findings. First, the retrospective cross-sectional design does not allow causal inference or firm conclusions regarding temporal ordering, particularly for the mediation analyses. The indirect effects should therefore be interpreted as exploratory statistical associations rather than confirmed developmental pathways.

Second, all data were derived from administrative case files and social workers' professional knowledge, without standardized psychometric assessments or direct interviews with the youth. This approach may have resulted in underreporting, omission, or inconsistent documentation, especially for sensitive experiences such as sexual abuse, CSE, suicidal ideation, self-harm behaviour, and substance use.

Third, although the sample included 1315 youth and its age and sex distribution was broadly consistent with national child welfare statistics, the effective response rate was 19.18%. Selection bias therefore remains possible. Social workers may have been more likely to complete the survey for youth whose situations were particularly complex, well known to services, or more extensively documented, although the direction and magnitude of any resulting selection bias cannot be determined. Consequently, the proportion of identified CSE and the observed associations may not be fully generalizable to all youth receiving child protection services.

Fourth, CSE was identified from case-file information and professional judgement rather than through a validated screening instrument, independent clinical assessment, or judicial confirmation. Variability in professional recognition and documentation may therefore affect the consistency and comparability of CSE classification.

Finally, some restricted analyses involved few events, particularly for alcohol use. Firth penalized logistic regression was used to reduce small-sample bias, but the corresponding estimates remained imprecise. Longitudinal studies using standardized measures and direct youth reports are needed to clarify the temporal relationships between maltreatment, CSE, and psychological difficulties.

5. Conclusion

Child sexual exploitation was identified in 4.7% of youth in this child welfare cohort and was associated with extensive

maltreatment histories and substantial psychological and behavioural difficulties. Although girls represented the majority of identified cases, more than one quarter involved boys, underscoring the need for gender-inclusive detection and prevention strategies. Youth with CSE were also older, entered care later, and were more frequently disengaged from school. Childhood sexual abuse showed the strongest association with CSE. Compared with youth who had experienced sexual abuse without CSE, those with CSE had higher adjusted odds of self-harming behaviour, aggressive behaviour, alcohol use, and other substance use, as well as a higher cumulative psychological and behavioural difficulty score. Exploratory mediation analyses further showed that CSE statistically accounted for part of the association between childhood sexual abuse and suicidal ideation, whereas comparable indirect associations were not retained for physical or psychological abuse in the multivariable model. These findings support comprehensive, trauma-informed responses that address not only exploitation itself, but also prior sexual abuse, cumulative adversity, self-harm, substance use, suicidality, relational difficulties, and educational disruption. Early identification, comprehensive assessment, and coordinated intervention across child welfare, mental health, education, and substance-use services may be particularly important for youth presenting with complex maltreatment profiles.

CRediT authorship contribution statement

Aziz Essadek: Writing – review & editing, Writing – original draft, Visualization, Validation, Project administration, Methodology, Investigation, Formal analysis, Data curation. **Tamara Guenoun:** Writing – review & editing, Writing – original draft, Visualization, Supervision, Methodology. **Joris Mathieu:** Writing – review & editing, Writing – original draft, Methodology. **Nadine Lanctôt:** Writing – review & editing, Writing – original draft. **Gérard Shadili:** Writing – review & editing, Writing – original draft. **Marion Robin:** Writing – review & editing, Writing – original draft, Visualization, Validation.

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

We used ChatGPT (version 5) for translation purposes only.

Funding statement

No funding was received.

Declaration of competing interest

The authors have no competing interests to declare that are relevant to the content of this article.

Acknowledgements

None.

Data availability

Data will be made available on request.

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