Published in final edited form as:

Personal Ment Health. 2015 November ; 9(4): 288–297. doi:10.1002/pmh.1306.

Does Hostile Rumination Mediate the Associations between Reported Child Abuse, Parenting Characteristics, and Borderline Features in Adulthood?

Melissa J. Zielinski^{a,b}, Ashley Borders^b, Peter R. Giancola^c

^aUniversity of Arkansas, Department of Psychological Science, Fayetteville, AR 72701 USA

^bThe College of New Jersey, Department of Psychology, Ewing, NJ 08628 USA

^cUniversity of Kentucky, Department of Psychology, Lexington, KY 40506 USA

Abstract

This cross-sectional study investigated whether hostile rumination mediated the association between several indicators of a negative childhood environment (retrospectively reported child abuse and perceived parental care and overprotection) and borderline features. Community participants ($N = 524$) completed self-report measures in the laboratory. Results showed that adults exhibiting borderline features reported less parental care and more parental overprotection, as well as greater abuse. Additionally, hostile rumination statistically mediated the associations between all childhood environmental variables and borderline features, even controlling for depressive symptoms, alcohol use, and impulsivity. Although cross-sectional data cannot test causal mediation, this pattern of results provides preliminary evidence that hostile rumination may partially account for the well-established connection between negative environments and borderline features. Future directions, including a discussion of longitudinal and experimental work that might help build on and strengthen the current findings, are explored.

Keywords

Rumination; Childhood Abuse; Parenting; Borderline Personality Features; Mediation

Introduction

Borderline personality disorder (BPD) is characterized by marked instability in affect regulation, impulse control, interpersonal relationships, and self-image (American Psychiatric Association, 2013). Moreover, even individuals who do not meet criteria for a formal diagnosis of BPD can display levels of borderline features that are associated with dysfunction cross-sectionally (e.g., depressive symptoms, drinking to cope, suicide attempts; Selby, Anestis, Bender, & Joiner, 2009) and over time (e.g., interpersonal problems, mood disorders; Trull, Ueda, Conforti, & Doan, 1997). Understanding factors that may impact the development of borderline features is thus crucial. This study examined one potential

pathway by which negative childhood experiences may associate with borderline features. We first briefly review theory and research suggesting that certain childhood environments contribute to borderline features. We then discuss how rumination may constitute an important mechanism in this association.

Childhood Environment and Borderline Personality

Childhood abuse and certain parenting behaviors have both received attention as potential environmental influences that may lead to the emotion dysregulation that is at the core of borderline personality. Adults with BPD report higher rates of childhood physical abuse, sexual abuse, emotional abuse, and emotional neglect than non-BPD controls and individuals with other personality disorders (Herman, Perry, & van der Kolk, 1989; Zanarini et al., 1997). Hernandez and colleagues (2012) found that borderline criteria were significantly associated with sexual and emotional abuse, even when controlling for other related environmental circumstances (e.g., co-occurring abuse, parenting style, Axis I symptoms and non-BPD Axis II criteria). Borderline features were also associated with stronger physical abuse histories in a nonclinical sample (Trull, 2001). Regarding specific parenting behaviors, research conducted in a primary care setting found that borderline personality symptomatology was associated with lower recalled quality of care by parents and caretakers on brief screening measures (Sansone, Farukhi, & Wiederman, 2013). This finding is supported by several other studies that have found that individuals exhibiting more borderline features report lower parental care and higher parental overprotection (Nickell, Waudby, & Trull, 2002; Zweig-Frank & Paris, 1991; but see Helgeland & Torgersen, 2004).

Taken together, childhood abuse, lack of parental care, and excess of parental overprotection are all environmental experiences that are reported by individuals with borderline features. Understanding mechanisms that might account for these well-established associations is an important next step. We propose that rumination, or thinking repetitively and passively about negative emotions and experiences, is a particularly maladaptive tendency that may emerge as individuals attempt to cope with distressing childhood environments (Repetti, Taylor, & Seeman, 2002) and will ultimately contribute to borderline features.

