The occurrence of childhood trauma in patients with severe mental illness with and without co-occurring substance disorders

by

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PLAGIARISM DECLARATION

I, Marc Hector, hereby declare that the work on which this dissertation/thesis is based is my original work (except where acknowledgements indicate otherwise) and that neither the whole work nor any part of it has been, is being or is to be submitted for another degree in this or any other university.

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ABSTRACT

Background

Childhood trauma (CT) is a common phenomenon. A higher-than-expected number of psychiatric patients with severe mental illness (SMI) report experiencing CT. Additionally, the co-morbidity of mental illness and substance abuse is well documented. While data exists examining the associations between CT, substance use disorders (SUD) and SMI, the research has been predominantly in population and community-based cohorts, with little known of these clinical correlates in clinical settings. As there is no current data on the clinical correlations and association between substance misuse and CT, the relationship between SUD and a history of CT was examined.

Methods

In Chapter 1 the results of a literature review are reported summarising studies that have investigated the association between CT and substance abuse in patients with SMI. In Chapter 2 of the thesis, the results of a cross-sectional study investigating the relationship between CT in patients with SUD were reported. The study included eligible patients recruited from wards at a large psychiatric treatment facility. Eligible patients comprised adults aged 18–59 years with a diagnosis of schizophrenia spectrum disorder and bipolar mood disorder with psychotic features. The Structured Clinical Interview for DSM-IV was used to determine the principal axis I psychiatric diagnosis as well as the presence of an SUD. The Childhood Trauma Questionnaire (CTQ) was used to determine the presence of CT.

Results

The literature review yielded nine studies all of which except one were cross-sectional studies where issues of any recall bias could be problematic. In the remaining study – the Konings study – concern regards selection bias or losses to follow up that may introduce a confounding factor.

In Chapter 2, 74 patients were included in the study, with a mean age of 29 years (*SD* = 8.6; range 19–61 years), of whom 64% (*n* = 47) were male, 64% had a schizo-spectrum diagnosis, 23% had BMD-I and 14% had SIPD. Of the participants 41% (*n* = 30) were taking no drugs,

22% were mono-drug users and 38% poly-drug users. No significant difference between substance use groups was noted in terms of age or level of education. However, those without SUDs were significantly more likely to be female, whereas those with mono- or poly-substance use were significantly more likely to be male. Patients with poly-SUDs were significantly less likely to have been married and significantly less likely to have a diagnosis of BMD-I, but significantly more likely to have a diagnosis of SIPD. The study showed no significant difference in CTQ scores by SUD groups. In this sample of patients with SMI, no significant association was found between CT and SUD.

Conclusion

South Africa has several challenges, including a significant socio-political trauma history and many social ills that drive general health broadly and mental health specifically, all against a background of high prevalence of substance use. Despite the high prevalence of CT in patients with SMI, only a small number have had their CT recognised and explored further. More research is needed into the effects CT may have on SUD and SMI as unique treatment approaches centred on exploring traumatic experiences may be available.

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ABBREVIATIONS

BMD	Bipolar mood disorder
CBT	Cognitive behaviour therapy
CT	Childhood trauma
CTQ	Childhood trauma questionnaire
DSM IV	Diagnostic and statistical manual fourth edition
HPA	Hypothalamic pituitary axis
MI	Motivational interviewing
PTSD	Post traumatic stress disorder
SCID	Structured clinical interview for DSM-IV
SMI	Severe mental illness
SUD	Substance use disorder
SIPD	Substance induced psychotic disorder

CHAPTER 1 INTRODUCTION

1.1 Background

Childhood adversity and trauma are a common phenomenon which, according to the WHO Mental Health Survey, occurs in up to a third of adults with mental disorders (Kessler *et al.*, 2010). Childhood trauma (CT) can be varied and many definitions of CT exist (physical, sexual, emotional abuse and neglect). It can be thought of as the aggregate of actions and non-actions by caregivers towards a child that inhibit that child's mental and emotional development (Toker *et al.*, 2011). Despite the high prevalence of CT, obtaining prevalence rates is often challenging as cases are either unreported or underreported (Rosenberg & Krugman, 1991).

A higher-than-expected number of psychiatric patients with severe mental illness, i.e., schizophrenia and bipolar affective disorders, report experiencing a traumatic childhood event (Palmer, Chaloner & Oppenheimer, 1992).

In addition, the co-morbidity of mental illness and substance abuse is well documented. Swendsen *et al.* reviewed data from the *National Co-morbidity Survey* in the United States. It concluded that mental disorders were associated with later substance use disorders (SUDs) (Swendsen *et al.*, 2010). Furthermore, mentally ill patients with co-morbid substance abuse generally have more negative outcomes when compared to non-substance abusing patients, including aggression and violent acts, poor adherence to medication and increased use of psychiatric services (Weich & Pienaar, 2009; Angermeyer, 2000; Swartz et al., 1998).

CT's role in psychosis, affective disorders and substance use disorders has been debated and controversial at times. Critiques on recall bias, the ability of psychotic patients to recall trauma, under reporting of incidents of CT and differing definitions of CT are all noted in the literature (Fisher *et al.*, 2011a; Spauwen *et al.*, 2006; Janssen *et al.*, 2004).

Currently, there appears to be a dearth of research on the co-occurrence of CT in persons with a dual diagnosis (where dual diagnosis is the condition of severe mental illness and co-morbid SUD). The literature is replete with the associations between CT and common and severe mental illness, as well as CT and SUDs, with a lack of research on associations

between CT and dual diagnosis (MacMillan et al., 2001; Fergusson, Horwood & Lynskey, 1996; Mullen et al., 1993).

Where data does exist examining the associations among CT, SUDs and severe mental illness; the research has been predominantly in population- and community-based cohorts, with little known of these clinical correlates in clinical inpatient settings (Bentall *et al.*, 2012; Varese *et al.*, 2012; Kelleher *et al.*, 2008; Bendall *et al.*, 2008).

Currently, no data exists in a South African psychiatric inpatient population with a dual diagnosis and history of CT. There appears to be a paucity of research on clinical correlates of SUDs in a population with severe mental illness in relation to demographic profile, pattern of substance use, suicidality and CT (Martinotti et al., 2009).

1.2 Association of childhood trauma and severe mental illness

The role of CT in the development of psychosis has been vigorously debated. With the arrival of post-traumatic stress disorder (PTSD) as a diagnostic entity most research has focused on the relationship of trauma to non-psychotic disorders. Read and Fraser comment on possible reasons for the lack of studies examining the relationship between trauma and psychosis, which include clinician fears about ascribing blame to families, fears of re-traumatising patients and re-diagnosing patients from psychosis to PTSD after abuse is uncovered (Read & Fraser, 1998).

