

## **RELATIONSHIPS BETWEEN CHILDHOOD MALTREATMENT, PARENTING STYLE, AND BORDERLINE PERSONALITY DISORDER CRITERIA**

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This study examines the relationship of different types of childhood maltreatment and the perceived parenting style with borderline personality disorder (BPD) criteria. Kendall's Tau partial correlations were performed controlling for the effect of simultaneous adverse experiences and Axis I and II symptoms in a sample of 109 female patients (32 BPD, 43 other personality disorder, and 34 non-personality disorder). BPD criteria were associated with higher scores on emotional and sexual abuse, whereas parenting style did not show a specific association with BPD. Findings of the present study help clarify the effects of overlapping environmental factors that are associated with BPD.

After decades of research, the role of childhood abuse and neglect in the etiology of borderline personality disorder (BPD) is still unclear (Ball & Links, 2009). Univariate research has given way to multivariate studies that simultaneously examine the associations of different types of childhood adverse experiences. The results of these studies are diverse, and each one supports different relationships between BPD and types of childhood maltreatment. Zanarini et al. (1997) reported sexual abuse by a male non-caretaker, inconsistent treatment by a female caretaker, and emotional denial by a male caretaker as predictors of BPD. In other studies, emotional abuse was the only predictor of BPD (Bernstein, Stein, &

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This article was accepted under the editorship of Paul S. Links.

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This study was conducted with the support of the "Comissionat per a Universitats i Recerca del Departament d'Innovació, Universitats i Empresa de la Generalitat de Catalunya i del Fons Social Europeu" and with the support of the "Fondo de Investigación Sanitaria FIS: 06/0857."

We acknowledge David P. Bernstein and NCS Pearson for the license to use the "Childhood Trauma Questionnaire: A Retrospective Self-Report (CTQ)." Copyright © 1998 by NCS Pearson, Inc. All rights reserved.

Finally, I would like to thank David Gallardo-Pujol for his work in the Spanish CTQ initial validation.

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Handelsman, 1998; Bierer et al., 2003; Bornovalova, Gratz, Delany-Brumsey, Paulson, & Lejuez, 2006). On the other hand, Lobbestael, Arntz, and Bernstein (2010) found significant relationships between BPD and sexual abuse, emotional abuse, and emotional neglect. Some studies have simultaneously examined the effects of maltreatment and parenting style on BPD: Paris, Zweig-Frank, and Guzder (1994) reported sexual abuse as the only significant predictor of BPD; Russ, Heim, and Westen (2003) found sexual and physical abuse and maternal care as significant predictors of BPD; Machizawa-Summers (2007) reported emotional abuse and neglect and paternal overprotection as predictors of BPD; whereas Nickell, Waudby, and Trull (2002) found significant relationships between BPD and physical abuse, maternal care, and overprotection.

Even though research results support childhood adverse experiences as a risk factor for BPD, there is not yet a consensus regarding the types of experiences that play a significant role in the disorder. These results are difficult to integrate due to the differences in types of adverse experiences assessed, instruments used, samples examined, and co-occurring variables controlled.

A categorical approach to BPD has been used in most of the previous studies; however, the existing diagnostic categories for personality disorder (PD) have been described as controversial and problematic. Some of these concerns are the excessive diagnostic co-occurrence and the arbitrary and unstable diagnostic boundaries (Widiger, Simonsen, Sirovatka, & Regier, 2006). Moreover, taxometric analyses of *DSM-IV* PDs indicated greater evidence for a latent dimensional structure than for a categorical one (Arntz et al., 2009). On the other hand, advances in the study of childhood adverse experiences highlight the importance of taking into account both maltreatment severity and the effect of co-occurring adverse experiences (Clemmons, Walsh, DiLillo, & Messman-Moore, 2007; Higgins & McCabe, 2000; Schilling, Aseltine, & Gore, 2008).

