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Trauma history in a high secure male forensic inpatient population

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ABSTRACT

There is an increasing focus on trauma within forensic services. This study aimed to investigate exposure to trauma among a high secure male forensic population. Based on the Childhood Trauma Questionnaire (CTQ) and the Trauma History Questionnaire (THQ) data capture sheets were developed. Patients' own offending behaviour was included as a source of potential trauma. Records for all patients placed within the hospital (n = 194) were reviewed. All patients had been exposed to a traumatic event over the lifespan, with 75% having been exposed to trauma during childhood. Sixty-five percent of patients had experienced more than one type of trauma during childhood; the mean number of trauma types experienced during this period being 2.31. In adulthood 63% had been exposed to one trauma type while 29% had been exposed to two or more trauma types. No significant difference was found between those with and those without childhood trauma histories on hospital variables including admission length, seclusion and incidents. The implications of these results in the context of adopting a trauma informed care approach to treatment in forensic settings are discussed, and recommendations for future clinical and research directions are made.

1. Introduction

High levels of exposure to one or more traumatic event(s) have been increasingly noted within the histories of individuals with serious mental illness (SMI), such as schizophrenia-spectrum and severe mood disorders, and personality disorder (PD) (e.g. Martins, Tofoli, Baes, & Juruena, 2011; Mueser et al., 1998, 2001; Mueser et al., 2004). In a systematic review of individuals with SMI, rates of trauma exposure across the lifespan varied from 49%–100% (Grubaugh, Zinzow, Paul, Egede, & Frueh, 2011). Few studies have assessed lifetime trauma exposure in individuals with a PD diagnosis; however, trauma in childhood was reported by 73% of patients with various PDs in a longitudinal study (Battle et al., 2004) and by as many as 90% in a review of borderline PD patients (MacIntosh, Godbout, & Dubash, 2015). The few studies considering PD and adulthood trauma have found substantially higher rates than in the general population, again particularly in persons with borderline PD (de Aquino, Queiroz, Neri, & Aguiar, 2018; Golier et al., 2003).

A substantial body of literature supports a dose-response relationship between the frequency of childhood trauma exposure and development of SMI and/or PD (e.g. Carr, Martins, Stingel, Lemgruber, & Juruena, 2013; Muenzenmaier et al., 2014). Grubaugh et al. (2011) found 75%–98% of individuals with SMI reported multiple lifetime trauma exposures, with a mean number of exposures as high as eight in some studies and physical assault constituting the most common trauma type. Such heightened vulnerability of individuals with SMI and/or PD to chronic and violent trauma has been further supported by elevated prevalence and incidence rates from self-report and police data (see Dean et al., 2018; Khalifeh, Oram, Osborn, Howard, & Johnson, 2016). It is, therefore, not unexpected that higher rates of current and lifetime post-traumatic stress disorder (PTSD) have been found in individuals with SMI and/or PD than in the general population (Friborg, Martinussen, Kaiser, Øvergard, & Rosenvinge, 2013; Mauritz, Goossens, Draijer, & van Achterberg, 2013).

Trauma exposure is linked with a range of negative clinical variables and outcomes. Higher levels of childhood trauma are associated with more severe and persistent symptoms (de Aquino et al., 2018; van Dam et al., 2015), higher medication doses (Schneeberger, Muenzenmaier, Castille, Battaglia, & Link, 2014), longer and more frequent hospitalisations and time in seclusion (Read, Hammersley, & Rudegeair, 2007; Reddy & Spaulding, 2010). Whilst childhood trauma has been associated with poorer treatment response in individuals with SMI and PD (Gunderson et al., 2006; Paterniti, Sterner, Caldwell, & Bisserbe, 2017; Schneeberger et al., 2014; Seow et al., 2016), contrasting findings found that trauma exposure in adulthood rather than childhood was more predictive of poorer recovery and functioning in this population (Stumbo, Yarborough, Paulson, & Green, 2015). Individuals with SMI and/or PD and a history of trauma exposure also

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have higher rates of current and lifetime substance abuse (Aas et al., 2016; Tomassi et al., 2017) and of self-injurious and suicidal behaviour (Muenzenmaier et al., 2014; O'Hare, Shen, & Sherrer, 2018) than those without a trauma history.

