



## King's Research Portal

DOI:

[10.1080/14999013.2024.2363539](https://doi.org/10.1080/14999013.2024.2363539)

*Document Version*

Peer reviewed version

[Link to publication record in King's Research Portal](#)

*Citation for published version (APA):*

Liddle, E., Ali, S., & Short, R. (2024). Childhood Trauma and Clinical Outcomes in a Low Secure Male Forensic Population. *International Journal of Forensic Mental Health*, 23(3), 289-299.

<https://doi.org/10.1080/14999013.2024.2363539>

### **Citing this paper**

Please note that where the full-text provided on King's Research Portal is the Author Accepted Manuscript or Post-Print version this may differ from the final Published version. If citing, it is advised that you check and use the publisher's definitive version for pagination, volume/issue, and date of publication details. And where the final published version is provided on the Research Portal, if citing you are again advised to check the publisher's website for any subsequent corrections.

### **General rights**

Copyright and moral rights for the publications made accessible in the Research Portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognize and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the Research Portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the Research Portal

### **Take down policy**

If you believe that this document breaches copyright please contact [librarypure@kcl.ac.uk](mailto:librarypure@kcl.ac.uk) providing details, and we will remove access to the work immediately and investigate your claim.

1 **This is the Author's Accepted Manuscript version of the article: Liddle, E., Ali, S., &**  
2 **Short, R., (2024). Childhood trauma and clinical outcomes in a low secure male forensic**  
3 **population. International Journal of Forensic Mental Health. Accepted for publication**  
4 **on 29<sup>th</sup> May 2024.**

5

6 **Childhood trauma and clinical outcomes in a low secure male forensic population**

7 Eve Liddle<sup>1\*</sup>, Salma Ali<sup>2</sup> & Roxanna Short<sup>3</sup>

8 *<sup>1</sup>East London NHS Foundation Trust, London, UK; <sup>2</sup>West London NHS Trust, London, UK; <sup>3</sup>Institute*  
9 *of Psychiatry, Psychology and Neuroscience, King's College London, UK*

10 \*eve.liddle@nhs.net

1 **Childhood trauma and clinical outcomes in a low secure male forensic population**

2 **Abstract**

3  
4 Previous literature increasingly recognises the prevalence of childhood trauma (CT)  
5 history in forensic settings. Patients in forensic settings are likely to engage in self-harm,  
6 violence, and encounter multiple hospital admissions. We aimed to investigate CT history in  
7 a low secure forensic population and examine associations between specific types of CTs and  
8 three clinical outcomes: self-harm, in-hospital violence, and number of hospital admissions.

9 A retrospective case file review was employed. A data capture sheet was developed  
10 using items from two Childhood Trauma Questionnaires. Data was collected from case files  
11 of male patients within a low secure forensic setting (n=93). CTs were documented if they  
12 occurred before the age of 18 years old. Associations were examined between CT and the  
13 clinical outcomes using a series of logistic regression analyses.

14 Eighty-five percent of patients had experienced CT and 60.3% had been exposed to  
15 two or more types of CT. There were no significant associations between CT and the clinical  
16 outcomes.

17 Findings expose the high prevalence of CT experienced by patients in a low secure  
18 hospital. Additionally, high rates of CT with low rates of PTSD also suggest potential  
19 diagnostic overshadowing. Findings are discussed with reference to trauma-informed care  
20 treatment approaches in forensic settings.

21  
22  
23  
24

1 **Keywords:** Childhood trauma; forensic mental health; inpatient; low secure services; trauma-  
2 informed care.

### 3 **Introduction**

4 Childhood traumas (CTs) are highly stressful, frightening, and disturbing events that occur  
5 before the age of 18 (Johnson, 2017). Common CTs include parental separation, witnessing  
6 domestic abuse, and experiencing physical, emotional, or sexual abuse (Marshall et al.,  
7 2020). Approximately 4 in 10 adults in the general population who experienced childhood  
8 abuse before the age of 16 have experienced more than one type. (Office for National  
9 Statistics, 2020).

10

11 Experiencing CT can increase the risk of developing a severe mental illness (SMI) (Hogg et  
12 al., 2022) and CT rates are significantly higher in those with a SMI (Aas et al., 2016; Devi et  
13 al., 2019). Post-traumatic stress disorder (PTSD) often co-occurs with SMI as a result of  
14 significant traumatic experiences (Subica, 2013), which may explain high rates of PTSD in  
15 those with a SMI compared with the general population. Specific associations have been  
16 examined between experiencing CT and personality disorder (PD) (Johnson et al., 1999;  
17 Perry and Lee, 2020), and psychosis and schizophrenia (Cutajar et al., 2010; Read et al.,  
18 2005).

19

20 Research from Rossiter et al. (2015) highlights that 77% of an inpatient and outpatient mental  
21 health population had experienced CT (including, sexual, physical, and emotional abuse).  
22 Having a history of CT is associated with a range of negative clinical outcomes in these  
23 settings (McKenna et al., 2019) and those who have experienced CT are more likely to have  
24 longer and more frequent hospital admissions (Read et al., 2007).

25

1 Furthermore, there has been an increased focus on CT history in forensic settings, with  
2 research in high secure settings finding CT rates to be as high as 75%, of which around 65%  
3 have experienced multiple types of CTs (McKenna et al., 2019). Research from male forensic  
4 populations found physical abuse to be the most common type of CT experienced (McKenna  
5 et al., 2019; Wolff and Shi, 2012). Further studies in forensic populations find rates of SMI to  
6 increase with exposure to CT (Ford et al., 2020; Karatzias et al., 2019;).

7

8 Individuals with SMI are twice as likely to perpetrate violence if they have a history of CT  
9 (Green et al., 2017). In forensic populations, rates of violence are high among patients with  
10 SMI (Patchan et al., 2018; Trestman, 2017; Verstegen et al., 2017), and it is widely accepted  
11 that CT increases the likelihood of displaying violent behaviour in adulthood (Dambacher,  
12 2022; Bruce and Laporte, 2015). Experiencing multiple types of CT can promote 'self-  
13 invalidating attitudes', that may lead to difficulties in emotional regulation (Pohl et al., 2021).  
14 Therefore, it is perhaps unsurprising that patients may present with maladaptive coping  
15 strategies of which violent behaviour may be an example (Verstegen et al., 2017).

16 Additionally, increased rates of CT are often associated with self-harm (Holden et al., 2022)  
17 suggesting that self-harm might result from poor emotional regulation and coping strategies  
18 linked to unresolved trauma (Mosquera and Ross, 2016).

19

20 Furthermore, hospital admissions for forensic patients can be lengthy, with many being  
21 admitted more than once (Penney et al., 2018). Whilst studies focussing on forensic  
22 readmission rates are limited, Jewell et al. (2018) found that early childhood maladjustment  
23 was associated with shorter time to recall in conditionally discharged forensic inpatients.

