Pretreatment and Outcome Correlates of Sexual and Physical Trauma in an Epidemiological Cohort of First-Episode Psychosis Patients

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Objectives: High prevalence of trauma has been reported in psychosis. While role of trauma as a risk factor for developing psychosis is still debated, its negative impact on outcome has been described. Few studies have explored this issue in first-episode psychosis (FEP) patients. We assessed rate of stressful events, as well as premorbid and outcome correlates of past sexual and/or physical abuse (SPA) in an epidemiological FEP patients cohort. *Methods:* The Early Psychosis Prevention and Intervention Centre admitted 786 FEP patients between 1998 and 2000. Data were collected from patients' files using a standardized questionnaire. A total of 704 files were available, 43 excluded because of a non-psychotic diagnosis at end point and 3 due to missing data regarding past stressful events; 658 patients were analyzed. *Results:* A total of 83% patients had been exposed to at least one stressful event and 34% to SPA. SPA patients were more likely to have presented other psychiatric disorders before psychosis onset (posttraumatic stress disorder, substance use disorder), to have made suicide attempts in the past, and to have had poorer premorbid functional levels. Additionally, SPA patients had higher rate of comorbid diagnosis at program entry and were more likely to attempt suicide during treatment. *Conclusions:* SPA prevalence is high in FEP patients and must be explored by clinicians considering its durable impact on psychological balance and link with long-lasting suicidal risk. More research is warranted to better understand mechanisms involved between trauma and its potential consequences, as well as to develop psychological interventions adapted to this very sensitive and complex issue.

Key words: sexual abuse/physical abuse/early psychosis/outcome

Introduction

Several publications have recently focused on the relation between trauma and psychosis. Bebbington et al[1] have found evidence, in the second British National Survey of Psychiatric Morbidity, of an excess of victimizing experiences in people suffering from psychosis compared with normal population as well as with patients with other types of mental illness. Available literature suggests that prevalence of childhood sexual abuse among patients with schizophrenia-spectrum disorder ranges from 30% to 60% for women and from 25% to 30% for men.[2] In bipolar disorders, rate of trauma exposure during childhood ranges from 45% to 68%,[3–6] with 15% to 21% of patients exposed to sexual trauma and 21% to 28% to physical trauma.

While there is still a controversy regarding a possible causal relationship between childhood trauma and later development of a psychotic disorder,[7–9] the potential long-lasting impact of trauma not only on affective behavior but also on neurochemistry and brain structure[3] has led to the exploration of possible relationships between trauma in childhood and both characteristics of illness and its course over time. Cross-sectional studies in schizophrenia-spectrum patients have shown that patients with a history of childhood abuse have higher levels of positive symptoms and cognitive deficits and poorer social functioning.[10–13] Extending these cross-sectional findings, Lysaker et al[2] showed that higher symptom levels and poorer social functional levels are maintained over time. In bipolar disorder patients, the negative impact of early physical and sexual abuse on illness course (longer delay to treatment initiation, higher rate of comorbid substance use disorders (SUDs), increased severity of mania, higher rates of suicide) has also been observed.[3,4,14]

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However, the studies mentioned above were conducted in samples of chronic patients, with the potential selection biases of sampling poorer outcome patients and the effect of long-lasting illness or treatment. To our knowledge, only 5 studies were conducted in first-episode psychosis (FEP) patients. Four of them are based on samples of patients with a first admission for psychosis. Greenfield et al[15] reported a rate of 53% of childhood trauma in a sample of 38 first-admission psychotic patients and found elements suggesting a more chronic course in trauma patients. In a cohort of 426 patients, Neria et al[5] found that 68% had been exposed to trauma defined as "event involving harm or threat to physical integrity and that would be markedly distressing to almost everyone." In a further publication,[6] they reported on a cohort of 109 first-admitted bipolar I patients with psychosis and found that previous physical assault was a risk factor for poorer outcome at 6- and 24-month follow-up (including higher risk of relapse, general distress, and higher levels of depression). Finally, in a pilot study based on 18 first-admitted patients, Compton et al[16] found elements suggesting that childhood sexual and physical abuse may be a risk factor for cannabis and other SUD in the early course of schizophrenia.

