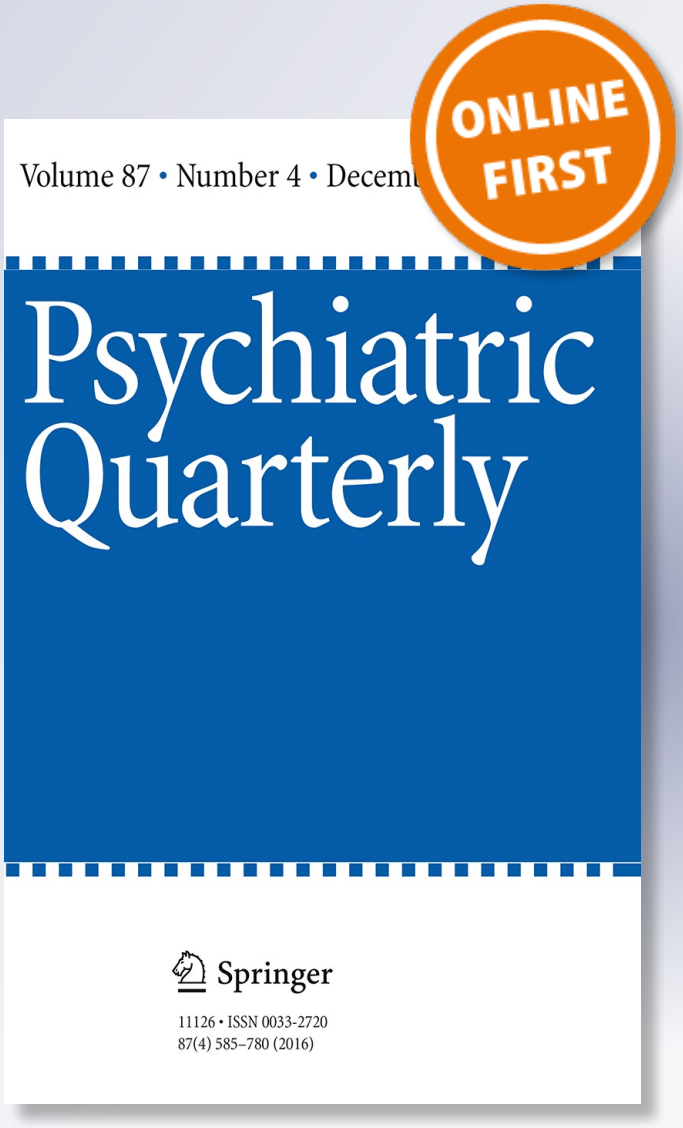
Adverse Childhood Experiences among Men with Schizophrenia

Miguel Vallejos, Oscar M. Cesoni, Romina Farinola, Matías S. Bertone & Cintia R. Prokopez

Psychiatric Quarterly

ISSN 0033-2720

Psychiatr Q
DOI 10.1007/s11126-016-9487-2



Springer

Psychiatr Q
DOI 10.1007/s11126-016-9487-2

ORIGINAL PAPER

Adverse Childhood Experiences among Men with Schizophrenia

Miguel Vallejos[1] · **Oscar M. Cesoni**[1] · **Romina Farinola**[1] · **Matías S. Bertone**[2] · **Cintia R. Prokopez**[3]

