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CHILDHOOD TRAUMA REPORTS IN PSYCHOSIS

1

**Stability of Retrospective Self-Reports of Childhood Trauma in First-Episode Psychosis**

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**ABSTRACT**

Aim: Childhood trauma (CT), abuse and neglect is commonly reported by individuals experiencing psychosis. However, there are concerns that acute psychotic symptoms, in particular delusions, may contribute to inaccurate reporting of CT. As a result, individuals experiencing psychosis may not be asked about their experiences of abuse when they are being seen in psychiatric settings. This lack of attention can directly impact on the tailoring of their clinical care. This study aimed to investigate the stability of reports of CT by young people experiencing a first psychotic episode (FEP) compared to healthy comparison subjects. Methods: Responses of 24 young people during the acute first-episode of psychosis and three months later to items on the Childhood Trauma Questionnaire were compared to 30 non-psychiatric controls. All participants were aged 15-25 years. Results: FEP participants reported higher CT than controls at both time points. Reliability analyses (interclass correlation coefficients) suggested strong agreement between CT reports at baseline and follow-up for FEP participants (.81) and controls (.91). Positive psychotic symptoms were unrelated to CT reports. While the severity of CT reports fluctuated between assessments, complete retractions of severe abuse claims occurred rarely. Conclusions: The results suggest that retrospective self-report can be used to reliably assess CT in young people experiencing acute psychosis.

*Keywords*

Abuse; childhood trauma; psychosis; reliability; schizophrenia; acute phase, hallucinations, delusions

## INTRODUCTION

The link between childhood trauma (CT) and increased risk of developing psychosis has been demonstrated in several reviews (Bonoldi et al., 2013; Matheson, Shepherd, Pinchbeck, Laurens, & Carr, 2013; Varese et al., 2012). A recent meta-analysis has also established an association between CT and the severity of positive symptoms in groups with psychotic disorder (Bailey et al., 2018). While prevalence rates for exposure to CT vary greatly and are difficult to compare (Bendall, Jackson, Hulbert, & McGorry, 2008), a recent meta-analysis found that 39% of individuals with psychosis reported childhood physical abuse (Bonoldi et al., 2013) compared to 5-11% of the general population (Kessler, 2010). Furthermore, those subjected to multiple or severe forms of abuse are at greater risk of psychosis (Trauelsen et al., 2015).

The majority of studies rely on retrospective self-reports of CT, which introduces concerns about reliability (Bendall et al., 2008; Hardt, Vellaisamy, & Schoon, 2010). These concerns encompass not only the general limitations of human memory, such as declining accuracy and “reconstruction” of memories over time (Hardt & Rutter, 2004), but also limitations specific to psychosis. These include cognitive and memory impairments (Fioravanti, Carlone, Vitale, Cinti, & Clare, 2005) and the effects of substance use, pharmacotherapy, and other treatments such as electroconvulsive therapy (Goodman et al., 1999; Grubaugh, Zinzow, Paul, Egede, & Frueh, 2011). However, it is the unique phenomena of delusions, hallucinations and detachment from reality that can create scepticism about reports of abuse (Meyer, Muenzenmaier, Cancienne, & Struening, 1996). This scepticism appears to stem from anecdotal reports of individuals who made claims of abuse when acutely psychotic, which were bizarre or later retracted (e.g. Engle & O'Donohue, 2012; Howard, 1993; O'Donohue & Bowers, 2006).

While this anecdotal evidence raises legitimate concerns, it also has clear implications for clinical treatment. An investigation into abuse among psychiatric inpatients revealed that psychotic patients are less likely than non-psychotic patients to be asked about abuse (Read & Fraser, 1998). One of the most common reasons for this was believing that patients

may imagine abuse that did not actually occur (Young, Read, Barker-Collo, & Harrison, 2001). This is significant because in a recent study, 39% of individuals with first-episode psychosis reported CT-related PTSD symptoms at clinical levels (Bendall, Alvarez-Jimenez, Hulbert, McGorry, & Jackson, 2012), and the effects of CT cannot be addressed if the trauma history is not explored.

