

ORIGINAL ARTICLE

## Borderline personality and emotional reactivity to theoretical media events: A pilot study

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### Abstract

**Objective.** The purpose of this study was to determine if patients with borderline personality emotionally react any differently than controls to theoretical media events of different valences. **Methods.** In this cross-sectional sample of convenience, we examined among 70 primary care patients the relationship between borderline personality disorder, according to two diagnostic measures (the borderline personality scale of the Personality Diagnostic Questionnaire-4 and the Self-Harm Inventory), and emotional reactions to three types of theoretical media events – positive, negative, and neutral events. **Results.** Participants with versus without borderline personality evidenced no emotional differences to the various media events according to the Personality Diagnostic Questionnaire-4. However, according to the Self-Harm Inventory, participants with borderline personality symptomatology were more likely to rate neutral events with greater emotional intensity, but not positive or negative events. **Conclusions.** These findings suggest that patients with borderline personality may tend to respond more dramatically to ambiguous stimuli, such as neutral environmental events. We discuss the potential implications of these findings.

**Key Words:** Borderline personality, media events, Self-Harm Inventory, emotional over-reactivity, borderline personality disorder

### Introduction

Borderline personality is an Axis II disorder that is characterized by "... a pervasive pattern of instability of ... affects" with "... marked reactivity of mood" [1]. In keeping with this characterization, Linehan [2] describes emotional regulation as a fundamental deficit among individuals with borderline personality disorder (BPD) and Herpertz [3] states that such individuals tend to react with "emotional hyper-responsiveness".

This characteristic emotional over-responsiveness in BPD is supported by several empirical studies. For example, Jennings [4] found that when viewing evocative color slides of pleasant, neutral, and unpleasant themes, compared with control undergraduate students, those with borderline personality characteristics showed significantly greater overall magnitudes of startle response regardless of the valence of the slide content. Korfine and Hooley [5] presented study participants with words of different emotional valences. Participants were then asked to forget the words. Compared

with controls, those with BPD recalled significantly more of the high-valent words from the "forget" condition. Herpertz et al. [6] presented participants with a short story and found that those participants with BPD evidenced greater affective hyper-reactivity, which was characterized by a lower threshold for affective responses as well as intense and rapidly changing affects. Conrad and Morrow [7] examined male participants' responses to videos depicting abandonment. Compared with controls and participants with low borderline symptoms, those with high levels of borderline personality symptomatology reported a significantly greater willingness to use verbal and/or symbolic aggression, including threats of violence, against a partner and actual violence against inanimate objects (i.e. they reacted more dramatically to viewing the videos). Finally, Domes and colleagues [8] found that, compared with healthy controls, women with borderline personality symptomatology had more difficulty suppressing irrelevant information of an aversive nature (i.e. sensitivity to

negative stimuli). In support of these data, Minzenberg, Poole, and Vinogradov [9] conclude that, "... patients with BPD may have subtle deficits in the processing of social stimuli ...".

The preceding studies support the hypothesis that individuals with BPD manifest an emotional hyper-reactiveness to environmental stimuli, perhaps even regardless of the nature of the stimulus (i.e. positive, neutral, negative). However, not all studies support this conclusion. Renneberg et al. [10] found that, when presented with videos depicting positive or negative emotions, compared with controls, participants with BPD demonstrated *reduced* facial expressiveness to both. In addition, Herpertz and co-workers [11,12] found that, upon viewing slides with emotional content, participants with BPD did *not* demonstrate affective hyper-responsivity.

The present study was designed to further clarify the emotional responsiveness of individuals with and without borderline personality symptomatology by presenting participants from a primary care setting with descriptions of theoretical media events and having them: (1) grade each event as positive or negative and (2) rate their degree of emotional response to each event.

## Methods

### Participants

Participants were male and female outpatients, ages 18 or older, being seen for outpatient medical care by residents in internal medicine, in a mid-sized mid-western city. Exclusion criteria were cognitive (e.g., dementia), medical (e.g., pain), or intellectual impairment that would preclude the successful completion of a survey booklet. Respondents ( $N=70$ ) consisted of 18 males and 52 females, ranging in age from 18 to 84 years (Mean=41.31, SD=15.46). With regard to race/ethnicity, most participants indicated White (91.4%), with three being African-American, two Hispanic, and one Native-American. With regard to highest level of education, 11.4% had not graduated high school, 54.3% had earned a high school diploma, 15.7% had completed some college coursework but not a degree, 11.4% had earned an undergraduate degree, and 7.1% had earned a graduate degree.

