

Bipolar Disorder With Comorbid Cluster B Personality Disorder Features: Impact on Suicidality

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Background: Because of their overlapping phenomenology and mutually chronic, persistent nature, distinctions between bipolar disorder and cluster B personality disorders remain a source of unresolved clinical controversy. The extent to which comorbid personality disorders impact course and outcome for bipolar patients also has received little systematic study.

Method: One hundred DSM-IV bipolar I (N = 73) or II (N = 27) patients consecutively underwent diagnostic evaluations with structured clinical interviews for DSM-IV Axis I and cluster B Axis II disorders, along with assessments of histories of childhood trauma or abuse. Cluster B diagnostic comorbidity was examined relative to lifetime substance abuse, suicide attempt histories, and other clinical features.

Results: Thirty percent of subjects met DSM-IV criteria for a cluster B personality disorder (17% borderline, 6% antisocial, 5% histrionic, 8% narcissistic). Cluster B diagnoses were significantly linked with histories of childhood emotional abuse ($p = .009$), physical abuse ($p = .014$), and emotional neglect ($p = .022$), but not sexual abuse or physical neglect. Cluster B comorbidity was associated with significantly more lifetime suicide attempts and current depression. Lifetime suicide attempts were significantly associated with cluster B comorbidity (OR = 3.195, 95% CI = 1.124 to 9.088), controlling for current depression severity, lifetime substance abuse, and past sexual or emotional abuse.

Conclusions: Cluster B personality disorders are prevalent comorbid conditions identifiable in a substantial number of individuals with bipolar disorder, making an independent contribution to increased lifetime suicide risk.

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Complex interrelationships between bipolar disorder and severe personality disorders remain the subject of unresolved controversy. Phenomenologic overlap in symptoms has been described between bipolar and cluster B (e.g., borderline) personality disorders with regard to mood instability or lability,^{1–5} leaving the field divided about when these conditions are differentiable and when they may truly co-occur. There is no easy means by which to tease apart the developmental sequelae of chronic bipolar disorder with early onset (which is seen in at least two thirds of patients referred to tertiary care specialty centers⁶) from the formation of personality structure. Consequently, it often becomes exceedingly difficult to draw causal differences or chronological distinctions between the development of bipolar disorder *with* Axis II comorbidity *versus* Axis II comorbidity.² Furthermore, phenomenologic variation within the so-called “bipolar spectrum” may create further issues of diagnostic and etiologic ambiguity.⁷

Despite the relative frequency with which clinicians encounter the overlap and ambiguity of these disorders in everyday practice, these challenges have received surprisingly little systematic investigation. Because symptoms of bipolar disorder and cluster B personality disorders may overlap,^{2,5} factors related to diagnostic validity other than cross-sectional phenomenology—such as course and

outcome—may provide fruitful directions for investigations in this area.

While etiologies for both bipolar and borderline personality disorders remain the object of speculation, traumatic life experiences have been shown to adversely affect the course of either condition. Links between childhood abuse and the development and expression of borderline personality disorder have been described but remain controversial.⁸ Among individuals with bipolar disorder, histories of childhood physical or sexual abuse have been associated with an earlier age at onset, more extensive psychiatric comorbidity, faster cycling frequencies, and a higher rate of suicide attempts.^{9,10} Childhood physical or sexual abuse may contribute to the development of trait impulsivity and suicide risk among depressed patients¹¹ as well as more complex psychopathology among individuals with borderline personality disorder.^{12,13}

Few studies have addressed the comorbidity of cluster B personality disorder features with bipolar disorders, even though one third to one half of bipolar patients manifest both conditions.^{14–18} Axis II comorbidity in bipolar disorder may be associated with lower recovery rates,¹⁹ greater unemployment,¹⁷ and comorbid substance abuse.^{15,17} To date, no studies have examined the differential impact of childhood physical or sexual abuse on bipolar patients with versus without comorbid personality disorders. Such information may be particularly important for discriminating the clinical and psychosocial consequences of abuse, particularly on key outcome features such as suicide risk.

The present investigation involved a cross-sectional assessment of cluster B personality disorder features in a large group of rigorously diagnosed patients with bipolar disorder, alongside retrospectively obtained data regarding childhood physical, emotional, or sexual abuse and clinical psychopathology dimensions during adulthood. The rationale for focusing on cluster B personality disorders comorbid with bipolar illness lies not only in their overlapping affective symptoms but also in the high prevalence rates of both substance abuse^{20,21} and suicidality^{22,23} seen in both disorders.