Rumination and Borderline Personality

Rather than actively and effectively responding to upsetting emotions or events, ruminators spend time brooding, replaying past events, and fantasizing about future changes. Researchers identify various types of rumination (e.g., depressive, hostile, angry) based upon the main negative emotion or thought fueling the repetitive thoughts (Caprara, 1986; Papageorgiou & Wells, 2004; Sukhodolsky, Golub, & Cromwell, 2001). For example, angry rumination is defined as perseverative thoughts about anger (Sukhodolsky et al., 2001). Across all types, rumination results in increased negative emotions and cognitions, depression, anxiety, impaired decision making, and disinhibited behaviors (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008).

Initial evidence also provides support for specific associations between rumination and borderline features. Of all the personality disorders, rumination is uniquely related to BPD, even after controlling for depression (Smith, Grandin, Alloy, & Abramson, 2006). Both

angry and depressive rumination predicted higher borderline features, even controlling for negative affect (Baer & Sauer, 2011). However, angry rumination was also associated with borderline features more strongly than depressive rumination (see also Selby et al., 2009) and mediated the association between negative affect and borderline features. Thus, evidence suggests that rumination – particularly angry rumination – predicts greater borderline features. Although no extant research has examined the relation between hostile rumination and borderline features, researchers have theorized that hostile rumination is related to anger and is associated with the emotion dysregulation characteristic of BPD (Gardner & Moore, 2008). Hostile rumination has been explored as an individual difference variable which captures a person's tendency to fixate on emotions such as hostility and resentment, as well as the desire to seek revenge in response to situations that have been perceived as threatening (Caprara et al., 2014).

Importantly, ruminative tendencies are more likely in adults who experienced childhood stressors, including abuse or other traumatic events (Sarin & Nolen-Hoeksema, 2010; Spasojević & Alloy, 2002). Rumination also mediated the associations between childhood maltreatment and negative clinical outcomes such as depressive symptoms, alcohol consumption, and bulimia. A recent review suggested that rumination might be a mechanism by which traumatic events during childhood lead to symptoms of psychopathology (Baer, Peters, Eisenlohr, Geiger, & Sauer, 2012). In terms of parenting behaviors, higher rumination is correlated with more parental overprotection and lower care (Mancini, D'Olimpio, Prunetti, Didonna, & Del Genio, 2000). Additionally, rumination mediated the relationship between parental overcontrol and number of depressive episodes in past research (Spasojević & Alloy, 2002).

The current study

The present study examined the associations between self-reported childhood abuse, parental overprotection and care, hostile rumination, and borderline features. In line with previous research, we expected that participants who reported more negative childhood experiences (less care, more overprotection, and abuse) would report greater borderline features. We also hypothesized that hostile rumination would positively correlate with both negative childhood experiences and borderline features. Finally, we expected that hostile rumination would mediate the association between negative childhood experiences and borderline features, even when controlling for other forms of psychopathology. Although previous research has explored some of these bivariate associations, this is the first study to examine both the relation between hostile rumination and borderline features and a rumination-mediated link between aspects of childhood environments and borderline features.

Method

Participants

Community participants ($N = 524$; 264 women) ranging in age from 21 to 35 years old ($M = 23.07$, $SD = 2.91$) were recruited for a larger study on alcohol and aggression using newspaper advertisements and flyers (Borders & Giancola, 2011). The data for the current

study were collected prior to alcohol consumption and provocation. Participants self-identified as Caucasian (87%), African American (10%), and Other (3%). They had an average of 16 years of education and a mean income of approximately \$16,000. Recruited individuals reported drinking socially (at least 3–4 drinks twice a month). Individuals who reported past or present drug problems, alcohol problems, serious head injury, learning disability, or serious psychopathology were excluded from participation during phone pre-screening.

Measures and procedures

Participants completed several questionnaires upon first entering the laboratory. All procedures were approved by the institutional review board at the University of Kentucky.