A 2005 review by Read *et al.* of the available literature on CT and psychosis concluded that childhood abuse is a potential causal factor for psychosis and schizophrenia (Read *et al.*, 2005). This was, however, challenged in a further review by Morgan and Fisher who contend that current data does not support causality due to methodological limitations such as differing definitions of CT and small and highly selected heterogeneous samples (Morgan & Fisher, 2007). Bendall *et al.*, in a systematic review of the evidence, found that limited conclusions could be drawn from these reviewed studies. Issues identified were the small number of studies that could address any associations and the methodological differences in studies that which all present only preliminary evidence of an association between CT and psychosis (Bendall *et al.*, 2008).

Noting the issues with consistency in the existing literature, a meta-analysis in 2018 by Bailey *et al.*, explored the associations of childhood trauma and symptoms of psychosis. The author's systematic review yielded 41 studies that met inclusion criteria, of which only 29 of those had adequate data to be used for meta-analysis. The majority of the 41 studies were cross-sectional (36 in total) with 5 studies that were longitudinal in nature. For the purposes of the meta-analysis, childhood trauma was defined in subjects under 18 years of age and included childhood sexual abuse, childhood physical abuse, childhood emotional abuse, childhood physical neglect, childhood emotional neglect and bullying. Key findings from their study showed an association where hallucinations and delusions were more severe in those subjects diagnosed with a psychotic disorder (Bailey et al., 2018).

Bonoldi *et al.,* hoping to address issues of consistency and magnitude of self-reported CT in psychosis, conducted a meta-analysis of retrospective studies. The study's key findings were that psychotic patients' self-reported childhood abuse was consistently high (Bonoldi *et al.*, 2013).

1.3 The neurobiology of childhood trauma

The exact mechanism whereby CT may be associated with severe mental illness and SUDs is unknown. Classical theories regarding schizophrenia centre on the diathesis-stress model in which the diathesis is genetic, while stress is viewed as a trigger to "activate" an underlying disorder (Ruby *et al.,* 2014; Read *et al.*, 2001).

A hallmark of psychosis, and schizophrenia in particular, are associated cognitive deficits. Apart from CT as a risk factor for psychosis, it may be associated with adverse effects on cognition in both adolescents and adults (Perez & Widom, 1994). In a study to examine whether patients with schizophrenia who had experienced childhood sexual trauma also had cognitive deficits, Lysaker *et al.* showed poor performance in both working memory and information processing speed in those who had experienced such trauma (Lysaker *et al.,* 2001).

Aas *et al.* conducted a study to examine links among CT, cognition, amygdala and hippocampal volume in first episode psychosis. Their study showed poor cognitive performance and smaller amygdala volume in first episode psychosis participants.

Hippocampal volume showed no significant reduction, but the study reports that a history of CT was associated with worse cognitive performance and smaller amygdala volume (Aas *et al.*, 2012).

Read *et al.* proposed a "Traumagenic Model" of schizophrenia, whereby the diathesis that leads to over-activation to stress is abnormal neurodevelopment from CT (Read *et al.*, 2001). In this model, Read *et al.* hypothesise a number of varied possible mechanisms of such abnormal neurodevelopment seen in patients with schizophrenia and traumatic history, including over activation of the hypothalamic pituitary adrenal (HPA) axis, abnormal neurotransmitter signalling, and structural brain changes. Read *et al.* contend that understanding these trauma related abnormalities may have implications for the many well known aspects of schizophrenia, such as hyper-reactivity to stressors, cognitive deficits and eventual positive and negative symptoms.

In addition, the interactive effects among cannabis, CT and psychosis were investigated, with Harley *et al.* finding an additive effect among these variables. They found an additive effect of CT and cannabis abuse (greater than either alone) with the risk of experiencing psychotic symptoms. The authors argue that the sensitisation of dopamine systems, the interplay of cannabis and dopamine (especially with frequency of exposure effects) and exposure to previous CT over activating the HPA axis all cause lasting permanent changes to both dopamine and HPA axis systems (Harley *et al.*, 2010).

In a 2014 study, Ruby *et al.* proposed a glucocorticoid cascade hypothesis of CT in the neurobiology of schizophrenia. They noted the existent evidence in the literature of neurotransmitter abnormalities, structural brain changes and HPA dysregulation and sought to investigate how the stress cascade may play a mediating role. A key finding from this study (in the context of early trauma), is an excessive glucocorticoid release causing neurotoxic changes in the hippocampus, which in turn may lead to cognitive deficits, and psychotic symptoms (Ruby *et al.*, 2014).

1.4 Association of childhood trauma and substance use disorders

Traumatic childhood experiences were found by De Bellis *et al.* to be associated with an increased risk of later alcohol and substance abuse. The authors postulate traumatic

experiences may interact with genetic vulnerabilities in the individual's biological stress response systems. Chronic stress may overwhelm the individual's ability to manage these stressors, causing a dysregulated biological stress response. This may lead to the negative affective symptoms seen in schizophrenia, in turn leading to an enhanced risk of "self-medicating" with substances in later life to ameliorate these effects (De Bellis, 2002).

Toker *et al.,* in a study to investigate this relationship also concluded that a history of physical abuse in childhood increases the risk of later substance use (Toker et al., 2011). In this study, it was reported that a history of childhood abuse increases proclivity to substance abuse as a means to ameliorate stress response and feelings of low self-esteem.

1.5 Clinical correlates in dual diagnosis

Currently, there appears to be a dearth of research on the occurrence of CT in persons with a dual diagnosis in clinical populations. A 2009 study by Martinotti *et al.* explored the clinical correlates of substance dependence and co-morbid axis 1 diagnosis in a population (out-patient hospital and local penitentiaries), specifically comparing polysubstance dependence – that is three or more substances – to mono-drug dependence in the context of an Axis 1 diagnosis. Their study found unique differences, with poly-drug dependent participants more likely to have more self-mutilation and suicide attempts; they were more often younger, separated or divorced, and had higher scores on the CTQ when as compared to participants with mono-substance dependence (Martinotti *et al.,* 2009). In a 2004 study of an inner city, outpatient psychiatric clinic, Scheller-Gilkey *et al.* compared patients with schizophrenia and a history of substance abuse to patients with schizophrenia who did not have a history of substance abuse. The results of their study showed higher rates of early traumatic life events, PTSD and depression in patients with schizophrenia and a history of substance abuse, compared to patients with schizophrenia who were not abusing substances (Scheller-Gilkey et al., 2004). In 2011, Ramsay *et al.* conducted a study of clinical correlates of CT and maltreatment in first episode psychosis in hospitalised patients. In their exploratory correlational analysis, the associations among trauma related variables (e.g., traumatic experiences, parental harsh discipline, violence exposure) and social variables (years of education attained and Axis IV psychosocial problems), substance abuse (age at initiation of alcohol and cannabis use, as well as estimates of lifetime intake of both), and

positive and negative symptom severity, were examined. The key findings from this study are listed below:

1 Rates of traumatic experiences and maltreatment were high in the in-patient sample of mostly African-American men.

2 Years of educational attainment and extent of Axis IV psychosocial problems correlated with several domains of child abuse/maltreatment events.