Abstract Individuals who suffered traumatic events or adverse experiences during their childhood have an increased risk of developing during adulthood physical problems, aggressive behavior, and psychiatric disorders, such as schizophrenia. Patients diagnosed with schizophrenia have higher rates of traumatic experiences during childhood than the general population, and those who suffered multiple traumatic events have an increased risk of disease relapse. The current study aims to determine the prevalence of different types of adverse experiences during childhood among a male patient sample with schizophrenia. An Observational descriptive cross-sectional study was conducted at Jose T. Borda Hospital, in Buenos Aires, Argentina. Participants included 51 male patients between the ages of 18 and 63 years with a diagnosis of schizophrenia. Semi-structured interviews were conducted, applying a socio-demographic questionnaire, SCID I and II scales to assess psychiatric diagnosis, and the Adverse Childhood Experiences (ACE) Questionnaire to evaluate the presence of adverse childhood experiences. Statistical analyses were conducted using SPSS 22 software. We observed that 94% of participants had experienced at least one adverse childhood experience. Most (63%) suffered from 4 or more disruptive child events. A high prevalence of family history of mental illness was found, also emotional abuse and neglect. Most traumatic events occurred within the family group. It was found a moderately significant relationship between patients who suffered adverse events and the presence of auditory hallucinations.

Keywords Child abuse · Men · Schizophrenia · ACE scale

✉ Cintia R. Prokopez
cprokopez@gmail.com

[1] José T. Borda Hospital, Dr. Ramón Carrillo 375, C1275AHG, Buenos Aires, Argentina

[2] Belgrano University, Zabala 1837, C1426DQG, Buenos Aires, Argentina

[3] Braulio A. Moyano Hospital, Brandsen 2570, C1287ABJ, Buenos Aires, Argentina

Published online: 12 December 2016

Child Abuse in Patients with Schizophrenia

Suffering adverse experiences during childhood increase the risk of developing physical diseases, aggressive behavior and psychiatric disorders in adulthood [1, 2]. Given its high prevalence, it is likely that child abuse is a major factor in developing mental pathologies [1, 2]. People who suffered abuse during childhood are more likely to require psychiatric treatment in adulthood [3, 4].

Several authors argue that individuals with a history of traumatic events in childhood rarely experience a single traumatic event, being more likely to suffer several traumatic episodes [5]. Finkelhor et al. state that 69% of children suffering from child abuse experience an average of three different types of adverse events in childhood [6].

Patients in psychiatric hospitals have a child abuse rate that exceeds 2 times that of the general population [7, 8]. These results may be underestimated since people,and more often men, tend to underreport their stories of abuse when they are admitted to a psychiatric hospital [4, 8, 9].

Several studies show a higher prevalence of childhood traumatic events among psychotic patients in comparison with the general population. Its incidence varies between 45 and 71% among schizophrenic patients [10–15]. People who suffered adverse events at an earlier age and those who were exposed numerous times to different severe events have a higher risk of developing psychosis, suggesting a dose-response relationship among trauma/ psychosis [9, 10, 14–19]. In addition, many studies demonstrated that severe and chronic traumatic childhood experiences increase the occurrence of hallucinations [13, 20–22].

The aim of this study is 1) to determine the prevalence of child abuse in a male sample of schizophrenic patients, 2) to determine the prevalence of different types of child abuse suffered by this population, 3) to determine the percentage of patients who had 4 or more types of adverse events, 4) to determine who were the perpetuators of these events, and finally 5) to analyze the relationship between child abuse and the presence of auditory hallucinations.

Method

Study Design

The present study is a descriptive-observational, cross-sectional study conducted at Dr. Tiburcio Borda Hospital. This is a male's neuropsychiatric hospital and serves a large urban catchment area in Buenos Aires, Argentina, and predominantly uninsured patients.

All procedures performed in studies involving human participants are in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

Participants

The study includes 51 male patients diagnosed with schizophrenia, admitted to the hospital or outpatients. All patients were between the ages of 18 and 65 years (M = 41.27; SD = 12.61). Patients reported an average of 10.33 years (SD = 3.55) of completed education and the majority of the sample were single (82.4%) and unemployed (88.2%). Further clinical and demographic variables are presented in (Table 1).