24 More generally, wider research draws attention to significant risk factors for forensic hospital  
25 readmission, such as deterioration in mental state (Harrison and Alves-Costa, 2022), a history

1 of substance misuse (Jewell et al., 2018), and non-adherence to treatment (Penney et al.,  
2 2018).

3

4 Whilst much of the existing literature reveals that rates of CT, SMI, and PD are high in  
5 forensic settings, the literature examining CT in forensic settings overall is sparse – generally  
6 focusing on prison populations, with only some attention given to high and medium secure  
7 hospital settings (Brackenridge and Morrissey, 2010; Dolan and Whitworth, 2013; Karatzias  
8 et al., 2019; Macinnes et al., 2016; McKenna et al., 2019). Further limitations of previous  
9 research include its tendency to focus on common severe types of CT (like sexual and  
10 physical abuse) at the expense of others (like serious injury and death of a caregiver), making  
11 it difficult to determine how different CTs impact individuals in adulthood. Critically, there is  
12 no known research which exclusively examines CT rates in low secure settings. Gathering  
13 data from low secure settings may highlight differences in CT profiles compared to other  
14 secure settings, which could assist in tailoring policy and clinical practice.

15

### 16 ***Current study***

17 This study aims to fill the gap in current literature by examining rates of CT exposure in  
18 males in low secure forensic inpatient settings and examine associations between specific  
19 *types* of CT and three clinical outcomes: self-harm, hospital violence, and number of hospital  
20 admissions. The CT model was adopted to examine potential differences in the type of CT  
21 experienced and related clinical outcomes. Two CT questionnaires were combined to include  
22 a wider range of CTs and group CTs into specific categories ('abuse' traumas and 'other'  
23 traumas). Findings may reveal whether certain CTs are more likely to be associated with  
24 negative clinical outcomes and may assist tailoring the management and intervention of  
25 patients in forensic settings within a more trauma-informed approach to treatment.

## Method

### *Design*

This was a retrospective case file review of administrative data. A data capture sheet was developed to record patient demographics, clinical information, and exposure to CT(s). Corresponding patient files were reviewed. Patient demographics and clinical information were obtained via an electronic patient record system for community and mental health providers. Types of CT were documented in the data capture sheet if they occurred before the age of 18 years old. Case files (violence risk assessments, care program approach meetings, and mental health tribunal reports) were examined to identify self-reported CT type(s) and clinical outcomes.

### *Sample*

93 adult male patients detained across six low secure wards (including a learning disability ward and an assessment ward) of a forensic hospital in the UK between January-March 2021 were eligible for participation in the study. All patients had been sectioned under the Mental Health Act (1983), had committed a criminal offence and/or had a significant history of violence.

### *Measures*

#### *i. Childhood Trauma (primary exposure)*

Types of CT were derived from two questionnaires used to measure childhood traumatic experiences: the Childhood Trauma Questionnaire (short form) (CTQ-SF) (Bernstein and Fink, 1998; Bernstein et al., 2003) and the Childhood Traumatic Events Scale of the Childhood Trauma Questionnaire (Pennebaker and Susman, 1988; 2013).

1 We examined patient case files for both specific wording which matched the descriptions  
2 used in the CT questionnaires (e.g., “not having food to eat”, or “I had to wear dirty clothes”)  
3 or any mention of specific CT types (e.g., being physically or sexually abused). CT types  
4 were recorded as presence/absence of: sexual abuse, physical abuse, neglect (including  
5 emotional abuse), death of care giver(s), parental separation, and serious injury to self. These  
6 types were derived from the subscales of the two CT questionnaires. We used these trauma  
7 types in two ways: 1) to examine the number of CT types that were recorded for each  
8 individual (range 0-6 trauma types); and 2) to create mutually exclusive groups for analysis  
9 where CTs were grouped into categories: ‘no CT’, ‘other trauma’ (parental separation, death  
10 of a caregiver and serious injury to self), ‘abuse’ (sexual and physical abuse and neglect  
11 (including emotional abuse) and ‘both’ – this group included patients who had experienced  
12 traumas from both groups (other trauma and abuse).

13

#### 14 *ii. Outcome Measures*

15 We recorded the following clinical outcomes from patient case files: history of self-harm  
16 (yes, no), history of violence in hospital (yes, no), and number of hospital admissions to adult  
17 forensic services (1-3, 4+). Number of hospital admissions was spilt into 1-3, 4+ as the data  
18 was highly positively skewed. History of self-harm was defined as any previous record of  
19 self-harm contained in patient case files. Violence in hospital was defined as any history of  
20 violence (i.e., actual physical or interpersonal violence) during admission to a secure forensic  
21 hospital. Hospital admissions were defined as any type of admission into adult secure  
22 forensic hospital.

23

#### 24 *iii. Demographic and Clinical Variables*



1 Demographics included age (23-36, 37-50, 51-78), and ethnicity (White, Black, Asian,  
2 other). Clinical variables included mental health diagnoses (primary and secondary: no  
3 diagnosis; schizophrenia, schizotypal and delusional disorders [ICD-10 codes F20-F29];  
4 personality disorders [F60-F69]; mood disorders [F30-F39]; neurotic, stress-related and  
5 somatoform disorders [including PTSD; F40-F39]), neurodevelopmental diagnosis (autism,  
6 attention deficit hyperactivity disorder [ADHD], learning disability [including dyslexia and  
7 dyspraxia], other [brain injury or dementia]) (World Health Organization, 2016), and a  
8 history of substance misuse (yes, no).

9

### 10 ***Data analysis***

11 Categorical variables were described as frequencies and proportions of the total sample, and  
12 continuous variables were summarized using medians and inter-quartiles ranges.

13

14 A series of crude and adjusted binary logistic regression models were conducted to examine  
15 the associations between trauma type (abuse, other, and both, versus none), and each clinical  
16 outcome, adjusting for age and ethnicity.

17

18 Associations are reported as crude and adjusted odds ratios (OR and aOR, respectively),  
19 along with their 95% confidence intervals (CI), and p-values. Global p-values according to  
20 the Wald statistic are reported for each categorical variable. All data were analyzed using  
21 SPSS version 27.

22

### 23 ***Ethical considerations***

24 This study was a service evaluation, therefore formal ethical approval was not required.

25 However, the project was reviewed and approved locally by the Research and Development

1 Service and Clinical Governance Committees. All data were anonymized and stored securely  
2 in line with the Data Protection Act and GDPR regulations.