3 Age of initiating alcohol and cannabis use significantly correlated with a number of trauma domains.

4 The severity of positive symptoms (of psychosis) correlated with more trauma domains than negative symptoms (which correlated only with emotional neglect) (Ramsay *et al.*, 2011).

1.6 Implications for screening treatment and interventions.

As there is a high incidence of trauma in patients with severe mental illness, mental health professionals should screen for CT in patients, who – as the literature shows – are able to reliably recall past trauma (Fisher *et al.*, 2011a).

Despite the high prevalence of CT in patients with severe mental illness, only a small proportion have their CT recognised and explored upon assessment (Read & Fraser, 1998). The authors examined the case files of the first one hundred admissions (in a specific calendar year) to a New Zealand hospital and found that of the patients who disclosed a history of abuse, in 91% of those cases, no action was taken to provide information, support or counselling (Read & Fraser, 1998), particularly if patients were male with a schizophrenia spectrum disorder. Possible reasons cited were highly behaviourally disturbed patients, an under-resourced or over-stretched unit and fears about "false memories" (Agar & Read, 2002).

Mentally ill patients with co-morbid substance abuse generally have more negative outcomes when compared to non-substance abusing patients, such as aggression and violent acts, poor adherence to medication and increased use of psychiatric services (Angermeyer, 2000; Swartz *et al.*, 1998). Exploring substance abuse in this context could

have important effects for interventions, and ultimately patient functional ability and adherence to treatment.

Cognitive behaviour therapies, motivational interviews, family interventions for carers, and building a sound therapeutic alliance have all been shown to be the mainstay of treatment for a population group with multiple challenges of history of CT, substance abuse and severe mental illness (Fisher et al., 2011b; Barrowclough et al., 2009; Pourmand, Kavanagh & Vaughan, 2005; Haddock et al., 2003; Kavanagh, 1992). All these interventions have implications for retention in an intervention programme and treatment adherence.

1.7 Aims

This research searched for studies that explored the association between substance dependence and CT in a population with severe mental illness.

1.8 Methods

1.8.1 Studies to be included

The following studies were included: systematic reviews, randomised control studies, cross sectional studies, cohort studies and case control studies. All studies published in the English language after 1 January 1960 up to 30 November 2013 were included. Studies excluded were case series, case reports, letters to the editor and validation studies.

1.8.2 Population

The population of interest was adults aged 18–59 years with a diagnosis of a severe mental illness. Severe mental illness included participants with a diagnosis of schizophrenia spectrum disorder or bipolar mood disorder. Studies of patients with psychotic symptoms due to substances, dementia, amnestic syndrome or a general medical condition and patients with moderate to severe mental retardation and severe physical illness were excluded.

1.8.3 Literature review strategy

The Pubmed data base for studies was searched. Search terms were "schizophrenia", "bipolar mood disorder", "severe mental illness", "serious mental illness", "dual diagnosis", "psychosis", "co-occurring", "disorder", "substance use", "substance abuse", "substance dependence", "substance use disorders", "drug use", "drug abuse", "drug dependence", "polysubstance dependence", "childhood trauma" and "childhood trauma questionnaire". All abstracts of citations yielded by the search were screened against the inclusion criteria to determine if the article's full text needed to be obtained. Reference sections were manually searched for additional titles of relevance.

1.8.4 Study selection

After the search was finalised, all abstracts of citations retrieved were recorded and reviewed by (Marc Hector) to screen for eligibility according to the inclusion criteria as set out. Where there was uncertainty from the abstract as to whether the study qualified for inclusion, the full article was requested and (Marc Hector) reviewed for possible inclusion in the study. The full text articles from the selected abstracts were screened again for inclusion to derive a final set of articles.

1.8.5 Data collection:

The author (Marc Hector) extracted information from the different articles using a data extraction sheet on an Excel spreadsheet. Data on the authors, study title, study design, population and setting, measures used to identify exposures, outcomes and main findings were summarised in columns in a tabular format, with the rows indicating studies sorted by year of publication or author.

1.8.6 Data handling

Data was extracted on the strength of association between exposure and outcome. Where possible, outcome measures obtained were reported as either odds ratios or relative risks and their magnitude and strength as well as 95% confidence intervals around these effect estimates were reported. In turn, absolute differences were reported as the risk differences together with their 95% confidence intervals.

1.8.7 Assessment of study quality

For original research the study quality in terms of the items set out in the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) and CONSORT (Consolidated Standards for Reporting Trials) statements were commented on. For systematic reviews the PRISMA (Preferred Reporting of Systematic Reviews) statement was used to comment on quality of reporting.

1.8.8 Data presentation

The data was presented in tabular format, with each table containing a description of study authors, study title, study design, population and setting, diagnostic instruments used as gold standard/reference standard, measures used to identify exposures, outcomes and main findings. The effect measures and study quality were reported on in separate tables.

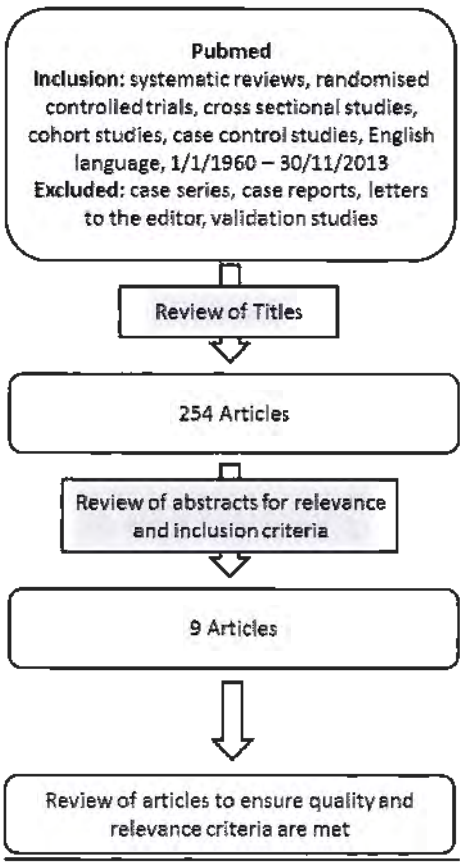

Figure 1.1: Flowchart of search strategy

1.9 Results

Table 1.1 below presents the results of the literature review in tabular format.