This highlights the need for research into the validity of CT reports in psychosis, which can be difficult to ascertain. While it is possible to confirm that abuse *did* occur, through corroboration with court, clinic or research records, and parent or sibling reports (Hardt & Rutter, 2004), it is impossible to confirm that an instance of abuse *did not* occur, because it may not have been witnessed by or reported to any other person. This makes it difficult to ascertain over-reporting. However, research suggests considerable under-reporting of even documented cases of childhood abuse (Widom & Morris, 1997; Widom & Shepard, 1996; Williams, 1994). Not only can stressful childhood experiences lead to impaired memory of the experience (Dube, Williamson, Thompson, Felitti, & Anda, 2004; Fergusson, Horwood, & Woodward, 2000), the highly sensitive and personal nature of CT may result in unwillingness to report it in the context of a questionnaire or interview (Widom & Shepard, 1996).

An alternative approach is to investigate the stability of reporting over time. Studies conducted with the general population have found CT reports to be moderately stable in adults over a five year period ( $\kappa = .63$ ; Yancura & Aldwin, 2009) and in college students (mean age 22 years) over two weeks ( $\kappa = .74-.88$ ; L. A. Goodman, Corcoran, Turner, Yuan, & Green, 1998). In a population study, reports of CT at ages 18 and 21 were found to be less stable ( $\kappa = .45-.47$ ); however, inconsistency in reporting was independent of participants' psychiatric status and history (Fergusson et al., 2000). In a sample of adult women (mean age 42 years) with persistent and serious mental illness (diagnoses not stated), CT reports remained relatively stable over four weeks ( $\kappa = .63-.82$ ; Meyer et al., 1996).

Only one study has investigated the stability of CT reports in psychosis, assessing 30 participants (mean age 29 years) at their first presentation with psychosis and seven years

later (Fisher et al., 2011). Using the Childhood Experience of Care and Abuse Questionnaire (CECA.Q), kappa coefficients indicated 'fair' agreement (.43-.59) for neglect, antipathy and sexual abuse, and 'moderate' agreement (.63) for physical abuse (Shrout, 1998). Slightly more participants (20-28%) reported CT at baseline that was not reported at follow-up, compared to those (13-21%) who reported CT at follow-up that was not reported at baseline. However, due to the seven-year follow-up period and absence of a non-clinical control group, it is not possible to ascertain whether psychotic symptoms, other factors associated with psychosis or a normal process of forgetting may have interfered with the reliability of reports.

The current study aims to investigate the reliability of CT reports using the Childhood Trauma Questionnaire (CTQ) in a sample of individuals with first-episode psychosis (FEP; hereafter referred to as 'patients') when acutely psychotic (at intake) and when symptoms have stabilised (3 months later), and in a non-psychiatric control group (hereafter referred to as 'controls'). It is hypothesised that test-retest reliability of the CTQ total scale score will be strong for both patients and controls. The secondary aim is to investigate the impact of acute positive symptoms on the reporting of CT.

## **METHOD**

### *Participants*

The current study took place within a larger study investigating hypothalamic-pituitary-adrenal (HPA) axis function, stress, childhood trauma and FEP at the Early Psychosis Prevention and Intervention Centre (EPPIC) at Orygen Youth Health (OYH) in Melbourne, Australia between 2006 and 2009 (see Garner et al., 2011 for further details). The study was approved by the local Research and Ethics Committee (HREC ID 26193). After complete description of the study, written informed consent was obtained from participants or a parent or guardian, where appropriate. Inclusion criteria for patients were individuals aged 15-25 years experiencing an acute first episode of psychosis and residing in the EPPIC catchment area (population 1.2 million). Exclusion criteria were more than 10

days of treatment with any psychotropic medication, IQ<70, organic brain disorder or any significant medical illness (see Garner et al., 2011 for details), and having a follow-up time of <10 weeks or >20 weeks (in order to match the follow-up time between groups as longer time between assessments may lead to greater forgetting). Participants were 54 patients (35 male; 19 female) with a mean age of 19.87 years (SD = 2.69). Twenty-five patients completed the assessments at both time points. One patient was excluded due to follow-up time being greater than 20 weeks.

