

# Childhood Trauma, Borderline Personality Symptomatology, and Psychophysiological and Pain Disorders in Adulthood

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*In the empirical literature, there is support for the idea of a relationship between childhood trauma and various psychophysiological as well as pain disorders, and between borderline personality symptomatology and somatic preoccupation, as well as chronic pain. However, to date, no single study has examined the relationships between childhood trauma and borderline personality symptomatology, and the number of psychophysiological and pain disorders in adulthood. In this study, the authors examined these relationships and found no significant correlation between borderline personality symptomatology and the number of psychophysiological and pain disorders. However, there were positive and significant correlations between childhood physical abuse, emotional abuse, and witnessing violence and the number of psychophysiological and pain disorders in adulthood. Using hierarchical-regression analyses to determine which specific childhood traumas significantly predicted the number of psychophysiological and pain disorders, only witnessing violence emerged, accounting for 12% of the variance. These data suggest that a general factor associated with various forms of trauma predicts number of psychophysiological and pain disorders and that a specific predictor may be witnessing violence in childhood.*

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In the empirical literature, there appears to be some relationship between childhood adversity or trauma and several types of psychophysiological disorders (i.e., physical disorders with psychological components) in adulthood. For example, Roberts<sup>1</sup> describes an association between sexual abuse in childhood and physical disorders in adulthood such as somatization, gastrointestinal difficulties, headache, and chronic pain. Romans and colleagues<sup>2</sup> report statistically significant associations between childhood sexual abuse and chronic fatigue, as well as head-

aches. Also, a host of other researchers have examined early-childhood trauma and its association with specific types of psychophysiological disorders and pain syndromes. First, we will briefly review this literature.

## Fibromyalgia

Imbierowicz and Egle<sup>3</sup> compared fibromyalgia patients and those with somatoform pain disorders and control patients (i.e., those with medically explained chronic pain); the fibromyalgia subsample demonstrated the highest scores on childhood adversity. Finestone and colleagues<sup>4</sup> found that women with childhood sexual abuse were more likely than either psychiatric outpatients or nurses (comparison groups) to have a diagnosis of fibromyalgia. Finally, in a study examining three pain groups (fibromyalgia, myofascial pain, other pain), Goldberg and colleagues<sup>5</sup> found that the rates for childhood physical,

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sexual, and verbal abuse exceeded 48% in all subsamples, with fibromyalgia subjects having the highest prevalence rate (65%).

### Gastrointestinal Symptoms

With regard to functional gastrointestinal disorders, Drossman and colleagues<sup>6</sup> found a frequent history of sexual and physical abuse among such patients. Felitti<sup>7</sup> found a relationship between childhood sexual abuse and chronic gastrointestinal distress in victims, as compared with control subjects. Jamieson and Steege<sup>8</sup> compared sexually abused women to those without histories of childhood trauma and found a higher frequency of irritable bowel syndrome. Longstreth and Wolde-Tsadiq<sup>9</sup> found that early histories of sexual abuse were more likely to be associated with increasing levels of severe irritable bowel symptoms. Biggs and colleagues<sup>10</sup> found that childhood adversity was associated with a poor outcome in patients with functional gastrointestinal syndromes. Leserman and colleagues<sup>11</sup> echoed these preceding findings and reported that, compared with nonabused women, sexually abused women experienced more pain and functional disability with their gastrointestinal symptoms.

### Headache

Felitti<sup>7</sup> found that, compared with control subjects, those with histories of childhood sexual abuse reported more frequent headaches. Glod<sup>12</sup> reviewed the literature on the sequelae of childhood sexual and physical abuse and concluded that headaches were a common outcome. Arnow and colleagues<sup>13</sup> compared those with childhood sexual abuse-only to those with both childhood sexual and physical abuse; the latter group had more frequent acute-pain complaints during emergency room visits; these were most often headaches.

### Chronic Pain

Compared with the preceding areas, the empirical literature with regard to the relationship between childhood abuse and pain syndromes is more plentiful; at the same time, it is more controversial. There are a multitude of studies that support such a relationship among the various types of pain syndromes.<sup>12,14-21</sup> Likewise, there are studies that suggest a modest relationship, if any,<sup>22-24</sup> and those that find no relationship.<sup>25,26</sup>

### Summary

The empirical data appear to support some relationship between childhood trauma and various psychophysiological disorders, as well as chronic pain. The variability among these studies probably relates to the nature of subject recruitment (e.g., treatment-seeking versus not, compensated versus not), varying population characteristics (e.g., those from primary- versus tertiary-treatment settings), various assessment measures used for childhood trauma, and the inherent difficulties in studying childhood abuse because of subject factors (e.g., potential psychological interference from repression, suppression, denial, dissociation, and misinterpretation). However, given that there may be a relationship between childhood abuse and psychophysiological and pain disorders, we were intrigued by the possibility that these disorders may also have some relationship to borderline personality disorder, which is associated with a childhood-trauma substrate in many cases.<sup>27</sup>

### Borderline Personality Disorder and Psychophysiological/Pain Disorders

The empirical literature in the area of borderline personality disorder and its relationship to psychophysiological and pain disorders is very sparse. However, we have previously discussed the available literature in detail and identified a possible relationship between borderline personality disorder and 1) somatic preoccupation; and 2) chronic pain.<sup>28</sup>

### Study Hypothesis

In this study, we were interested in examining five types of childhood trauma and borderline personality symptomatology and their relationship, if any, to a cumulative (i.e., an increasing) number of psychophysiological disorders and chronic pain in adulthood. Specifically, we hypothesized that there would be relationships between childhood trauma, borderline personality symptomatology, and an increasing number of self-reported psychophysiological and pain disorders.