Focusing on first hospital admission leads however to the potential bias of selecting subjects suffering from more severe forms of a disorder compared with those who would not need an initial hospital admission. In a recent study on a group of 57 first-episode schizophrenia patients, Uçök and Bikmaz[17] reported that 30% had experienced sexual abuse during childhood and 14% physical abuse and that exposure to these events influenced types of symptoms presented at first assessment. The sample size is however limited, and only two-thirds of patients treated at this center were included in the study. Finally, none of these FEP studies provide information regarding the period elapsing between occurrence of trauma and development of psychosis.

Considering these elements and limitations, we planned this study with the aim to examine, in an epidemiological cohort of FEP patients, (1) prevalence rate of various types of stressful events and (2) pretreatment, baseline, and outcome differences between subjects who did and did not report past sexual and/or physical abuse (SPA).

Methods

Patients Sample

Details of study methodology and context have been given elsewhere.[18] The initial sample on which this file-audit study is based comprised a population-based cohort of 786 patients with FEP patients, consecutively admitted to the Early Psychosis Prevention and Intervention Centre (EPPIC) in Melbourne between 1998 and 2000. The EPPIC program provides a comprehensive early intervention treatment program with a usual episode of care of 18 months. At the time of the study, EPPIC had a mandate to treat all FEP patients aged 15–29 years in the catchment area with little if any leakage to private psychiatrists; as such, the study sample represents an epidemiological cohort.

While 786 patients were admitted to EPPIC during the study period, 82 files (10%) sent to other services at time of discharge were not available for the study. Excluded patients did not differ regarding diagnostic distribution and available demographic characteristics (age and gender). Among 704 available files, 43 were excluded because of a nonpsychotic diagnosis at end point and only3 due to missing data regarding past stressful events. Data on 658 patients were analyzed.

Procedure

During their treatment at EPPIC, patients benefited from various components of the program, and all information on pretreatment, baseline (admission to EPPIC), and outcome characteristics during the 18-month treatment at EPPIC were systematically documented in one single file. Patients were treated according to guidelines that were later published as the Australian Guidelines for Early Psychosis,[19] and clinical assessments were based on the Royal Park Multidiagnostic Instrument for Psychosis.[20,21] Data for the current study were sourced from the First-Episode Psychosis Outcome Study (FEPOS).[22–30] A local ethics committee granted approval for this file-audit study. Patient's medical files were assessed exclusively by 2 experienced psychiatrists (M.L. and P.C.) using a specifically designed file-audit tool (Early Psychosis File Questionnaire; EPFQ).[18]

Diagnostic Assessment

Clinical diagnoses at EPPIC are the consensus result of an intensive diagnostic and treatment process, first within the initial 6 weeks of admission by well-trained clinicians working in a specialized assessment and crisis-assertive community treatment team and then throughout the entire duration of treatment. Diagnoses for FEPOS were derived according to *Diagnostic and Statistical Manual of Mental Disorders* (Fourth Edition) (*DSM-IV*) criteria[31] and on basis of information gathered from the medical file. In case of disagreement with clinical diagnoses reported in the file, a consensus rating between both research psychiatrists and the patient's case manager was performed.[25]

Validity of the FEPOS diagnoses was established by the following procedure: Between 1998 and 2000, 230 of the 786 patients treated at EPPIC have been included in prospective trials. Their main and comorbid diagnoses were defined within 6 weeks of admission using the Structured Clinical Interview for *DSM-IV* (SCID).[32] The SCID and FEPOS diagnoses of 115 patients randomly

selected within this sample of 230 were compared. The calculated kappa values revealed a very good concordance for both psychosis diagnoses ($\kappa = 0.80$) and comorbid SUD diagnoses ($\kappa = 0.74$).

Assessment of History of Past Trauma

Clinicians at EPPIC are trained to conduct an extensive assessment of patients, including all potential psychosocial stressors that may have contributed to the emergence of psychosis. Additional information is gathered with family and relatives. Patients are seen on an average rate of 90 visits over the 18-month treatment, which provided a framework for the establishment of a trusting relationship where clinicians get an extensive knowledge of patients' history. The EPFQ contains a table where exposure to stressful events mentioned in the file can be recorded. A global item is scored according to presence or absence of any past stressful event. In case of a positive answer, a list of possible stressful events is listed (sexual abuse, physical abuse, death or loss of close other, migration, adoption, separation of parents, partner problems, and others), with additional recording of time of occurrence relative to psychosis (before or after onset of first psychotic episode). "Sexual abuse" refers to sexual molestation and/or rape. "Physical abuse" refers to physical attack or assault or being repeatedly beaten by parents, relatives, or caregivers during childhood.

