

The Impact of Posttraumatic Stress Disorder on Dysfunctional Implicit and Explicit Emotions Among Women With Borderline Personality Disorder

Nicolas Rüsch, MD,*†‡ Patrick W. Corrigan, PsyD,†‡ Martin Bohus, MD,§ Thomas Kühler, PhD,||
Gitta A. Jacob, PhD,* and Klaus Lieb, MD*

Abstract: A comorbid posttraumatic stress disorder (PTSD) aggravates symptoms, course of illness and social functioning of persons with borderline personality disorder (BPD). However, it is largely unclear how this effect is mediated. In 60 women with BPD of whom 23 had a comorbid current PTSD we investigated whether dysfunctional explicit and implicit emotions were associated with a comorbid PTSD. Shame and guilt proneness, anxiety, anger–hostility, and general psychopathology were assessed by self-report measures. Implicit anxiety-related self-concept was measured using the Implicit Association Test. Self-reported guilt proneness and general psychopathology, but not shame proneness or trait anxiety, were significantly higher in women with BPD and PTSD than in women with BPD alone. A comorbid PTSD was associated with a more anxiety-prone (relative to shame-prone) implicit self-concept as assessed by the Implicit Association Test. Self-reported guilt proneness and implicit anxiety may mediate the negative impact of comorbid PTSD on women with BPD.

Key Words: Borderline personality disorder, posttraumatic stress disorder, guilt, anxiety, implicit self-concept.

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A comorbid posttraumatic stress disorder (PTSD) is common in subjects with borderline personality disorder (BPD) and associated with poor outcome and continuing BPD symptomatology over 10 years (Gunderson et al., 2006; Zanarini et al., 2006). A comorbid PTSD in persons with BPD is related to a more severe clinical history, worse general functioning (Zlotnick et al., 2003), and more anxiety and depression (Bolton et al., 2006).

*Department of Psychiatry and Psychotherapy, University of Freiburg, Freiburg, Germany; †Joint Center for Psychiatric Rehabilitation at the Illinois Institute of Technology, Chicago, Illinois; ‡Chicago Consortium for Stigma Research, Chicago, Illinois; §Department of Psychosomatic Medicine and Psychotherapy, Central Institute of Mental Health, Mannheim, Germany; and ||Psychiatric Hospital, Meissenberg, Zug, Switzerland.

Send reprint requests to Nicolas Rüsch, Department of Psychiatry and Psychotherapy, University of Freiburg, Hauptstraße 5, D-79104 Freiburg, Germany. E-mail: nicolas.ruesch@uniklinik-freiburg.de.

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Despite the evidence that a comorbid PTSD worsens the course of BPD, how this effect is mediated is not clear. Therefore, we investigated whether emotional variables are associated with a comorbid PTSD in subjects with BPD. Dysfunctional emotions are likely to play a crucial role in the interaction between BPD and comorbid PTSD. First, emotional dysregulation is at the core of BPD (Lieb et al., 2004; Linehan, 1993) and levels of self-reported anxiety, anger–hostility, and shame are higher among women with BPD than in women with social phobia and in healthy women (Rüsch et al., 2007b). Second, in PTSD, fear and anxiety are considered central emotions that lead to avoidance and arousal and are the focus of most therapeutic efforts (Dalgleish and Power, 2004). In addition to anxiety, other emotions such as anger, guilt, and shame may be relevant in PTSD (Andrews et al., 2000; Lee et al., 2001).

Emotions can operate at an explicit, consciously accessible level as well as implicit and automatic levels that are not necessarily congruent. For instance, an anxiety-prone individual may say “I am anxious,” which is, at an implicit level, accompanied by memories, affects, or autonomic reactions that the person may not be aware of but may be highly relevant to subsequent behavior. It is therefore useful to assess anxiety at an explicit and implicit level (Dalgleish and Power, 2004; Teachman et al., 2001). The Implicit Association Test (IAT) is a measure of automatic or implicit attitudes that can be used to measure implicit self-concept (Greenwald and Farnham, 2000) and dysfunctional cognitive schemata especially in anxiety disorders (Teachman et al., 2001). The IAT uses reaction time measurements to determine the relative strength of implicit associations between concepts (e.g., self vs. best friend) and attributes (e.g., anxiety vs. shame) based on the notion that quicker processing speeds equate with stronger associations.