Table 1 Socio-demographic characteristics of patient sample ($N = 51$)

	M (±SD) or %	Range
Mean age	41,27 (±12,61)	20–65
Relationship status, n (%)		
Single	82,4%	
Married/living with a partner	13,7%	
Divorced	2,0%	
Widowed	2,0%	
Years of education	10,33 (±3,55)	
Occupation, n (%)		
Employed	11,8%	
Unemployed	88,2%	

Procedure

All participants in the current study were male patients. Interviews were conducted by three psychiatrists (MV, OC and RF). All psychiatrists were trained to take the semi-structured interview administered as part of the study protocol. Initial evaluation was performed to determine if patients met inclusion criteria: (a) age between 18 and 65 years and (b) diagnosed with schizophrenia. Patients were excluded if they (a) were unable to respond autonomously (i.e., due to sedative effects of medication or language limitations), (b) suffered delusions at the time of the study. All patients who agreed to participate provided a written informed consent.

Measures

Each patient underwent a semi-structured interview with a psychiatrist from the research team. It included questions related to clinical and demographic variables. Structured Clinical Interview for DSM (SCID I and II) was used to assess the psychiatric disorder in Axis I and II [23].

Patient history of childhood trauma. Information about childhood experiences was collected through questions selected from the Adverse Childhood Experiences study (ACE) [2] (translated into Spanish by Carolina Whitelegg and back- translated by Gabriela Kardos). The questionnaire consists of 10 questions about the presence of different types of trauma before 18 years. The maximum score is ten and a higher score indicates a greater number of adverse childhood experiences suffered during childhood. The questionnaire explores the history of physical, emotional and/ or sexual abuse, the history of physical and/ or emotional neglect and the presence of psychiatric disorders and family legal problems. It includes the following variables:

Childhood Abuse One question related to the experience of each of the following forms of abuse: physical (being hit or beaten), emotional (being threatened, frightened, belittled, neglected), and sexual (being touched against your will, threatened to do things against your will, being abused sexually). Responding 'often' or 'sometimes' on any of the types of abuse was taking as indicating experience with this sort of abuse.

Childhood Neglect Divided into emotional and physical neglect, measured by five questions each. The questions measuring emotional neglect were: (1) 'Nobody in my family helped me feel important or special', (2) 'I did not feel loved', (3) 'People in my family did not look out for each other', (4) 'People in my family did not feel close to each other', (5) 'My family was not a source

of strength and support'. Responding 'often' or 'sometimes' on any of the questions was considered an indicator of emotional neglect. The questions measuring physical neglect were: (1) 'I did not have enough to eat', (2) 'I knew there was not someone there to take care of me and protect me', (3) 'My parents were too drunk or too high to take care of me', (4) 'I had to wear dirty clothes', (5) 'There was not someone to take me to the doctor if I needed it'. Responding 'often' or 'sometimes' on any of the questions was considered an indicator of physical neglect.

Household Dysfunction Measured by the following variables:

- *Witnessing intimate partner violence*: (1) 'Did you ever hear or see that your father or your mother's partner abusing your mother physically, emotionally or sexually?', (2) 'Did you ever hear or see that your mother or your father's partner abusing your father physically, emotionally or sexually?'. Responding 'often' o 'sometimes' to one or both of these questions was considered evidence of having witnessed intimate partner violence.
- *Household substance abuse.* Measured by two questions: 'Have you ever lived with (1) an alcoholic or problem drinker? (2) 'someone using drugs?'. Affirmative responses to one or both of these questions were taken as evidence of being exposed to household substance abuse.
- *Parental separation, divorce or death*. Measured by responding 'yes' to the question: 'Were your parents separated or divorced or did any of your parents die before you reached the age of 18?'
- *Mental illness among household members*. Measured by responding 'yes' to one or both of the following questions: (1) 'Was anyone in your household ever depressed or mentally ill?', (2) 'Did anyone in your household ever attempt to commit suicide?'
- *Incarceration of household member*. Measured by responding 'yes' to the following question: 'Did anyone in your household ever go to prison?'

Definition of a history of auditory hallucination. A history of hallucination was defined as a 'yes' response to the question: 'Have you ever had or do you have hallucinations (heard things that were not really there)?'