Pretreatment, Baseline, and Outcome Characteristics

Pretreatment Characteristics. Premorbid functioning was assessed with the Global Assessment of Functioning (GAF) Scale,[31] as recommended by the Early Psychosis Association for the definition of prodromal patients at high risk for transition to psychosis.[33] Social adjustment was assessed with one item of the Premorbid Adjustment Scale (PAS)[34]; the complete PAS, commonly used in prospective studies, was considered too complex to reliably extract data from files. Age at onset was defined as the age when first sustained positive psychotic symptoms occurred, according to the Duration of Untreated Psychosis (DUP) Scale,[20,21] on the basis of a procedure detailed elsewhere.[29] Past psychiatric diagnoses were also assessed according to *DSM-IV* criteria and past suicide attempts according to *International Classification of Diseases, Tenth Revision*, classification.[35]

Baseline and Outcome Characteristics. Severity of illness at baseline and discharge was assessed with the Clinical Global Impressions-Severity of Illness Scale (CGI-S)[36] and level of functioning with the GAF.[31] Insight into illness was assessed on the basis of one item with anchors ranging from absent to partial and full insight.[18] Patients were rated as "working at entry" (having employment/occupation at entry) on the basis of the Modified Vocation Code Index and Modified Location Code Index

(MVCI and MLCI)[37] if they fulfilled following criteria: having a job (full time or part time) or being a student at school or university for at least the previous 4 weeks. "Medication nonadherence" was defined as failure to take medication for 1 week or longer in accordance with Robinson et al.[38] Patients were also dichotomized according to the evolution of SUD during treatment period in the following 3 groups: (a) absence of SUD (b) decrease or stopping of SUD over treatment period, and (c) persistence, increase, or commencement of SUD over treatment period.[22] Interrater reliability (between M.L. and P.C.) was established for CGI-S ($\kappa = 0.87$), GAF ($\kappa = 0.88$), PAS ($\kappa = 0.82$), and insight score ($\kappa = 0.89$).

Data Analysis

The prevalence estimates of the various types of stressful events (adoption, separation of parents, partner problems, sexual abuse, physical abuse, death or loss of close other, and migration) were calculated based on this total number of patients.

Considering that there was no way to retrospectively assess patient's perception of the traumatizing intensity of various forms of stressful events, we felt some events such as parental divorce, eg, may not have been perceived as traumatizing by some patients. We therefore focused our analysis on correlates of SPA, considering that such events would be experienced as traumatizing by anyone. This also allows comparison with data reported in FEP by others.[5,17] Descriptive statistics in the form of means and SDs are provided for scale data, and counts and frequencies are presented for categorical variables. To determine differences between those who did and did not have history of SPA, a series of independent samples *t* tests were conducted for dependent variables that were continuous in nature while the chi-square test was used for categorical dependent variables. For treatment and outcome variables, it was important to control for time in service as the length of contact varied. For continuous dependent variables, time in service was entered as a covariate in a series of one-way analyses of covariance. For categorical dependent data, a series of logistic regressions were used with time in service entered into the first step and SPA (yes/no) entered into the second step. For these analyses, the odds ratios (ORs) and the 95% confidence interval (CI) of the ORs were calculated, and the Wald statistic (z) was used to determine the significance of the associations (only *P* values are reported for these analyses). Symptomatic remission was defined on the basis of receiving a CGI-S score of no worse than "mild" (score ≤ 3) at discharge. Functional remission was defined as employment based on MVCI (paid or unpaid full- or part-time employment, being an active student in school or university, head of household with employed partner [homemaker], or full- or part-time volunteer) and

independent living based on MLCI (head of household; living alone, with partner, or with peers; and living with family with minimal supervision) at discharge. For symptomatic remission, baseline CGI-S was also entered as a covariate into the logistic regression. For functional remission, baseline functioning (employment and independent living) was entered as a covariate into the model.

Results

Rates of Various Types of Trauma

Information on trauma was available for 658 patients with FEP. Exposure to at least one type of stressful event was found in 547 patients (83%). The most frequently occurring stressful events were separation of parents (42.1%, $n = 277$) followed by physical abuse (26.0%, $n = 171$), death or loss of close other (21.1%, $n = 139$), migration (18.5%, $n = 122$), problems with partner (17.5%, $n = 115$), and sexual abuse (16.0%, $n = 105$). In 98% of cases, trauma had occurred before psychosis onset. Fifty patients had a premorbid history of both sexual and physical abuse, 55 had a history of sexual abuse but no physical abuse, and 121 with a history of physical abuse but no sexual abuse. These 226 patients (34%) comprised the SPA category and were contrasted to 432 patients who had not experienced such trauma.