### METHOD

#### Participants

Participants were men and women between the ages of 18 and 90 years, who were being seen as outpatients in

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an internal-medicine clinic in which resident physicians, supervised by faculty, provide services. The clinic is the outpatient training facility for an internal-medicine training program that is located in a community hospital in a mid-sized, midwestern city. All candidates were approached as time permitted (i.e., the sample was one of convenience). Of the 123 patients who were approached, 106 agreed to participate in this project, a response rate of 86.2%. A total of 19 participants produced invalid or incomplete questionnaires and thus were excluded from analyses, bringing the total sample size to 87.

Among this sample, 51 (59%) were women and 34 (39%) were men; two participants (2%) did not indicate gender. Participants' average age was 43 years (standard deviation [SD]: 15); nine participants (10%) did not report age. With regard to race, 85% were Caucasian, 9% African American, 3% Asian American, 3% Hispanic, and 1% did not indicate ethnicity. With regard to marital status, 40% were married, 20% divorced, 23% never married, 7% separated, 5% widowed, and 5% did not indicate marital status. Regarding education, 12% had a 4-year college degree, 87% did not have a 4-year degree, and 1% did not endorse either item.

### Procedure

After recruitment, all participants completed an on-site survey that explored demographic information (e.g., age, sex, marital status, educational background); history of childhood trauma (i.e., sexual, physical, emotional abuse; physical neglect; witnessing of violence); history (i.e., "Have you ever had any of the following disorders?") of six specific medical diagnoses (fibromyalgia, chronic fatigue syndrome, irritable bowel syndrome, migraine headaches, multiple chemical sensitivities, chronic pain); and a measure of borderline personality symptomatology.

**Childhood trauma assessment.** For the assessment of trauma in childhood, participants were asked about such experiences before the age of 12. With Yes/No response options, we inquired about sexual abuse (defined as "any sexual activity against your will"), physical abuse (defined as "any physical insult against you that would be considered socially inappropriate by either yourself or others and that left visible signs of damage on your body either temporarily or permanently or caused pain that persisted beyond the 'punishment'"), emotional abuse (defined as "verbal and nonverbal behaviors by another individual that were purposefully intended to hurt and control you, not tease or kid you"), physical neglect (defined as "not having

your basic life needs met"), and witnessing of violence (defined as "the first-hand observation of violence that did not directly involve you").

**Borderline personality symptomatology.** We measured borderline personality symptomatology by use of the Self-Harm Inventory.<sup>29</sup> The Self-Harm Inventory is a 22-item, Yes/No, self-report measure that screens for borderline personality disorder. Each item in the inventory is preceded by the phrase: "Have you ever intentionally, or on purpose..." and items include, "overdosed, cut yourself on purpose, burned yourself on purpose, hit yourself," and "attempted suicide." Each endorsement is in the pathological direction, and the total Self-Harm Inventory score is the sum of endorsements. In comparison with the Diagnostic Interview for Borderlines,<sup>30</sup> using a cutoff score of 5, the Self-Harm Inventory demonstrates an 85% accuracy in the diagnosis of borderline personality disorder.<sup>29</sup>

Participation in the survey was presumed to be informed consent. The Institutional Review Boards of both the community hospital and the university approved this project.

## RESULTS

In this sample, the number and percentage of participants who reported psychophysiological and pain disorders were the following: fibromyalgia: 4 (4.6%); chronic fatigue syndrome: 10 (11.5%); irritable bowel syndrome: 19 (21.8%); migraine headaches: 17 (19.5%); multiple chemical sensitivities: 4 (4.5%); and chronic pain: 24 (27.5%). A total of 17 (19.5%) participants scored  $\geq 5$  on the Self-Harm Inventory.

### Childhood Trauma and Number of Psychophysiological and Pain Disorders

We first examined the relationships between specific childhood trauma variables and the total number of psychophysiological and pain disorders (TPPD). After a test for normality, we applied a transformation for a highly positive skewed variable to the TPPD; namely,  $1/(\text{oldvar} + 1)$ , which brought that item within an acceptable range of normality. On the basis of significant correlations, hierarchical regression was performed between the TPPD, as the dependent variable, and specific childhood trauma variables, as predictor variables. Intercorrelations between specific childhood trauma variables and TPPD were the following: witnessing violence (WV;  $r=0.34$ ) and physical abuse (PA;  $r=0.33$ ) were significant at the 0.01 level, and

emotional abuse (EA;  $r=0.24$ ) was significant at the 0.05 level. Neither sexual abuse (SA) nor physical neglect (N) were significantly related to TPPD.