We hypothesized that bipolar patients with cluster B diagnostic features would have more extensive histories of childhood abuse as well as more complications of bipolar disorder in adulthood with regard to illness complexity (i.e., substance abuse comorbidity, rapid cycling, and suicidality).

METHOD

Subjects

The study group comprised 100 bipolar outpatients (N = 95) or inpatients (N = 5) who met DSM-IV criteria for bipolar disorder type I (N = 73) or type II (N = 27),

based on the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I).²⁴ The interviews were conducted by one of us (J.L.G.), a Ph.D.-level research psychologist with expertise in bipolar disorder and over 7 years' experience in conducting SCID interviews, who also was responsible for SCID training and supervision of junior staff within the broader research program. Research diagnoses were affirmed via consensus discussion with a research team led by the research psychiatrist-director of the institutional research program in bipolar disorders (J.F.G.), based on summary presentations of SCID protocols prepared by the interviewer. Fulfillment of DSM-IV criteria for the lifetime presence of a personality disorder was ascertained using the SCID for Axis II Personality Disorders, Cluster B subsection (SCID-II),²⁵ conducted as part of the global assessment. For instances in which senior research staff could not agree with reasonably high confidence on an Axis I and Axis II diagnosis, cases were excluded.

The vast majority of subjects were affectively non-syndromal at the time SCID-II interviews were conducted. Recognizing the potential overlap of certain cluster B personality features with those present in a full affective syndrome, we included subjects for analysis only if the research team agreed by a consensus case review of SCID assessments that features attributable to an Axis II diagnosis were evident in the absence of a current major affective syndrome. Potential relationships between subthreshold affective symptoms and the presence of a comorbid cluster B diagnosis were examined in separate analyses.

In terms of the generalizability and representativeness of the study group, all subjects were consecutively derived from patients seen in the Bipolar Disorders Research Clinic of the New York Presbyterian Hospital (New York, N.Y.). Each presented after self-referral, response to clinic or outside advertisement, or word of mouth. All were ascertained in the context of seeking treatment for bipolar disorder in any phase of illness.

The study group had a mean \pm SD age of 41.2 ± 12.7 years (range, 18–73 years). Forty-nine percent were female. Seventy-five percent were white, 10% were African American, 12% were Latino, and the remaining 3% were of other races. Fifty-two percent were currently unmarried. Fifty-nine percent were currently employed, and the group had achieved a mean \pm SD education level of 15.7 ± 2.7 years. All subjects when assessed were receiving psychotropic medications or other treatments naturalistically, as deemed appropriate by their prescribing psychiatrists.

Study Procedures

After signing informed consent, patients underwent an evaluation by one of us (J.L.G.) consisting of the SCID-I and SCID-II. Histories of childhood trauma and abuse were evaluated retrospectively using the Childhood Trauma Questionnaire (CTQ), a 31-item self-report mea-

Table 1. Features of Bipolar Patients With and Without Cluster B Personality Disorders

Variable	Cluster B Disorder Present (N = 30)	Cluster B Disorder Absent (N = 70)	χ^2	t	df	p ^a
Gender, %			1.008	...	1	.315
Female	57	46				
Male	43	54				
Race, %			1.365	...	4	.850
Caucasian	77	74				
African American	10	10				
Latino	13	11				
Asian	0	1				
Other	0	3				
Age, mean (SD), y	39.0 (12.6)	42.1 (12.7)	...	1.124	98	.264
HAM-D score, mean (SD)	18.6 (10.6)	12.2 (8.5)	...	3.191	96	.002 ^b
YMRS score, mean (SD)	12.0 (8.5)	8.5 (8.7)	...	1.811	96	.073
No. of lifetime suicide attempts, mean (SD)	1.37 (2.04)	0.31 (0.89)	...	3.410	98	.001 ^b
History of substance abuse/dependence, N			4.762	...	1	.029
Present	20	30				
Absent	10	40				
History of rapid cycling, N ^c			0.252	...	1	.616
Present	24	52				
Absent	6	17				

^aBonferroni-corrected alpha level = .006.