Childhood abuse.—The 28-item Childhood Trauma Questionnaire (CTQ; Bernstein & Fink, 1998) retrospectively screens for five types of maltreatment: emotional, physical, and sexual abuse, and emotional and physical neglect. Items are rated on a 5-point scale, with higher summed subscales indicating more severe maltreatment. The CTQ's authors suggested using cut-off scores to classify participants as having experienced (1) none or minimal abuse, (2) low to moderate abuse, (3) moderate to severe abuse, and (4) severe to extreme abuse (Bernstein & Fink, 1998). Because a large proportion of our sample reported no or minimal abuse on any subscale (76.8%), we created a dichotomized total abuse score for each participant. Due to the retrospective and self-report nature of these data, we used the conservative approach of only classifying scores in the moderate or severe categories as indicative of maltreatment. Participants who reported maltreatment of any form at or above the moderate level were coded as abused (1); otherwise participants were coded as not abused (0).

Parental care and overprotection.—The 25-item Parental Bonding Instrument (PBI; Parker, Tupling, & Brown, 1979) asks about respondents' recollections of their mothers and fathers during the first 16 years of life. Items are rated on a 4-point scale and were averaged to create mean care and overprotection subscales. Higher scores on the care scale indicate parents who exhibited emotional warmth and closeness, whereas lower scores indicate parents who showed emotional coldness and indifference. Higher summed scores on the overprotection scaled indicate parents who exhibited control and intrusiveness, whereas lower scores indicate parents who allowed for autonomy and independence. We averaged across mother and father reports to create composite measures. Participants who only reported on one parent were assigned that parent's score. Internal consistencies in this sample were .91 for care and .88 for overprotection.

Hostile rumination.—The 20-item Dissipation-Rumination Scale (DRS; Caprara, 1986) assesses the tendency to engage in hostile rumination (e.g., "I hold a grudge for a very long time when people have offended me"). Participants rate their reaction to each statement (including 5 "filler" items) on a 6-point scale, with higher summed scores indexing greater hostile rumination. Internal consistency in this sample was .89. Researchers have found correlations between this and other measures of rumination (McCullough, Bellah, Kilpatrick, & Johnson, 2001).

Borderline features.—Borderline personality features were assessed using the Borderline Features subscales of the Personality Assessment Inventory (PAI-BOR; Morey, 1991). The 24 items are rated on a 4-point scale, and an overall score is calculated by summing across the four subscales (Affective Instability, Identity Problems, Negative Relationships, and Self-Harm). This measure is frequently used to screen for BPD and correlates well with other measures of BPD symptomology (Gardner & Qualter, 2009). Internal consistency in this sample was .84.

Covariates.—In order to assess the specificity of the association between negative childhood environments, rumination, and borderline features, we included as covariates several variables that have known associations with rumination and BPD (Nolen-Hoeksema & Harrell, 2002; Peters, Upton, & Baer, 2013; Selby et al., 2009). Specifically, we included measures indexing current depressive symptoms (Beck Depression Inventory- II; Beck, Steer, & Brown, 1996), alcohol use problems (Short Michigan Alcohol Screening Test; Selzer, Vinokur, & van Rooijen, 1975), and impulsivity (UPPS Impulsive Behavior Scale; Whiteside & Lynam, 2001).

Statistical Analyses

All analyses were conducted using SPSS version 19.0. Descriptive statistics and correlations were used in a primary investigation of each of our predictor variables. We also used *t*-tests to examine potential gender differences in our predictor variables and to examine differences in reported abuse severity between our dichotomized abuse groups. Finally, the PROCESS macro for SPSS (Hayes, 2013) was used to examine the three aforementioned mediational models. We tested the significance of total, direct, and indirect effects using 95% bias-corrected bootstrap confidence intervals (with 5000 bootstrap samples). Confidence intervals that do not include zero are considered statistically significant.

