

Trauma and comorbid posttraumatic stress disorder in individuals with schizophrenia and substance abuse

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Abstract

Objectives: The aim of this study was to investigate the occurrence of trauma and comorbid posttraumatic stress disorder (PTSD) in dual diagnosis patients and whether the trauma was related to the patient's behavior or illness.

Method: One hundred ten patients with schizophrenia and comorbid substance or alcohol abuse were assessed for PTSD using self-report and structured interview. Traumatic events were classified as independent or dependent upon the patient's behavior, illness, or symptoms.

Results: One hundred patients (91%) reported at least 1 trauma (mean, 4.3). Sixty-three patients (57%) reported a traumatic event that met modified-criterion A for PTSD. Thirty-one patients (28%) met criteria for full PTSD, and 18 (16%) had a trauma directly related to their illness. Patients with PTSD had significantly higher scores on positive psychotic symptoms and depression.

Conclusions: Exposures to traumatic events and comorbid PTSD are high but are inflated by reactions to illness-related events such as hospitalization and psychotic symptoms.

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Exposure to traumatic events in the general population is high, with estimates from community samples ranging from 40% to 80% [1,2]. There is some evidence that exposure to trauma in those suffering schizophrenia and severe mental illness may be even higher, with reported rates up to 98% [3,4]. Patients with schizophrenia report much higher rates of childhood physical and sexual abuse than the general population [5,6].

Those diagnosed with serious mental illness (SMI) are not only more likely to be exposed to traumatic events but also more likely to suffer from posttraumatic stress disorder (PTSD) as a result of this exposure, with prevalence rates between 14% and 53% [4,7–9]. Thus, the prevalence of PTSD appears to exceed that of the general population, which is estimated at 6% to 8% lifetime prevalence [2,10,11].

Posttraumatic stress disorder trauma in SMI is reported to be associated with a wide range of negative and adverse outcomes, including delayed recovery, poorer social and

role functioning, poorer general health, and greater use of health services [12–14]. Childhood trauma in sexual and physical abuse and neglect in those with SMI has been associated with greater levels of psychotic symptoms, higher levels of anxiety, poorer social functioning, homelessness, poorer memory functioning, and subsequent substance abuse [15–18]. In a study of patients with first-episode psychosis, the presence of comorbid PTSD was significantly associated with involuntary admission to hospital [9]. This association between involuntary hospitalization and PTSD did not appear to be a function of the severity of the psychotic illness.

Controversy exists regarding the accuracy and reliability of trauma reports in people suffering a disorder that distorts perception, thought, and behavior [19]. However, overall, the psychometric properties of assessments developed for the general population are comparable in individuals with severe mental illness [20–23]. Thus, it would seem that, when reporting specific events and posttraumatic symptoms related to them, individuals with schizophrenia are as reliable as the general population.

Notwithstanding the potential problems inherent in recall and interpretation of traumatic events, it is also possible that the person's illness and behavior may increase their exposure

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to, or even cause, traumatic events [24]. This difficulty was recognized some time ago in life-event research [25]. There was concern that an association between life events and illness onset might be an artifact, with the exposure to a life event, such as the loss of a job, actually resulting from the patient's emerging illness behavior rather than the alternative explanation that the stress of the event precipitated the onset of the illness [25]. Thus, events were classified according to the probable contribution of the patient's own behavior. Thus, "dependent" events were the consequences of the patient's abnormal behavior resulting from their illness; "possibly independent" were events within the patient's control but probably not the result of their illness, whereas "independent" events were clearly outside the patient's control. This classification attempted to remove the potential confounding effect of the patient's illness on the relationship between the life event and illness onset.