This study was designed to test the following hypotheses:

1. Women with BPD and PTSD report higher shame and guilt proneness, trait anxiety, and anger–hostility in self-report measures compared with women with BPD alone.
2. Women with BPD and PTSD have a higher frequency of self-injurious behaviors, more life-time psychiatric hospitalizations, more depression, and a lower quality of life than women with BPD alone.

3. In the IAT measuring the strength of implicit association of self with anxiety (relative to shame), women with BPD and PTSD show a more anxiety-related implicit self-concept than women with BPD alone because anxiety is considered the primary emotion in PTSD (Dalglish and Power, 2004).

METHODS

Subjects

Sixty women with BPD were recruited at the Department of Psychiatry and Psychotherapy, University of Freiburg, Germany, and at the Department of Psychiatry, Meissenberg, Zug, Switzerland. All subjects met the DSM-IV diagnostic criteria for BPD as assessed by the appropriate segment of the Structured Clinical Interview for DSM-IV Personality Disorders (First et al., 1997). Axis I comorbidity was assessed using the Mini-International Neuropsychiatric Interview (Sheehan et al., 1998). Information on a possible history of childhood sexual abuse was provided by therapists after careful clinical interviews. All subjects gave written informed consent to the study after the procedures had been fully explained. The study was approved by the local ethics committee. This investigation is part of a larger study on dysfunctional emotions in BPD, and sample characteristics have been reported in detail elsewhere (Rüsch et al., 2006, 2007b).

Self-Report Measures

We used a short 11-scenario version of Tangney's Test of Self-Conscious Affect (TOSCA-3; Tangney et al., 2000; Rüsch et al., 2007a; German version, Rüsch and Brück, unpublished) to measure shame and guilt proneness. The State-Trait-Anxiety-Inventory (STAI; Spielberger et al., 1970) was used to measure trait anxiety. General psychopathology and anger–hostility were assessed by the Symptom Check List (SCL-90-R; Derogatis, 1977). Quality of life was assessed by the SmithKline Beecham Quality of Life Scale

(SBQoL; Stoker et al., 1992). Depression was measured with a 15-item version of the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977).

Implicit Association Test

During the IAT, subjects classified consecutive words into superordinate categories. The target categories were “Self” versus “Best Friend,” the attribute categories were “Anxiety” versus “Shame.” The idea of the task is that verbal stimuli are classified more quickly when the target and attribute category pairings (e.g., Self/Anxiety) match the individual's automatic associations with the target categories versus when the target and attribute category pairings are mismatched (Rüsch et al., 2007b for details of the IAT design).

Statistical Analyses

Analyses were conducted using SPSS for windows, version 11.1.5. All comparisons were 2-tailed *t*-tests for independent samples, and the significance level was set at $p \leq 0.05$.

RESULTS

Twenty-three of all 60 women with BPD had a current comorbid PTSD. Of these 23, 18 had suffered from childhood sexual abuse. These 23 subjects did not differ significantly from the 37 women with BPD alone in terms of age or years of school education (Table 1). The level of depression was similar in both groups, but general psychopathology was significantly higher in the group with a comorbid PTSD, and there was a trend for more frequent self-injurious behavior among women with BPD and PTSD. Although self-reported shame proneness, trait anxiety, anger–hostility, and quality of life were similar in both groups, guilt proneness was higher in women with BPD and PTSD. A comorbid PTSD was also associated with a more anxiety-prone implicit self-concept (relative to shame prone) as assessed by the IAT (Table 1).