Results

Data Preparation

Prior to analyses, 24 univariate or multivariate outliers were removed. The negatively-skewed parental care variable required a reflection and log transformation (skewness before and after = -1.08 and 0.34 , respectively). Although reflecting a variable changes the sign of the variable, we will continue to report this variable in such a way that higher values indicate higher levels of parental care. All other variables met assumptions of normality.

Preliminary Analyses

Means and standard deviations of all study variables (presented separately by gender), as well as Pearson and point-biserial correlations, are presented in Table 1. Men reported significantly less parental overprotection and care than women. More hostile rumination was correlated with more borderline features. Lack of parental care, parental overprotection, and reported abuse were significantly intercorrelated. Additionally, less parental care and more reported abuse and parental overprotection were significantly associated with greater rumination and borderline features.

Across all abuse types, participants who were classified as abused reported significantly greater abuse severity than participants who were classified as not abused (all $ps < .001$). Mean scores on each of the five abuse variables are reported in Table 2 by dichotomized abuse category. Participants classified as abused (23.2% of the total sample) reported varying levels of multiple maltreatment: 12.8% reported one type of abuse, 5.2% reported two types, 2.4% reported 3 types, 2.0% reported four types, and 0.8% reported all five types of abuse at the moderate level or above.

Mediational Analyses

We examined the indirect effects of the predictor variables (parental care, parental overprotection, and total abuse) on the criterion variable (current borderline features) via the mediator (hostile rumination). Because of the gender differences in parental care and overprotection, we controlled for gender in all analyses. Additionally, to assess the specificity of the associations between negative childhood environments, hostile rumination, and borderline features, we controlled for current depressive symptoms, current alcohol use problems, and impulsivity. As seen in Table 3, all indirect effects were significant, suggesting that hostile rumination statistically mediated the effects of reported childhood abuse, low parental care, and high parental overprotection on borderline features. All direct effects were also significant, indicating that the negative childhood constructs maintained significant associations with borderline features even after taking rumination into account. Finally, we tested alternative mediation models with gender as a moderator (PROCESS model 8); however, gender did not moderate any of the results (not shown).

Discussion

Although substantial literature has documented links between childhood abuse, parenting styles, and diagnosed BPD (Herman et al., 1989; Zanarini et al., 2000), less work has examined these associations in non-clinical samples. Our findings suggest that reported childhood abuse and negative parenting characteristics are associated with worse borderline symptoms, even in a non-clinical population.

This study also explored whether hostile rumination mediated the associations between three negative contributors to childhood environment (reported childhood abuse, parental care, parental overprotection) and borderline features in adulthood. The results supported hostile rumination as a potential mechanism of each of these associations. Our findings and those of several previous studies (Baer & Sauer, 2011; Selby & Joiner, 2013; Smith et al., 2006) suggest that rumination constitutes one type of emotion dysregulation that may be particularly prominent in borderline personalities. We also confirmed previous research that found that rumination evidences a unique relationship with BPD (Smith et al., 2006), even when controlling for depressive symptoms, and expanded evidence for the specificity of this relation by also controlling for alcohol use and impulsivity.

Selby and Joiner's (2009, 2013) emotional cascade model identifies rumination as the major mechanism by which emotional dysregulation leads to the behavioral symptoms of BPD. We propose that certain childhood experiences might jumpstart this process. Specifically, children who experience maltreatment, lack of care, and/or overprotection may ruminate in

response to the many negative emotions they are experiencing. This rumination in turn only further amplifies their negative emotions, and may eventually result in the emotional and behavioral dysregulation present in individuals exhibiting borderline features. This study provides a preliminary base from which to launch longitudinal and experimental work examining these hypothesized paths.