Correlates of Exposure to SPA

Demographic, Diagnostic, and Premorbid Variables. The relationship between SPA and demographic, diagnostic, and premorbid variables is depicted in table 1. Patients who had a history of SPA were more likely to be female ($P < .001$); to have fewer years of education ($P < .001$); to have poorer premorbid functioning (as indicated by the premorbid GAF and PAS, both $P < .001$); to have a longer DUP ($P = .002$); to have a past history of psychiatric disorder ($P = .001$), particularly posttraumatic stress disorder (PTSD, $P = .001$); to have a past history of suicide attempts ($P < .001$); and to have a lifetime diagnosis of a SUD ($P = .020$). There was no association between SPA and diagnosis.

Characteristics at Entry to the Service

Descriptive statistics for characteristics at entry to service can be found in table 2. At entry to the service, a history of SPA was related to presence of a comorbid diagnosis ($P = .007$), polysubstance abuse/dependence ($P = .005$), unemployment ($P < .001$), and living away from family ($P < .001$).

Treatment and Outcome Characteristics

Patients who had a history of SPA were more likely to be noncompliant with treatment ($P = .003$; OR = 1.68, 95% CI = 1.19–2.38) and to have attempted suicide during treatment ($P < .001$; OR = 2.72, 95% CI = 1.56–4.74) (see table 3).

SPA was not related to either symptomatic ($P = .150$, OR = 0.88, 95% CI = 0.75–1.05) or functional remission ($P = .249$, OR = 0.80, 95% CI = 0.55–1.17) at discharge.

Correlates Associated With Specific Types of Traumas

In order to explore if there were specific correlates to specific types of trauma, post hoc analyses were conducted to determine which factors were specifically associated with a history of sexual abuse only and a history of physical abuse only. Individuals who had history of both sexual and physical abuse ($n = 50$) were excluded from these analyses. The comparison group was composed of 432 patients who had not experienced SPA.

Correlates Associated With Sexual Abuse. Factors related to a history of sexual abuse only include gender, with females more likely to have a history of sexual abuse ($\chi_1^2 = 53.89$, $P < .001$); a past diagnosis of PTSD ($\chi_1^2 = 8.58$, $P = .003$); an increased rate of polysubstance use at entry to service ($\chi_1^2 = 7.62$, $P = .006$); and living away from family at entry ($\chi_1^2 = 12.23$, $P < .001$). Sexual abuse was neither related to symptomatic remission (Wald $z = 0.35$, $P = .55$, OR = 1.10, 95% CI = 0.81–1.50) nor to functional remission (Wald $z = 0.18$, $P = .68$, OR = 1.15, 95% CI = 0.80–2.21).

Correlates Associated With Physical Abuse. Factors associated with a history of physical abuse only include fewer years of education ($t_{536} = 4.29$, $P < .001$), a past history of substance use ($\chi_1^2 = 11.98$, $P < .001$) and a higher rate of suicide attempts ($\chi_1^2 = 7.09$, $P = .008$), lower premorbid functioning (premorbid GAF $t_{545} = 4.37$, $P < .001$; PAS $t_{548} = -4.86$, $P < .001$), a longer DUP ($t_{542} = -3.32$, $P < .001$), a SUD at service entry ($\chi_1^2 = 5.03$, $P = .026$); unemployment or not studying at service entry ($\chi_1^2 = 10.16$, $P = .001$), and treatment noncompliance (Wald $z = 9.36$, $P = .002$, OR = 2.03, 95% CI = 1.29–3.19). A history of physical abuse only also related significantly to diagnosis ($\chi_5^2 = 16.56$, $P = .005$) with patients with schizophrenia being more likely to have a past history of physical abuse but only as compared with patients with a diagnosis of bipolar I disorder ($P = .026$). A history of physical abuse was neither related to symptomatic remission (Wald $z = 2.82$, $P = .093$, OR = 0.84, 95% CI = 0.68–1.03) nor to functional remission (Wald $z = 1.31$, $P = .252$, OR = 0.76, 95% CI = 0.47–1.22).