Historically, PTSD research has focused on external events such as child abuse, criminal acts, serious injuries, natural disasters, and combat experience. However, there has been a recent trend to demonstrate that internal events such as physical and mental illness have similar consequences to external traumas [21,26]. Several studies have shown that individuals report traumatic stress related to the onset of their psychosis [8,27–32]. Furthermore, there is evidence that, for patients with schizophrenia, the process of hospitalization and receiving treatment is in itself highly traumatic and can result in PTSD-like symptoms [9,30–32]. The diagnosis of PTSD is based upon the "core assumption" that a distinct class of traumatic events is linked to a distinct clinical syndrome [33]. Investigation of PTSD in psychosis populations needs to consider whether PTSD is really a separate and independent disorder and, if so, whether it has been brought about by, or is independent of, the patient's illness or illness-related factors. Thus, studies of comorbid PTSD in psychosis need to investigate the nature of the traumatic event with reference to the patient's illness and behavior [24].

Patients with schizophrenia are increasingly presenting with comorbid alcohol and/or drug abuse. Prevalence rates, from US studies, indicate that between 47% and 65% suffer comorbid substance and/or alcohol abuse [34–36]. Studies in the United Kingdom, from treatment setting surveys, estimate past-year prevalence rates of around 25% [37,38]. A recent review indicates a prevalence rate of over 50%, with even low-level substance misuse having a detrimental effect [39]. There is a well-documented consistency in the pattern of substance use in psychosis, the most frequently reported substance used being alcohol, and cannabis the most frequently used drug [38,40–42]. Consistent results indicate a high proportion of the sample with polysubstance use, the most common combination including alcohol and cannabis [41,42]. There are strong indications that clinical outcomes are poorer for those people with schizophrenia who abuse drugs and alcohol [43–45] and that recovery and employment outcomes are compromised [46]. With increased access to

drugs and alcohol, it may well be that the prevalence of substance use in people with schizophrenia is increasing and that dual diagnosis is the norm for presentation of patients with severe mental illness.

Overall, the aim of the study was to further contribute to the literature on the comorbidity of schizophrenia and PTSD by investigating a population of patients with schizophrenia and drug and/or alcohol misuse. This is an increasingly common presentation, but in which, the comorbidity of PTSD has not previously been studied. Specifically, the aims of the study were (1) to investigate the occurrence and nature of traumatic events in those with schizophrenia and drug and/or alcohol abuse and describe those events as independent of, or related to, the patient's behavior or illness; (2) to investigate whether traumatic events satisfied PTSD-criterion A; (3) to estimate the occurrence of PTSD as a result of such trauma and its association with the type of traumatic event; and (4) to compare those with and without comorbid PTSD on clinical and demographic measures.

1. Method

1.1. Participants

This study opportunistically recruited dual diagnosis patients who were participating in a multicentered clinical trial of motivational CBT (the Motivational Interventions for Drug and Alcohol Misuse in Schizophrenia [MIDAS] trial [42]). One hundred ten participants were recruited from 4 National Health Service trusts in the northwest of England between October 2004 and April 2007. Participants were first recruited into the clinical trial and consented to further assessment for the purposes of this study. Assessments were carried out at the 6-month assessment point of the trial. Ethical permission was obtained from the National Health Service Eastern Multi-centre Research Ethics Committee (MREC). Participants were recruited into the study if they met the following inclusion criteria: (1) *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)* diagnostic criteria for schizophrenia, schizophreniform, or schizoaffective disorder, as assessed by trained research assistants from medical records; (2) were English-speaking; (3) had contact with mental health services; (4) were able to give informed consent to take part in the trial; and (5) met minimum levels of substance use of 28 U of alcohol and/or using drugs for at least 2 days a week and met criteria for dependence or abuse assessed by the structured clinical interview for *DSM-IV*. Participants were excluded if there was an organic cause for their psychosis. All participants were living in the community at the time of recruitment and had current contact with mental health services.

1.2. Measures

1.2.1. Positive and Negative Syndrome Scale

The Positive and Negative Syndrome Scale (PANSS) was used as a measure of severity of schizophrenia [47]. The

PANSS is a semistructured interview, which assesses positive, negative, and general symptoms using a 7-point rating scale over 30 items. It has good internal reliability, test-retest reliability, and convergent and discriminant validity, as well as predictive validity [48]. It is a commonly used measure in schizophrenia research.