Table 1.1: Literature review results

Study authors	Study title	Study design	Population and setting	Exposure (Childhood trauma)	Outcomes (Dual diagnosis)	Main findings
(Konings et al., 2012)	Replication in two independent population-based samples that childhood maltreatment and cannabis use synergistically impact on psychosis risk	cohort study	population based	Semi-structured self-constructed interview	Community Assessment of Psychic Experiences (CAPE), Composite international Diagnostic Interview (CIDI-L)	Childhood_maltreatment moderates association between psychosis and cannabis use
(Wu et al., 2010)	Childhood trauma and health outcomes in adults with comorbid substance abuse and mental health disorders	cross sectional study	outpatient setting	Life Stressor Checklist-Revised (LSC-R)	Structured Clinical Interview for the DSM-IV Axis I Disorders (SCID), self-constructed Interview for Substance use disorders (SUD)	prevalence of childhood traumatic events was higher among a clinical sample of adults with comorbid substance use disorders and mental health problems when compared to adults sampled from a primary health care setting
(Lu et al., 2008)	Correlates of Adverse Childhood Experiences Among Adults With Severe Mood Disorders	cross sectional study	outpatient setting	Sexual Abuse Exposure Questionnaire, Conflict Tactics Scales	Dartmouth Assessment of Lifestyle Instrument (DALI), SCID	Significant association in persons with schizophrenia and history of childhood trauma & later SUD

(Gearon et al., 2003)	Traumatic Life Events and PTSD Among Women With Substance Use Disorders and Schizophrenia	cross sectional study	outpatient setting	Traumatic Life Events Questionnaire (TLEQ)	Structured Clinical Interview for DSM-IV (SCID)	high rates co-occurrence childhood trauma and dual diagnosis – significant associations
(Rosenberg, S. D. et al., 2007)	Correlates of Adverse Childhood Events Among Adults With Schizophrenia Spectrum Disorders	cross sectional study	outpatient setting	Sexual Abuse Exposure Questionnaire , Conflict Tactics Scales	Dartmouth Assessment of Lifestyle Instrument (DALI), Short-Form Health Survey (SF-12)	Diagnosis of schizophrenia associated with early childhood adversity and elevated rates of substance use disorders (SUD)
(Martinotti et al., 2009)	Mono- and polysubstance dependent subjects differ on social factors, childhood trauma, personality, suicidal behaviour, and comorbid Axis diagnoses	cross sectional study	outpatient setting	Childhood Trauma Questionnaire (CTQ)	Structured Mini-International Neuropsychiatric Interview (MINI), poly drug dependence or mono drug dependence. (DSMIV-TR)	Polydrug dependents score higher on CTQ compared to monodrug dependence, significant association between CT, dual diagnosis
(Compton, Furman & Kaslow, 2004)	Preliminary evidence an association between childhood abuse & cannabis dependence	cross sectional study	inpatient setting	Childhood Trauma Questionnaire	Structured Clinical Interview for DSM-IV Axis I Disorders (SCID)	evidence for an association between childhood physical and sexual abuse and cannabis

	among African American first-episode schizophrenia-spectrum disorder pts			-Short Form (CTQ-SF)		dependence among schizophreniform spectrum disorders
(Scheller-Gilkey et al., 2004)	Early life stress and PTSD symptoms in patients with comorbid schizophrenia and substance abuse	cross sectional study	outpatient setting	modification of the Childhood Traumatic Events Scale (CTES)	The Addiction Severity Index (ASI), Positive and Negative Symptom Scale (SCI-PANSS)	a significant association : higher rates of early life stress, among schizophrenia patients with a history of substance abuse
(Ramsay et al., 2011)	Clinical correlates of maltreatment and traumatic experiences in childhood and adolescence among predominantly African American, socially disadvantaged, hospitalized, first-episode psychosis patients	exploratory correlational analysis	inpatient setting	Trauma Experiences Checklist (TEC), Childhood Trauma Questionnaire -Short Form (CTQ-SF)	Structured Clinical Interview for DSM-IV Axis I Disorders (SCID), Lifetime Substance Use Recall (LSUR), Scale for the Assessment of Positive Symptoms (SAPS), Scale for the Assessment of Negative Symptoms	High rates of childhood maltreatment in a population with co-morbid substance use disorders and axis 1 diagnosis

1.9.1 Quality of studies

The Konings study raised concerns about selection bias or losses to follow up that may introduce a confounding factor. The remainder of studies were all cross-sectional studies where issues of any recall bias could be problematic.

1.10 Study rationale

As there is no current data in a local South African setting regarding the clinical correlates of dual diagnosed inpatient population, it was decided to examine the correlates of poly-substance dependence by comparison to mono-substance dependence in terms of demographic profile and history of CT.

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CHAPTER 2 THE OCCURRENCE OF CHILDHOOD TRAUMA IN PATIENTS WITH SEVERE MENTAL ILLNESS WITH AND WITHOUT CO-OCCURRING SUBSTANCE DISORDERS.

Article title

The occurrence of childhood trauma in patients with severe mental illness with and without co-occurring substance disorders

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Ethical approval

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The Occurrence of Childhood Trauma in patients with severe mental illness with and without co-occurring substance disorders

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ABSTRACT

Background

Childhood trauma (CT) has been associated with development of substance use disorders (SUDs) and severe mental illness (SMI) in community cohorts. There is a paucity of data on correlates of CT in dually diagnosed clinical populations in South Africa. We investigated the association among mono-substance use, polysubstance use and CT. Additionally, we explored demographic and clinical correlates of CT.

Study aims

We investigated associations between CT and SUD in patients with SMI.

Setting

Participants included patients aged 18–59 years with psychotic disorders attending specialist psychiatric hospital.

Methods

A cross-sectional study was conducted and the structured clinical interview for DSM-IV, (SCID – I) to determine SUD and SMI, and the childhood trauma questionnaire (CTQ) to measure CT were administered.

Results

Of the 74 patients, the mean age was 29 years (*SD* = 8.6) and 64% were male; 64% had schizophrenia-spectrum diagnoses, 23% had BMD-I and 14% had SIPD. Of the patients, 41% were taking no drugs, 22% were mono-drug users and 38% were poly-drug users. There was no significant difference between substance use groups in terms of age or level of education. However, those with no SUDs were significantly more likely to be female, whereas those

with mono- or-poly-substance use were significantly more likely to be male. Patients with poly-SUD were significantly less likely to have been married and significantly more likely to have had a diagnosis of SIPD. There were no significant differences in CTQ scores by SUD groups. In this sample of patients with SMI, we found no significant association between CT and SUDs.

Conclusion

More research is needed into the effects CT has on dual diagnoses to inform treatment approaches to explore traumatic experiences.

INTRODUCTION

The field of research into childhood trauma and its potential mental health effects has been a steadily burgeoning field since the late 1990s (Wota et al., 2014; Ramsay et al., 2011; Morgan & Fisher, 2007). According to the 2010 WHO Mental Health Survey, childhood adversity and trauma are common phenomena associated with a third of adult mental disorders (Kessler *et al.,* 2010), yet research in the field of the effects of CT on severe mental illness and substance use has been controversial at times for a number of reasons.

Current understanding of the neurobiology of CT and the exact mechanisms whereby it may be associated with severe mental illness and SUDs is still unknown (Ruby *et al.*, 2014; Aas *et al.*, 2012; Harley *et al.*, 2010; Read *et al.*, 2001). In addition, CT remains under-recognised and under-reported, which has implications for obtaining accurate prevalence rates (Rosenberg & Krugman, 1991).