In addition, 40 healthy controls (25 male; 15 female) with a mean age of 22.10 years (SD = 1.88) were recruited from similar socio-demographic areas through advertisements and seeking friends or neighbours of the patients. Exclusion criteria included a current or past history of psychiatric illness and any psychiatric illness in the immediate family (this exclusion was required for the larger HPA axis function, trauma and stress study), in addition to the exclusion criteria for the patient group. Thirty-one controls completed assessments at both time points. One control was excluded due to follow-up time being less than 10 weeks.

At baseline, there were no significant differences in age, CT reports, or psychopathology between participants who completed both assessments and those who did not.

### *Measures*

Psychotic diagnoses were assessed using the Structured Clinical Interview for DSM-IV – research version, patient edition (SCID-I/P; M. B. First, Spitzer, Gibbon, & Williams, 2001). Controls were assessed using the Structured Clinical Interview for DSM-IV – research version, non-patient edition (SCID-I/NP; M. First, Spitzer, Gibbon, & Williams, 2002).

Childhood trauma was assessed using the Childhood Trauma Questionnaire (CTQ), a 28-item questionnaire that assesses physical abuse, sexual abuse, emotional abuse, physical neglect and emotional neglect (Bernstein & Fink, 1998).

Positive psychotic symptoms were assessed using the positive symptom subscale (BPRS-Pos) of the Brief Psychiatric Rating Scale (BPRS; Ventura et al., 1993). The BPRS a 24-item semi-structured interview measure based on individual self-report and clinician observation. The BPRS-Pos is the sum of scores on four core psychotic areas: suspiciousness (expressed or apparent belief that other persons have acted maliciously or with discriminatory intent), hallucinations (reports of perceptual experiences in the absence of relevant external stimuli), unusual thought content (unusual, odd, strange, or bizarre thought content), and conceptual disorganization (degree to which speech is confused, disconnected, vague or disorganised).

#### *Procedure*

Trained interviewers administered all measures (SCID-I/P, CTQ and BPRS-Pos) to patients as part of a larger test battery upon entry to EPPIC. The SCID-I/NP and CTQ were administered to controls as part of a larger test battery. A follow-up assessment was conducted after an average of 13.39 weeks (SD = 1.23) for controls and 14.58 weeks (SD = 1.97) for patients ( $p = .014$ ). At follow-up, the patients repeated all measures and the controls repeated the CTQ.

#### *Statistical Analysis*

Partial missing data (three participants) was dealt with by person-mean substitution (Hawthorne & Elliott, 2005). The guidelines for the categorisation of CTQ scale scores (Bernstein & Fink, 1998) were used to classify participants' scores as either none (or minimal), low (to moderate), moderate (to severe), or severe (to extreme) on each of five subscales. Based on previous research (Baker & Maiorino, 2010; Watson, Chilton, Fairchild, & Whewell, 2006), scores were further categorised: participants who reported none (or minimal) CT on all five subscales were categorised as reporting 'no CT', whereas participants who reported low (to moderate), moderate (to severe), or severe (to extreme) CT on one or more subscales were categorised as reporting 'CT'.

Differences between patients and controls for age, CT reports and psychopathology were analysed using independent samples *t*-tests. Due to non-equal variances between groups, corrected *t*-tests are reported. Differences between baseline and follow-up for CT reports and psychopathology were analysed using paired samples *t*-tests. Absolute change over time for CT reports and psychopathology was calculated by subtracting the baseline score from the follow-up score. Test-retest reliability of the CTQ was analysed utilising Intraclass Correlation Coefficient (ICC) procedures, used to assess test-retest reliability among continuous measures (Frick, Kimonis, Dandreaux, & Farell, 2003; Paivio, 2001). The movement of participants between CT categories ('CT' versus 'no CT') was analysed descriptively and with chi-square tests. The relationship between positive psychotic symptoms and CT reports was analysed using correlation coefficients.