Discussion

To our knowledge, this is the largest naturalistic study exploring rate of trauma as well as correlates of sexual and physical trauma in FEP patients, including characteristics before onset of psychosis. FEP cohorts allow studying patient and illness characteristics within the entire scope of psychosis, ranging from subjects who will

Table 1. Demographic, Diagnostic, and Premorbid Factors Related to a Premorbid History Sexual Abuse and/or Physical Abuse

	Statistic	Total (n = 658)	Sexual and/or Physical Abuse		Test Statistic	Value	df	P Value
			Yes (n = 226)	No (n = 432)				
Demographics								
Age, y	M (SD)	22.0 (3.4)	22.2 (3.6)	22.0 (3.3)	t test	−0.58	656	.57
Gender, % male	% (n)	65.7 (432)	51.8 (117)	72.9 (315)	χ^2	**29.43**	**1**	**<.001**
Years in school	M (SD)	10.5 (1.5)	10.2 (1.5)	10.7 (1.4)	t test	**4.27**	**637**	**<.001**
Diagnosis[a][b]								
Schizophrenia	% (n)	42.7 (281)	39.9 (112)	60.1 (169)	χ^2	6.96	3.00	.73
Schizophreniform	% (n)	18.8 (124)	27.4 (34)	72.6 (90)				
Schizoaffective	% (n)	9.7 (64)	43.8 (28)	56.3 (36)				
Bipolar I disorder	% (n)	17.9 (118)	24.6 (29)	75.4 (89)				
Major depressive disorder	% (n)	2.7 (18)	44.4 (8)	55.6 (10)				
Other	% (n)	8.1 (53)	28.3 (15)	71.7 (38)				
Premorbid variables								
Premorbid GAF	M (SD)	69.4 (10.6)	66.5 (10.6)	71.0 (10.3)	t test	**5.22**	**650**	**<.001**
PAS level	M (SD)	2.8 (1.2)	3.2 (1.1)	2.6 (1.1)	t test	**5.66**	**653**	**<.001**
Duration of prodrome (in d)[c]	M (SD)	55.7 (81.6)	53.8 (68.8)	56.7 (87.6)	t test	−0.65	590	.519
	Median	26.1	32.6	25.9				
Duration of untreated psychosis (in wk)[c]	M (SD)	36.4 (83.8)	44.1 (83.8)	32.3 (74.2)	t test	**3.04**	**647**	**.002**
	Median	8.7	13.0	8.7				
Age of onset of psychosis, y	M (SD)	21.3 (3.6)	21.2 (3.9)	21.3 (3.4)	t test	0.33	647	.743
Past history of psychiatric disorder	% (n)	47.7 (314)	59.7 (135)	41.4 (179)	χ^2	**19.92**	**1**	**<.001**
Depression	% (n)	27.4 (180)	31.4 (71)	25.2 (109)	χ^2	2.86	1	.091
Personality disorder	% (n)	7.1 (47)	5.8 (25)	9.7 (22)	χ^2	3.49	1	.062
Posttraumatic stress disorder	% (n)	3.8 (25)	7.1 (16)	2.1 (9)	χ^2	**10.13**	**1**	**.001**
Past history of suicide attempts	% (n)	14.3 (93)	22.1 (49)	10.3 (44)	χ^2	**16.58**	**1**	**<.001**
Past history of SUD	% (n)	74.2 (488)	79.6 (180)	71.3 (308)	χ^2	**5.40**	**1**	**.020**

Note: GAF, Global Assessment of Functioning; PAS, Premorbid Adjustment Scale; SUD, substance use disorder.
[a]Based on final discharge diagnosis.
[b]Percentages based on frequency of sexual abuse within each diagnostic category, rather than distribution of diagnoses within sexual and physical abuse (yes/no) categories.
[c]Analyses based on logarithmic (plus constant 1) transformation due to extreme positive skewness.

present a unique psychotic episode to those who suffer from a chronic and relapsing form of illness. Additionally, FEPOS data are based on an epidemiological cohort from a geographically circumscribed area, composed of all patients treated at EPPIC during the study period, including those who have been treated exclusively as outpatients. This provides data from a patient sample representative of the whole spectrum of FEP. The common biases of nonepidemiological FEP studies are avoided, such as exclusion of patients with milder symptoms if studying first hospital admission patients exclusively or, more commonly, exclusion of those with highest illness severity, higher rates of SUD, and poor engagement in treatment when conducting prospective studies in the context of an informed consent procedure.[39,40]