Furthermore, studies have at times been conflicting, with some providing stronger association pointing to a possible causal role, with others at best showing only preliminary association effects. Issues identified ranged from differing definitions of CT, small study sizes, few (highly selected) studies and methodological differences in between studies (Bonoldi et al., 2013; Varese et al., 2012; Bendall et al., 2008; Morgan & Fisher, 2007; Read et al., 2005).

Despite the high prevalence of CT in patients with severe mental illness, only a small proportion have their CT recognised and explored upon assessment (Read & Fraser, 1998). This has implications for screening, treatment and interventions as mentally ill patients with co-morbid substance abuse generally have more negative outcomes when compared to non-substance abusing patients, such as aggression and violent acts, poor adherence to medication and increased use of psychiatric services (Angermeyer, 2000; Swartz *et al.*, 1998).

Currently, there appears to be a dearth of research on the co-occurrence of CT in persons with a dual diagnosis in clinical populations.

First, some studies have pointed to an association between CT and SMI. *Duhig et al.*, in a 2015 observational Australian study, aimed to establish the prevalence of CT in an

outpatient early psychosis clinic. An additional aim was to describe the functional correlates in this specific outpatient population. Findings of interest were that three quarters of patients had been exposed to CT, patients exposed to CT did not have decreased vocational functioning or increased risk for substance abuse, and patients exposed to CT were more likely to have positive psychotic symptoms. It was thought that the lack of association between CT and substance use was likely mediated by the symptoms of early psychosis (Duhig *et al.*, 2015). A meta-analysis in 2012 by Varese *et al.* of 18 case-control studies, 10 prospective cohort studies and 8 population-based cross sectional studies found significant associations between childhood adversity and psychosis across all study designs (overall pooled effect odds ratio = 2.78; 95% CI = 2.34-3.31) (Varese *et al.*, 2012). The study aimed to explore whether this association held across specific types of trauma. It found that apart from parental death, all other aspects of childhood adversity showed a significant association with psychosis and that no one specific form of trauma was a stronger predictor of psychosis.

Second, studies have shown an association between CT and SUDs. Afifi *et al.*, in a 2012 study, aimed to examine this association. Using data from a nationally representative epidemiological US survey, they examined the association between five forms of childhood maltreatment and SUDs. Key findings were that all five forms of childhood maltreatment were significantly associated with increased odds of a number of SUDs (Afifi *et al.*, 2012). Toker *et al.*, in a (Turkish cross-sectional) study to investigate this relationship also concluded that a history of physical abuse in childhood increases the risk for later substance use. In this study, persons with SUD were compared to healthy controls with regards to a history of childhood maltreatment and proclivity to substance abuse. It was reported that history of childhood abuse increases proclivity to substance abuse as a means to ameliorate stress response and feelings of low self-esteem (Toker *et al.*, 2011). In their review of the literature, Debellis *et al.* found that traumatic childhood experiences were found to be associated with an increased risk of later alcohol and substance abuse. The authors postulate that dysregulation of biological stress response systems can lead to negative affect symptoms, which in turn may lead to an increased risk of "self-medicating" with alcohol and substances in later life (De Bellis, 2002).

Third, few studies have investigated CT and SUD in patients with SMI, that is dually diagnosed populations. From the existing studies in dual diagnosed patients, some have shown an association between CT and poly-drug use disorder. For instance, a 2009 study by Martinotti *et al.* aimed to explore correlates of mono-drug users compared to poly-drug users. Some key findings from that study were that poly-substance dependent subjects had experienced significantly more CT, specifically emotional and physical neglect, than mono-drug dependent subjects (Martinotti *et al.*, 2009).

More recently, Lecomte *et al.* conducted a study to explore co-morbidity profiles of psychotic patients. Of particular interest was exploring how these co-morbidities present and co-exist in those with psychosis and how it may affect their social functioning. Study participants were persons who presented at a psychiatric emergency centre with symptoms of psychosis. The measures of comorbidity were screens for substance misuse, depression, anxiety, a trauma history, an impulsivity history and screening for social function deficits. They reported that all participants had psychotic symptoms, 13% had substantial substance abuse disorders and 63% had experienced at least one form of abuse. Their cluster analysis also showed five well-defined classes. One particular class had the highest scores for CT and average substance use, with fairly high scores for both depression and anxiety. The results of their regression analysis show that certain co-morbidity profiles, such as depression and anxiety, followed by a history of CT, were more strongly associated with poorer social function, (Lecomte *et al.*, 2020).

Where data does exist examining the associations between CT, SUDs and severe mental illness, the research has been predominantly in population- and community-based cohorts; with little known of these clinical correlates in clinical inpatient settings.

Currently no data exists in a South African psychiatric inpatient population with a dual diagnosis and history of CT. This study therefore aimed to explore the clinical correlates of a dual diagnosed population with a history of CT, hypothesising that participants with polysubstance use disorders would have higher levels of CT compared to patients with mono-substance use disorders and those with no SUDs.

Study aims

The study aimed to investigate the relationship between CT and substance use in patients with severe mental illness. In addition to substance use, demographic and clinical factors associated with CT in patients with SMI were explored.

Objectives

a) Childhood trauma was measured using the Childhood Trauma Questionnaire (CTQ).

b) The presence of SUDs were determined using the SCID-I for DSM-IV.

Hypothesis

The study hypothesised that participants with poly-substance use disorders would have higher levels of CT compared to patients with mono-substance use disorders and those with no SUDs.

METHODS

Study design

A cross sectional, analytical study.

Sample and population

Eligible participants included adult patients aged 18–59 years with a diagnosis of a severe mental illness. Severe mental illness included participants with a diagnosis of schizophrenia spectrum disorder or bipolar mood disorder with psychotic features. Patients with dementia or a general medical condition and patients with moderate to severe mental retardation or severe physical illness were excluded. Eligible patients were recruited using the pre-discharge wards at a specialist psychiatric treatment facility (Valkenberg Hospital, Cape Town, South Africa). Clinical and demographic data was obtained from an existing database linked to the study "Presentation, risk factors and psychobiology of psychosis" (UCT ref 332/2008). For the purposes of a preliminary exploratory analysis, a sample size of 70 was estimated to be sufficient. All participants provided written informed consent.

Measures

(1) Demographic data:

This data included age, gender, home language, highest level of education and number of dependents.