## RESULTS

### *Sample Characteristics*

Sample characteristics are reported in Table 1.

TABLE 1 ABOUT HERE

### *Stability of Childhood Trauma Reports*

Patients scored significantly higher on the CTQ total scale than controls at baseline ( $M = 30.46$ ,  $SD = 17.36$  and  $M = 9.33$ ,  $SD = 10.57$ , respectively;  $p < .001$ ) and follow-up ( $M = 24.25$ ,  $SD = 20.11$  and  $M = 9.83$ ,  $SD = 10.07$ , respectively;  $p = .003$ ). Change on the CTQ total scale was not correlated with age, years of education, or follow-up time, for patients ( $p = .96$ ;  $p = .21$ ;  $p = .56$ , respectively) or controls ( $p = .16$ ;  $p = N/A$ ;  $p = .17$ , respectively). Intraclass Correlation Coefficients indicated that the paired ratings on the CTQ total scale at baseline and follow-up had a consistency of .81 for patients and .91 for controls.

Categorical analyses indicated that more patients than controls reported having experienced CT at baseline (67% vs. 13%;  $p < .001$ ) and follow-up (54% vs. 20%;  $p = .009$ ). Six patients (24%) moved from reporting CT at baseline to reporting no CT at follow-up. Two patients (8%) and two controls (7%) moved from reporting no CT at baseline to reporting CT at follow-up (see Figure 1).

FIGURE 1 ABOUT HERE

#### *Relationship between Psychopathology and Childhood Trauma Reports in the Psychosis Group*

Patients' scores on the BPRS-Pos were significantly lower at follow-up compared to baseline ( $M = 8.21$ ,  $SD = 3.16$  and  $M = 14.75$ ,  $SD = 3.99$ , respectively;  $p < .001$ ). BPRS-Pos scores and CTQ total scores were not correlated at baseline ( $r = -.11$ ;  $p = .60$ ) or follow-up, ( $r = .01$ ;  $p = .96$ ). Absolute change in BPRS-Pos scores and absolute change in CTQ total scores were not correlated ( $r = .05$ ;  $p = .83$ ).

#### **DISCUSSION**

The current study investigated the stability of CT reports and their relationship to positive psychotic symptoms in a sample of FEP patients and non-psychiatric controls. The first hypothesis, that test-retest reliability of CTQ total scale scores over a 3-month period would be strong for both FEP patients and controls, was supported. Positive psychotic symptoms were not correlated with CTQ total scale scores at baseline or follow-up, and change in positive symptoms was not correlated with change in CTQ scores.

Consistent with past research, patients reported higher rates of CT at both time points. The proportion of patients reporting CT at different time points (54-67%) was comparable to the rates reported in previous early psychosis research (e.g. 64% in Bendall et al., 2012; and 71% in Wang et al., 2013). Additionally, the proportion of controls

reporting CT (13-20%) fell within the range of the rates previously reported in the general population (e.g. 10-22% in Felitti et al., 1998).

In the current study, patients' CTQ scores at baseline and follow-up showed strong agreement (ICC = .81; Portney & Watkins, 2000). While the use of varying statistical techniques makes direct comparison challenging, this result is nonetheless similar to those found in previous research. Over a seven-year follow-up period, FEP patients' scores on the CECA.Q produced kappa coefficients categorised as 'moderate' to 'substantial' agreement (Fisher et al., 2011; Landis & Koch, 1977). Over a four-week follow-up period, CT reports made by women with persistent and serious mental illness produced kappas categorised as 'substantial' agreement for childhood physical abuse and 'almost perfect' agreement for childhood sexual abuse (Landis & Koch, 1977; Meyer et al., 1996). However, severity of psychotic symptoms was not reported in either of these studies.