Data Analytic Approach

Categorical measures are reported as frequencies or percentages and compared with contingency tables ($\chi 2$). Continuous measures are reported as means ± standard deviations (SD) and compared by ANOVA methods (t-test) or Wilcoxon ranksum test (Mann–Whitney U statistic) for non-normally distributed continuous data. Statistical significance required two-tailed $p < 0.05$. All statistical analyses were conducted using SPSS 22 software.

Results

Clinical Characteristics

According to the DSM IV, all patients were diagnosed with schizophrenia, most of them subtype paranoid (72.6%). More than a half of the sample did not have history of suicide attempts; a high rate of rehospitalization due to relapse was observed (Table 2).

Table 2 Clinical variables ($N = 51$)

	N (%)
Type of schizophrenia	
Paranoid	37 (72,6)
Disorganized	8 (15,7)
Residual	5 (9,8)
Catatonic	1 (1.8)
Suicide attempts	
None	30 (58,9)
1	11 (21,5)
2 or more	10 (19,6)
Number of hospitalizations	
None	4 (7,8)
1	10 (19,6)
2 or more	37 (72,6)

Adverse Childhood Events

The average score of the scale was 4.33 ± 2.17 (mean +/− SD) and the median score was 5 (range 0–9). Of the total sample, 48 patients (94%) reported at least one adverse experience during childhood and 32 individuals (63%) reported 4 or more disruptive events (Fig. 1).

The most frequent subtype of adverse event found was a mental illness among household members, reported by 37 patients (72.5%), followed in decreasing order by parental separation, divorce or death (30 patients, 58.8%), emotional neglect (28 patients, 54.9%), and physical neglect (22 patients, 43.6%). The prevalence of sexual abuse and the history of incarceration of a household member were low (10 patients,19.6% and 15 patients, 29%, respectively) (Fig. 2). Both physical and emotional abuses were perpetrated mainly by parents, while sexual abuse was more frequently perpetrated by close relatives (Fig. 3).

Finally, a moderately significant relationship was found between patients who suffered adverse events during childhood and the presence of auditory hallucinations, Phi coefficient 0.35 ($p = 0.047$) Table 3).

Discussion

The vast majority of the individuals included in the study suffered from some traumatic event during childhood (94%). We found that 63% of the sample scored four or more types of trauma. Our findings are higher than those found in general population [2, 24], in subjects with mental disorders in prison [25], in patients with a severe mental illness [10] and among schizophrenic spectrum patients [8–10, 14, 15, 21]. We consider two hypotheses to explain

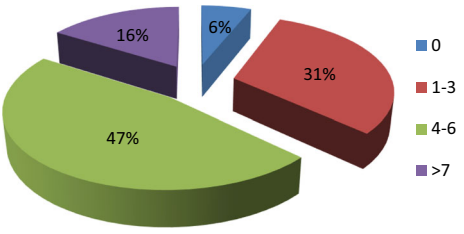


Fig. 1 Patients grouped according to the number of adverse events experienced during childhood

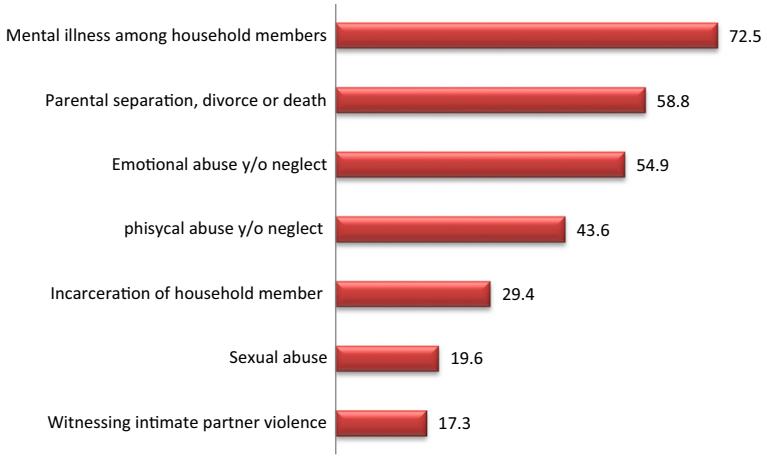


Fig. 2 Prevalence of traumatic events, percentage (%)