1.2.2. Calgary Depression Scale

The Calgary Depression Scale (CDS) is a 9-item, semistructured interview designed for use with individuals with a diagnosis of schizophrenia [49]. The scale assesses levels of depressive symptoms independent of positive and negative symptoms of schizophrenia and any effects of medication. The scale has been found to have good interrater reliability and validity in both the rating scale and interview itself [49–51].

1.2.3. Posttraumatic Stress Diagnostic Scale

The presence of PTSD was assessed using the Posttraumatic Stress Diagnostic Scale (PDS) [52]. The structure and content of the PDS mirror the *DSM-IV* diagnostic criteria for PTSD. The participants are asked how much each PTSD symptom has bothered them in the last 3 months (0 = not at all or only one time, 1 = once or twice a week, 2 = 3 or 4 times a week, 3 = 3 or more times a week/almost always). Respondents were asked to read through a list of traumatic events and to mark any event they had witnessed or experienced. They were then asked which of the experiences they marked affected them the most and to briefly describe the event. This event is the index event, which is referred to when asking about resulting posttraumatic symptoms. They were asked questions to ascertain whether the index event met criterion A for PTSD diagnoses. Probe questions specifically related to the level of threat and danger (criterion A1) and emotional and fearful responses (criterion A2). Because of recent findings from our research group [9], indicating trauma specific to the schizophrenia population, such as involuntary hospitalization, distressing psychotic symptoms, and treatments, these experiences were also added to the list of traumatic experiences. As this change resulted in a modification of criterion A and, consequentially, PTSD throughout the remaining text, these will be referred to as *modified-criterion A* and *modified-PTSD* as appropriate to reflect these changes. Questions in this part also ascertain the length of time that had passed since the incident corresponding to modified-criterion A occurred. The PDS has good psychometric properties and validity with the Structured Clinical Interview for *DSM-IV* [52].

1.2.4. Clinician-Administered PTSD Scale for Schizophrenia [53]

The Clinician-Administered PTSD Scale (CAPS) for Schizophrenia (CAPS-S) was used as a further measure of PTSD. The CAPS is a structured clinical interview designed to assess the 17 symptoms for PTSD outlined in *DSM-IV*. The frequency and intensity of each symptom was rated. The

CAPS-S is a version of the CAPS adapted for use with patients with schizophrenia. Difficulties, such as impaired processing, speed, attention, and difficulty in understanding abstractions, combined with episodic psychotic symptoms may interfere with the ability to reliably report PTSD symptoms. The CAPS-S has been used with women having schizophrenia and co-occurring, illicit drug-use disorders. Validity of the CAPS-S was demonstrated by the level of agreement between CAPS-S–derived diagnoses of PTSD and diagnoses obtained from Structured Clinical Interview for *DSM-IV*–based interviews. As intrusive thoughts are considered the signature symptom of PTSD and positive symptoms the signature symptom of schizophrenia, the lack of relationship between the CAPS-S intrusion subscale and the positive symptom scale from the PANSS provides preliminary evidence of discriminant validity [53].

1.3. Procedure

Participants were referred by their care coordinators for involvement in the MIDAS trial. Research assistants recruited individuals after screening their medical notes to check eligibility and assessing whether they met criteria for alcohol and/or drug dependence or abuse. Individuals gave informed consent to be involved in the study for the next 2 years. During baseline assessments for the MIDAS study, demographic information was collected, the PANSS was carried out, and individuals were randomized into the intervention or control arm. At 6-month follow-up, participants were asked to complete the CDS and PDS measures for the present study. The event identified, from the list of events on the PDS, by the participant as the most traumatic over the preceding 3 months was recorded and rated independently by 2 assessors (AP and NT) as being (1) independent of the individual's behavior (eg, natural disaster)¹; (2) possibly independent of their behavior, that is, an event that was not related to the patient's illness, but the independence of the patient's behavior was probable but not certain (eg, being physically assaulted); (3) an event dependent upon their illness or behavior (eg, hospitalization); or (4) an event dependent upon, or a consequence of, a symptom of their illness (ie, a delusional interpretation or hallucination). Where there was disagreement, further information was sought from corroborative sources, and a consensus rating was arrived at. There was agreement in all but 10 of the cases. The interclass correlation coefficient for all events was 0.96.