3

4

## Results

### 5 *Sample characteristics*

6 The final sample included 93 male patients, with a median age of 40 years (IQR=33.0-51.5)  
7 (see Table 1). The most commonly reported ethnicity was Black (n=40, 43%), and most  
8 patients had a primary mental health diagnosis of schizophrenia, schizotypal or a delusional  
9 disorder (ICD-10 codes F20-F29 [World Health Organization, 2016]) (n=86, 92.5%). PD was  
10 the most common comorbid diagnosis (n=22, 23.7%), and PTSD was the least common (n=1,  
11 1.1%). A quarter of patients had a neurodevelopmental disorder (n=24, 25.8%), with learning  
12 disability being the most common (n=16, 17.2%). 80.6% (n = 75) of patients had been violent  
13 in hospital, 55.9% (n= 52) of patients had been admitted to hospital 4 or more times and 41  
14 patients (44.1%) had a history of self-harming behaviors.

15

16 **INSERT TABLE 1 HERE**

17

### 18 *Overview of CT history*

19 Over three quarters of patients had experienced at least one traumatic experience in childhood  
20 (n=78, 83.9%; see Table 2). The most commonly reported trauma type was physical abuse  
21 (n=47, 50.5%), followed by parental separation (n=35, 37.6%) and neglect (including  
22 emotional abuse) (n=31, 33.3%). In terms of specific trauma types among those with CT,  
23 most experienced at least two types of CT (n=56, 60.2%). Just under half of the patients had a  
24 complex trauma-like profile, having experienced traumas from both domains (n=40, 43.0%),  
25 and almost a quarter of patients had experienced abuse types only (n=22, 23.7%; Table 2).

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24

**INSERT TABLE 2 HERE**

***Self-harm***

As shown in Table 3, although those who had experienced abuse were 2.5 times more likely to self-harm than those who did not report any CT, this association was not statistically significant (aOR 2.50, 95% CI 0.66-9.44). The multivariable model was significant over the null model ( $\chi^2=16.10$ ,  $p=0.04$ ), and this appeared to be driven by ethnicity (Wald=9.45,  $p=0.02$ ), although none of the individual ethnicity categories was significantly associated with self-harm. Being aged 37-50 was significantly negatively associated with self-harm (OR 0.35, 95% CI 0.12-0.99), but this was no longer significant in the adjusted model (aOR 0.36, 95% CI 0.11-1.11).

**INSERT TABLE 3 HERE**

***Violence in hospital***

CT was not significantly associated with violence in hospital (see Table 4). Whilst those who had experienced CT types in both domains appeared to be more strongly associated with a reduction of engaging in violence in hospital compared to those with no CT, this association was not statistically significant (aOR 0.33, 95% CI 0.08-1.32).

**INSERT TABLE 4 HERE**

1 ***Hospital admissions***

2 CT was not significantly associated with increased number of hospital admissions (see Table  
3 5). Whilst those who had experienced trauma types in the “other trauma” domain were 2.26  
4 times as likely to have an increased number of hospital admissions than those who did not  
5 report any CT, this association was not statistically significant (aOR 2.26, 95% CI 0.58-8.73).  
6 Additionally, those who experienced abuse types were 3.46 times as likely to have an  
7 increased number of hospital admissions than those who did not report any CT, but again this  
8 association was not statistically significant (aOR 3.46, 95% CI 0.90-13.26).

9

10 **INSERT TABLE 5 HERE**

11

12 **Discussion**

13 This study aimed to identify rates of CT in patients in a low secure forensic hospital and to  
14 examine associations between specific CT types and self-harm, violence in hospital, and  
15 number of hospital admissions. Whilst the prevalence of CT in the population was high  
16 (83.9% of patients had experienced at least one type of CT, and 60.3% had experienced two  
17 or more types), the regression analyses identified no significant associations between CT  
18 types and the clinical outcomes.

19

20 Consistent with findings in wider literature (Brackenridge and Morrissey, 2010; Holden et al.,  
21 2022; McKenna et al., 2019), physical abuse was the most common type of CT. This is  
22 concurrent with the established link between being physically abused in childhood and  
23 perpetrating violence in adulthood (Dambacher et al., 2022).

24

1 Given the high rates of CT, it was surprising that a PTSD diagnosis was present in only one  
2 patient. Alexander et al. (2016) also found PTSD rates to be extremely low in a high-secure  
3 hospital and McKenna et al. (2019) did not identify patients with a primary diagnosis of  
4 PTSD despite 75% of patients having a history of CT. Our apparently contradictory findings  
5 of high CT but low PTSD prevalence might be supported by the fact that whilst we recorded  
6 what *types* of CTs were experienced, the impact or severity of these CTs were not explored.  
7 This perhaps encourages us to understand trauma as a *response* to an event, rather than the  
8 event itself. However, an alternative explanation for low PTSD prevalence is that significant  
9 underreporting (or underreporting and misdiagnosis) of PTSD exists (see Alexander et al.,  
10 2016). One reason this seems possible is that the primary treatment focus in forensic settings  
11 is SMI management (Alexander et al., 2016), potentially increasing the risk of diagnostic  
12 overshadowing (McKenna et al., 2019). Given this treatment paradigm, and as symptoms  
13 common in schizophrenia like auditory hallucinations may present as clinically similar to  
14 flashbacks in PTSD (Alexander et al., 2016; McKenna et al., 2019), symptoms of PTSD may  
15 go under- or misdiagnosed (Alexander et al., 2016). In our study, a primary diagnosis of a  
16 schizophrenia spectrum disorder was present in 92.5% of patients and a secondary diagnosis  
17 of PTSD was present in only 1.1% of patients – indicating the possibility of diagnostic  
18 overshadowing and highlighting the importance of distinguishing between SMI and PTSD  
19 symptoms to better inform interventions and clinical practice in forensic settings.

20

21 We found no significant association between CT type and self-harm. This contrasts with  
22 previous research indicating specific CTs – namely, sexual, and physical abuse – are  
23 significantly associated with self-harm in forensic patients (Holden et al., 2022; Karatzias et  
24 al., 2019). Our small sample size and the small number of individuals with no CT may  
25 explain why no significant associations were found. Additionally, general characteristics of

1 this population may have confounded results. For example, previous research indicates that  
2 CT is associated with self-harm in females (Howard et al., 2017), suggesting gender may  
3 mediate the association between CT and self-harm. Whilst these results highlight that CT can  
4 play a significant role in self-harm, further demographic and socio-developmental factors  
5 may also be important to consider. Future research should aim to investigate the impact of  
6 other demographic factors in relation to self-harming behaviors and CT history.