these results; the first one is related to the populations included in each study, as it was observed that people who suffer from severe mental illnesses have an increased prevalence of child abuse. The second hypothesis to explain the higher prevalence of childhood trauma in our study is because we explored the presence of more types of child abuse in comparison with other studies that used other questionnaires. In addition, the studies among schizophrenic population differ in many methodological aspects, such as the definition of abuse or childhood, and the types of trauma explored. Because of these reasons, the studies are not comparables [14, 15, 26].

Consistent with other studies examining the presence of physical, emotional and sexual abuse, we found that emotional abuse is the most frequent adverse childhood experience observed in schizophrenia spectrum patients [10, 15, 27].

Numerous studies have linked a history of multiple childhood adverse events with substance abuse, with a greater amount of psychotic symptoms and also with higher rates of hospitalization in patients with mental disorders [10, 14, 21]. As in many studies, we also found a significant relationship between the presence of numerous childhood traumas and develop of auditory hallucinations ($p = 0.016$) [9, 21]. In comparison with other analysis, we

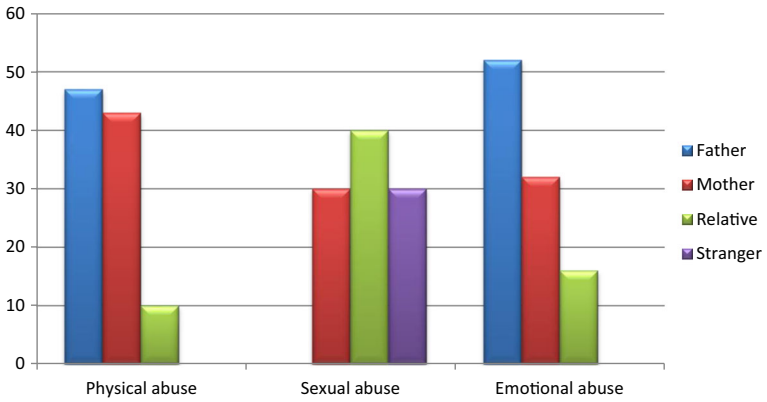


Fig. 3 Types of abuse and their perpetrators

Table 3 Descriptive statistics of the variables studied among the group of patients with 3 or less ACE and the group with 4 or more ACE

	0–3 ACE (n = 19)	4 or more ACE (n = 32)	p value
Mean age, years (SD)	45,89 (12,151)	38,53 (12,240)	0,043
Education, years (SD)	10,26 (4293)	10,38 (3098)	0,915
Civil status, n (%)			
Single	13 (68,4)	29 (90,6)	0,178
Married	4 (21,1)	3 (9,4)	
Divorced	1 (5,3)	0 (0)	
Widowed	1 (5,3)	0 (0)	
Occupation, n (%)			
Employed	3 (15,8)	5 (15,6)	0,988
Unemployed	16 (84,2)	27 (84,4)	
Mean hospitalizations, n (SD)	4,24 (3364)	3,65 (2388)	0,483
Prevalence of substance use, n (%)	7 (36,8%)	18 (56,3%)	0,180
Prevalence of hallucinations, n (%)	13 (68,4%)	30 (93,8%)	0,016

ACE adverse childhood experiences

observed a greater use of psychoactive substances among people who suffered from 4 or more events, although this difference was not statistically significant in our study *($p = 0.180$)* [14].