All measures were administered by trained research assistants in a single session. Those individuals who met

¹ Childhood sexual abuse or sexual assault while younger than 18 years of age was considered as an independent event because of the very low probability that it was a consequence of the patient's behavior.

criteria for modified-PTSD were asked for their consent to complete the CAPS-S. This was not possible in all cases because of clinical and ethical reasons. Nineteen participants were interviewed with the CAPS.

1.4. Analytic strategy

In the data analysis, we sought initially to establish the nature and prevalence of traumatic events in the sample. We then sought to establish the concordance between questionnaire and interview methods of eliciting posttraumatic stress symptoms. Having confirmed that these methods were in agreement, we ascertained the prevalence of posttraumatic stress symptoms and PTSD in the sample and investigated the associations between this and the nature of the event, specifically related to its independence from the patient's behavior. Lastly, we made comparisons on clinical and demographic factors between those identified with or without PTSD.

2. Results

From a total of 166 potentially eligible participants from the Manchester trial center of the MIDAS study at the 6-month assessment, 126 individuals consented to the study, and 110 completed the assessments.

2.1. Sample characteristics

The characteristics of the total sample and divided into those with and without modified-PTSD are presented in [Table 1](#).

2.2. Occurrence and nature of traumatic events

One hundred (91%) of the 110 participants reported at least 1 traumatic event, with an average of 4.3 (SD, 2.4) events being reported by participants. The number of individuals reporting different types of events and whether the event was the most traumatic event for them (the index event) and met PTSD modified-criterion A is reported in [Table 2](#).

The most commonly reported traumas were related to the individual's illness regarding hospitalizations and delusions. The most common events that were not directly related to illness were serious injuries, physical assault by a stranger, and sexual contact when younger than 18 years by someone 5 or more years older. Men most commonly reported experiencing serious injuries and nonsexual assaults by a stranger, and women most commonly reported sexual assault by someone known to them.

2.3. Prevalence of PTSD criteria

Sixty-three individuals (57%) met the PTSD modified-criterion A for their most traumatic event. (The types of traumatic event experienced by patients and whether the trauma met PTSD modified-criterion A are presented in [Table 2](#)).

Table 1

Sample characteristics of the total sample and divided into those with and without modified-PTSD