7

8 Furthermore, we found no significant association between CT type and violence in hospital.  
9 Our results differ from that of Bruce and Laporte (2015), who found forensic patients with a  
10 history of CT (specifically physical and sexual abuse) to be 2.8 times more likely to engage  
11 in violent behaviors than those without. Whilst this study also measured the prevalence of  
12 CT, it had the benefit of a large sample size in contrast to our present study. We may not have  
13 found significant associations for several reasons. Firstly, it was problematic that the majority  
14 of the sample had a history of violence in hospital, which resulted in a loss of power and  
15 large standard errors. Secondly, time-at-risk was not fully accounted for, though it was  
16 considered to an extent by including age as a covariate. We did not have the data to calculate  
17 the exact length of patients' time in hospital (accounting for time in the community). By  
18 considering time-at-risk we may have been able to distinguish whether, among patients with  
19 CTs, those who have spent less time in hospital were more likely to have been violent than  
20 those with longer hospital stays. Subsequent future research would benefit from collecting  
21 data from a larger sample to determine whether there is in fact any association between co-  
22 occurring CTs and violence in hospital across low secure wards.

23

24 Lastly, we found no significant association between CT type and increased hospital  
25 admissions. Previous research has found early childhood maladjustment to be associated with

1 a shorter time to recall in patients discharged into the community from forensic services  
2 (Jewell et al., 2018). Findings from Clarke et al. (2013) highlighted that over a third of  
3 patients released from a medium secure hospital were subsequently readmitted to medium or  
4 high-security hospitals, with previous in-patient and mental illness being statistically  
5 significant predictors of readmission. Similarly, wider research suggests that deterioration in  
6 mental state is a risk factor for hospital readmission (Harrison and Alves-Costa, 2022) –  
7 suggesting SMI rather than CT could be a primary risk factor for readmission. Future  
8 research should consider using CT as a predictor variable in relation to readmission to  
9 forensic hospital. This may encourage targeted trauma-informed interventions for patients in  
10 secured services to lower the likelihood of readmission to forensic settings. High rates of  
11 readmission to forensic hospitals (Clarke et al., 2013; Jewell et al., 2018) suggest admitted  
12 patients could benefit from long-term support from mental health services to assist in  
13 reducing hospital readmissions.

14

### 15 *Strengths and limitations*

16 This study had several strengths. It is the first known study to examine associations between  
17 specific CT types and the clinical outcomes in a low secure setting. Our findings encourage  
18 future research to expand in this area to improve understanding of CT and inform clinical  
19 services. This study adds to the growing literature base suggesting that CT rates are high in  
20 forensic settings (e.g., Brackenridge and Morrissey 2010; McKenna et al., 2019). Such  
21 findings highlight the importance of secure settings adopting a trauma-informed care  
22 approach.

23

24 Nonetheless, results of this study should be interpreted in the light of several limitations.

25 Firstly, it is apparent from this study and previous research (e.g., McKenna et al., 2019) that

1 CT is overrepresented in forensic settings, making any control group small. Consequently,  
2 the targeted effects would only ever be very small. A significantly larger sample in this  
3 population would be desirable to detect significant effects. Secondly, the current paper did  
4 not record neglect and emotional abuse separately as these categories were more difficult to  
5 distinguish in case files. This did not impact the regression analyses as both trauma types  
6 were included in the ‘abuse’ trauma category. Future research may wish to more strictly  
7 distinguish these trauma types. Thirdly, the trauma categories in the CTQ’s are highly  
8 specific, resulting in many types of CT going unreported or unrecognized – for example, CTs  
9 related to marginalization/ discrimination. Given that a large percent of our sample was of  
10 Black ethnicity (43%), it may have been useful to consider race related CTs. Future research  
11 may benefit from considering a wider range of CTs. Fourthly, we only examined the *types* of  
12 CT experienced and not the frequency, intensity, or timing of CT. This is important as wider  
13 research shows that multiple accounts of the same trauma can result in more severe  
14 symptoms of mental illness in adulthood (Suliman et al., 2009), and that timing of trauma  
15 may modulate its impact (Copeland et al., 2018; Dunn et al., 2018; Schalinski et al., 2019).  
16 Fifthly, whilst we included data from a learning disability ward, we were not able to explore  
17 if patients from this population were more likely to have experienced specific types of CT.  
18 Previous research highlights that bullying and sexual assault are experienced in children with  
19 autism spectrum disorder (Hoover, 2015; Hoover and Kaufman, 2018; Kerns et al 2022).  
20 Rates of CTs in forensic patients with ASD or further diversities could be explored and  
21 expanded upon in future research. Finally, data was obtained from patient case files which  
22 relied on patients’ self-reporting CT(s) during clinical interactions, threatening the data’s  
23 accuracy by making it susceptible to recall bias. Furthermore, patients may never have been  
24 asked about specific types of CT, meaning this detail may not be included in case files.  
25 Nonetheless, the benefits of this methodology were deemed to outweigh its limitations as it



1 allowed information to be surveyed from a variety of sources from a long period of time –  
2 thus maximizing the chance of any CT being reported in contrast to other forms of data  
3 collection such as short interviews or questionnaires.

4

#### 5 *Implications for clinical practice and policy*

6 Whilst this study did not find specific associations between CT types and the clinical  
7 outcomes, the high rate of CT has important implications for future clinical practice in low-  
8 secure settings; something which is of note given that existing literature focuses  
9 predominantly on higher levels of security.

10

11 As noted, the low prevalence of PTSD raises concerns regarding the identification of trauma  
12 symptoms being conflated with symptoms of schizophrenia (McKenna et al., 2019;  
13 OConghaile and DeLisi, 2015). This may impact the development of accurate formulations of  
14 clinical needs and the ability to assess risk of future violence (Alexander et al., 2016;  
15 McKenna et al., 2019). To account for this, more routine methods of screening for PTSD may  
16 be beneficial.

17

18 Recent developments in service delivery have compelled services to adopt a trauma-informed  
19 care (TiC) treatment approach. In this framework, professionals focus on the effects of  
20 trauma and how ward environments can be retraumatizing (Grossman et al., 2021). These  
21 considerations yield better treatment outcomes and inform policy and practice in an attempt  
22 to integrate TiC working practices at a strategic level, avoiding widespread traumatization of  
23 patients (Substance Abuse and Mental Health Services Administration, 2014). Utilizing a TiC  
24 approach in forensic settings may allow individuals to recognize and acknowledge CT in a

1 safe, therapeutic environment with the aim of reducing their risk of reoffending. This study's  
2 results reinforce the appropriateness of TiC approaches in forensic settings.

3  
4 Whilst a TiC approach is highly encouraged in clinical settings, it may also be important to  
5 consider how working with highly traumatized individuals impacts clinicians when  
6 delivering care. Trauma-focused work has been found to affect staff members both physically  
7 and psychologically (Mistry et al., 2021). Hearing about patients' traumatic experiences  
8 (Makadia et al., 2017) and witnessing violence and aggression (Mistry et al., 2021) in  
9 inpatient settings can put staff at risk of experiencing secondary traumatic stress (Makadia et  
10 al., 2017) and vicarious trauma (Mistry et al., 2021). Therefore, it is crucial for staff to  
11 receive regular support from the wider team and through clinical supervision (Harris et al.,  
12 2015) to minimize health effects that are associated with traumatic events in the workplace.