Additionally, CTQ scores for the control group showed strong agreement between baseline and follow-up (ICC = .91; Portney & Watkins, 2000). Previous research into the stability of reports of adverse childhood experiences over a five-year period for a non-clinical sample produced a median kappa coefficient characterised as 'substantial' agreement (Landis & Koch, 1977; Yancura & Aldwin, 2009), which may be lower than the current results due to a longer follow-up period.

The pattern of responding for the minority of participants who provided inconsistent reports of CT was also examined. Overall, six patients (24%) reported CT at baseline that was not reported at follow-up. This finding supports that of Fisher and colleagues (2011), who found that between 20 and 29% of patients reported CT at baseline that was not reported at follow-up. However, a slight increase or decrease in the severity of reports was the most common finding. While published case studies (Howard, 1993; O'Donohue & Bowers, 2006) have suggested that individuals with psychosis make false allegations of severe abuse that are then retracted when symptoms have stabilised, the current data suggest that the complete retraction of severe CT reports occurs rarely.

Nevertheless, it is important to consider potential explanations for patients' reduced reporting of CT when their symptoms had stabilised, compared to when acutely psychotic, as this was the more common pattern of inconsistency. As corroboration with other records and reports was not possible, judgements about the accuracy of reports cannot be made. However, it is possible that willingness to report trauma may change. Psychosis is accompanied by disinhibition and people may be more willing to disclose a history of CT when acutely psychotic (Fisher et al., 2011). When remitted, they may not report this history due to shame or fear of potential consequences, reasons not dissimilar to those proposed for under-reporting of abuse in the general population (Femina, 1990; Melchert & Parker, 1997; Widom & Shepard, 1996). While there was no relationship between CT reports and positive psychotic symptoms, the BPRS-Pos does not measure disinhibition and an additional measure may be required to investigate this hypothesis.

An additional hypothesis that could be explored in future research is that individuals experiencing psychosis may be motivated to find an explanation for their symptoms, as Fuchs (1993) suggests. This may impact on the personal relevance and appraisals of past experiences during an acute psychotic episode. Inconsistency in CT reports more likely involves a reduction in the appraised severity of experiences, rather than a complete retraction (Fisher et al., 2011).

Another potential explanation is that CT may be more easily remembered during a psychotic episode. The distressing and sometimes traumatic experience of psychosis may prime the recall of traumatic memories for some individuals, particularly those whose psychotic symptoms are CT related (Bendall, McGorry, & Krstev, 2006). Research has demonstrated that individuals exposed to CT are more likely to present with trauma-related psychotic symptoms (Reiff, Castille, Muenzenmaier, & Link, 2012) and more than half of the psychotic symptom content of abused adult inpatients was related to CT (Read & Argyle, 1999). While the current study did not investigate symptom content, traumatic memories may be more prominent during acute psychosis for individuals who experience trauma-related hallucinations and delusions.

The current findings suggest a complex relationship between psychosis and CT reports. Even in the general population, CT reports are not perfectly consistent across time. This relationship can be further complicated when an individual has experienced CT and also has a diagnosis of a psychotic disorder. However, our results suggest that reports of trauma are not dependent upon psychological states or psychopathology, a result that has also been found in population studies (Fergusson et al., 2000; Yancura & Aldwin, 2009). While it would be naïve to assume that all claims of abuse are true, there is danger in subjecting claims from particular groups to scepticism, particularly for groups in which there is known to be a high prevalence of abuse. On occasion, individuals may make false claims of abuse and then retract them, which is important information in a clinical setting. However, the current results suggest that this occurs rarely. Instead, appraisals of CT might wax and wane, impacting on the severity of the trauma reported.