^bAnalysis remained significant after correction for multiple comparisons.

^cData missing for 1 patient without cluster B personality disorder.

Abbreviations: HAM-D = Hamilton Rating Scale for Depression, YMRS = Young Mania Rating Scale.

sure developed by Bernstein et al.²⁶ Diagnoses of comorbid substance abuse/dependence were made using the SCID. The severity of current manic and depressive symptoms was assessed using the Young Mania Rating Scale (YMRS)²⁷ and the 17-item Hamilton Rating Scale for Depression (HAM-D),²⁸ respectively. YMRS and HAM-D clinical ratings were made by trained and experienced research assistants after achieving adequate interrater reliability ($\kappa > .80$) in the implementation of each scale.

A history of lifetime suicide attempts was rated using an adaptation of the suicide history module from the Schedule for Affective Disorders and Schizophrenia,²⁹ used by our group in previous studies.^{30,31} A suicide attempt was defined as per O'Carroll et al.,³² namely, a self-injurious or potentially self-injurious act associated with an acknowledged attempt to end one's life. We excluded all self-injurious behaviors that were not associated with an intent to die (e.g., self-mutilation).

The study protocol was approved by the Institutional Review Boards of both the New York Presbyterian Hospital and Long Island University.

Data were analyzed using SPSS PC (Version 11.5; SPSS Inc., Chicago, Ill.). Dichotomous variables were analyzed using χ^2 tests. Mean group differences were analyzed using independent t tests. Univariate correlations were assessed with Pearson correlations. The strength of association between a dichotomous dependent variable (e.g., presence or absence of a lifetime suicide attempt) and 2 or more independent variables was analyzed by logistic regression analysis. All statistical tests were 2-tailed. A Bonferroni-corrected alpha level of .006 was

used for the 8 independent univariate analyses presented in Table 1 (0.05/8).

RESULTS

Lifetime cluster B personality disorders were evident in 30 (30%) of the 100 bipolar subjects. Prevalence rates were highest for borderline personality disorder (17/100 [17%]), followed by narcissistic (8/100 [8%]), antisocial (6/100 [6%]), and histrionic (5/100 [5%]). Four of the 17 subjects with borderline personality disorder also met criteria for other cluster B disorders (2 with antisocial, 1 with narcissistic, and 1 with antisocial and histrionic). One subject among the 30 with any cluster B diagnosis met criteria for both histrionic and narcissistic personality disorders.

Demographic and clinical differences between the subgroups with versus without a cluster B disorder are summarized in Table 1. After Bonferroni corrections for multiple comparisons, significant univariate relationships were evident between the presence of a cluster B diagnosis and (1) lifetime number of suicide attempts and (2) current HAM-D scores.

Validation of the Childhood Trauma Questionnaire

Although the psychometric properties of the CTQ have previously been demonstrated in nonbipolar populations,²⁶ we wished to examine its reliability and internal consistency in the current study population. To accomplish this, we calculated the Cronbach alpha coefficient for the total CTQ scale, followed by a factor analysis using the principal axis factoring method of data extraction.