13  
14 Furthermore, given that minority backgrounds are often over-represented in forensic settings  
15 (Coid et al., 2000; Warnock-Parkes et al., 2010), it is important to ensure that a culturally  
16 sensitive approach is considered when adopting a TiC framework.

17  
18 Looking forward, future research could better assess associations between specific CT types  
19 and clinical outcomes in low secure forensic settings by gathering data from a much larger  
20 sample. Future research could also gather qualitative data focusing on clinicians'  
21 understanding of trauma to better tailor how they can adopt a TiC approach. This may  
22 highlight the need for trauma-informed training for staff to feel confident in addressing SMI  
23 in relation to CT with patients. Staff awareness of TiC in forensic settings may assist patients  
24 to gain a deeper understanding of their traumatic experiences and how to effectively manage  
25 symptoms. As mentioned, this research would do well to consider how race and ethnicity are

1 explored within TiC, including staff members' ability to navigate conversation about  
2 culturally- and racially-related traumas.

3  
4 Finally, future research may also benefit from consideration of complex PTSD (CPTSD).  
5 Symptoms of CPTSD are concurrent with PTSD with the addition of disturbances in the  
6 following areas: self-organization, emotional dysregulation, interpersonal difficulties, and  
7 negative self-concept (Jowett et al., 2020). Individuals with CPTSD may have experienced  
8 repeated traumas over a prolonged period – often during early childhood (Hyland et al.,  
9 2017). The high CT rates and poor coping strategies for patients in forensic settings (e.g.,  
10 Holden et al., 2022) suggest diagnosis of CPTSD may sometimes be more appropriate than  
11 PTSD. The inclusion of CPTSD in the ICD-11 will aid accurate diagnosis.

12  
13 In conclusion, this study examined the prevalence of CT in a low secure forensic population  
14 but found no significant associations between types of CT and self-harm, violence in hospital,  
15 and number of hospital readmissions. Broadly, results contrasted with wider research by  
16 finding no significant associations but were consistent with research outlining the extremely  
17 high prevalence of CT in forensic populations. Of particular note was the high prevalence of  
18 CT compared to the extremely low prevalence of PTSD. In line with other research, it was  
19 suggested that significant underreporting and/or misdiagnosing of PTSD may exist in  
20 forensic settings, which could impact the appropriateness of treatment interventions. Given  
21 this, research implications aimed at adopting a TiC approach to benefit both patient and staff  
22 knowledge of CT were recommended. In time, this may improve the wellbeing of forensic  
23 patients and reduce the risk of readmission to hospital by reducing their risk of harm to  
24 themselves and/or others.

25

1 **Declaration of interest statement**

2 The authors have declared that no disclosures of interest exists.

3

4

5 **References**

6

7 Aas, M., Henry, C., Andreassen, O. A., Bellivier, F., Melle, I., & Etain, B. (2016). The role  
8 of childhood trauma in bipolar disorders. *International journal of bipolar*  
9 *disorders*, 4(1), 1-10.

10

11 Alexander, A. A., Welsh, E., & Glassmire, D. M. (2016). Underdiagnosing posttraumatic  
12 stress disorder in a state hospital. *Journal of Forensic Psychology Practice*, 16(5),  
13 448-459.

14

15 Bernstein, D. P., & Fink, L. (1998). Childhood Trauma Questionnaire: A retrospective self-  
16 report manual. San Antonio, TX: The Psychological Corporation.

17

18 Bernstein, D. P., Stein, J. A., Newcomb, M. D., Walker, E., Pogge, D., Ahluvalia, T., & Zule,  
19 W. (2003). Development and validation of a brief screening version of the Childhood  
20 Trauma Questionnaire. *Child abuse & neglect*, 27(2), 169-190.

21

22 Brackenridge, I., & Morrissey, C. (2010). Trauma and post-traumatic stress disorder (PTSD)  
23 in a high secure forensic learning disability population: future directions for  
24 practice. *Advances in Mental Health and Intellectual Disabilities*, 4 (3), 49-56.

25

26 Bruce, M., & Laporte, D. (2015). Childhood trauma, antisocial personality typologies and  
27 recent violent acts among inpatient males with severe mental illness: Exploring an  
28 explanatory pathway. *Schizophrenia research*, 162(1-3), 285-290.

29

30 Coid, J., Kahtan, N., Gault, S., & Jarman, B. (2000). Ethnic differences in admissions to  
31 secure forensic psychiatry services. *The British Journal of Psychiatry*, 177(3), 241-  
32 247.

33

34 Clarke, M., Duggan, C., Hollin, C. R., Huband, N., McCarthy, L., & Davies, S. (2013).  
35 Readmission after discharge from a medium secure unit. *The Psychiatrist*, 37(4), 124-  
36 129.

37

38 Copeland, W. E., Shanahan, L., Hinesley, J., Chan, R. F., Aberg, K. A., Fairbank, J. A., &  
39 Costello, E. J. (2018). Association of childhood trauma exposure with adult

1 psychiatric disorders and functional outcomes. *JAMA network open*, 1(7), e184493-  
2 e184493.

3

4 Cutajar, M. C., Mullen, P. E., Ogloff, J. R., Thomas, S. D., Wells, D. L., & Spataro, J. (2010).  
5 Schizophrenia and other psychotic disorders in a cohort of sexually abused  
6 children. *Archives of general psychiatry*, 67(11), 1114-1119.

7

8 Dambacher, C., Kreutz, J., Titze, L., Lutz, M., Franke, I., Streb, J., & Dudeck, M. (2022).  
9 Resilience as a mediator between adverse childhood experiences and aggression  
10 perpetration in forensic inpatients: An exploratory study. *Journal of Aggression,  
11 Maltreatment & Trauma*, 31(7), 910-925.

12

13 Devi, F., Shahwan, S., Teh, W. L., Sambasivam, R., Zhang, Y. J., Lau, Y. W., &  
14 Subramaniam, M. (2019). The prevalence of childhood trauma in psychiatric  
15 outpatients. *Annals of General Psychiatry*, 18(1), 1-8.

16

17 Dolan, M., & Whitworth, H. (2013). Childhood sexual abuse, adult psychiatric morbidity,  
18 and criminal outcomes in women assessed by medium secure forensic  
19 service. *Journal of Child Sexual Abuse*, 22(2), 191-208.

20

21 Dunn, E. C., Nishimi, K., Gomez, S. H., Powers, A., & Bradley, B. (2018). Developmental  
22 timing of trauma exposure and emotion dysregulation in adulthood: Are there  
23 sensitive periods when trauma is most harmful? *Journal of affective disorders*, 227,  
24 869-877.