### Procedure

As patients presented for routine medical care, each was invited into the project as time allowed (i.e. a sample of convenience) by one of two internal-medicine resident recruiters. Following an explanation of the project, participants completed a six-page

research booklet that initially explored demographic information and then emotional reactions to 21 author-developed theoretical media items. Individual items consisted of media events such as the birth announcement of a baby of a famous couple, an automobile accident involving a grisly death, the job promotion notice of a friend in the local newspaper, etc. Each item was assessed as negative or positive by the respondent. Then, respondents were asked to rate the intensity of their emotional reaction to each individual event, using a 5-point Likert-style scale from "very minimal" to "very strong".

The latter portion of the booklet contained two measures for BPD. The first measure, the borderline personality scale of the Personality Diagnostic Questionnaire-4 (PDQ-4) [13], is a 9-item, true/false, self-report measure that consists of the diagnostic criteria for BPD that are listed in the DSM-IV [1]. A score of 5 or higher is highly suggestive of the diagnosis of BPD. Previous versions of the PDQ have been found to be useful screening tools for BPD in both clinical [14,15] and nonclinical [16] samples, including the use of the freestanding borderline personality scale [17].

The second measure, the Self-Harm Inventory (SHI) [18], is a 22-item, yes/no, self-report measure that explores participants' histories of self-harm behavior. Each item in the inventory is preceded by the statement, "Have you ever intentionally, or on purpose", and items include, "overdosed", "cut yourself on purpose", "burned yourself on purpose", and "hit yourself". Each endorsement is in the pathological direction and the SHI total score is the summation of "yes" responses. SHI total scores of 5 or higher are highly suggestive of the diagnosis of BPD. Specifically, in comparison with the Diagnostic Interview for Borderlines [19], a benchmark for the diagnosis of BPD in research settings, the SHI demonstrates an accuracy in diagnosis of 84% [18].

The survey booklet took participants about 15 minutes to complete. All responses were anonymous. After completion, surveys were placed in sealed envelopes to await data entry and analysis. Completion of the survey was assumed to function as implied consent. The institutional review boards of both the community hospital and university approved this project.

## Results

To create baseline participant-determined scales for the media items corresponding to positive, negative, and neutral forms of media events, respondents' ratings of the positive versus negative nature of each item were subjected to factor analysis. Based on these results, as well as examination of scale reliabilities with and without potential items, three such scales were constructed, each comprised of five items. These three

scales functioned as the baselines for comparison in subsequent analyses.

The positive media events scale, which consisted of items 1, 3, 5, 6, and 14, seemed to reflect either a personal focus (e.g., wedding announcement of a friend in the newspaper) or a community good (e.g., announcement for a blood drive in the local newspaper). The internal consistency coefficient ( $\alpha$ ) for this five-item scale was 0.85, and each item was rated as positive by 83–92% of respondents.

The negative media events scale, which consisted of items of 2, 7, 13, 15, and 21, seemed to reflect negative events that had already occurred to specific people, but not to someone known by the respondent (e.g., television coverage of a child mauled by a dog, media coverage of a student shooting incident in a high school in the region). The internal consistency coefficient ( $\alpha$ ) for this five-item scale was 0.94, and each item was rated as negative by 67–80% of respondents.

The neutral media events scale, which consisted of items 9, 10, 12, 19, and 20, seemed to either be truly neutral (e.g., advertisements for new cars by a local dealership) or positive in a general community sense (e.g., media coverage of the opening of a local flower shop). The internal consistency coefficient ( $\alpha$ ) for this five-item scale was 0.84, and each item was rated as neutral by 59–86% of respondents.

After these 15 media items were categorized as positive, negative, or neutral, we examined the degree of emotional reaction for each participant to each category of media events. To do so, each participant's ratings of emotional reactions were summed for each category of media items. We then examined the resulting correlations between BPD scores according to the PDQ-4 and the SHI, and the established baseline emotional ratings for each media category, which are presented in Table I. Note that there was a statistically significant correlation between SHI scores and emotional intensity ratings of the items comprising the neutral media events scale. In examining the mean rating on the neutral items as a function of BPD status according to the SHI, using a cut-off score of 5, non-BPD participants rated each item an average

of 1.86, whereas the 11 BPD participants rated each item an average of 2.71. We further examined whether there was a difference between BPD and non-BPD individuals with regard to endorsing these neutral items as positive or negative, and found that there was no such difference on any of the five items.