	Modified-PTSD (n = 31)	Non-PTSD (n = 79)	Total sample (N = 110)
<i>Sex</i>			
Male	30 (97%)	69 (87%)	99 (90%)
Female	1 (3%)	10 (13%)	11 (10%)
<i>Age</i>			
Mean (SD)	36 (9.33)	39 (10.20)	38 (10.00)
Median	34	38	37
Range	20-52	18-61	18-61
<i>Ethnicity</i>			
White	29 (94%)	71 (90%)	100 (91%)
Black Caribbean	0	2 (2.5%)	2 (2%)
Black other	0	2 (2.5%)	2 (2%)
Indian	0	1 (1%)	1 (1%)
Pakistani	0	1 (1%)	1 (1%)
Other	2 (6%)	2 (2.5%)	4 (4%)
<i>Diagnosis</i>			
Schizophrenia	28 (90%)	59 (75%)	87 (79%)
Schizoaffective	1 (3%)	12 (15%)	13 (12%)
Schizophreniform	0	1 (1%)	1 (1%)
Psychosis NOS	2 (7%)	7 (9%)	9 (8%)
<i>Years since onset</i>			
Mean (SD)	11 (8.34)	14 (10.65)	13 (10.14)
<i>Hospitalizations</i>			
Mean (SD)	4 (5.79)	3 (3.02)	4 (3.00)
<i>Substance</i>			
Alcohol	17 (55%)	46 (58%)	63 (57%)
Cannabis	8 (26%)	21 (27%)	29 (26%)
Crack cocaine	2 (6%)	3 (4%)	5 (5%)
Heroin	0	2 (2%)	2 (2%)
Amphetamine	4 (13%)	7 (9%)	11 (10%)
<i>PANSS scores</i>			
Positive: mean (SD)	18 (4.71)*	15 (5.4)*	16 (5.32)
Negative: mean (SD)	13 (3.74)	14 (4.90)	14 (4.6)
General: mean (SD)	36 (7.52)*	31 (6.78)*	33 (7.27)
Total score: mean (SD)	67 (11.24)*	60 (13.32)*	62 (13.04)
<i>CDS</i>			
Mean (SD)	9.74 (5.74)*	4.65 (4.42)*	6.08 (5.33)
<i>BHS</i>			
Mean (SD)	11.10 (6.23)*	6.82 (4.81)*	8.03 (5.56)

NOS indicates not otherwise specified; HD = Beck Hopelessness Scale.

* $P < .01$.

The events were classified into whether they were independent of the patient's behavior, possibly independent of the patient's behavior, dependent on the patient's behavior, or related to their illness symptoms (eg, traumatized by their delusional thoughts or the content of their voices); these results are presented in [Table 3](#). Of those 63 individuals who met modified-criterion A, 24 reported an independent index event, 5 reported a possibly independent event, 14 reported a dependent event, and 20 reported an illness-related event. Sixty-seven (54 of those meeting modified-criterion A) individuals met criteria for intrusion symptoms resulting from their index event, 52 (42 meeting modified-criterion A) individuals met criteria for avoidance symptoms, and 54 (44 meeting modified-criterion A) individuals met criteria for hyperarousal symptoms. There is clearly a subgroup of

Table 2
Type of traumatic event in number of individuals reporting and as index event and fulfilling PTSD modified-criterion A

Event	No. of individuals reporting type of event	No. of individuals reporting as most traumatic	% Reported as most traumatic event	No. of individuals meeting modified-criterion A	% Meeting modified-criterion A
Serious injury	35	4	11%	1	3%
Natural disaster	2	0	0	0	0
Nonsexual assault by someone known	30	8	27%	8	27%
Nonsexual assault by a stranger	45	5	11%	5	11%
Sexual assault by someone known	28	13	46%	9	32%
Sexual assault by a stranger	24	4	17%	3	13%
Combat or war zone	6	0	0	0	0
Sexual contact when younger than 18 years old	34	1	3%	0	0
Imprisonment	26	1	4%	0	0
Torture	12	0	0	0	0
Life-threatening illness	21	4	19%	4	19%
Involuntary admission	57	20	35%	12	21%
Traumatic treatment	34	1	3%	1	3%
Delusions	66	14	21%	9	14%
Hallucinations	63	16	25%	10	16%
Other—unexpected death of child	2	2	100%	1	50%

participants who met symptom-category criterion but did not meet modified-category A criterion.

2.4. Prevalence of full PTSD and group differences

Overall, 31 (28%) met full criteria for current modified-PTSD on the PDS. Independent *t* tests found no significant differences between the group (modified-PTSD and non-PTSD) in age, number of hospitalizations, or years since onset. The mean PANSS positive, general subscales and the total score and the CDS were all significantly higher in the modified-PTSD group; scores for the negative subscale were not significantly different. There were no significant differences in the proportion of men to women in the 2 groups. For ethnicity, living arrangements, diagnosis, and most problematic substance, a too large a proportion of the frequencies was less than 5, so χ^2 tests could not be carried out. A χ^2 test was carried out on only cannabis and alcohol as the most frequently recorded substances; again, there were no significant differences between groups. (See Table 1 for characteristics of the modified-PTSD and non-PTSD groups.)