Traumatic experiences throughout the lifespan are also well established as a significant explanatory risk factor for the perpetration of violence in both general and mental health populations (Choe, Teplin, & Abram, 2008; Mancke, Herpertz, & Bertsch, 2018; Zanarini et al., 2017). The risk of those with SMI and/or borderline and antisocial PD perpetrating violence is two or more times greater when a trauma history is present (Green, Browne, & Chou, 2017; Swanson et al., 2002; Tikkanen, Holi, Lindberg, Tiihonen, & Virkkunen, 2009). Among individuals with SMI and/or PD, being subject to violent victimisation is associated with an 11-fold increase in violence perpetration; furthermore, those who perpetrate violence are 11 times more likely to have been victims of violence (Desmarais et al., 2014).

Given the empirical literature, it would seem reasonable to anticipate relatively high rates of historical trauma exposure in individuals with SMI and/or PD who have perpetrated violence. The few studies that have examined trauma in forensic populations report trauma rates that are significantly higher than the general population and that are similar to non-forensic individuals with SMI and/or PD. In a study of German and Sudanese forensic inpatients with SMI and/or PD, Garieballa et al. (2006) found 100% of their 31 participants reported at least one lifetime trauma and a mean number of five trauma exposures. Similarly, 100% of the 45 inpatients with SMI in Gosein, Stiffler, Frascoia, and Ford' (2016) US hospital jail study reported one or more trauma exposure during their lifetime. In a study by Spitzer et al., (2001) across two German maximum-security hospitals, 64% of the 53 inpatients with SMI and PD had experienced one lifetime trauma. A later study conducted in one of the same German maximum-security hospitals showed 81% of inpatients with PD reported at least two types of childhood trauma (Spitzer, Chevalier, Gillner, Freyberger, & Barnow, 2006). In a UK study comparing patients detained in a medium secure unit versus general psychiatric inpatients, Sarkar, Mezey, Cohen, Singh, and Olumoroti (2005) noted consistently higher self-reported and documented rates of exposure to traumas of all types in the forensic group. Bruce and Laporte (2015) highlighted that 32% of the 162 UK secure unit inpatients with SMI and antisocial PD in their study reported a history of childhood trauma. A recent study of 436 Dutch forensic psychiatric patients found 67% had experienced trauma in childhood and 36.5% in adulthood (Bohle & de Vogel, 2017).

Within studies that specified the trauma type experienced, traumas of all types were common but particularly physical and sexual abuse (Sarkar et al., 2005; Spitzer et al., 2001; Spitzer et al., 2006; Bohle et al., 2017). One study found that the most common trauma reported, after physical abuse, was patients' own violent offences (Spitzer et al., 2001). Whilst seemingly an isolated finding, a number of studies in UK medium secure units have found that between a third to over half of the forensic inpatients sampled experienced PTSD in relation to their own violent offence (Crisford, Dare, & Evangeli, 2008; Gray et al., 2003; Papanastassiou, Waldron, Boyle, & Chesterman, 2004).

In the UK, individuals with mental disorders whose risk of harm to others cannot be managed safely within other mental health settings are detained under mental health legislation in forensic mental health inpatient settings. There are four High Secure Hospitals (HSH) in the UK that detain patients '*who present a grave risk of harm to others*' (NHS England, 2013, p. 3). To date, three studies exploring trauma rates in a HSH have been published. An early study by Heads, Taylor, and Leese (1997) of all women and a sample of men with schizophrenia detained in Broadmoor HSH reported rates of exposure to various adverse experiences during childhood. The findings highlighted that 25% had been subjected to violence by a parent, 12% had a history of definite sexual abuse, and 25% had experienced parental neglect. The loss of a parent before the age of 17 years had been experienced by 32%, and 12% had been raised in institutions or under Local Authority Care. A second, more recent study conducted in Rampton HSH by Brackenridge and Morrissey (2010) explored the exposure to trauma across their lifespan in a sample of male patients with intellectual disability (ID), some of whom also had SMI and/or PD. This study found that 95% had experienced more than one type of lifetime trauma and 42.5% had experienced five or more types. Physical abuse constituted the most common trauma, experienced by 75% of participants. The final published study by Macinnes, Macpherson, Austin, and Schwannauer (2016) presents childhood trauma rates reported by a sample of patients from The State Hospital HSH and from two medium secure units, and unfortunately does not provide data for the HSH patients alone. This study found that 82.8% of their multi-site sample had experienced childhood trauma, yet the statistical analysis suggested patient underreporting of abuse.