The present study focuses on the dimensional aspect of BPD, the severity of childhood adverse experiences, and the control of simultaneous effects of maltreatment and parenting style. Specifically, the first objective of the present study is to examine the association between different types of childhood maltreatment and BPD criteria in a sample of female BPD, other-PD, and non-PD patients, controlling for the effect of co-occurring childhood maltreatment, perceived parenting style, Axis I symptoms, and non-BPD PD criteria. Given previous findings, we expect that especially severity of childhood sexual and emotional abuse and emotional neglect will be associated with a greater number of BPD criteria. Our second objective is to examine the relationship between parenting style and BPD criteria, controlling for the effect of childhood maltreatment, Axis I symptoms, and non-BPD PD criteria. We expect that BPD criteria will be negatively correlated with parental care and positively correlated with parental overprotection.

## METHOD

### SAMPLE

Subjects included in this study were inpatient and outpatient females between 18 and 65 years of age from the Hospital Psiquiàtric Universitari Institut Pere Mata in Reus, Spain. Patients with a diagnosis of one or more of the following ICD-10 categories were excluded: mental retardation; organic mental disorders; schizophrenia, schizotypal, and delusional disorders; manic episode; and bipolar affective disorder.

One hundred twenty-four patients completed the assessment; 6 patients whose BPD diagnosis was not confirmed and 9 patients without paternal bonding data were excluded. Data analyses were performed with a sample of 109 patients: 32 BPD patients, 43 patients with one or more PDs different from BPD (paranoid,  $n = 5$ ; schizotypal,  $n = 2$ ; narcissistic,  $n = 1$ ; histrionic,  $n = 10$ ; avoidant,  $n = 9$ ; dependent,  $n = 2$ ; obsessive-compulsive,  $n = 9$ ; not otherwise specified,  $n = 17$ ), and 34 patients without PD and with Axis I primary diagnosis (major depressive disorder or dysthymia,  $n = 9$ ; anxiety disorder,  $n = 5$ ; substance dependence disorder,  $n = 5$ ; adjustment disorder,  $n = 12$ ; eating disorder,  $n = 2$ ; hypochondriasis,  $n = 1$ ).

The mean age was 38.79 years ( $SD = 10.73$ ; range 19 to 64); 93.6% of patients were born in Spain; 37.6% had higher education; 30.6% were employed, 20.8% had a certified disability; 47.7% were married or cohabitating at the time of the study; and 2.8% of the sample was adopted. Of the sample, 37.6% was receiving treatment on an outpatient basis and the rest of the sample inpatient treatment.

### MEASURES

*Structured Clinical Interview for DSM-IV Axis II Personality Disorders* (SCID-II). DSM-IV PDs were assessed with the SCID-II Spanish version (First, Gibbon, Spitzer, Williams, & Benjamin, 1999). Each PD criteria was assessed on a three-point scale: absent, subthreshold, present. Number of criteria met was used as a continuous score of each PD. PD categories were used to describe the sample and for initial analyses. As suggested by Pagan et al. (2005), patients with more than 10 PD criteria and without any other form of PD received a diagnosis of PD not otherwise specified. PDs from the DSM-IV appendix were not used in the analyses.

*Revised Diagnostic Interview for Borderlines* (DIB-R). SCID-II BPD diagnoses were confirmed with the Spanish DIB-R (Barrachina et al., 2004). The Spanish version showed good internal consistency ( $\alpha = .89$ ) and good interrater reliability ( $ICC = .94$ ). The optimal cut-off point for BPD was judged to be 6, which produced high sensitivity [.81] and specificity [.94].

*Childhood Trauma Questionnaire-Short Form* (CTQ). The retrospective assessment of childhood maltreatment was performed with the CTQ (Bernstein & Fink, 1998), a 28-item self-report instrument with five-point Likert

scales. Scores can be computed for five types of maltreatment: emotional, sexual and physical abuse, and emotional and physical neglect. Higher scores represent higher levels of maltreatment; items of each scale produce a continuum from none/minimal to severe/extreme maltreatment. CTQ subscales scores were related to severity, frequency, and duration of maltreatment (Fink, Bernstein, Handelsman, Foote, & Lovejoy, 1995). The Spanish CTQ version showed internal consistency coefficients similar to the original version (average  $\alpha = .83$ ), and the confirmatory factor analyses replicated the original five-factor structure (Hernández et al., 2012). The sample analyzed for the Spanish CTQ validation included data from patients in the present study.