Key Findings

Our data reveal a high prevalence of trauma exposure in FEP patients. The commonness of abuse in psychosis patients supports Read et al[7] suggestion that this issue should always be explored when treating such patients. The rather broad trauma definition adopted in the EPFQ probably explains why we found a significantly higher percentage of patients exposed to at least one type of trauma compared with other studies on trauma in FEP.[5,15–17] Yet, when restricting our analyses to SPA, we find prevalence rates that are similar to those reported by these authors, thus confirming their results in a larger and more representative sample. As mentioned by Üçok and Bikmaz,[17] such rates are however on the lower range of what has been reported in cohorts of patients suffering from more chronic forms of psychosis.[7] Considering the suggested link between trauma and poorer outcome in psychosis,[2,10–13] this relatively lower rate may reflect the absence, in FEP studies, of selection bias toward patients with chronic outcome and could therefore offer a more realistic picture of the prevalence of such events in the whole range of psychosis patients. The observation that female patients are more likely than male patients to have been exposed to at least one form of

Table 2. Characteristics at Admission Related to a History of Sexual Abuse and/or Physical Abuse

Variables of Interest	Statistic	Total (*n* = 658)	Sexual and/or Physical Abuse		Test Statistic	Value	*df*	*P* Value
			Yes (*n* = 226)	No (*n* = 432)				
Clinical characteristics at entry								
CGI-S score	M (SD)	5.5 (0.8)	5.5 (0.8)	5.5 (0.8)	*t* test	0.56	656	.575
CGI-S depression score baseline	M (SD)	2.0 (1.6)	2.1 (1.7)	1.9 (1.6)	*t* test[a]	−1.37	420.5	.172
GAF baseline	M (SD)	32.2 (9.7)	31.8 (9.7)	32.4 (9.7)	*t* test	0.76	654	.449
Insight at baseline								
% No insight	% (*n*)	62.4 (408)	58.6 (30)	64.4 (278)	χ^2	3.97	2	.138
% Partial insight	% (*n*)	28.7 (188)	29.7 (66)	28.2 (122)				
% Full insight	% (*n*)	8.9 (58)	11.7 (26)	7.4 (32)				
Comorbidity								
Overall comorbidity (not SUD), %yes	% (*n*)	17.5 (115)	23.0 (52)	14.6 (63)	χ^2	**7.30**	**1**	**.007**
Comorbid depression	% (*n*)	36.5 (42)	32.7 (17)	39.7 (25)	χ^2	0.60	1	.438
Comorbid personality disorder	% (*n*)	42.6 (49)	44.2 (23)	41.3 (26)	χ^2	0.10	1	.750
Substance use								
Overall substance use, % yes	% (*n*)	61.4 (404)	65.9 (149)	59.0 (255)	χ^2	2.98	1	.084
Cannabis use or dependence, % yes	% (*n*)	47.0 (309)	47.8 (108)	46.5 (201)	χ^2	0.09	1	.758
Polysubstance use, % yes	% (*n*)	10.8 (71)	15.5 (35)	8.3 (36)	χ^2	**7.89**	**1**	**.005**
Functional level at entry								
Working at entry, % number	% (*n*)	51.8 (340)	62.1 (139)	46.5 (201)	χ^2	**14.24**	**1**	**<.001**
Living with family, % number	% (*n*)	37.5 (244)	49.1 (108)	31.6 (136)	χ^2	**19.12**	**1**	**<.001**

Note: CGI-S, Clinical Global Impressions-Severity of Illness Scale; GAF, Global Assessment of Functioning; SUD, substance use disorder.
[a]Test statistic and *df* adjusted because of violation of homogeneity of variance.

trauma is also in keeping with previous results[5]; it should however be stressed that if this was true in the subgroup of patients exposed to SPA for sexual abuse, it was not the case for physical abuse. Clinicians should therefore not neglect to raise this issue with male patients as well.