Two unpublished file reviews have also been conducted within HSHs. Jones (2017) reported that across the lifespan of the non-ID, male population at Rampton HSH, 55% had experienced physical abuse, 36% sexual abuse, 61% emotional abuse, 51% emotional neglect, 26% physical neglect, and 26% found their own offence traumatising. Finally, a review by The State Hospital HSH highlighted that 100% of the all-male population had experienced at least one trauma (Scott, 2017).

The current study aims to add to the evidence base on the frequency and nature of trauma exposure in childhood and adulthood of patients in a UK HSH. Such data will enable comparison with other HSH populations, and supplement the existing sparse literature on the lifetime trauma rates of male forensic inpatients with SMI and/or PD. As also acknowledged by Brackenridge and Morrissey (2010), clinical experience suggested that the levels of trauma within our patient population was high; however, no data to empirically support this presumption, and thus guide service delivery, had been systematically obtained. In addition to exploring child and adult trauma exposure, the study also sought to compare data for differences between groups (i.e. patients with and without a childhood trauma history) on admission length, adverse incidents and seclusion and segregation stays. This secondary aim was prompted by findings within the literature that individuals with SMI and/or PD exposed to trauma may be at an increased risk of violence and have periods of hospitalisation and seclusion (Reddy & Spaulding, 2010). Such information is of great relevance within forensic mental health settings, given that experience of childhood physical abuse, longer periods of hospitalisation/treatment compliance, and previous aggressive incidents (and thus seclusion) are variables associated with violence in inpatient settings (Cornaggia, Berghi, Pavone, & Barale, 2011; Jeandarme et al., 2016).

2. Method

A retrospective case file review, utilising only secondary data, was employed. A team of clinical psychologists developed a data capture sheet using the items on the Childhood Trauma Questionnaire (CTQ: Bernstein et al., 1994) to identify presence of childhood trauma, and the items on the Trauma History Questionnaire (THQ; Green, 1996) to identify presence of adulthood trauma. These well established measures were selected to inform the gathering of relevant indicators of trauma types. The CTQ is a 28-item self-report instrument covering emotional abuse, emotional neglect, physical abuse, physical neglect and sexual abuse. Reliability for the CTQ is good, with high internal consistency (sexual abuse, emotional neglect, emotional abuse and physical abuse reported coefficients of 0.93–0.95, 0.88–92, 0.84–0.89 and 0.81–0.86 respectively) and test-retest (calculated coefficient close to 0.80) scores. The THQ is a 24-item self-report measure that examines child and adulthood exposure to potentially traumatic events in the categories of 'Crime-Related Events' (i.e. attempted or actual robbery and burglary), 'General Disasters and Trauma' (i.e. serious accident, natural disasters, witnessing serious injury or death to another), and 'Physical and Sexual Experiences' (i.e. non-consensual sexual contact, physical attack with/

without weapons). The THQ has shown to be a valid measure of trauma (see Hooper, Stockton, Krupnick, & Green, 2011), and has moderate to high test-retest reliability with correlation coefficients ranging from 0.54 to 0.92 (Green, 1996).

Patient case files (i.e. most recent Mental Health Tribunal and CPA reports, HCR-20^{v3} violence risk assessments) were reviewed using the data capture sheet to identify the presence or absence of the CTQ and THQ items. Demographic and clinical information was collected through case files and electronic patient records and included ethnicity, primary and co-morbid diagnoses, length of admission, number and duration of episodes in seclusion or segregation. Additional clinical information gathered included whether patients found the commission of their own offences traumatising; this was obtained via each patient's ward liaison psychologist. Permission from NHS Trust Research & Development (R&D) was obtained in order for this study to commence.

2.1. Data coding and analysis

Collected data was coded and inputted into Statistical Package for the Social Sciences (version 24). Descriptive and frequency analyses were performed. Due to the collection of both binary and nominal data, non-parametric tests were conducted. Independent samples Mann-Whitney *U* tests were used to examine differences between groups on the above hospital variables.