Table 2. Factor Matrix From Factor Analysis of Childhood Trauma Questionnaire^a

Item	Mean	SD	Factor Loadings ^b		
			1	2	3
1 Not enough to eat	1.7	1.2	0.29	0.35	0.22
2 Someone to provide care	2.4	1.2	0.40	0.35	0.48
3 Being called names	3.4	1.4	0.45	-0.07	0.05
4 Parents drunk	2.2	1.4	0.20	0.42	0.19
5 Someone to make feel special	3.0	1.4	0.22	0.00	0.46
6 Dirty clothing	1.5	0.8	0.33	0.44	0.18
7 Feeling loved	3.0	1.0	0.70	0.00	0.25
8 Wish never been born	2.8	1.3	0.66	-0.17	-0.21
9 Hit so hard needed medical attention	1.5	1.0	0.32	0.15	-0.14
10 Wanting to change nothing about family	4.0	1.4	0.26	-0.12	-0.08
11 Hit so hard left bruises	2.9	1.5	0.76	-0.07	-0.45
12 Hit with belt or cord	3.1	1.5	0.42	-0.11	-0.33
13 Family members looked out for each other	2.9	1.1	0.43	-0.28	0.39
14 Family members said hurtful things	3.8	1.1	0.70	-0.17	0.07
15 Physically abused	3.1	1.5	0.48	0.15	-0.29
16 Felt childhood was perfect	4.5	0.7	0.43	0.09	0.36
17 Teachers noticed bruises	1.8	1.1	0.41	-0.17	-0.27
18 Feeling hated by someone in family	3.3	1.5	0.71	0.03	-0.34
19 Family members felt close	3.3	1.0	0.37	-0.26	0.39
20 Sexually inappropriate touching	2.5	1.6	-0.09	0.85	0.10
21 Threatened to hurt if refused sex	1.7	1.3	0.10	0.79	-0.09
22 Felt family was the best in world	4.3	0.9	0.59	0.01	0.44
23 Forced to do or watch sexual things	2.5	1.5	0.05	0.78	-0.21
24 Sexually molested	2.4	1.7	-0.17	0.90	-0.06
25 Emotionally abused	4.3	1.1	0.50	0.19	-0.34
26 Having someone to bring to doctor	1.9	1.0	0.35	0.43	0.34
27 Sexually abused	2.6	1.7	-0.13	0.87	-0.08
28 Family is a source of strength	3.7	1.0	0.63	-0.11	0.56
29 Hit or beaten by family member	3.3	1.4	0.64	-0.14	-0.53
30 Saw mother or siblings get hit	2.7	1.5	0.31	0.23	-0.27
31 Someone outside family like a parent	2.9	1.6	0.46	0.20	-0.24

^aEach item is scored on a scale of 1 to 5 corresponding to the responses "never true," "rarely true," "sometimes true," "often true," and "very often true."

^bFactor loadings of 0.39 or greater are shown in boldface type.

After adjusting for consistent directionality of scoring across the 31 individual items comprising the CTQ, the alpha coefficient obtained for the total scale was .94, indicating "excellent" reliability.³³ Next, a principal factor analysis using varimax rotation identified 8 factors with Eigenvalues > 1, explaining a cumulative 75.1% of the variance in total CTQ scores. After inspecting the corresponding scree plot for the number of meaningful dimensions, we tested several factor solutions and ultimately determined that a 3-factor solution best provided simple structure for the pattern of factor loadings (explaining 45.2% of the variance in total CTQ scores). As presented in Table 2, the first of these factors appears to correspond

most saliently with a "physical abuse" dimension, while the second factor best describes a "sexual abuse" dimension. The third factor appears to reflect a "reversed items" dimension from the original CTQ and was thus not considered in further analyses.

The Cronbach alpha coefficient was calculated to examine the internal consistency of each of the 2 factors in which each CTQ item loaded saliently on 1 dimension. For factor 1, containing 17 items, the Cronbach alpha coefficient was .94. For factor 2, composed of 8 items, the Cronbach alpha coefficient was .90.

Impact of Current

Subthreshold Affective Symptoms on Cluster B Diagnoses and Childhood Trauma Histories

Although subjects in the present study did not meet DSM-IV syndromic criteria for a manic or major depressive episode, we nevertheless sought to control for the potential impact of current subthreshold affective symptoms on the prevalence rate of severe childhood abuse histories, as well as on lifetime prevalence rates of a cluster B diagnosis. Complete data on mood (euthymic vs. not euthymic) were available for 97 of the 100 subjects. A subgroup of 27 subjects was identified as being euthymic when assessed, defined on the basis of HAM-D scores ≤ 10 and YMRS scores ≤ 8 . In this analysis, the prevalence of a history of severe childhood abuse was similar for subjects who were euthymic (11/27, or 41%) or not euthymic (38/70, or 54%) ($\chi^2 = 1.430$, $df = 1$, $p = .232$). With regard to the presence of cluster B symptoms, a significant, moderate association was observed between current HAM-D scores and the number of SCID-II items meeting threshold criteria for borderline personality disorder ($r = 0.32$, $p = .002$) but not histrionic ($r = 0.03$, $p = .752$), narcissistic ($r = 0.10$, $p = .308$), or antisocial ($r = 0.11$, $p = .271$) personality disorders. By contrast, current YMRS scores were modestly significantly correlated with the number of SCID-II items meeting threshold criteria for histrionic personality disorder ($r = 0.23$, $p = .023$) but not narcissistic ($r = 0.07$, $p = .488$), borderline ($r = 0.16$, $p = .106$), or antisocial ($r = 0.16$, $p = .108$) personality disorders.