In contrast to other studies, we did not find a greater number of hospitalizations [14, 21] among subjects who suffered multiple adverse events. These results could be explained by patient difficulty to remember this information, because most of the subjects included have been treated for many years; it could also be because they have chosen not to disclose certain experiences or personal behaviors [28].

The traumagenic neurodevelopmental model (TN) integrates biological, psychological and social elements and suggests that traumatic childhood events could cause changes in children's brain development. When the exposure to traumatic experiences is persistent, there is hyperactivity and an ongoing deregulation of the hypothalamic-pituitary-adrenal axis (HHA) with a continuous and chronically release of glucocorticoids. The result is an increased sensitivity to stressful events and an alteration in neurotransmitter systems, with a long term dopaminergic hiperactivation. This neurochemical alteration is frequently observed among schizophrenic patients [22, 29, 30]. Neurological abnormalities found in patients with schizophrenia have also been found among traumatized children: cerebral cortex atrophy, mainly in frontal lobes, hippocampus alterations, ventricular dilatation, brain asymmetry and amygdale dysfunction [22, 29]. The model proposes that if traumatic experiences are sufficiently prolonged, severe or if they occur at an early age, they may create a vulnerability; this vulnerability, with or without genetic predisposition, could lead to an hypersensitivity to stressful life events, which may predispose to the development of psychotic experiences as a consequence of increased emotional reactivity [22, 29].

On the other hand, there is another model proposed by Kapur. This model integrates biological and psychosocial paradigms and proposes that other elements preceding the dopaminergic alteration, such as cognitive and interpersonal deficits and alterations in the neurodevelopment, are relevant to explain psychosis in schizophrenia [30].

The current study contains limitations that should be considered when interpreting the findings. First, results are based on observational, cross-sectional data with a small simple. It should be noted that the difficulty remembering certain events of childhood or the decision not to disclose certain experiences or personal behaviors could be a bias in our study.

Finally, the results of our research have several clinical implications and beyond the etiological model adopted we cannot deny a high prevalence of traumatic childhood experiences among patients with schizophrenia and other psychiatric disorders.

Compliance with ethical standards

Funding This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Conflict of interests The Authors declare that they have no conflict of interest.

Disclosures No author or immediate family member has financial relationships with commercial entities that might appear to represent a potential for conflicts of interest.