*Parental Bonding Instrument (PBI)*. Perceived parental rearing style until 16 years of age was assessed with the Spanish PBI (Parker, Tupling, & Brown, 1979). This self-report questionnaire has 25 items scored on a four-point Likert scale ranging from “very unlike” to “very like.” Two subscales are computed for each parental figure: care/affection and overprotection/control. The Spanish PBI showed good internal consistency for the four subscales, with Cronbach’s alpha from .82 to .88 (Ballús, 1996).

*Revised Symptom Checklist-90-R (SCL-90-R)*. Axis I symptoms were assessed with the SCL-90-R (Derogatis, 1994), a 90-item self-report questionnaire with five-point Likert scale responses. Nine symptom dimensions and three global symptom indexes can be obtained. The Spanish version of the SCL-90-R showed good internal consistency, with average Cronbach’s alpha equal to .86 (Derogatis, 2002). In this study we used the score on the Positive Symptom Distress Index (PSDI) standardized for Spanish psychiatric female patients. The PSDI is the average of symptom severity and is calculated by dividing the global score of the SCL-90-R by the total of positive symptoms.

## PROCEDURE

This study was approved by the institutional review board at the Hospital Psiquiàtric Universitari Institut Pere Mata in Reus and the ethical committee for clinical research at the Hospital Universitari Sant Joan in Reus. The study was proposed to patients who fulfilled inclusion criteria and whose treating psychiatrists/psychologists consented to their participation. All the patients of the sample signed an informed consent document after receiving a verbal and written explanation of the study, the conditions, and the voluntary nature of their participation.

Axis II diagnoses were assessed with the SCID-II. When patients met five or more criteria for BPD on the SCID-II, we confirmed the diagnosis with the DIB-R. Patients with diagnosis not confirmed were eliminated. As per the guidelines for both instruments, information from the medical history and the treating psychiatrist and psychologist were used in addition

to the patient interview. Patients completed self-reported instruments after the interview in the presence of one psychologist to answer questions.

## DATA ANALYSES

Nonparametric analyses were performed due to the non-normal distribution of the data. Differences on sociodemographic categorical data between BPD, other-PD, and non-PD patients were examined with Pearson  $\chi^2$ . Differences on age, childhood maltreatment, parenting, BPD criteria, and the PSDI symptom index were examined with Kruskal-Wallis  $H$  tests. Post-hoc tests were calculated using Mann-Whitney tests and Bonferroni correction (critical value for significance lower than .001).

Kendall's Tau partial correlations were calculated to examine the association between BPD criteria and childhood maltreatment. The continuous score of BPD (number of criteria met) was defined as the dependent variable. One of the five childhood maltreatment subscales or one of the four parental bonding scales was defined in each analysis as the independent variable. Given the sample size ( $N = 109$ ), we limited the number of control variables that were partialled out to a maximum of 10. This implied that we had to look at different sets of control variables in different analyses. Partial correlations were calculated controlling for age, the childhood maltreatment scales, the parental bonding scales, and the PSDI index. Age and the continuous score of the other nine SCID-II PD scales were examined as a second set of control variables. Significance tests were based on two-tailed  $Z$ -tests with  $Z = 3\tau\sqrt{n(n-1)}/\sqrt{[2(2n+5)]}$  (Johnson, 1979; Shirahata, 1977; Simon, 1977).