2.5. Reliability of PDS scores

To assess the reliability of reports of posttraumatic symptoms on the PDS, the PDS and CAPS-S scores were compared for those 19 participants who completed both measures. Those who did not complete the CAPS either refused to consent or there was concern from the relevant clinician that in-depth interviews about trauma would cause distress and have an aversive effect on the patient’s mental health. The reports of the number of symptoms were not found to be significantly different when each symptom cluster was considered in turn. For intrusion scores, $Z = -1.39$ and $P = .17$; for avoidance scores, $Z = -.32$ and $P = .75$; and for hyperarousal scores, $Z = -.55$ and $P = .58$. Similarly, there was no significant difference in total number of symptoms reported, $Z = -.66$ and $P = .51$. In all but the intrusion criteria, individuals scored more highly when the CAPS-S was used. In all but 2 cases, there was agreement on PTSD status on the PDS and CAPS. In these 2 cases, this difference resulted from a delay of logistic reasons in carrying out the CAPS interview participants rather than

Table 3
Number and percentage of participants reporting each classification of event

Event classification	No. of individuals reporting type of event	No. of individuals meeting modified-criterion A for type of event	No. of individuals meeting modified-PTSD for type of event
Independent (eg, sexual assault in childhood and life-threatening illness)	76 (69%)	24 (38%)	10 (32%)
Possibly independent (eg, physical assault since illness onset)	86 (78%)	5 (8%)	3 (10%)
Dependent (eg, hospitalizations and being chased by police)	65 (59%)	14 (22%)	5 (16%)
Illness-related (eg, command hallucinations)	77 (70%)	20 (32%)	13 (42%)

disagreement between the measures². In the remaining sample, all those who had lifetime modified-PTSD also had current modified-PTSD.

2.6. Modified-PTSD and the classification of the traumatic event

Of the 31 participants who had full modified-PTSD, 10 (9%) had an independent event; 3 (2.7%), a possibly independent event; 5 (4.5%), a dependent event; and 13 (11.8%), an illness-related event. (The number of participants experiencing each type of event dependent on their behavior is presented in Table 3).

The mean number of PTSD symptoms reported by people experiencing an independent event was 7 (SD, 5.76); those experiencing a possibly independent event, 6 (SD, 4.19); those experiencing a dependent event, 6 (SD, 4.95); and those experiencing an event related to their illness, 7 (SD, 5.56).

There were no significant differences between categories of dependence of trauma for any of the 3 symptom clusters (intrusions, avoidance, or arousal). Emotional reactions to memories, avoiding thinking about the event, and avoiding activities were commonly reported across all categories of event. Feelings of a foreshortened future were common in both illness-related and dependent events.

3. Discussion

The reported incidence of trauma in this population is very high, with 91% reporting at least 1 traumatic event, with an average of 4.3 events. These rates are largely consistent with those found in other studies of psychosis populations [3,4]. In over half of the sample (57%), the event was significantly severe to meet PTSD modified-criterion A. As reported elsewhere [3], men were more likely to experience serious injury and nonsexual assault from a stranger; women most frequently reported sexual assault by someone known to them. The characteristics of the sample indicate that it is representative.

Of the 63 individuals who had a traumatic event that met modified-criterion A for PTSD, 29 (46%) experienced an event that was independent or possibly independent of their behavior, whereas 34 (54%) had an event that was related to their illness, and of these, 20 (32%), nearly a third, had an event that was a reaction to delusional thought

or hallucination. Overall, 28% of the sample met full criterion for modified-PTSD when any type of event was considered. This percentage decreased to 12% when events independent or possibly independent of the patient's behavior were considered and to 9% when only independent events were included.