References

1. Cuijpers, P., et al., The disease burden of childhood adversities in adults: a population-based study. Child Abuse Negl, 2011. 35(11): p. 937–45.
2. Felitti, V.J., et al., Relationship of childhood abuse and househol0064 dysfunction to many of the leading causes of death in adults. The adverse childhood experiences (ACE) study. Am J Prev Med, 1998. 14(4): p. 245–58.
3. Anda, R.F., et al., Adverse childhood experiences and prescribed psychotropic medications in adults. Am J Prev Med, 2007. 32(5): p. 389–94.
4. Spataro, J., et al., Impact of child sexual abuse on mental health: prospective study in males and females. Br J Psychiatry, 2004. 184: p. 416–21.
5. Cloitre, M., et al., A developmental approach to complex PTSD: childhood and adult cumulative trauma as predictors of symptom complexity. J Trauma Stress, 2009. 22(5): p. 399–408.
6. Finkelhor, D., et al., The victimization of children and youth: a comprehensive, national survey. Child Maltreat, 2005. 10(1): p. 5–25.
7. Jacobson, A. and C. Herald, The relevance of childhood sexual abuse to adult psychiatric inpatient care. Hosp Community Psychiatry, 1990. 41(2): p. 154–8.
8. Read, J., et al., Childhood trauma, psychosis and schizophrenia: a literature review with theoretical and clinical implications. Acta Psychiatr Scand, 2005. 112(5): p. 330–50.
9. Read J, M.L.R., Bentall R.P, *Modelos de Locura*. 2006: Herder.
10. Alvarez, M.J., et al., Prevalence and clinical impact of childhood trauma in patients with severe mental disorders. J Nerv Ment Dis, 2011. 199(3): p. 156–61.
11. DeRosse, P., et al., The relation between childhood maltreatment and psychosis in patients with schizophrenia and non-psychiatric controls. Schizophr Res, 2014. 155(1–3): p. 66–71.
12. Trotta, A., et al., Impact of different childhood adversities on 1-year outcomes of psychotic disorder in the genetics and psychosis study. Schizophr Bull, 2016. 42(2): p. 464–75.
13. Ucok, A. and S. Bikmaz, The effects of childhood trauma in patients with first-episode schizophrenia. Acta Psychiatr Scand, 2007. 116(5): p. 371–7.
14. Rosenberg, S.D., et al., Correlates of adverse childhood events among adults with schizophrenia spectrum disorders. Psychiatr Serv, 2007. 58(2): p. 245–53.
15. Holowka, D.W., et al., Childhood abuse and dissociative symptoms in adult schizophrenia. Schizophr Res, 2003. 60(1): p. 87–90.
16. Hermann, J., *Trauma y Recuperación: como superar las consecuencias de la violencia*. 2004: Espasa.
17. Varese, F., et al., Childhood adversities increase the risk of psychosis: a meta-analysis of patient-control, prospective- and cross-sectional cohort studies. Schizophr Bull, 2012. 38(4): p. 661–71.
18. Janssen, I., et al., Childhood abuse as a risk factor for psychotic experiences. Acta Psychiatr Scand, 2004. 109(1): p. 38–45.
19. Shevlin, M., et al., Cumulative traumas and psychosis: an analysis of the national comorbidity survey and the British psychiatric morbidity survey. Schizophr Bull, 2008. 34(1): p. 193–9.
20. Whitfield, C.L., et al., Adverse childhood experiences and hallucinations. Child Abuse Negl, 2005. 29(7): p. 797–810.

21. Schenkel, L.S., et al., Histories of childhood maltreatment in schizophrenia: relationships with premorbid functioning, symptomatology, and cognitive deficits. Schizophr Res, 2005. 76(2–3): p. 273–86.
22. Larkin, W. and J. Read, Childhood trauma and psychosis: evidence, pathways, and implications. J Postgrad Med, 2008. 54(4): p. 287–93.
23. Spitzer, R.L. and J.B. Williams, American psychiatry's transformation following the publication of DSM-III. Am J Psychiatry, 1994. 151(3): p. 459–60.
24. Kessler, R.C., C.G. Davis, and K.S. Kendler, Childhood adversity and adult psychiatric disorder in the US National Comorbidity Survey. Psychol Med, 1997. 27(5): p. 1101–19.
25. Driessen, M., et al., Childhood trauma, psychiatric disorders, and criminal behavior in prisoners in Germany: a comparative study in incarcerated women and men. J Clin Psychiatry, 2006. 67(10): p. 1486–92.
26. Arnow, B., Relationship between childhood maltreatment, adult health and psychyatric outcomes, and medical utilization. J Clin Psychiatry, 2004. 12: p. 10–5.
27. Margo, G.M. and E.M. McLees, Further evidence for the significance of a childhood abuse history in psychiatric inpatients. Compr Psychiatry, 1991. 32(4): p. 362–6.
28. Anda, R.F., et al., The enduring effects of abuse and related adverse experiences in childhood. A convergence of evidence from neurobiology and epidemiology. Eur Arch Psychiatry Clin Neurosci, 2006. 256(3): p. 174–86.
29. Read, J., et al., The contribution of early traumatic events to schizophrenia in some patients: a traumagenic neurodevelopmental model. Psychiatry, 2001. 64(4): p. 319–45.
30. Kapur, S., Psychosis as a state of aberrant salience: a framework linking biology, phenomenology, and pharmacology in schizophrenia. Am J Psychiatry, 2003. 160(1): p. 13–23.