## RESULTS

No significant differences were found between the three groups in educational level, nationality (Spanish-born versus foreign-born), occupation, certified disability, or history of adoption. BPD patients were significantly younger than other-PD or non-PD patients ( $H(2) 29.38, p < .001$ ). Non-PD and other-PD patients were more likely to be married or cohabitating than BPD patients ( $\chi^2(2) = 7.81, p = .02$ ). Non-PD patients were also more likely to receive treatment on an outpatient basis than those in the BPD group ( $\chi^2(1) = 10.48, p = .001$ ) or other-PD patients ( $\chi^2(1) = 13.11, p < .001$ ). There were no significant differences between BPD and other-PD patients on the treatment basis. Medians and differences between groups of the CTQ, PBI, PSDI, and BPD scales are reported in Table 1.

Kendall's Tau partial correlation results between BPD criteria, childhood maltreatment, and parental bonding scales are shown in Tables 2 and 3. All abuse and neglect scales were related to BPD criteria, but only sexual and emotional abuse remained significant after controlling for all the co-occurring variables. The parental bonding scales were not signifi-

**TABLE 1. CTQ, PBI, and PSDI Median, Interquartile Range, and Differences Between Groups**

	<b>BPD (n = 32) Mdn (I-R)</b>	<b>Other-PD (n = 43) Mdn (I-R)</b>	<b>Non PD (n = 34) Mdn (I-R)</b>	<b>H(2)</b>
Emotional Abuse <sup>a</sup>	16 (14–19)	12 (8–16)	7 (5–14)	20.80***
Physical Abuse	8 (5–11)	7 (5–11)	5 (5–6)	8.89*
Sexual Abuse	9 (5–14)	5 (5–15)	5 (5–8)	7.60*
Emotional Neglect	13 (10–17)	12 (7–15)	8 (5–13)	9.66**
Physical Neglect	7 (5–9)	6 (5–9)	5 (5–8)	4.34
Maternal Care	18 (14–24)	21 (11–32)	29 (16–34)	6.09*
Paternal Care	16 (8–23)	16 (9–30)	26 (15–31)	7.06*
Maternal Overprotection	22 (15–29)	20 (12–26)	16 (11–25)	3.86
Paternal Overprotection	20 (12–27)	18 (11–27)	15 (11–24)	1.65
PSDI <sup>a,b</sup>	54 (48–63)	55 (48–67)	43 (34–54)	20.09***
BPD criteria <sup>a,b,c</sup>	6 (5–8)	2 (1–3)	0 (0–0)	82.09***

*Note.* Mdn = median; I-R = interquartile range; H = Kruskal-Wallis H test; PSDI = Positive Symptom Distress Index. <sup>a</sup>significant Mann-Whitney test between BPD and non-PD patients using Bonferroni correction ( $p < .001$ ); <sup>b</sup>significant Mann-Whitney test between other-PD and non-PD patients using Bonferroni correction ( $p < .001$ ); <sup>c</sup>significant Mann-Whitney test between BPD and other-PD patients using Bonferroni correction ( $p < .001$ )

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

cantly associated with BPD criteria after controlling for co-occurring variables.

## DISCUSSION

The results of the present study support the association between emotional and sexual abuse and BPD criteria, above and beyond the effects of co-occurring childhood maltreatment, perceived parenting style, Axis I symptoms, and non-BPD criteria. The results of the present study do not support the relationship between parenting style and BPD criteria above co-occurring childhood maltreatment or non-BPD Axis II criteria.

Findings on sexual and emotional abuse are consistent with previous studies (Arntz, Dietzel, & Dreessen, 1999; Bernstein et al., 1998; Bierer et al., 2003; Bornovalova et al., 2006; Lobbetael et al., 2010; Machizawa-

**TABLE 2. Kendall's Tau Partial Correlations Between Childhood Maltreatment and BPD Criteria (n = 109)**

<b>Controlled variables</b>	<b>EA</b>	<b>PA</b>	<b>SA</b>	<b>EN</b>	<b>PN</b>
—	.35***	.17*	.24**	.22**	.24**
Age	.30***	.15*	.26***	.21**	.22***
Age, co-occurring maltreatment	.17**	-.01	.15*	.02	.05
Age, co-occurring maltreatment, and parenting style	.16**	-.00	.15*	.02	.07
Age, co-occurring maltreatment, parenting style, and PSDI	.14*	-.01	.16*	.03	.06
Age and SCID-II PD scales	.14*	.05	.13*	.09	.14*

*Note.* EA = emotional abuse; PA = physical abuse; SA = sexual abuse; EN = emotional neglect; PSDI = Positive Symptom Distress Index.