25

26 Ford, K., Bellis, M. A., Hughes, K., Barton, E. R., & Newbury, A. (2020). Adverse childhood  
27 experiences: a retrospective study to understand their associations with lifetime  
28 mental health diagnosis, self-harm or suicide attempt, and current low mental  
29 wellbeing in a male Welsh prison population. *Health & justice*, 8(1), 1-13.

30

31 Green, K., Browne, K., & Chou, S. (2019). The relationship between childhood maltreatment  
32 and violence to others in individuals with psychosis: a systematic review and meta-  
33 analysis. *Trauma, Violence, & Abuse*, 20(3), 358-373.

34

35 Grossman, S., Cooper, Z., Buxton, H., Hendrickson, S., Lewis-O'Connor, A., Stevens, J., &  
36 Bonne, S. (2021). Trauma-informed care: recognizing and resisting re-traumatization  
37 in health care. *Trauma Surgery & Acute Care Open*, 6(1), e000815.

38

39 Harris, D. M., Happell, B., & Manias, E. (2015). Working with people who have killed: The  
40 experience and attitudes of forensic mental health clinicians working with forensic  
41 patients. *International Journal of Mental Health Nursing*, 24(2), 130-138.

42

- 1 Harrison, L., & Alves-Costa, F. (2022). Predictors associated with readmission in low secure  
2 forensic settings in the UK: an exploratory investigation and survival analysis. *The*  
3 *Journal of Forensic Psychiatry & Psychology*, 33(1), 178-196.  
4
- 5 Hogg, B., Gardoki-Souto, I., Valiente-Gómez, A., Rosa, A. R., Fortea, L., Radua, J., &  
6 Moreno-Alcázar, A. (2022). Psychological trauma as a transdiagnostic risk factor for  
7 mental disorder: an umbrella meta-analysis. *European Archives of Psychiatry and*  
8 *Clinical Neuroscience*, 1-14.  
9
- 10 Holden, R., Stables, I., Brown, P., & Fotiadou, M. (2022). Adverse childhood experiences  
11 and adult self-harm in a female forensic population. *BJPsych Bulletin*, 46(3), 148-152.  
12
- 13 Hoover, D. W. (2015). The effects of psychological trauma on children with autism spectrum  
14 disorders: A research review. *Review Journal of Autism and Developmental*  
15 *Disorders*, 2, 287-299.  
16
- 17 Hoover, D. W., & Kaufman, J. (2018). Adverse childhood experiences in children with  
18 autism spectrum disorder. *Current opinion in psychiatry*, 31(2), 128.  
19
- 20 Howard, R., Karatzias, T., Power, K., & Mahoney, A. (2017). From childhood trauma to self-  
21 harm: An investigation of theoretical pathways among female prisoners. *Clinical*  
22 *Psychology & Psychotherapy*, 24(4), 942-951.  
23
- 24 Hyland, P., Murphy, J., Shevlin, M., Vallières, F., McElroy, E., Elklit, A., Christoffersen, M.,  
25 & Cloitre, M. (2017). Variation in post-traumatic response: The role of trauma type in  
26 predicting ICD-11 PTSD and CPTSD symptoms. *Social Psychiatry and Psychiatric*  
27 *Epidemiology*, 52, 727-736.  
28
- 29 Jewell, A., Cocks, C., Cullen, A. E., Fahy, T., & Dean, K. (2018). Predicting time to recall in  
30 patients conditionally released from a secure forensic hospital: A survival  
31 analysis. *European Psychiatry*, 49, 1-8.  
32
- 33 Johnson, M. E. (2017). Childhood trauma and risk for suicidal distress in justice-involved  
34 children. *Children and Youth Services Review*, 83, 80-84.  
35
- 36 Johnson, J. G., Cohen, P., Brown, J., Smailes, E. M., & Bernstein, D. P. (1999). Childhood  
37 maltreatment increases risk for personality disorders during early adulthood. *Archives*  
38 *of General Psychiatry*, 56(7), 600-606.  
39
- 40 Jowett, S., Karatzias, T., Shevlin, M., & Albert, I. (2020). Differentiating symptom profiles  
41 of ICD-11 PTSD, complex PTSD, and borderline personality disorder: A latent class  
42 analysis in a multiply traumatized sample. *Personality Disorders: theory, research,*  
43 *and treatment*, 11(1), 36.  
44

- 1 Karatzias, T., Shevlin, M., Pitcairn, J., Thomson, L., Mahoney, A., & Hyland, P. (2019).  
2 Childhood adversity and psychosis in detained inpatients from medium to high  
3 secured units: results from the Scottish census survey. *Child Abuse & Neglect*, *96*,  
4 104094.  
5
- 6 Kerns, C. M., Lankenau, S., Shattuck, P. T., Robins, D. L., Newschaffer, C. J., & Berkowitz,  
7 S. J. (2022). Exploring potential sources of childhood trauma: A qualitative study  
8 with autistic adults and caregivers. *Autism*, *26*(8), 1987-1998.  
9
- 10 Macinnes, M., Macpherson, G., Austin, J., & Schwannauer, M. (2016). Examining the effect  
11 of childhood trauma on psychological distress, risk of violence and engagement, in  
12 forensic mental health. *Psychiatry Research*, *246*, 314-320.  
13
- 14 Makadia, R., Sabin-Farrell, R., & Turpin, G. (2017). Indirect exposure to client trauma and  
15 the impact on trainee clinical psychologists: Secondary traumatic stress or vicarious  
16 traumatization? *Clinical Psychology & Psychotherapy*, *24*(5), 1059-1068.  
17
- 18 Marshall, C., Semovski, V., & Stewart, S. L. (2020). Exposure to childhood interpersonal  
19 trauma and mental health service urgency. *Child Abuse & Neglect*, *106*, 104464.  
20
- 21 McKenna, G., Jackson, N., & Browne, C. (2019). Trauma history in a high secure male  
22 forensic inpatient population. *International Journal of Law and Psychiatry*, *66*,  
23 101475.  
24
- 25 Mental Health Act. (1983). [cited 2022 July 7]. Available from:  
26 <https://www.legislation.gov.uk/ukpga/1983/20/contents>  
27
- 28 Mistry, D., Gozna, L., & Cassidy, T. (2022). Psychological and the physical health impacts of  
29 forensic workplace trauma. *The Journal of Forensic Practice*, *24*(1), 18-33.  
30
- 31 Mosquera, D., & Ross, C. A. (2016). Application of EMDR therapy to self-harming  
32 behaviors. *Journal of EMDR Practice and Research*, *10*(2), 119-128.  
33
- 34 OConghaile, A., & DeLisi, L. E. (2015). Distinguishing schizophrenia from posttraumatic  
35 stress disorder with psychosis. *Current Opinion in Psychiatry*, *28*(3), 249-255.  
36
- 37 Office for National Statistics. (2020). *Child abuse extent and nature, England and Wales:  
38 year ending March 2019*.  
39 [https://www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice/articles/child  
40 dabuseextentandnatureenglandandwales/yearendingmarch2019#:~:text=In%20the%20  
41 0year%20ending%20March%202019%2C%20the%20CSEW%20estimated%20that,T  
42 able%20%3B%20Figure%201](https://www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice/articles/childabuseextentandnatureenglandandwales/yearendingmarch2019#:~:text=In%20the%20year%20ending%20March%202019%2C%20the%20CSEW%20estimated%20that,T)).  
43