It would appear that, in those suffering psychotic illnesses, the prevalence of modified-PTSD is elevated because of a reaction to symptoms of the illness or as a consequence of the illness. This raises the question as to what are legitimate events to be included in a comorbid diagnosis of PTSD. At its inception, the diagnosis of PTSD was based upon the assumption that there was a direct relationship between a distinct class of stressors (category A events) and a distinct clinical syndrome or presentation [33]. There has been an expansion of events that are regarded as a valid category A stressor, which has been termed *criterion creep* [54]. For example, PTSD-like symptoms have been reported in people who believed that they had been abducted by aliens, in that they were physiologically reactive to "trauma" script-driven imagery [55]. Thus, merely believing that a traumatic event has occurred can result in emotional reactions very similar to those who have truly been exposed to objective traumas. These findings raise the possibility that PTSD can result from any event, real or imagined, if the affected individual believes it was sufficiently stressful. By implication, the event did not necessarily have to take place, just that the individual believes it should. Diagnostically, this would appear problematic. There are parallels here with those who are traumatized by their delusional beliefs or hallucinations. Should traumatic reactions to psychotic symptoms be considered part of the psychosis or a separate and independent comorbid disorder?

From a practical point of view, the presentation of PTSD-like symptoms in some patients as a result of their abnormal thought or perceptual processes, in essence, secondary psychopathology, is potentially clinically important irrespective of the diagnostic issues. The implication for psychologic treatments may be that where PTSD comorbidity exists, for whatever reason, this needs to be accommodated into the treatment program. Cognitive behavioral treatment programs for the treatment of comorbid PTSD and severe mental illness have been described, and initial results indicating that they are effective may be indicated in these cases [12,56,57].

This study has several strengths and weaknesses. The sample is of a reasonable size. Dual-diagnosis patients (schizophrenia and drug/alcohol misuse) have not previously been investigated in this way. The classification of the traumatic event, so as to elucidate the contribution of the patient's behavior or illness to the occurrence of the event, is a novel feature of the study. Assessments were by standardized measures and included both interview and self-report. Unfortunately, not all those who scored positive for modified-PTSD on the self-report questionnaire could be assessed through interview; this was due to refusal of the

² In 2 participants, there was a delay of over a month in administering the CAPS-S after the PDS had been completed because of disengagement of these 2 participants from the mental health services and difficulty in arranging the interview appointments. These 2 individuals met criteria for PTSD based on their reports on PDS but did not meet modified-PTSD on the CAPS-S. Both individuals reported a dependent index event. In both cases, there was an issue of current vs lifetime PTSD. Rating of lifetime modified-PTSD indicated that they both would have met modified-PTSD criterion on the CAPS-S at the time the PDS was completed.

patient or concern from the relevant clinician that in-depth interviews about trauma were contraindicated. Reporting of symptoms did not significantly differ depending on whether they were assessed by interview or self-report. Thus, there is reasonable confidence that the questionnaire methods of assessing trauma symptoms in this population were accurate. A potential limitation is that this sample may not be representative of schizophrenia in general and of those without substance misuse. Furthermore, the substance use was heterogeneous and included both drug and alcohol consumption. However, the use of drugs and abuse of alcohol is increasingly prevalent in this disorder, and the heterogeneity of use did not appear to influence the results. A further limitation was that participants were assessed on the traumatic event they found most distressing. It is possible that PTSD may have resulted from other previously occurring events, which were not elicited. For a diagnosis of PTSD, symptoms should not be present before the index event. Thus, it is unlikely that symptoms to the index event masked PTSD symptoms to another prior event or to a less distressing subsequent event, but this possibility cannot be entirely ruled out.

The research here adds to a body of evidence suggesting that it is important to gather information on trauma history and its consequences, particularly with regard to understanding the impact of hospitalization and treatment of acute exacerbations and supporting individuals when they return to the community.

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