TABLE 1. Clinical, Neuropsychological and Self-Report Variables

	Women With BPD and PTSD (<i>n</i> = 23), Mean (SD)	Women With BPD Alone (<i>n</i> = 37), Mean (SD)	<i>T</i> *	<i>p</i>
Age (yr)	27.0 (7.6)	28.3 (6.5)	−0.68	0.50 (ns)
School education (yr)	10.0 (1.5)	10.7 (1.5)	−1.55	0.13 (ns)
Self-injurious behaviors per month (over the last 6 months)	13.9 (21.1)	6.9 (8.5)	1.82	0.07 [‡]
Suicide attempts lifetime	5.1 (5.2)	3.2 (3.8)	−1.59	0.12 (ns)
Psychiatric hospitalizations lifetime	5.2 (5.8)	4.1 (4.1)	−0.81	0.42 (ns)
Quality of life (SBQoL)	3.00 (0.70)	2.96 (0.66)	0.21	0.85 (ns)
General psychopathology (SCL-90-R)	1.91 (0.7)	1.54 (0.6)	−2.19	0.03 [§]
Anger–hostility (SCL-90-R)	1.78 (1.1)	1.45 (0.9)	−1.21	0.23 (ns)
Depression (CES-D)	28.8 (10.5)	27.4 (9.6)	−0.52	0.61 (ns)
Shame proneness (TOSCA-3)	45.2 (5.2)	42.5 (7.6)	−1.48	0.14 (ns)
Guilt proneness (TOSCA-3)	50.6 (3.2)	48.4 (4.9)	−1.97	0.05 [§]
Trait anxiety (STAI-X2)	60.3 (11.3)	61.6 (10.0)	0.47	0.64 (ns)
Anxiety-prone implicit self-concept (IAT) [†]	−0.14 (0.29)	0.05 (0.28)	2.50	0.02 [§]

*Comparisons are 2-tailed *t*-tests for means across each row.

[†]with a negative score indicating a more anxiety-prone implicit self-concept (relative to shame prone).

ns, nonsignificant; [‡] $p \leq 0.10$; [§] $p \leq .05$.

DISCUSSION

To our knowledge, this initial study is the first to assess key emotions at an explicit and implicit level among women with BPD and with versus without comorbid PTSD. Our results point to the role of increased self-reported guilt proneness and of an anxiety-prone implicit self-concept, but not of explicit self-reported anxiety, in women with BPD and a comorbid PTSD.

Our first hypothesis was confirmed for guilt proneness, which is in line with recent models of guilt being a key emotion in PTSD (Lee et al., 2001). On the other hand, contrary to our expectations and recent conceptualizations, self-reported shame (Lee et al., 2001), anxiety (Dalgleish and Power, 2004), and anger (Andrews et al., 2000; Dalgleish and Power, 2004) were not significantly associated with a comorbid PTSD. Given the modest sample size in our study, these may well be false negative findings.

The second hypothesis concerning the clinical impact of a comorbid PTSD was partly confirmed with respect to general psychopathology and, as a trend, the frequency of self-injurious behaviors. This is in line with recent research on PTSD as a risk factor for a more complicated course of BPD. However, PTSD comorbidity was not linked to differences in quality of life, depression, or psychiatric hospitalizations.

IAT results confirmed our third hypothesis that the implicit self-concept is more anxiety prone (relative to shame prone) in women with BPD and PTSD as compared with women with BPD alone. Although the levels of self-reported trait anxiety did not differ between both groups, at an implicit level a comorbid PTSD led to a stronger association of self with anxiety than with shame. This supports conceptualizations of implicit anxiety being a key emotion in PTSD (Dalgleish and Power, 2004). It is not surprising that explicit and implicit anxiety measures show divergent results because both capture different aspects of cognitive-emotional processing (Rüsch et al., 2007b; Teachman et al., 2001).

This initial study has some limitations. First of all, our sample size was limited and we did not have a comparison group of women with PTSD but without BPD. Future studies should confirm our findings in larger samples. Although we did measure quality of life, future studies should assess social functioning more specifically.

CONCLUSIONS

We assessed the association of key emotions at an explicit and implicit level with PTSD comorbidity among women with BPD. Our results point to the role of guilt proneness in BPD with comorbid PTSD. This is in line with recent conceptualizations of guilt-based PTSD (Lee et al., 2001). On the other hand, shame is likely to be a central emotion in women with BPD independently of a comorbid PTSD. Further, a comorbid PTSD appears to be associated with an anxiety-prone implicit self-concept, confirming the notion of anxiety as the primary emotion in PTSD.

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