(2) Psychiatric and substance use disorder diagnosis

The Structured clinical interview for DSM-IV (SCID-I) was used (Michael B., Spitzer, Robert L, Gibbon Miriam, and Williams, Janet B.W.: Structured Clinical Interview for DSM-IV-TR Axis I Disorders, Research Version, Patient Edition. (SCID-I/P) New York: Biometrics Research, New York State Psychiatric Institute, November 2002) to determine the principal axis I psychiatric diagnosis as well as the presence of a SUDs. The SCID-I assesses mood and psychotic symptoms in 2 modules (modules A and B) and derives a psychotic or mood disorder diagnosis in modules C and D. We used module E of the SCID to determine the presence of alcohol and drug abuse and dependence. Diagnostic interviews were conducted by qualified (SCID trained) psychiatrists and variables were extracted from the above database and entered into a new database according to clinical and demographic data applicable to this study.

(3) Childhood trouma

The Childhood Trauma Questionnaire (CTQ) short form (David Bernstein, Laura Fink 1996) was used to determine the presence of CT; the CTQ is a 28-item, self-report instrument developed to measure five types of abuse or neglect in childhood or adolescence. Respondents are queried on items with a S-point Likert type scale answer format ranging from never true (score=1) to very often true (score=5).

Each subscale in the CTQ (i.e., sexual abuse, physical abuse, emotional abuse, physical neglect and emotional neglect) contains five items, and an additional three items are intended to measure any tendency to minimise or deny the abuse and to identify inconsistencies in response.

According to the CTQ:

- sexual abuse is defined as "sexual contact or conduct between a child younger than 18 years of age and an adult or older person"
- physical abuse is defined as "bodily assaults on a child by an adult or older person that posed a risk of or resulted in injury"
- emotional abuse is defined as "verbal assaults on a child's sense of worth or well-being or any humiliating or demeaning behaviour directed toward a child by an adult or older person"
- physical neglect is defined as "the failure of caretakers to provide for a child's basic physical needs, including food, shelter, clothing, safety, and health care" (poor parental supervision was also included in this definition if it places children's safety in jeopardy)
- emotional neglect was defined as, "the failure of caretakers to meet children's basic emotional and psychological needs, including love, belonging, nurturing and support".

Information from the database was divided into clinical and demographic data.

Statistical analysis

To determine the internal consistency of the CTQ, the Cronbach's alpha coefficients for the total scale and its subscales were calculated. Data was explored using visual methods and tests for normality, with the aim of normalising variables where possible using a logarithmic transformation. Patients without SUDs were compared to those with mono-SUDs and those with poly-SUDs on clinical and demographic variables. Categorical data was analysed using Chi-squared tests and with Fisher's exact test where appropriate. For comparisons of CT on the CTQ across substance use groups (no-SUD, mono-SUD, poly-SUD), Analysis of Variance (ANOVA) or Kruskal-Wallis ANOVA in case of non-parametric data was used and the Sidak-test was used for post-hoc multiple comparisons. A series of six linear regression models were constructed with the dependent variable being the continuous score on the CTQ total and five subscales (physical neglect, physical abuse, emotional neglect, emotional abuse and sexual abuse). The main predictor variables of interest in these models were the three SUD categories (non-SUD, mono-SUD and poly-SUD), with the base comparison dummy-coded. Clinical and demographic variables were examined to determine if they fulfilled criteria for

potential confounders based on significant associations in univariate analyses at the p<0.25 level with both CT as well as an association with mono- or poly-drug use disorders, and not being in the causal pathway between CT and the development of SUD. Variables that were potential confounders were entered into the linear regression models to adjust for positive and negative confounders (suppressor variables). A significance level of 0.05 was considered statistically significant and two-tailed tests were used throughout. Stata version 16 for Windows was used to analyse all data.

RESULTS

There were 74 patients included in the study, with a mean age of 29 years (*SD* = 8.6; range 19–61 years). Out of the patients, 64% (*n* = 47) were male, 64% had a schizophrenia-spectrum diagnosis, 23% had BMD-I and 14% had SIPD. In addition, 41%, (*n* = 30) were taking no drugs, 22% were mono-drug users and 38% were poly-drug users. There were no significant differences between substance use groups in terms of age and level of education (see Table 2.1[1]). However, those with no SUDs were significantly more likely to be female, whereas those with mono- or poly-substance use were significantly more likely to be male. Patients with poly-SUD were significantly less likely to have been married and significantly less likely to have a diagnosis of BMD-I, but significantly more likely to have a diagnosis of SIPD (see Table 2.1).

Table 2.1: Sample demographic and clinical characteristics across SUD categories

	No-SUD (N=30)		Mono-SUD (N=16)		Poly-SUD (N=28)		Test-statistic (*df*)	*p*-value
	N	%	N	%	N	%		
Age							$\chi^2(4) = 5.64$	.227
18-25 (*n* = 31)	9	30	7	43.8	15	53.6		
26-35 (*n* = 29)	13	43.3	5	31.3	11	39.3		
35-65 (*n* = 14)	8	26.7	4	25	2	7.1		
Sex							$\chi^2(2) = 17.55$	< .001**
Male (*n* = 47)	11	36.7	11	68.8	25	89.3		
Female (*n* = 27)	19	63.3	5	31.3	3	10.7		
Level of education							Fisher's exact test	.349

[1] Table numbers have been adjusted to match the overall thesis.

	No-SUD (N=30)		Mono-SUD (N=16)		Poly-SUD (N=28)		Test-statistic (*df*)	*p*-value
	N	%	N	%	N	%		
≤ 7 years (*n* = 8)	3	10	0	0	5	17.9		
8-11 years (*n* = 31)	11	36.7	7	43.8	13	46.4		
≥ 12 years (*n* = 35)	16	53.3	9	56.3	10	35.7		
Marital status							Fisher's exact test	.041*
Ever married (*n* = 11)	8	26.7	2	12.5	1	3.6		
Never Married (*n* = 63)	22	73.3	14	87.5	27	96.4		
Diagnosis							Fisher's exact test	.035*
SCZ-spectrum (*n* = 47)	17	56.7	11	68.8	19	67.9		
BMD-I (*n* = 17)	11	36.7	4	25	2	7.1		
SIPD (*n* = 10)	2	6.7	1	6.3	7	25		

Table 2.2: Substances abused by participants

Variable	No-SUD (N=30)		Mono-SUD (N=16)		Poly-SUD (N=28)	
	N	%	N	%	N	%
Cannabis abuse (yes)	0	0	4	25	26	92.9
Alcohol abuse (yes)	0	0	10	62.5	22	78.6
Methamphetamine abuse (yes)	0	0	2	12.5	18	64.3
Mandrax abuse (yes)	0	0	0	0	9	32.1
Cocaine abuse (yes)	0	0	0	0	3	10.7
Ecstasy abuse (yes)	0	0	0	0	1	3.6
LSD abuse (yes)	0	0	0	0	0	0

In terms of substances used by participants (see Table 2.2), it appears only cannabis, alcohol and methamphetamines were used by mono-SUDS. Cannabis, alcohol and methamphetamines were the most common substances used by poly-SUDS. Mandrax was also fairly commonly used by poly-SUDs, whereas cocaine and ecstasy were less likely to be used. None of the participants used LSD.