3. Results

Case file data for all 194 patients in the hospital (excluding those on trial leave) on 01 August 2017 were reviewed. Participants' demographic information is located in Table 1. The majority (86.6%) had a primary diagnosis of schizophrenia-spectrum and other psychotic disorders, followed by 5.7% who had a primary diagnosis of antisocial personality disorder. The most common comorbid diagnosis was antisocial personality disorder (25.8%), followed by substance-related and addictive disorders (23.2%) and borderline personality disorder (13.9%). No patient had a primary diagnosis of PTSD, although three patients had PTSD as a comorbid diagnosis. The average length of admission was 66.43 months; the shortest length of stay was one month while the longest was 396 months.

Twenty seven (13.9%) patients had spent at least half their admission in seclusion and/or segregation. Of these, 11 patients had been in segregation and/or seclusion for the total duration of their stay. Five of these 11 had been admitted to the hospital for less than three months. Of the remaining 16, 13 had been in seclusion and/or segregation for between 12 and 105 months.

Table 1
Clinical and demographic information (n = 194).

Sociodemographic details	% (*n*)	Min.	Max.	Mean
Age		19	60	37.35
Ethnic group				
White British	71.6 (*139*)			
Any Other White background	7.7 (*15*)			
Black Caribbean	4.6 (*9*)			
White and Black Caribbean	3.1 (*6*)			
Any Other Black background	3.1 (*6*)			
Any Other Asian background	2.1 (*4*)			
Psychiatric history				
Primary diagnosis				
Schizophrenia spectrum and other psychotic disorders	86.6 (*168*)			
Dissocial personality disorder	5.7 (*11*)			
Emotionally unstable personality disorder	2.6 (*5*)			
Paranoid personality disorder	1.0 (*2*)			
Bipolar and related disorders	1.0 (*2*)			
Admission history				
No. of admissions to HSS		1	5	1.27
First admission	80.4 (*156*)			
Second admission	14.4 (*28*)			
Third admission	3.1 (*6*)			
Fourth admission	1.5 (*3*)			
Fifth admission	0.5 (*1*)			
Total days in seclusion/segregation		0	3148	290
Total months in seclusion/segregation		1	105	9.66
Cumulative time in seclusion/segregation				
Never	20.6 *(40)*			
1–30 days	27.8 *(54)*			
31–90 days	19.1 *(37)*			
91–360 days	15.5 *(30)*			
1–5 years	10.3 *(20)*			
Over 5 years	6.7 *(13)*			
Forensic history				
Mental health act section				
Section 47/49	38.3 (*75*)			
Section 37/41	37.2 (*73*)			
Section 3	8.7 (*17*)			
Section 37	8.2 (*16*)			
Section 45A/LD	4.1 (*8*)			
Section 48/49	2.0 (*4*)			
Violent index offence	91.2 (*177*)			
Non-violent index offence	8.8 *(17)*			

3.1. Trauma exposure

Results indicated that 100% of patients had been exposed to a traumatic event over the course of their lifespan, whether in childhood or in adulthood. Seventy-five percent of patients had been exposed to trauma in childhood. There was evidence of childhood physical abuse for 57%; sexual abuse for 34%; emotional abuse for 46% and emotional and physical neglect for 60% and 34% of patients, respectively. Ten percent had experienced a single trauma type, while 65% had experienced more than one trauma type. Results also indicated that 30% had experienced the death of a significant other in childhood, 41% experienced the death of a significant other in adulthood, while 40% had spent time in Local Authority Care as children.

Examination of the adulthood items on the THQ revealed that 63% had been exposed to one trauma type while 29% had been exposed to two or more trauma types. The 8% who had not experienced trauma in adulthood had been exposed to a traumatic event during childhood. Twenty-six percent had experienced physical abuse during adulthood while 3% had experienced adulthood sexual abuse.

In respect to lifespan trauma, there was evidence that 5% of patients had been victims of 'Crime-Related Events', 93% had been exposed to 'General Disasters and Trauma', and 73% were exposed to 'Physical and Sexual Experiences'. A further 13% found the commission of their own offences traumatising; this information was unknown for the remainder.