On the basis of the correlational relationships found between these variables, a hierarchical-regression analysis was performed to test whether specific childhood traumas would predict TPPD. The significant childhood traumas (WV, PA, and EA) were entered, and only WV emerged as a significant predictor of TPPD ( $F[1, 85] = 11.23$ ;  $p < 0.001$ ), accounting for 12% of the variance. Table 1 lists beta weights and part and partial correlations for the model. The effect size ( $f^2 = 0.13$ ) for WV is just under Cohen's convention<sup>31</sup> for a medium effect, at 0.15. The ANOVA for the entire model was significant ( $F[3, 86] = 4.22$ ;  $p < 0.008$ ).

#### Borderline Personality and Number of Psychophysiological and Pain Disorders

The Self-Harm Inventory total score was not significantly related to TPPD.

### DISCUSSION

In this primary-care outpatient sample, there were positive and significant correlations between several types of childhood adversity (i.e., witnessing violence, physical abuse, emotional abuse), and the number of psychophysiological and pain disorders. Through additional analyses to identify the strongest predictor of psychophysiological and pain disorders, Witnessing Violence emerged as the only significant predictor. (Surprisingly, the Self-Harm Inventory total score did not demonstrate a significant relationship with the number of psychophysiological and pain disorders.)

In summary, these data suggest that a general factor associated with certain types of childhood adversity relate to the number of psychophysiological and pain disorders, but witnessing violence in childhood makes a specific contribution to the development of these disorders.

Previous studies have confirmed varying relationships between particular types of childhood adversity (most often physical and sexual abuse) and specific or individual psychophysiological disorders or pain disorders. Most suggest a relationship between these two phenomena; our findings support the contributory role of witnessing violence in relationship to multiple psychophysiological and pain disorders. Unlike previous studies, the present study is, to our knowledge, the only one to examine the role of five different types of childhood adversity and their relationship to the cumulative number of six different physical disorders in a single study.

The finding that particular types of childhood abuse, and, specifically, the witnessing of violence, are strong predictors for cumulative psychophysiological and pain disorders, should be interpreted with some caution. Our assessment of childhood trauma was relatively simplistic, nonstandardized, and self-report in nature. The use of a standardized measure would have increased the validity of our findings. However, in a busy medical clinic, we believed that this was the best approach to assessment for this study.

The finding that borderline personality symptomatology (i.e., the Self-Harm Inventory total score) did not demonstrate a relationship to the number of psychophysiological and pain disorders in this study is somewhat surprising, given the strong relationship of this Axis II disorder to childhood trauma. However, the number of participants with Self-Harm Inventory scores suggestive of borderline personality symptomatology was fairly small. Also, we might expect potential variability in this relationship, because childhood trauma is not a singular causal factor; there are other possible substrates for borderline personality disorder, such as genetic predisposition, biparental failure, and triggering events. Finally, the measure for borderline personality symptomatology in this study is quite different from other measures in that the Self-Harm Inventory only elicits histories of self-harm behavior and not other types of psychological symptoms associated with the disorder. In future studies, another measure for borderline personality symptomatology would be an interesting approach, as well as examination of a larger borderline personality symptomatology subsample.

There are a number of potential limitations in these data. First, all data were from self-report, which is known

**TABLE 1. Summary of Hierarchical Regression for Variables Predicting Psychophysiological and Pain Disorders (N = 87)**

Step and Variable	B	SE B	$\beta$	Correlations	
				Part	Partial
Step 1					
Witnessing violence	0.22	0.07	0.34*	0.34	0.34
Step 2					
Witnessing violence	0.14	0.04	0.22	0.16	0.15
Physical abuse	0.12	0.10	0.18	0.13	0.12
Step 3					
Witnessing violence	0.13	0.10	0.21	0.15	0.14
Physical abuse	0.12	0.10	0.17	0.12	0.11
Emotional abuse	0.001	0.08	0.02	0.02	0.02

\* $p < 0.001$ .

to have inherent limitations. This may be particularly true with regard to trauma, where recollection may be compromised by denial, suppression, repression, dissociation, and misinterpretation. Second, we used only one measure of borderline personality symptomatology. We cannot predict how other types of borderline personality symptomatology measures might relate to psychophysiological and pain disorders. Recall that the Self-Harm Inventory is solely based on self-harm behaviors, unlike all other measures of borderline personality disorder. Whether this unique feature of the Self-Harm Inventory affected results is not known. Third, this was a predominantly female population. Whether a more evenly loaded population with respect to

gender would change findings is not known. However, this is the first study to examine, in a single population, five childhood-trauma variables and borderline personality symptomatology as they relate to an increasing number of psychophysiological and pain disorders, up to six. Also, these data are from a clinically relevant sample (a community outpatient center). These data suggest that patients suffering from multiple psychophysiological and pain disorders may have comorbid trauma histories, particularly the witnessing of violence. It would seem that these potential historical features should be explored, and, if present, might require treatment augmentation with psychological intervention.

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