## Discussion

These findings indicate that, when assessed according to the SHI, individuals with BPD do *not* demonstrate exaggerated responses to clearly negative or clearly positive stimuli (in this case, theoretical media events). However, when the stimulus is relatively neutral or ambiguous (in this case, theoretically neutral media events), the subsample with BPD demonstrated an exaggerated or overly dramatic response, which may represent a histrionic undertone in some individuals. This observed over-reaction to ambiguous stimuli is not clinically novel, as such responses are the defining features of patients with BPD when undergoing testing with the Rorschach Inkblots. For example, given these ambiguous stimuli, Zodan et al. [20] found significant differences in response between borderline and non-borderline participants. To clarify, participants with BPD evidenced more dysphoric affects and more difficulties with affective regulation compared to the control group of participants with various Axis I disorders.

Why did these findings not emerge in analyses with the PDQ-4? One possible explanation is the relatively low statistical power in the current study. Note that the corresponding correlation coefficient was similar in magnitude to the statistically significant one involving the SHI. However, given the current sample size, this correlation coefficient failed to reach statistical significance. Second, the borderline personality scale of the PDQ-4 explores predominantly psychological symptoms, a number of which are open to participant interpretation. For example, items on the PDQ-4 include, "I'll go to extremes to prevent those who I love from ever leaving me", "I often wonder who I really am", and, "I feel that my life is dull and meaningless". The factor of interpretation may have resulted in some diagnostic over-inclusion (i.e. false positives) and a subsequent wash-out effect with findings. In contrast, the SHI is based upon lifetime history, with little room for subjective interpretation (e.g., "Have you ever intentionally, or on purpose, cut yourself?").

One interesting issue is whether a comorbid condition, such as post-traumatic stress disorder, is mediating the observed findings, particularly given the high rates of trauma reported by patients with BPD. While this mediating effect is certainly a possibility (i.e. that trauma dynamics are, in part, accounting for the observed over-reaction to neutral stimuli), it

Table I. Correlations between intensity of emotional reactions to media items and two measures of borderline personality disorder.

	Ratings of the intensity of emotional reaction to		
	Positive media	Negative media	Neutral media
Scores on the PDQ-4	0.03	0.00	0.26
Scores on the SHI	0.12	0.10	0.33*

\* $P < 0.05$ . Note: due to missing data,  $N = 48-55$  depending on analysis; PDQ-4, borderline personality scale of the Personality Diagnostic Questionnaire-4; SHI, Self-Harm Inventory.

is less likely given the current construct of post-traumatic disorder. In the DSM-IV, the psychological and physiological reactivity associated with post-traumatic stress disorder is presumably due to external cues that symbolize or resemble some aspect of the traumatic event. It seems unlikely that such cues would be elicited by items such as an advertisement for new cars at a local dealership or media coverage of the opening of a local flower shop.

These findings support the concept that while patients with BPD may appropriately respond to overtly negative and positive stimuli, they may over-react to neutral or ambiguous stimuli. For the practicing clinician, these ambiguous stimuli might include pauses during a psychotherapy encounter, such as a clinician departure from the treatment room to respond to a telephone call. In other words, seemingly non-valent and meaningless events may take on emotional valence, to a modest degree, because of the patient's cognitive style of perceiving and emotional style of experiencing. According to these data, clinicians do not need to be overly concerned about over-reaction to valent events and experiences, but rather the ambiguous events and experiences that occur in and outside of treatment.

This study has a number of potential limitations. First, the sample size is relatively small. Second, we used self-report measures, which are known to have inherent limitations. Third, there is always the risk of sampling bias (i.e. the sample of convenience may have resulted in the unintentional exclusion of more complex medical/psychiatric patients as well as the excessive inclusion of over-emotional or BPD-like patients). Fourth, these data may be difficult to generalize to other types of clinical samples because of the recruitment setting (i.e. potential differences between BPD patients in medical versus psychiatric settings), low rate of minority participants, and over-representation of female participants. However, the findings appear to be clinically relevant and add to the current dearth of information relating to the responses of patients with BPD to neutral environmental stimuli. This awareness may inform specific therapeutic strategies, particularly psychodynamic and cognitive-based strategies, with regard to more effective management of patients with this challenging disorder.

### Key points

- A number of studies with various methodologies suggest that patients with BPD over-react to various types of emotional stimuli, whether positive, negative, or neutral
- In this study, through examining participants' reactions to theoretical media events, we found that only those diagnosed with borderline personality

disorder according to the Self-Harm Inventory evidenced differences in reactivity, and then, only to neutral media events, not positive or negative events

- Findings from this study suggest that patients with borderline personality disorder may be prone to over-reacting to ambiguous stimuli, but appear to respond as expected to valent (negative or positive) stimuli
- Clinicians need to be aware that patients with borderline personality disorder may be prone over-reacting to ambiguous or neutral stimuli

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