3.2. Trauma exposure and hospital variables

The Mann-Whitney *U* tests indicated no significant difference between presence or absence of childhood trauma and admission length (U = 4039, p = .11), total number of times in seclusion (U = 3448, p = .87), total number of times in segregation (U = 2987.5, p = .10), months in seclusion or segregation (U = 3618.5, p = .73), proportion of stay in seclusion or segregation (U = 3237, p = .41), total incidents (U = 3398.5, p = .76), or incidents per month (U = 3001.5, p = .13).

4. Discussion

The present study indicated that all patients had been exposed to a traumatic event over the course of their lifespan. There was no significant difference between those who had experienced childhood trauma and those who had not with respect to admission length,

number of times in seclusion or segregation, proportion of stay in segregation or seclusion, or number of incidents or incidents per month. All patients had been exposed to at least one trauma category during adulthood and therefore comparison between groups was not possible. No patient had a primary diagnosis of PTSD and only 1.5% had secondary diagnoses of PTSD. This small number prevented further analysis between those with and without a PTSD diagnosis. Of the 75% who had experienced trauma in childhood, the vast majority had experienced two or more trauma types. Sixty-three percent had experienced a single trauma type in adulthood while 29% had experienced two or more trauma types in adulthood. Physical abuse was the most common abuse in childhood. Abusive experiences falling into the THQ category of 'General disasters and trauma' were the most common trauma type in adulthood.

The only other file review of trauma exposure in a non-ID UK HSH sample found comparable rates of physical abuse, sexual abuse, emotional neglect and physical neglect (Jones, 2017). Lower rates of emotional abuse were, however, found in the current study. This and the study by Jones (2017) identified that a unique and perhaps, underacknowledged source of trauma specific to this client group is commission of the patient's own offences. These and other studies (e.g. Gray et al., 2003) have illustrated that patients' own criminal histories can be traumatic, which represents a specific area of therapeutic and clinical need.

The extraordinarily low prevalence of PTSD diagnoses evident in this study is less than lifetime prevalence rates of PTSD among the general population (Kessler et al., 2005), despite all patients having being exposed to a traumatic event. Interestingly, the low rate of PTSD diagnoses found in this study is similar to that reported among patients in a US maximum-security forensic psychiatric hospital, where approximately 1.4% of the individuals received such a primary or secondary diagnosis (Alexander, Welsh, & Glassmire, 2016). In a US hospital 2.08% of male inmates detained with acute psychotic illnesses had a PTSD diagnosis (Gosien et al., 2016). Among a UK male prison population, point prevalence of PTSD was found to vary widely, ranging from 0.1% to 27%, indicating that detection of trauma within this population is highly variable (Baranyi, Cassidy, Fazel, Priebe, & Mundt, 2018). In a UK male medium secure service no patient had a diagnosis of PTSD, despite 93% having a trauma history and all having a primary diagnosis of schizophrenia (Sarkar et al., 2005). This suggests a pervasive and persistent under-recognition of the extent of trauma and trauma-related psychiatric illness (McFarlane, Bookless, & Air, 2001; Mueser et al., 1998).

Several factors may be relevant to the low prevalence rates of PTSD diagnoses. Within this study, approximately 87% of patients had a primary diagnosis of Schizophrenia-spectrum disorders. It is possible that such disorders mask accurate differential diagnosis of patients' symptoms and may be suggestive of diagnostic overshadowing. For example, features of trauma (i.e. flashbacks, emotional numbing, detachment, derealisation) may present clinically as similar to positive and negative symptoms of schizophrenia (i.e. auditory or tactile hallucinations, flattened affect) and could be conceptualised from a schizophrenia explanatory framework, rather than from a trauma perspective (Morrison, Frame, & Larkin, 2003). O'Hare, Shen, and Sherrer (2007) suggest PTSD symptoms that reflect arousal (i.e., trouble sleeping, irritability, hypervigilance) may be dampened in individuals with SMI due to the use of psychotropic medications typically prescribed. There is also a possibility, as hypothesised by Mueser et al. (2008), that individuals with schizophrenia diagnoses may be viewed as unreliable historians leading clinicians to question the reliability and validity of their self-report such that disclosures are dismissed as an artefact of their 'mental illness'. This is despite research indicating that individuals with SMI accurately report their traumatic event histories and associated symptoms (Grubaugh et al., 2011). Indeed, self-reports have been found to be stable over time and are unaffected by psychiatric symptoms (Fisher et al., 2009), and often reflect an under- rather than over-estimation of trauma (Hardt & Rutter, 2004).