We should note that the field's current understanding of childhood contributions to ruminative tendencies in adulthood is limited. Nolen-Hoeksema (2000) theorized that individuals who feel little control over their environments may ruminate in an attempt to understand and gain some control over troubling aspects of one's life. Spasojević and Alloy (2002) further suggested that rumination beginning in childhood becomes increasingly engrained as children mature. The associations between negative childhood experiences and rumination in our study support these theories, as do the few previous studies on childhood experiences and ruminative tendencies in adulthood (Baer et al., 2012; Sarin & Nolen-Hoeksema, 2010; Spasojević & Alloy, 2002). However, in the absence of longitudinal data, we cannot know whether negative early childhood experiences result in increased rumination *in childhood* and whether this rumination then persists into adulthood. It may be that children in highly controlled, uncaring, or abusive environments have little opportunity to learn adaptive emotion regulation skills and so have few strategies to use as adults. Much more research is needed to better understand childhood contributors to adult rumination tendencies.

Because all predictor variables maintained significant direct effects on borderline features after accounting for rumination, there are likely additional constructs that mediate these associations. For example, individual differences in emotion regulation ability, attachment style, alexithymia, and affective avoidance have all been shown to evidence mediational relations between childhood environmental features and borderline personality symptoms in past research (Deborde et al., 2012; Gratz, Tull, Baruch, Bornoalova, & Lejuez, 2008; Nickell et al., 2002). It is also possible that negative environmental features during childhood exert a significant direct effect on borderline features beyond the variance that may be accounted for by either hostile rumination or other mediators. Additional research is needed to expand upon and assess the relative importance of each of these potential mechanisms when considered together.

This study had several limitations. Because our data are cross-sectional, causal inferences are not appropriate. Although we tested the mediational model that best accords with previous theoretical and empirical work, we cannot rule out the possibility of reverse mediation. Also, we only measured one type of rumination and thus could not investigate whether hostile rumination is specifically associated with negative childhood environments and borderline features above and beyond other forms of rumination. However, previous research suggests that anger rumination is more strongly associated with borderline features than other types of rumination (Baer & Sauer, 2011; Selby et al., 2009). Finally, relying on retrospective self-reports of childhood experiences is an important measurement limitation. Some researchers (e.g., Henry, Moffitt, Caspi, Langley, & Silva, 1994) have criticized retrospective examination of abuse due to the many potential sources of measurement error. For example, retrospective reports may be biased by changes in memory over time due to

forgetting, redefining, or meaning making, or influenced by an individual's current mental state (Durrett, Trull, & Silk, 2004; Hardt & Rutter, 2004). There is also evidence that individuals with BPD demonstrate negatively biased recall. Specifically, people with BPD tend to recall greater levels of negative emotion and lower levels of positive emotion when assessed retrospectively and compared to momentary emotion ratings (Ebner-Priemer et al., 2006). However, a longitudinal examination of adult retrospective reports of abuse and family discord revealed that errors in reporting had almost no impact on estimates of the risk for adult psychopathology deriving from these experiences (Fergusson, Horwood, & Woodward, 2000). We attempted to minimize the potential for false recollections of abuse by utilizing conservative cut-points for abuse scores. Additionally, although we examined borderline features in the current investigation, we did not rely on a sample of patients with BPD.

The present study points to the importance of decreasing rumination in individuals with borderline features who have histories of child abuse and/or problematic parenting. Fortunately, common forms of therapy used with BPD (i.e., Dialectical Behavior Therapy and Mindfulness Based Therapy) may already target rumination. These treatments incorporate mindfulness exercises, which instruct people to focus on their moment-to-moment experiences in order to learn how to tolerate painful emotions (Salsman & Linehan, 2006). People who participate in other mindfulness courses show not only decreased depression and aggression but also less rumination (Chambers, Lo, & Allen, 2008; Singh et al., 2007). Experimental work that seeks to understand how mindfulness-based treatments decrease the rumination and dysfunction evidenced by individuals with borderline features is a promising avenue for future research.

Acknowledgements

This research was supported by National Institute on Alcohol Abuse and Alcoholism and National Center for Research Resources Grant R01-AA-11691 awarded to Peter R. Giancola.