Association between childhood trauma and substance use

Cronbach's alpha (see Table 2.3) indicated that the CTQ total scale had good internal consistency (α = 0.849), as did the Emotional Neglect and Sexual abuse subscales (α = 0.807 and 0.812 respectively). The emotional abuse and physical neglect subscales had fair internal consistency (α = 0.709 and 0.693 respectively). The internal consistency was lowest for the physical neglect subscale (α = 0.609).

Table 2.3: Internal consistency of the CTQ

Childhood trauma scale	Number of items on CTQ scale	Cronbach's Alpha
CTQ total score	**28**	**0.849**
CTQ subscales		
Physical neglect	5	0.609
Physical abuse	5	0.693
Emotional neglect	5	0.807
Emotional abuse	5	0.709
Sexual abuse	5	0.812

Table 2.4: Comparison of childhood trauma scores between non-substance users, mono- and poly-drug users

Childhood trauma scale	Non-SUD		Mono-SUD		Poly-SUD		ANOVA test statistic (*df*)	*p*-value
	M	SD	M	SD	M	SD		
CTQ total score	46.2	15.1	47.5	17.9	47.4	11.8	$F(2) = 0.06$	.940
CTQ subscales								
Physical neglect	8.03	3.35	8.56	3.76	8.14	3.57	$F(2) = 0.12$	.886
Physical abuse	9.67	4.91	9.38	4.77	9.39	4.02	$F(2) = 0.03$	.967
Emotional neglect	10.60	4.87	10.19	4.58	11.82	4.75	$F(2) = 0.75$	.475
Emotional abuse	10.27	4.07	10.63	5.19	10.57	4.81	$F(2) = 0.04$	.956
Sexual abuse	7.67	4.88	8.75	5.50	7.50	3.91	$F(2) = 0.40$	.674

Table 2.5: Multiple linear regression models examining association between substance use and CT

CTQ score	Model R^2	B coefficient	*SE*	*t*	*p*-value	95% CI
CTQ total score[1]	**0.004**					
No-SUD		ref		ref	ref	ref
Mono-SUD		0.006	0.04	0.16	.871	(-0.072 - 0.085)
Poly-SUD		0.018	0.03	0.52	.604	(-0.049 - 0.084)
Constant		1.65	0.02	70.95	< .001	1.61 – 1.71
Physical neglect[1]	**0.114**					
Mono-SUD		0.010	0.04	0.23	.817	(-0.078 - 0.099)
Poly-SUD		0.006	0.04	0.16	.870	(-0.071 - 0.084)
Age (26 – 35 years)		-0.09	0.04	-2.36	.021*	(-0.162 - -0.014)
Age (36 – 65 years)		0.0315	0.05	0.66	.510	(-0.06 – 0.126)
Constant		0.961	0.04	27.01	< .011	(0.89 – 1.03)
Physical abuse[1]	**0.001**					
Mono-SUD		-0.011	0.05	-0.21	.836	(-0.116 - 0.094)
Poly-SUD		0.001	0.04	0.03	.976	(-0.088 - 0.091)
Constant		0.99	0.03	31.75	< .001	(0.93 – 1.05)
Emotional neglect[1]	**0.049**					
Mono-SUD		0.001	0.05	0.02	.984	(-0.105 - 0.107)
Poly-SUD		0.069	0.05	1.47	.145	(-0.024 - 0.162)
Married		0.078	0.06	1.35	.180	(-0.04 – 0.19)
Constant		1.01	0.03	29.07	< .001	(0.93 – 1.08)
Emotional abuse	**0.095**					
Mono-SUD		0.197	1.39	0.14	.888	(-2.574 - 2.967)
Poly-SUD		0.831	1.19	0.70	.486	(-1.537 - 3.200)
HLOE (8 – 11 years)		0.856	1.79	0.48	.634	(-2.72 – 4.43)
HLOE (≥ 12 years)		3.463	1.79	1.93	.058	(-0.11 – 7.04)
Constant		8.1054	1.74	4.66	< .001	(4.63 – 11.58)
Sexual abuse	**0.096**					
Mono-SUD		1.442	1.47	0.98	.331	(-1.496 - 4.380)
Poly-SUD		0.426	1.39	0.31	.761	(-2.354 - 3.206)
Female		-2.417	1.26	-1.91	.060	(-4.94 – 0.104)
Married		-2.94	1.56	-1.88	.064	(-6.05 – 0.172)
Constant		9.34	1.06	8.83	< .001	(7.23 – 11.45)

There were no significant differences in the mean scores for the CTQ across participants with poly-SUD versus mono-SUD and no-SUDs (see Table 2.4). Linear regression analyses adjusted for covariates (both potential positive and negative confounders) indicated that none of the CTQ models were statistically significant, nor did they explain much variance in participants CTQ scores (see Table 2.5): CTQ Total $F(2,71) = 0.14$, $p = .872$; CTQ Physical Neglect $F(4,69) = 2.22$, $p = .075$; CTQ Physical Abuse $F(2,71) = 0.03$, $p = .971$; CTQ Emotional Neglect $F(3,70) = 1.21$, $p = .312$; CTQ Emotional Abuse $F(4,69) = 1.81$, $p = .137$; and CTQ Sexual Abuse $F(4,69) = 1.83$, $p = .133$. In a sensitivity analysis in which the substance use variable was entered into the above models as a binary variable (any SUD versus no-SUD), the association between substance use and CT remained unchanged.

DISCUSSION

In the sample, 41% ($n = 30$) were taking no drugs, 22% were mono-drug users and 38% were poly-drug users. The high percentage of poly-drug users (38%) in this sample is consistent with previous studies (Martinotti *et al.*, 2009).

In terms of substances participants used, it appears that cannabis, alcohol and methamphetamine are commonly used by both mono-SUDs and poly-SUDs. This is a largely similar pattern to some existing studies in persons with CT history as well as those in the South African general population as noted in the South African community epidemiology network on drug use study (SACENDU) (Is *et al.*, 2018; Parry *et al.*, 2002).

As noted earlier, few studies have investigated CT and SUD in patients with SMI, that is dually diagnosed populations. The Martinotti and Lecomte studies – both looking at co-morbidity profiles of inpatients with a history CT, SUDs and SMI – were used as reference as they are similar in that regard to patients in our study (Lecomte *et al.*, 2020; Martinotti *et al.*, 2009).

This study shows no significant difference among substance use groups in terms of age or level of education, which contrasts with the Martinotti study which shows that those with poly-SUD are often younger and with a lower level of education (Martinotti *et al.*, 2009). However, those with no SUDs were significantly more likely to be female, whereas those with mono- or poly-substance use were significantly more likely to be male. This is consistent with patterns described in the literature (Greenfield et al., 2010).

Patients with poly SUD were significantly less likely to have been married, and significantly less likely to have a diagnosis of BMD-I, but significantly more likely to have a diagnosis of SIPD. This pattern is also reflected in the Martinotti study.