Relationship Between Childhood Trauma Questionnaire Scores and Cluster B Features

Mean \pm SD CTQ scores were significantly higher in subjects for whom a cluster B diagnosis was present rather than absent, with respect to histories of emotional abuse (15.8 ± 5.9 versus 12.3 ± 5.9 , respectively; $t = 2.660$, $df = 97$, $p = .009$), physical abuse (11.4 ± 4.8 versus 8.8 ± 4.6 , respectively; $t = 2.512$, $df = 97$, $p = .014$), and emotional neglect (14.7 ± 4.5 versus 12.1 ± 5.2 , respectively; $t = 2.336$, $df = 97$, $p = .022$). No significant differences in CTQ scores emerged between those with versus without cluster B comorbidities with regard to his-

Table 3. Logistic Regression Analysis of Presence or Absence of Lifetime Suicide Attempts

Independent Variable	OR	95% CI	Wald χ^2	df	p
History of substance abuse/dependence	0.615	0.213 to 1.779	0.806	1	.369
Cluster B diagnosis	3.195	1.124 to 9.088	4.758	1	.029
Current HAM-D score	1.036	0.978 to 1.096	1.494	1	.222
History of childhood sexual abuse	2.993	0.946 to 9.459	3.493	1	.062
History of childhood emotional abuse	1.688	0.572 to 4.982	0.901	1	.343

Abbreviation: HAM-D = Hamilton Rating Scale for Depression.

tories of sexual abuse (9.2 ± 6.2 versus 8.8 ± 6.0 , respectively; $t = 0.298$, $df = 97$, $p = .766$) or physical neglect (8.4 ± 4.3 versus 7.4 ± 3.3 , respectively; $t = 1.273$, $df = 97$, $p = .206$).

Based on significant or near-significant relationships from the preceding univariate analyses, we sought to further examine the association between lifetime suicide attempt histories and broader possible clinical correlates. We conducted a logistic regression analysis to assess the relative strengths of association between the presence or absence of a lifetime suicide attempt (the dependent variable) and 5 independent variables: (1) a history of substance abuse/dependence, (2) the presence of a cluster B diagnosis, (3) current HAM-D scores, (4) history of childhood sexual abuse, and (5) history of childhood emotional abuse. As shown in Table 3, the presence of a cluster B comorbid diagnosis was significantly associated with having made a lifetime suicide attempt, controlling for each of the remaining independent variables. A near-significant relationship was also evident between lifetime suicide attempts and a history of sexual abuse.

DISCUSSION

These findings indicate that cluster B personality diagnoses are evident in about one third of bipolar patients and appear associated with a greater prevalence of lifetime substance abuse, suicide attempts, and emotional or physical abuse. Suicide attempts, in turn, appear robustly linked with comorbid cluster B personality disorders while controlling for the effects of past abuse, substance abuse/dependence, or current depressive symptoms.

A number of implications follow from these results. First, these data lend support to the construct of personality disorders as discernible, coexistent phenomena in a substantial minority of bipolar patients. Rigorous assessment of Axis II psychopathology is notoriously difficult to differentiate from Axis I psychopathology among individuals with symptomatic affective disorders, particularly by cross-sectional analysis.² Particularly in the case of cluster B features, the frequency with which high impulsivity and aggressivity characterize mania or hypomania³⁴ prompts caution when attributing some forms of psycho-

pathology to Axis II relative to Axis I. The use of structured clinical interviews may help toward clarifications in this regard.

In the present study, depressive (but not manic) symptom severity was independently associated with the presence of a cluster B diagnosis. This observation is consistent with prior findings linking subthreshold depressive symptoms with the presence of a personality disorder in patients with bipolar illness.¹⁸ Whether a causal link might exist between depressive symptoms and the manifestation of cluster B features remains unknown; it is possible that Axis II diagnostic features in bipolar patients might change over time as a function of affective symptoms, a hypothesis not evaluable from the current cross-sectional design. However, the present data indicate a strong link between cluster B comorbidity and lifetime suicidality that appears highly robust while controlling for current affective symptoms. Although future longitudinal studies are needed to corroborate these findings, the findings should nevertheless alert clinicians to the possibility that cluster B features may directly and independently contribute to suicide risk for some bipolar patients.