Patients who suffered SPA were more likely to have presented with psychiatric disorders before FEP. While history of childhood trauma is more prevalent in psychotic patients than in the normal population,[10] Spataro et al[41] found that childhood sexual abuse increases the risk for other childhood and adult mental disorders, such as anxiety disorders, major depression, or personality disorder. More studies are needed to determine if some elements of past psychiatric history may belong to a pathway toward psychosis, where impact of trauma would translate first into anxiety, depression, and nonclinical psychotic symptoms and then contribute to the development of an at-risk state for psychosis.[42]

The observation of a higher rate of comorbidities at baseline in abused patients suggests however that some of these disorders persist over time, despite emergence of psychotic symptoms. These disorders may therefore belong to a wider spectrum of potentially coexisting consequences of trauma. Three specific diagnoses (PTSD, SUD, and suicide attempts in the past) were significantly more prevalent in the past history of abused compared with nonabused patients. First, the increased risk of PTSD in SPA patients at baseline confirms findings from Neria et al[5] and reveals the profound and durable

impact of such events. Second, considering that psychosis patients report using substances mainly in order to promote positive mood alteration and to cope with negative affects,[43] the observed excess of SUD in the past of SPA patients could be linked to the psychological impact of trauma and may represent an attempt to cope with these events and their consequences. However, on the basis of our data, it is impossible to say if SUD was, as suggested by others,[5] a risk factor for trauma or rather, as proposed by Compton et al,[16] a consequence of its occurrence, and this question needs additional research. Third, in agreement with Üçok and Bikmaz,[17] we found a higher likelihood for SPA patients to have attempted suicide in the past; even more concerning is our observation that, during treatment phase, suicide risk remained much higher in these patients who were close to 3 times more likely to attempt suicide. This suggests the necessity for both vigilance regarding a possible new attempt and again provision of adapted and intense psychological support. Taken together, the elements mentioned above highlight the long-lasting nature of the psychological turmoil related to childhood trauma and confirm that psychological approaches to the treatment of early psychosis must imperatively be broadened beyond the sole issue of psychosis.[18]

SPA patients had poorer functional levels before psychosis onset, as measured both by the premorbid GAF and the PAS. Even though there was no significant difference in GAF levels at baseline between both groups

Table 3. Treatment and Outcome Characteristics Related to a History of Sexual Abuse and/or Physical Abuse

Variables of Interest	Statistic	Total (n = 658)	Sexual and/or Physical Abuse		Test Statistic[a]	Value	df	P Value
			Yes (n = 226)	No (n = 432)				
Length of time in service (in wk)	M (SD)	63.5 (34.1)	65.0 (32.1)	62.7 (35.1)	t test	−0.80	656	.423
Admitted to hospital, % yes	% (n)	73.9 (486)	72.1 (163)	74.8 (323)	Wald	0.66	1	.417
Number of admissions	M (SD)	1.4 (1.5)	1.6 (1.7)	1.4 (1.4)	F statistic	6.68	1655	.084
Noncompliance to treatment, % yes	% (n)	60.6 (377)	68.5 (150)	56.3 (227)	Wald	**8.69**	**1**	**.003**
Suicide attempt in treatment	% (n)	8.7 (57)	14.3 (32)	5.8 (25)	Wald	**12.49**	**1**	**<.001**
Substance use disorders[b]								
No substance use disorders	% (n)	34.7 (228)	30.5 (69)	36.8 (159)				
Increased or no change	% (n)	25.2 (166)	27.0 (61)	24.3 (105)	Wald	2.2	1	.139
Decreased or stopped	% (n)	40.1 (264)	42.5 (96)	38.9 (168)	Wald	2.01	1	.156
Symptomatic remission at discharge, % yes[c,d]	% (n)	63.6 (418)	60.4 (136)	65.3 (282)	Wald	2.07	1	.150
Functional remission at discharge, % yes[e,f]	% (n)	44.3 (245)	40.1 (75)	46.4 (170)	Wald	1.33	1	.249

[a]Covariate was time in service.
[b]Multinomial logistic regression with "no substance use" as the reference category for the dependent variable.
[c]Symptomatic remission defined on the basis of discharge Clinical Global Impressions-Severity of Illness Scale (CGI-S) scores—CGI-S score ≤3 "remission" whereas CGI-S scores >3 were indicative of poor outcome.
[d]Symptomatic remission is the dependent variable, and adjusted odds ratios are reported controlling for length of time in the service and admission CGI-S score.
[e]Functional remission defined on the basis of employment status (paid or unpaid full-or part-time employment, being an active student, homemaker, or full- or part-time volunteer) and independent living (head of household, living alone, with partner, or with peers; and living with family with minimal supervision).
[f]Functional remission is the dependent variable, and adjusted odds ratios are reported controlling for length of time in the service, premorbid Global Assessment of Functioning (GAF), and GAF at admission.