From our study there was no significant difference in CTQ scores by SUD group (ie. in those with polysubstance use disorders did not appear to have higher levels of childhood trauma compared to patients with mono-substance use disorders and those with no SUDs). Multiple linear regression analyses indicated that none of the CTQ models were statistically significant (no significant associations between SUD and CTQ), nor did they explain much variance in participants.

These results would appear to be at odds with results from other studies that have aimed to examine correlates of childhood trauma and substance use disorders in those with a serious mental illness. For instance, in the Martinotti study the aim was to examine the clinical correlates of poly-substance dependence and a history of CT. This study recruited a large sample of 753 subjects from two streams - a psychiatric day hospital and from in-mates at state penitentiary services- and hypothesized that poly-drug users would differ from mono-drug users in areas such a socio-demographics and CT. Some key findings from that study were that poly-substance dependent subjects had experienced significantly more CT, specifically emotional and physical neglect, than mono-drug dependent subjects (Martinotti et al., 2009).

Reasons for this difference might be the relative size of this study and recruitment from two different settings (including penitentiaries).

The more recent Lecomte *et al.* (2020) study also aimed to explore co-morbidity profiles of psychotic patients, including how these co-morbidities may impact their social functioning. The measures of comorbidity were substance misuse, depression, anxiety, a trauma history, an impulsivity history as well as screening for social function deficits. They reported that all the participants had psychotic symptoms, 13% had substantial substance abuse disorders, and 63% had experienced at least one form of abuse. Their cluster analysis also showed five well-defined classes. Some noteworthy findings included that Class 2 had low scores on all measures including childhood trauma, substance misuse and psychotic symptoms. This class proportionally had more women and older participants. This finding is at least partially

reflected in our study where those with no SUD's were more likely to be female. In addition Class 4 had the highest substance misuse scores, younger subjects, proportionally more males and comparative average trauma scores. This class underscores findings in our study showing that those with poly-SUD were more likely to be younger and male. Class 1 had the highest scores for childhood trauma, average substance use scores, but in turn was more strongly associated with poorer social function (Lecomte et al., 2020). These findings are similar to our study where those with polysubstance use disorders did not appear to have higher levels of childhood trauma compared to patients with mono-substance use disorders and those with no SUDs.

Limitations of our study include: (1) one literature reviewer, (2) review was limited to English literature, (3) tool validity as the CTQ is a self- report measure and may be prone to personal bias or underreporting, (4) the study looks at a small number of inpatients specifically at a tertiary psychiatric hospital (increasing the chance of a Type II error and also limiting generalisability).

CONCLUSION

The South African setting has several challenges, amongst others a significant socio-political trauma history, many social ills that drive general health broadly and mental health specifically, all against a background of high substance use prevalence.

Childhood trauma is important, yet the dearth of studies specific to the South African mental health context shows it is as yet poorly researched.

From our study there was no significant difference in childhood trauma scores by SUD group (i.e., in those with poly-substance use disorders did not appear to have higher levels of CT compared to patients with mono-substance use disorders and those with no SUDs).

More research is needed into the potential effects CT may have on both substance use disorders and severe mental illnesses as there may be implications for a unique treatment approach centred on exploring traumatic experiences. Of interest for future researchers – especially so in the South African setting- would be to explore whether resilience may have a modulating effect with regards to the interplay between CT, SMI and SUD.

Adopting an approach of understanding the childhood experiences of patients can improve the therapeutic alliance and inform psychotherapeutic interventions (Duhig *et al.*, 2015).

Cognitive behaviour therapies, motivational interviews, family interventions for carers and building a sound therapeutic alliance have all been shown to be the mainstay of treatment for a population group with multiple challenges of history of CT, substance abuse and severe mental illness (Fisher et al., 2011b; Barrowclough et al., 2009; Pourmand, Kavanagh & Vaughan, 2005; Haddock et al., 2003; Kavanagh, 1992)

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APPENDICES

Appendix A – Childhood Trauma Questionnaire

Patient Code		Week		Visit		Date	DD	MMM	YYYY

Childhood Trauma Questionnaire – Short Form (CTQ-SF)

Instructions: These questions ask about some of your experiences growing up **as a child and a teenager**. For each question, circle the number that best describes how you feel. Although some of these questions are of a personal nature, please try to answer as honestly as you can. Your answers will be kept confidential.

Chapter 3 **When I was growing up,...** **(1=Never true 2=Rarely true 3=Sometimes true 4=Often true 5=Very often true)**	Never True	Rarely True	Sometimes True	Often True	Very Often True
1. I didn't have enough to eat.	1	2	3	4	5
2. I knew there was someone to take care of me and protect me	1	2	3	4	5
3. People in my family called me things like "stupid", "lazy" or "ugly".	1	2	3	4	5
4. My parents were too drunk or high to take care of me.	1	2	3	4	5
5. There was someone in my family who helped me feel important or special.	1	2	3	4	5
6. I had to wear dirty clothes.	1	2	3	4	5
7. I felt loved.	1	2	3	4	5
8. I thought that my parents wished I had never been born.	1	2	3	4	5
9. I got hit so hard by someone in my family that I had to see a doctor or go to the hospital.	1	2	3	4	5
10. There was nothing I wanted to change about my family.	1	2	3	4	5
11. People in my family hit me so hard that it left bruises or marks.	1	2	3	4	5
12. I was punished with a belt, a board, a cord, or some hard object.	1	2	3	4	5
13. People in my family looked out for each other.	1	2	3	4	5
14. People in my family said hurtful or insulting things to me.	1	2	3	4	5
15. I believe that I was physically abused.	1	2	3	4	5
16. I had the perfect childhood.	1	2	3	4	5

Chapter 3 When I was growing up,... (1=Never true 2=Rarely true 3=Sometimes true 4=Often true 5=Very often true)	Never True	Rarely True	Sometimes True	Often True	Very Often True
17. I got hit or beaten so badly that it was noticed by someone like a teacher, neighbour, or doctor.	1	2	3	4	5
18. I felt that someone in my family hated me.	1	2	3	4	5
19. People in my family felt close to each other.	1	2	3	4	5
20. Someone tried to touch me in a sexual way, or tried to make me touch them.	1	2	3	4	5
21. Someone threatened to hurt me or tell lies about me unless I did something sexual with them.	1	2	3	4	5
22. I had the best family in the world.	1	2	3	4	5
23. Someone tried to make me do sexual things or make me watch sexual things.	1	2	3	4	5
24. Someone molested me.	1	2	3	4	5
25. I believe that I was emotionally abused.	1	2	3	4	5
26. There was someone to take me to the doctor if I needed it.	1	2	3	4	5
27. I believe that I was sexually abused	1	2	3	4	5
28. My family was a source of strength and support.	1	2	3	4	5

Appendix B – SCID – modules A, B, C, D, E

Appendix C – UCT Ethics approval letter