A second implication of the present data involves the mechanisms by which cluster B features might relate to suicidality in bipolar patients. Recent observations suggest that most suicide attempts among psychiatric patients involve more extensive impulsivity than premeditation.³⁵ While trait impulsivity has been shown to occur with high frequency in both suicidal and nonsuicidal bipolar patients,³⁶ concomitant trait aggressivity may bear more directly than impulsivity—if not synergistically *with* impulsivity³¹—in accounting for suicidal behavior in this disorder. Borderline or other cluster B personality features could increase suicide risk among bipolar patients via an additive contribution to impulsive aggression, which could reflect greater underlying central serotonergic dysfunction.³⁷

Finally, with regard to histories of physical, emotional, or sexual abuse, several pertinent observations emerged from the current investigation. Cluster B comorbidity was associated with past abuse in certain domains (i.e., emotional or physical abuse or emotional neglect) more than others (sexual abuse). Suicide attempts, in turn, bore associations primarily with emotional abuse. These observations are consistent with previous reports linking suicidality with histories of childhood abuse^{9,10} and also cluster B or other Axis II comorbidities¹⁰ in bipolar patients. The present findings suggest that severe *emotional* abuse may be of particular importance for anticipating complications of bipolar disorder that involve either personality disturbances or suicide risk. Neurodevelopmental effects of emotional abuse during formative periods may be especially important in light of the possibility that severe interpersonal stresses might behaviorally sensitize individuals predisposed to bipolar illness.³⁸

The less salient association we observed between past sexual abuse and cluster B comorbidity was surprising and contrary to findings in the literature regarding borderline personality disorder in the absence of bipolar illness.^{8,12,13} Future studies might usefully further examine potential differences between the impact of emotional versus sexual or physical abuse on the development of borderline or other cluster B personality disorders in relation to the presence or absence of bipolar disorder.

The logistic regression model generated in the present study indicates that comorbid cluster B diagnoses remain strongly associated with suicide attempts, but histories of abuse do not. These findings contrast with those reported by Brodsky et al.¹¹ in a group of 136 adults with major depression. It is possible that differences exist between unipolar and bipolar patients with regard to the relative impact of cluster B (or other Axis II) comorbidities and childhood abuse. Brodsky et al.¹¹ also identified physical or sexual abuse as contributors to eventual suicidality in major depression patients, while our findings suggest that severe emotional abuse may play a more central role for suicide risk in bipolar patients.

Limitations of the current study include the retrospective analysis of lifetime suicide attempts and histories of abuse. Regarding the former, we utilized a detailed method for ascertaining lifetime attempts using an adaptation of a standardized interview.^{29–31} Self-reported abuse histories, particularly with regard to issues such as “emotional abuse,” could be impressionistic and influenced by self-perception or psychological dimensions such as an internal versus external locus of control. However, validation of past emotional, physical, or sexual abuse by corroborative historians has traditionally been viewed as a difficult and impractical undertaking.

Subjects who had not made a suicide attempt in the present group may do so eventually, limiting the present findings to bipolar patients who either had or had not made a suicide attempt within about the first 20 to 25 years since their lifetime illness onset. However, previous studies by our group³⁰ and others^{10,36} would suggest that the vast majority of first suicide attempts would have occurred before this time. The findings also are limited to bipolar patients who seek treatment from an academic specialty care center and therefore may not be generalizable to patients who do not seek voluntary treatment or who are not rigorously diagnosed using DSM-IV criteria.

Finally, cluster A and C personality disorders were not a focus of the present study, although prior research suggests that each may also be evident among bipolar patients differently than in unipolar patients.^{16,18} The extent to which such Axis II disorders may impact on suicidality, or arise in the aftermath of childhood abuse, remains subject to future investigation for patients with bipolar disorder.

In summary, the present findings indicate that cluster B personality disorder features appear evident in about one

third of bipolar patients and may be related to childhood emotional and/or physical abuse. Cluster B comorbidity may contribute to an elevated suicide risk among bipolar patients independently from other suicide risk factors, beyond the negative prognostic impact of childhood abuse. Longitudinal investigations are needed to affirm these initial observations.

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