(probably due to the ceiling effect of the presence of psychotic symptoms in all patients), SPA patients also had fewer years of education and were less likely to be working at entry to the service. This highlights that poorer functioning may be associated with SPA prior to the emergence of psychotic symptoms. SPA patients had a significantly longer DUP. Longer duration of untreated illness has already been reported in bipolar disorder patients who had been exposed to childhood trauma[3,14]; in these patient groups, however, age at onset was lower in patients who had been abused, and delayed treatment was probably partly related to failure to diagnose bipolar illness in younger subjects. In our sample, there was no significant difference in age at onset of psychosis between both groups, and therefore, other factors may explain this longer delay until treatment initiation. First, SPA patients were less likely to live with their family, which may contribute to a later contact with mental health professionals, considering previous findings that 30% of mental health contacts are initiated by family and that contacts made by families are more successful than those initiated by patients themselves.[44] Second, SPA patients were less likely to be in a school or working environment at the time of psychosis onset where behavioral anomalies may have been more likely to be identified. Thirdly, SPA patients higher rate of SUD may have led either to blur-

ring of the pathopsychological presentation of the initial episode or to failure to consider a diagnosis of psychosis when SUD was already identified. Finally, it is also possible that exposure to SPA may have had such a psychological impact that exposed patients had more difficulties building a trusting relationship with health-care professionals and were therefore less likely to seek help despite experiencing distress.

Contrary to previous publications,[17] we did not find any difference in symptomatic intensity at baseline between trauma patients and those who had not been exposed to such events. This may be linked to the epidemiological nature of this study and to the fact that every files of patients treated at EPPIC during the study period could be assessed, allowing the inclusion of highly symptomatic patients who would certainly have refused prospective research assessment based on informed consent procedure. Intensity of symptoms displayed by the majority of FEPOS patients results in a median CGI level of 5.5 that probably induces some degree of ceiling effect. Additionally, patients who had been exposed to SPA did not display a worse symptomatic or functional outcome than others, which is in contrast with all but one[15] previous FEP publications on trauma. Two factors may have played a role in this matter. First, the epidemiological nature of this study may here again

have played a role. Second, it is also possible that the type of treatment proposed to patients in a specialized early intervention program may have had a positive impact on patients outcome: major effort dedicated to engagement through assertive case management, detailed exploration of factors that may have led to development of psychosis in the aim to promote a better psychological integration of the first psychotic episode, and provision of treatment in the frame of a positive and optimistic attitude aimed at recovery. Nevertheless, SPA patients were more likely to be noncompliant to treatment and were, as mentioned above, more likely to attempt suicide during treatment, elements that again suggest that specific psychological treatment should be developed for those who have gone through such events.

Limitations

There are various limitations to this study. First, FEPOS being based on a retrospective file audit; the usual limitations to such studies need to be considered: poor quality of file entries and absence of strategies to ensure both interrater reliability and validity of the data. However, in the present study, all efforts were made to reduce these limitations as described in detail previously.[18,25] Second, despite relying on various sources for the assessment of trauma (multiple interviews with patients, relatives, and friends), this issue was assessed only retrospectively and is therefore subject to underestimation as well as to overestimation. The assessment of trauma over the entire duration of treatment in the context of a trusting relationship with case manager offers however a bigger chance for patients to talk about this difficult issue than during a single interview conducted by a research interviewer. Third, while the occurrence of various subtypes of trauma was assessed, no details were available regarding the number of occurrence of each specific type of abuse as well as precise age when trauma occurred. Fourth, despite being rather broad, the EPFQ list of possible traumatic events did not include emotional neglect that has been shown to be an important aspect of trauma in children.[17] Finally, duration of follow-up was relatively short, and it is possible that impact of trauma on outcome may become manifest only later. Additionally, results regarding association between SPA and some pretreatment variables must be interpreted with caution, considering that causality of relationship cannot be inferred from the statistical analysis we conducted.

Clinical Implications

Our results provide a better insight into the prevalence and impact of SPA in FEP patients. Clinicians should be aware that such events are frequent and that their possible occurrence needs to be explored in all patients presenting for a first psychotic episode. Not only do such events have a durable impact on psychological balance

of exposed patients; but they also increase the risk for them to disengage from treatment and to commit suicide. More research in this domain is therefore warranted, not only in order to better understand the mechanisms involved and direction of causality between trauma and its potential consequences but also to develop psychological interventions that are well adapted to this very sensitive and complex issue.

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