The National Institute of Clinical Excellence (National Institute for Health and Care Excellence, 2014) treatment guidance on psychosis and schizophrenia recommends that all patients be routinely screened for trauma symptoms. The implications of inaccurate PTSD diagnoses and contraindicated treatment has been found to inadvertently lead to patient harm, further highlighting the necessity of accurate detection and assessment of trauma in forensic populations (Lanius et al., 2014; Lanius, Brand, Vermetten, Frewen, & Spiegel, 2012). Furthermore, within a forensic population the clinical focus on the risk patients present to others may be at the expense of them being viewed as occupying dual roles of both perpetrator and victim. Risk to others is always the primary reason patients are detained in such restrictive settings and it may be that this is considered the primary clinical focus in high security, with later needs (i.e. trauma) being considered more suitable for identification and treatment in lower security conditions. PTSD screening tools could be easily introduced as part of the admission assessment process to identify trauma needs.

A number of clinical implications of the study are important. The lack of identification and acknowledgement of trauma is concerning. Primarily, the data suggests that clinical needs arising from trauma are at risk of being overlooked, missed and unaddressed. Research indicates that clinicians often avoid asking people with schizophrenia about exposure to adversity (Lommen & Restifo, 2009; Read, van Os, Morrison, & Ross, 2005). Perceived lack of knowledge and training, risk of deterioration in mental health, and lack of support have been identified as barriers that prevent exploration and treatment of trauma symptoms in people with psychosis (Gairns, Alvarez-Jimenez, Hulbert, McGorry, & Bendall, 2015). This highlights the necessity of clinician training to raise awareness of the potential for diagnostic overshadowing, impact of medication on symptom presentation, and to challenge views on the accuracy of patient self-report.

A further problem associated with trauma being unknown among forensic patients relates to research having demonstrated that consideration of trauma is essential for accurate formulations of clinical need and crucially in secure settings for accurate risk of violence formulations. Experiences of trauma are implicated in the mediation of both physical and sexual violence in a plethora of ways. This includes through offences re-enacting abuse experiences (Shaughnessy-Mogill, 2014), the relational characteristics of the abuse (Wyre, 2000), the development of hostile dominant traits (Podubinski, Lee, Hollander, & Daffern, 2014), acquired callousness (Kerig & Becker, 2010), moral disengagement (Hyde, Shaw, & Moilanen, 2010), and sexual preoccupation (Burton, 2003). Taken together, it is apparent that risk of violence cannot be accurately assessed and formulated without a thorough identification of past trauma, and recognition that this is not solely an area of clinical need for patients but also a critical factor in maintaining distress and risk processes (Ehlers, 2010).

Within mental health services, Trauma Informed Care (TiC) approaches are increasingly being advocated. TiC is a whole system approach to care and treatment which considers the individual's lifespan and history and uses this to actively understand the impact of previous trauma and adversity on current functioning, emotional experiences and relationships (Sweeney, Clement, Filson, & Kennedy, 2016). Within hospital settings, it is a model of care that is implemented to both identify and eliminate practices that inadvertently recreate or reinforce the traumatic experiences of the service user. The value of TiC approaches is increasingly reflected in policy and government legislation within the UK (see Scotland's Mental Health Strategy, 2012–2015; National Mental Health Development Unit, 2010) where trauma is considered a key priority. Guided by the five principles of safety, trustworthiness, choice, collaboration and empowerment (Fallot & Harris, 2006), TiC offers a framework for better understanding patients and changing the provision of care in numerous ways. Furthermore, Goossens, Nicholls, Torchalla, Brink, and De Ruiter (2016) suggest that forensic psychiatric patients may perceive benefit to themselves and

others in discussing their experiences of trauma.