References

- American Psychiatric Association (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.
- Baer RA, Peters JR, Eisenlohr-Moul TA, Geiger PJ, & Sauer SE (2012). Emotion-related cognitive processes in borderline personality disorder: A review of the empirical literature. *Clinical Psychology Review*, 32, 359–369. [PubMed: 22561966]
- Baer RA, & Sauer SE (2011). Relationships between depressive rumination, anger rumination, and borderline personality features. *Personality Disorders: Theory, Research, and Treatment*, 2, 142–150.
- Beck AT, Steer RA, & Brown GK (1996). *Manual for the Beck Depression Inventory-II*. San Antonio, TX: Psychological Corporation.
- Bernstein D, & Fink L (1998). *Childhood Trauma Questionnaire: A retrospective self-report*. San Antonio, TX: The Psychological Corporation.
- Borders A, & Giancola PR (2011). Trait and state hostile rumination facilitate alcohol-related aggression. *Journal of Studies on Alcohol and Drugs*, 72, 545–554. [PubMed: 21683036]
- Caprara GV (1986). Indicators of Aggression: The dissipation-rumination scale. *Personality and Individual Differences*, 7, 763–769.

- Caprara GV, Tisak MS, Alessandri G, Fontaine RG, Fida R, & Paciello M (2014). The contribution of moral disengagement in mediating individual tendencies toward aggression and violence. *Developmental Psychology*, 1, 71–85.
- Chambers R, Lo BCY, & Allen NB (2008). The impact of intensive mindfulness training on attentional control, cognitive style, and affect. *Cognitive Therapy and Research*, 32, 303–322.
- Deborde A, Miljkovitch R, Roy C, Bigre CD, Pham-Scottez A, Speranza M, & Corcos M (2012). Alexithymia as a mediator between attachment and the development of borderline personality disorder in adolescence. *Journal of Personality Disorders*, 26, 676–688. [PubMed: 23013337]
- Durrett C, Trull TJ, & Silk K (2004). Retrospective measures of childhood abuse: Concurrent validity and reliability in a nonclinical sample with borderline features. *Journal of Personality Disorders*, 18, 178–192. [PubMed: 15176756]
- Ebner-Primer UW, Kuo J, Welch SS, Thielgen T, Witte S, Bohus M, & Linehan MM (2006). A valence-dependent group-specific recall bias of retrospective self-reports. *The Journal of Nervous and Mental Disease*, 194, 774–779. [PubMed: 17041290]
- Gardner FL, & Moore ZE (2008). Understanding clinical anger and violence: The anger avoidance model. *Behavior Modification*, 32, 897–912. [PubMed: 18614696]
- Gardner K, & Qualter P (2009). Reliability and validity of three screening measures of borderline personality disorder in a nonclinical population. *Personality and Individual Differences*, 46, 363–641.
- Gratz KL, Tull MT, Baruch DE, Bornoalova MA, & Lejuez CW (2008). Factors associated with co-occurring borderline personality disorder among inner-city substance users: the roles of childhood maltreatment, negative affect intensity/reactivity, and emotion dysregulation. *Comprehensive Psychiatry*, 49, 603–615. [PubMed: 18970909]
- Hardt J, & Rutter M (2004). Validity of adult retrospective reports of adverse childhood experiences: Review of the evidence. *Journal of Child Psychology and Psychiatry*, 45, 260–273. [PubMed: 14982240]
- Hayes AF (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: Guilford.
- Helgeland MI, & Torgersen S (2004). Developmental antecedents of borderline personality disorder. *Comprehensive Psychiatry*, 45, 138–147. [PubMed: 14999665]
- Henry B, Moffitt TE, Caspi A, Langley J, & Silva PA (1994). On the “remembrance of things past”: A longitudinal evaluation of the retrospective method. *Psychological Assessment*, 6, 92–101.
- Herman JL, Perry JC, & van der Kolk BA (1989). Childhood trauma in borderline personality disorder. *American Journal of Psychiatry*, 146, 490–495. [PubMed: 2929750]
- Hernandez A, Arntz A, Gaviria AM, Labad A, & Gutiérrez-Zotes JA (2012). Relationship between childhood maltreatment, parenting style, and borderline personality disorder criteria. *Journal of Personality Disorders*, 26, 727–736. [PubMed: 23013341]
- Mancini F, D'Olimpio F, Prunetti E, Didonna F, & Del Genio M (2000). Parental bonding: Can obsessive symptoms and general distress be predicted by perceived rearing practices? *Clinical Psychology and Psychotherapy*, 7, 201–208.
- McCullough ME, Bellah CG, Kilpatrick SD, & Johnson JL (2001). Vengefulness: Relationships with forgiveness, rumination, well-being, and the big five. *Personality and Social Psychology Bulletin*, 27, 601–610.
- Morey LC (1991). *Personality Assessment Inventory professional manual*. Odessa, FL: Psychological Assessment Resources.
- Nickell AD, Waudby CJ, & Trull TJ (2002). Attachment, parental bonding, and borderline personality features in young adults. *Journal of Personality Disorders*, 16, 148–159. [PubMed: 12004491]
- Nolen-Hoeksema S (2000). The role of rumination in depressive disorders and mixed anxiety/depressive symptoms. *Journal of Abnormal Psychology*, 109, 504–511. [PubMed: 11016119]
- Nolen-Hoeksema S & Harrell ZA (2002). Rumination, depression, and alcohol use: Tests of gender differences. *Journal of Cognitive Psychotherapy*, 16, 391–403.
- Nolen-Hoeksema S, Wisco BE, & Lyubomirsky S (2008). Rethinking rumination. *Perspectives on Psychological Science*, 3, 400–424. [PubMed: 26158958]