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

**TABLE 3. Kendall's Tau Partial Correlations Between Parenting Style and BPD Criteria ( $n = 109$ )**

Controlled variables	Maternal Care	Paternal Care	Maternal Overprotection	Paternal Overprotection
—	-.18**	-.19**	.13*	.11
Age	-.17**	-.11	.14*	.10
Age and co-occurring maltreatment	-.00	.06	.06	.00
Age, co-occurring maltreatment, and parenting style	-.00	.06	.05	-.01
Age, co-occurring maltreatment, parenting style, and PSDI	.01	.05	.05	.01
Age and SCID-II PD scales	-.06	-.04	.04	.08

Note. EA = emotional abuse; PA = physical abuse; SA = sexual abuse; EN = emotional neglect; PSDI = Positive Symptom Distress Index.

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

Summers, 2007; Zanarini et al., 1997). However, we did not find the reported relationships between BPD criteria and emotional neglect, parental care, and overprotection. Some reasons for these divergent results could be the differences in variables controlled and the different instruments and samples used (Lobbestael et al., 2010; Machizawa-Summers, 2007; Nickell et al., 2002; Russ et al., 2003).

This study has some notable characteristics. First, this study focuses on the dimensional aspect of the BPD. Limitations in PD categories have been widely described, and recent research continues showing evidence of the dimensional structure of the PDs (Arntz et al., 2009; Widiger et al., 2006). Second, types of maltreatment were conceptualized in this study as continuous variables representing severity. Even though maltreatment is usually studied as a dichotomous variable (present/absent), recent findings underscore the importance of considering severity in childhood maltreatment research (Clemmons et al., 2007; Higgins & McCabe, 2000; Schilling et al., 2008). The third main aspect of this study is the control for simultaneous types of childhood maltreatment and parenting style. Family characteristics have been related to both childhood maltreatment and the long-term adjustment of adults, suggesting that the results may be more accurate when they are studied simultaneously (Higgins & McCabe, 2000). Finally, a notable characteristic of this study is the control for comorbid PD criteria and the inclusion of PD control patients.

Limitations of the present study make it impossible to determine the direction of the effect between childhood adverse experiences and BPD criteria. The relationships showed in this study cannot be considered causal because of the retrospective assessment of maltreatment and perceived parenting style. Self-reported childhood retrospective data may be also subject to recall bias. The PBI scales have shown good test-retest reliability and independence of mood state (Lizardi & Klein, 2005). Previous studies about the reliability and stability of the CTQ scales before and after therapy, and convergent validity using independent corroborative data, support the accuracy of the retrospective self-assessment of childhood maltreatment (Bernstein & Fink, 1998; Paivio, 2001). Abuse reports of

BPD patients have also been corroborated in previous studies using reports by mothers and fathers as well as similar reports of abuse and neglect by their sisters (Bernstein et al., 2003; Laporte & Guttman, 2001; Laporte, Paris, Guttman, & Russell, 2011). The recruitment method is also subjected to limitations. Patient participation was voluntary and consented to by their psychiatrist/psychologist. Since we are using a convenience non-probability sampling, we cannot generalize these results to other samples. Finally, another limitation is the lack of available information to examine differences between patients who accepted to participate and patients who refused to participate.

The effects of family environment can be difficult to distinguish from the effects of maltreatment because maltreatment usually occurs in the context of dysfunctional families. Findings of the present study help clarify the effects of overlapping environmental factors that are associated with BPD. In summary, BPD criteria were associated with higher scores on emotional and sexual abuse, whereas parenting style did not show a specific association with BPD. These results were still significant after controlling for comorbid Axis I and II symptoms. Future research should replicate these results in male samples and include other childhood adverse experiences related to BPD.

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