An important implication of the findings is that it is essential to ask about CT during the initial assessment with individuals experiencing psychosis. If clinicians do not do so at assessment, it seldom occurs later on (Read, 2006). Furthermore, the majority of CT is not identified by clinicians (Read, 2006). Questioning the truthfulness of psychotic patients' CT reports in both research and clinical practice can adversely affect treatment alliance and patient satisfaction (Reiff et al., 2012). As a perceived lack of knowledge and skills in treating individuals with psychosis has been identified as a barrier to asking about trauma (Gairns, Alvarez-Jimenez, Hulbert, McGorry, & Bendall, 2015), training opportunities should be made available to all clinicians working in this area (Bendall, Alvarez-Jimenez, Nelson, & McGorry, 2013; Frueh, Cusack, Grubaugh, Sauvageot, & Wells, 2006). The identification of CT may lead to more targeted and effective interventions for people who present with both psychosis and a history of trauma (e.g. Tong, Simpson, Alvarez-Jimenez, & Bendall, 2017; van den Berg et al., 2015).

The current study is not without its limitations. A significant limitation is the small sample size. This meant that few control participants reported CT, thereby reducing the capacity of the study to show descriptive data regarding movement between CT severity categories in

those without mental disorder but with CT. In addition, over half of the FEP patients and a quarter of controls had to be excluded from analyses due to incomplete data. However, there were no differences between those who completed both assessments and those who did not. The patients were also drawn from studies with additional exclusion criteria and, as the ability to give informed consent was a prerequisite to participation, the patients may have had less severe psychopathology than the general population of individuals experiencing psychosis. On average, the control group were older than the patients and had completed more years of education. However, there was no relationship between age or years of education and change in CTQ scores.

In conclusion, the current study is the first to investigate the consistency of retrospective reports of CT in individuals with FEP, when acutely psychotic and when stabilised, using a control group and a short follow-up period. Reliability of childhood trauma reports was strong for both patients and controls. Furthermore, CT reports were not associated with positive psychotic symptoms. While test-retest reliability is not necessarily suggestive of validity, these findings provide further evidence that retrospective self-reports can be used to reliably assess CT in both clinical settings and research with individuals experiencing acute psychosis. Importantly, the identification of CT may lead to more effective interventions for individuals who present with both psychosis and a history of trauma.

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**Table 1**

Sample characteristics.

	Patients N = 24	Controls N = 30	<i>p</i> value
Gender, M/F	14/10	18/12	
Age, years (SD)	19.54 (2.72)	22.17 (1.76)	<.001
Education, years (SD)	11.71 (1.43)	13.00 (0.00)	<.001
Diagnoses, <i>n</i> (%)			
Schizophreniform disorder	11 (46)		
MDD with psychotic features	6 (25)		
Psychotic disorder NOS	3 (13)		
Bipolar disorder with psychotic features	2 (8)		
Schizophrenia	1 (4)		
Substance-induced psychotic disorder	1 (4)		

Figure 1: Number of participants who changed CT category between baseline and follow-up

<i>Trauma category</i>		<i>Patients</i>	<i>Controls</i>
<b>No change</b>		<b>16 (67%)</b>	<b>28 (93%)</b>
<b>Low</b>	→ <b>None</b>	<b>4 (17%)</b>	<b>0</b>
<b>Moderate</b>	→ <b>None</b>	<b>1 (4%)</b>	<b>0</b>
<b>Severe</b>	→ <b>None</b>	<b>1 (4%)</b>	<b>0</b>
<b>None</b>	→ <b>Low</b>	<b>2 (8%)</b>	<b>2 (7%)</b>
<i>Baseline</i>	<i>Follow-up</i>		

## Stability of Retrospective Self-Reports of Childhood Trauma in First-Episode Psychosis

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Figure 1: Number of participants who changed CT category between baseline and follow-up

<b>Trauma category</b>		<b>Patients</b>	<b>Controls</b>
No change		16 (67%)	28 (93%)
Low	→ None	4 (17%)	0
Moderate	→ None	1 (4%)	0
Severe	→ None	1 (4%)	0
None	→ Low	2 (8%)	2 (7%)
<i>Baseline</i>	<i>Follow-up</i>		