- Papageorgiou C, & Wells A (2004). Nature, functions, and beliefs about depressive rumination In Papageorgiou C & Wells A (Eds.), *Depressive rumination: Nature, theory and treatment* (pp. 3–20). Chichester: Wiley.
- Parker G, Tupling H, & Brown LB (1979). A parental bonding instrument. *British Journal of Medical Psychology*, 52, 1–10.
- Peters JR, Upton BT, & Baer RA (2013). Relationships between facets of impulsivity and borderline personality features. *Journal of Personality Disorders*, 27, 547–552. [PubMed: 22984862]
- Repetti RL, Taylor SE, & Seeman TE (2002). Risky families: Family social environments and the mental and physical health of offspring. *Psychological Bulletin*, 128, 330–366. [PubMed: 11931522]
- Salsman NL, & Linehan MM (2006). Dialectical-Behavior Therapy for borderline personality disorder. *Primary Psychiatry*, 13, 51–58. [PubMed: 17183412]
- Sansone RA, Farukhi S, & Wiederman MW (2013). Perceptions of childhood caretakers and borderline personality symptomatology. *Child Abuse & Neglect*, 11, 1030–1033.
- Sarin S, & Nolen-Hoeksema S (2010). The dangers of dwelling: An examination of the relationship between rumination and consumptive coping in survivors of childhood sexual abuse. *Cognition and Emotion*, 24, 71–85.
- Selby EA, Anestis MD, Bender TW, & Joiner TE (2009). An exploration of the emotional cascade model in borderline personality disorder. *Journal of Abnormal Psychology*, 118, 375–387. [PubMed: 19413411]
- Selby EA, & Joiner TE (2009). Cascades of emotion: The emergence of borderline personality disorder from emotion and behavioral dysregulation. *Review of General Psychology*, 13, 219–229. [PubMed: 20161656]
- Selby EA, & Joiner TE (2013). Emotional cascades as prospective predictors of dysregulated behaviors in borderline personality disorder. *Personality Disorders: Theory, Research, and Treatment*, 4, 168–174.
- Selzer ML, Vinokur A, & van Rooijen L (1975). A self-administered Short Michigan Alcoholism Screening Test (SMAST). *Journal of Studies on Alcohol*, 36, 117–126. [PubMed: 238068]
- Singh NN, Lancioni GE, Winton ASW, Adkins AD, Wahler RG, Sabaawi M, & Singh J (2007). Individuals with mental illness can control their aggressive behavior through mindfulness training. *Behavior Modification*, 31, 313–328. [PubMed: 17438345]
- Smith JM, Grandin LD, Alloy LB, & Abramson LY (2006). Cognitive vulnerability to depression and Axis II personality dysfunction. *Cognitive Therapy and Research*, 30, 609–621.
- Spasojević J, & Alloy LB (2002). Who becomes a depressive ruminator? Developmental antecedents of ruminative response style. *Journal of Cognitive Psychotherapy: An International Quarterly*, 16, 405–419.
- Sukhodolsky DG, Golub A, & Cromwell EN (2001). Development and validation of the anger rumination scale. *Personality and Individual Differences*, 31, 689–700.
- Trull TJ (2001). Relationships of borderline features to parental mental illness, childhood abuse, Axis I disorders, and current functioning. *Journal of Personality Disorders*, 15, 19–32. [PubMed: 11236812]
- Trull TJ, Ueda JD, Conforti K, & Doan B (1997). Borderline personality disorder features in nonclinical young adults 2: Two-year outcome. *Journal of Abnormal Psychology*, 106, 307–314. [PubMed: 9131850]
- Whiteside SP, & Lynam DR (2003). Understanding the role of impulsivity and externalizing psychopathology in alcohol abuse: Application of the UPPS Impulsive Behavior Scale. *Experimental and Clinical Psychopharmacology*, 11, 210–217. [PubMed: 12940500]
- Zanarini MC, Williams AA, Lewis RE, Reich RB, Vera MA, Marino MF, ...Frankenburg FR. (1997). Reported pathological childhood experiences associated with the development of borderline personality disorder. *American Journal of Psychiatry*, 154, 1101–1106. [PubMed: 9247396]
- Zweig-Frank H, & Paris J (1991). Parents' emotional neglect and overprotection according to the recollections of patients with borderline personality disorder. *The American Journal of Psychiatry*, 148, 648–651. [PubMed: 2018169]