- 1 Patchan, K., Vyas, G., Hackman, A. L., Mackowick, M., Richardson, C. M., Love, R. C., &  
2 Kelly, D. L. (2018). Clozapine in reducing aggression and violence in forensic  
3 populations. *Psychiatric Quarterly*, 89(1), 157-168.  
4
- 5 Pennebaker, J. W., & Susman, J. R. (1988). Disclosure of traumas and psychosomatic  
6 processes. *Social Science & Medicine*, 26(3), 327-332. [https://doi.org/10.1016/0277-](https://doi.org/10.1016/0277-9536(88)90397-8)  
7 [9536\(88\)90397-8](https://doi.org/10.1016/0277-9536(88)90397-8)  
8
- 9 Pennebaker, J. W., & Susman, J. R. (2013). Childhood trauma questionnaire. *Measurement*  
10 *Instrument Base for the Social Sciences*.  
11
- 12 Penney, S. R., Marshall, L., & Simpson, A. I. (2018). A prospective study of pathways to  
13 hospital readmission in Canadian forensic psychiatric patients. *The Journal of*  
14 *Forensic Psychiatry & Psychology*, 29(3), 368-386.  
15
- 16 Perry, C., & Lee, R. (2020). Childhood trauma and personality disorder. In: Spalletta, G.,  
17 Janiri, D., Piras, F., Sani, G. (Eds.) *Childhood Trauma in Mental Disorders*.  
18 Cham:Springer. [https://doi.org/10.1007/978-3-030-49414-8\\_12](https://doi.org/10.1007/978-3-030-49414-8_12)  
19
- 20 Pohl, S., Steuwe, C., Mainz, V., Driessen, M., & Beblo, T. (2021). Borderline personality  
21 disorder and childhood trauma: Exploring the buffering role of self-compassion and self-  
22 esteem. *Journal of Clinical Psychology*, 77(3), 837-845.  
23
- 24 Read, J., Hammersley, P., & Rudegeair, T. (2007). Why, when and how to ask about  
25 childhood abuse. *Advances in Psychiatric Treatment*, 13(2), 101-110.  
26
- 27 Read, J., van Os, J., Morrison, A. P., & Ross, C. A. (2005). Childhood trauma, psychosis, and  
28 schizophrenia: a literature review with theoretical and clinical implications. *Acta*  
29 *Psychiatrica Scandinavica*, 112(5), 330-350.  
30
- 31 Rossiter, A., Byrne, F., Wota, A. P., Nisar, Z., Ofuafor, T., Murray, I., & Hallahan, B. (2015).  
32 Childhood trauma levels in individuals attending adult mental health services: An  
33 evaluation of clinical records and structured measurement of childhood trauma. *Child*  
34 *abuse & neglect*, 44, 36-45.  
35
- 36 Schalinski, I., Breinlinger, S., Hirt, V., Teicher, M. H., Odenwald, M., & Rockstroh, B.  
37 (2019). Environmental adversities and psychotic symptoms: The impact of timing of  
38 trauma, abuse, and neglect. *Schizophrenia research*, 205, 4-9.  
39
- 40 Subica, A. M. (2013). Psychiatric and physical sequelae of childhood physical and sexual  
41 abuse and forced sexual trauma among individuals with serious mental  
42 illness. *Journal of Traumatic Stress*, 26(5), 588-596.  
43



1 Substance Abuse and Mental Health Services Administration. (2014). *SAMHSA's Concept of*  
2 *Trauma and Guidance for a Trauma-Informed Approach*. U.S. Department of Health  
3 and Human Services.  
4

5 Suliman, S., Mkabile, S. G., Fincham, D. S., Ahmed, R., Stein, D. J., & Seedat, S. (2009).  
6 Cumulative effect of multiple trauma on symptoms of posttraumatic stress disorder,  
7 anxiety, and depression in adolescents. *Comprehensive Psychiatry*, *50*(2), 121-127.  
8

9 Trestman, R. L. (2017). Treating aggression in forensic psychiatric settings. *The Journal of*  
10 *the American Academy of Psychiatry and the Law*, *45*(1), 40-43.  
11

12 Verstegen, N., de Vogel, V., de Vries Robbé, M., & Helmerhorst, M. (2017). Inpatient  
13 violence in a Dutch forensic psychiatric hospital. *Journal of Forensic Practice*, *19*(2),  
14 102-114.  
15

16 Warnock-Parkes, E., Young, S., & Gudjonsson, G. (2010). Cultural sensitivity in forensic  
17 services: findings from an audit of South London forensic inpatient services. *Journal*  
18 *of Forensic Psychiatry & Psychology*, *21*(1), 156-166.  
19

20 Wolff, N., & Shi, J. (2012). Childhood and adult trauma experiences of incarcerated persons  
21 and their relationship to adult behavioral health problems and treatment. *International*  
22 *journal of environmental research and public health*, *9*(5), 1908-1926.  
23

24 World Health Organization. (2016). *International statistical classification of diseases and*  
25 *related health problems* (10th ed.). <https://icd.who.int/browse10/2016/en>.  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43

1

## Tables

2 **Table 1.**3 *Demographic and clinical characteristics of the patient sample (n = 93)*

Characteristics	<i>n (%)</i>
<b>Demographics</b>	
Age (years), median (IQR)	40.00 (33.0-51.5)
Age categories (years)	
23-36	33 (35.5%)
37-50	31 (33.3%)
50-78	29 (31.2%)
Ethnicity	
White	30 (32.3%)
Black	40 (43.0%)
Asian	12 (12.9%)
Other	11 (11.8%)
<b>Clinical</b>	
Primary diagnosis	
No diagnosis	1 (1.1%)
Schizophrenia, schizotypal and delusional disorders	86 (92.5%)
Personality disorders	1 (1.1%)
Mood (affective) disorder	5 (5.4%)
Neurotic, stress-related and somatoform disorders (including PTSD)	0 (0.0%)
Comorbid diagnosis	
No diagnosis	62 (66.7%)
Schizophrenia, schizotypal and delusional disorders	0 (0.0%)
Personality disorder	22 (23.7%)
Mood (affective) disorder	8 (8.6%)
Neurotic, stress-related and somatoform disorders (including PTSD)	1 (1.1%)
Neurodevelopmental disorder	
No diagnosis	69 (74.2%)
ASD	2 (2.2%)
ADHD	5 (5.4%)
Learning disability	16 (17.2%)
Other	1 (1.1%)
History of self-harm	
Yes	41 (44.1%)
No	52 (55.9%)
History of violence in hospital	
Yes	75 (80.6%)
No	18 (19.4%)
Number of hospital admissions	
1-3	41 (44.1%)
4+	52 (55.9%)

*Note:* IQR: Interquartile Range. PTSD: Post Traumatic Stress Disorder. ASD: Autistic Spectrum Disorder. ADHD: Attention Deficit Hyperactivity Disorder.