Specifically within secure settings, it is suggested that adoption and implementation of TiC principles has relevance at environmental levels (e.g. reducing restrictive practice, reduction of long-term segregation), interpersonal levels (e.g. developing empathic, boundaried attachment relationships; understanding boundary crossings and challenging behaviours), and psychological and neurobiological levels (i.e. recognising and identifying trauma needs and offering appropriate treatments). As is elegantly described by Spitzer et al., (2006) applying a trauma-based approach to forensic patients does not minimise any legal or moral guilt, but rather enables the integration and acknowledgement of individuals' trauma histories and use this to inform, understand and reduce risk and offending in a therapeutic manner. Given the rates of lifespan trauma among forensic patients found in this and other studies, it can be argued that the need for forensic services to adopt a TiC approach is paramount.

A number of methodological limitations to this study should be noted. Although the data was obtained from case file reviews, this was reliant on patient self-report as the primary source of information to indicate presence or absence of trauma. In many cases the accuracy of self-report cannot be independently verified and could be susceptible to bias. Specifically, research (Fondacaro, Holt, & Powell, 1999) has indicated that 41% of prisoners meeting standard criteria for sexual abuse did not consider themselves to have been abused, and therefore patients' perception of sexual and other forms of interpersonal traumatisation are likely to impact upon reported trauma rates. Furthermore, this factor may underpin the discrepancy between the higher rates of physical abuse than emotional abuse reported in this and another studies, with the inherent emotional trauma associated with physical abuse being the patients' normative experience, and therefore not recognised by them as a separate form of abuse.

Within the current study, the impact of patients' mental health was noted to have impacted upon historical disclosures of abuse, both in the reporting of experiences of trauma as well as retracting disclosures of past trauma. It is also possible that some patients were reluctant to discuss or disclose past trauma, chose not to, or had not been asked about it resulting in it being potentially under-identified or under-reported. In addition, research indicates that the symptoms and illness experience of SMI itself (e.g. threatening or persecutory psychotic symptoms) can be traumatic, and for some the onset of psychosis is an event of such severity that it can lead to PTSD or PTSD symptoms (Lu, Mueser, Rosenberg, Yanos, & Mahmoud, 2017). This study did not assess for presence of trauma symptoms arising from the experience of SMI and this is a further limitation.

In addition, this study considered historical trauma that occurred prior to patients' admission to hospital, but did not account for exposure to traumatic or harmful experiences which occurred subsequent to their admission. Research has identified that psychiatric hospitalisation and custodial settings can involve exposure to several sources of iatrogenic harm including physical assault, sexual assault and victimisation (Lambie & Randell, 2013), seclusion and/or segregation (Frueh et al., 2005), involuntary hospitalisation (Paksarian et al., 2014), forced medication (Pandarakalam, 2015) and physical restraint (Hammer, Springer, Beck, Menditto, & Coleman, 2011). The vast majority of patients included in this study would likely have experienced one, if not several, of these situations. It is therefore possible that for some patients, their hospital detention has been a source of further trauma exposure. In addition, for many patients within high secure forensic settings, the available collateral information focused heavily on the risk that they presented to others or themselves, often at the expense of documentation reflecting their own victimisation by others. This was particularly apparent when reviewing documentation from adulthood. It was also apparent when reviewing case files that trauma was often conceptualised as consisting only of physical and/or sexual abuse and that several other potentially traumatic events (e.g. homelessness, racial abuse, threats) were not captured.

As highlighted above (Gairns et al., 2015), research undertaken with clinicians in non-forensic settings has highlighted factors which inhibit them from asking about trauma exposure routinely during clinical practice. It is suggested that future qualitative research should now be undertaken with patients to investigate the interpersonal or environmental factors which increase or decrease the likelihood of disclosure of abuse to clinicians. There are also implications for clinical practice and policy. Given the extent of exposure to trauma in childhood and/or adulthood in HSHs, it is clear that a TiC approach, which assumes trauma histories among this population, is needed. Recognition of the impact and manifestation of trauma on psychiatric symptoms, violence risk and interpersonal functioning will enable more responsive and safer delivery of treatment and care. In order to create such a cultural shift, awareness training to increase the knowledge, confidence and competence among those working in HSH of the likelihood of patient trauma is essential. An enhanced commitment to exploring and ensuring accurate differential diagnosis of symptoms will help identify PTSD as a unique and valid treatment need, and enable more targeted interventions to address this. Following implementation of such a TiC approach, regular evaluation of the extent to which this contributes to a positive impact on incident rates, patient engagement, seclusion and segregation.

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Declaration of Competing Interest

The authors declare that there is no conflict of interest.

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