**Table 2.**

*Prevalence of the type of CT, total number of CT types, and category of CT within the patient sample (n=93)*

<b>Variable</b>	<b>n (%)</b>
<b>Type of CT</b>	
Physical abuse	47 (50.5%)
Sexual abuse	21 (22.6%)
Neglect (including emotional abuse)	31 (33.3%)
Parental separation	35 (37.6%)
Death of caregiver	16 (17.2%)
Serious injury to self	24 (25.8%)
<b>Number of CT types</b>	
0	15 (16.1%)
1	22 (23.7%)
2	28 (30.1%)
3	16 (17.2%)
4	10 (10.8%)
5	2 (2.2%)
6	0 (0.0%)
<b>CT category</b>	
No CT	15 (16.1%)
Other trauma	16 (17.2%)
Abuse	22 (23.7%)
Both	40 (43.0%)

*Note:* CT: Childhood trauma.

2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18

**Table 3.**

*Binary logistic regression examining the association between self-harm and childhood trauma, adjusting for age and ethnicity*

Variable	n/N (%)	OR (95% CI)	<i>p</i>	aOR (95% CI)	<i>p</i>
<b>Age</b>			0.13		0.20
23-36	11/33 (33.33)	Reference		Reference	
37-50	13/31 (41.94)	0.35 (0.12-0.99)	0.04	0.36 (0.11-1.11)	0.07
51-78	17/29 (58.62)	0.51 (0.18-1.42)	0.19	0.51 (0.16-1.66)	0.26
<b>Ethnicity</b>			0.02		0.02
White	20/30 (66.67)	Reference		Reference	
Black	12/40 (30.00)	2.40 (0.58-9.81)	0.22	2.58 (0.50-13.12)	0.25
Asian	4/12 (33.33)	0.51 (0.13-2.01)	0.34	0.46 (0.10-2.06)	0.31
Other	5/11 (45.45)	0.60 (0.11-3.24)	0.55	0.45 (0.07-2.73)	0.33
<b>Childhood Trauma</b>			0.72		0.46
No CT	6/15 (40.00)	Reference		Reference	
Other trauma	9/16 (56.25)	1.00 (0.29-3.35)	1.00	1.27 (0.32-5.06)	0.72
Abuse	10/22 (45.45)	1.92 (0.59-6.23)	0.27	2.50 (0.66-9.44)	0.17
Both	16/40 (40.00)	1.25 (0.43-3.57)	0.67	0.77 (0.22-2.73)	0.69

*Note:* CT = Childhood Trauma. OR = Odds Ratio. CI = Confidence Interval. aOR = Adjusted Odds Ratio.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20

**Table 4.**

*Binary logistic regression examining the association between violence in hospital and CT, adjusting for age and ethnicity*

Variable	n/N (%)	OR (95% CI)	<i>p</i>	aOR (95% CI)	<i>p</i>
<b>Age</b>			0.35		0.21
23-36	24/33 (72.72)	Reference		Reference	
37-50	26/31 (83.87)	0.42 (0.11-1.57)	0.20	0.34 (0.08-1.39)	0.13
51-78	25/29 (86.20)	0.83 (0.22-3.45)	0.80	0.92 (0.20-4.25)	0.92
<b>Ethnicity</b>			0.45		0.49
White	22/30 (73.33)	Reference		Reference	
Black	35/40 (87.50)	1.03 (0.21-4.87)	0.96	1.39 (0.22-8.63)	0.71
Asian	10/12 (83.33)	2.62 (0.51-13.32)	0.24	3.26 (0.53-19.71)	0.19
Other	8/11 (72.72)	1.87 (0.25-14.08)	0.54	2.07 (0.24-17.59)	0.50
<b>Childhood Trauma</b>			0.38		0.43
No CT	12/15 (80.00)	Reference		Reference	
Other trauma	14/16 (87.50)	0.70 (0.15-3.27)	0.65	0.71 (0.12-4.09)	0.70
Abuse	15/22 (68.18)	1.23 (0.22-6.87)	0.80	0.95 (0.15-5.75)	0.95
Both	34/40 (85.00)	0.37 (0.10-1.31)	0.12	0.33 (0.08-1.32)	0.11

*Note:* CT = Childhood Trauma. OR = Odds Ratio. CI = Confidence Interval. aOR = Adjusted Odds Ratio.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18
- 19

**Table 5.**

*Binary logistic regression examining the association between number of hospital admissions and CT, adjusting for age and ethnicity*

Variable	n/N (%)	OR (95% CI)	<i>p</i>	aOR (95% CI)	<i>p</i>
<b>Age</b>			0.27		0.32
23-36	15/33 (45.45)	Reference		Reference	
37-50	18/31 (58.06)	0.43 (0.15-1.22)	0.11	0.44 (0.15-1.28)	0.13
51-78	19/29 (65.51)	0.72 (0.25-2.07)	0.55	0.66 (0.21-2.09)	0.48
<b>Ethnicity</b>			0.92		0.90
White	17/30 (56.66)	Reference		Reference	
Black	21/40 (52.50)	0.74 (0.81-3.10)	0.68	0.84 (0.16-4.25)	0.83
Asian	7/12 (84.00)	0.63 (0.15-2.50)	0.51	0.65 (0.14-2.89)	0.57
Other	7/11 (63.63)	0.14 (0.14-4.29)	0.79	0.59 (0.09-3.50)	0.56
<b>Childhood Trauma</b>			0.22		0.23
No CT	10/15 (66.66)	Reference		Reference	
Other trauma	12/16 (75.00)	2.21 (0.64-7.63)	0.21	2.26 (0.58-8.73)	0.23
Abuse	11/22 (50.00)	3.31 (0.91-12.05)	0.06	3.46 (0.90-13.26)	0.07
Both	19/40 (47.50)	1.10 (0.91-12.05)	0.51	1.01 (0.32-3.14)	0.97

*Note:* CT = Childhood Trauma. OR = Odds Ratio. CI = Confidence Interval. aOR = Adjusted Odds Ratio.