Table 1.

Descriptive Statistics and Zero-Order Correlations of Study Variables, Separately by Gender

	Males	Females						
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>t</i> -test	1	2	3 ^a	4	5
1. Parental Care	2.28 (.53)	2.37 (.54)	-2.03 [^]	-	-.38**	-.44** ^a	-.27**	-.39**
2. Parental Overprotection	1.00 (.36)	1.10 (.23)	2.75*		-	.23** ^a	.20**	.31**
3. Childhood Abuse ^b	--	--	--			--	.21** ^a	.28** ^a
4. Rumination	27.67 (13.37)	26.74 (12.34)	-.81					.55**
5. Borderline Features	21.83 (9.50)	21.60 (8.87)	-.28					-

[^]
 $p < .05$,*
 $p < .01$,**
 $p < .001$.^aIndicates a point-biserial correlation, because the abuse variable was dichotomous.^bThere were no gender differences in our dichotomous childhood abuse variable, $\chi^2(1) = 1.20$, $p = .27$.

For ease of interpretation, we report raw means, standard deviations, and ranges. Transformed variables were used for statistical analyses.

Table 2.

Descriptive Statistics for Abuse Type, Separately by Dichotomized Abuse Category

	Not Abused		Abused		<i>t</i> -test ^a
	<i>M</i> (<i>SD</i>)	Range	<i>M</i> (<i>SD</i>)	Range	
Emotional Abuse	6.29(1.69)	5–12	11.21(3.91)	5–23	–13.18 **
Physical Abuse	5.88(1.14)	5–9	9.47(3.70)	5–20	–10.32 **
Sexual Abuse	5.04(.24)	5–7	6.78(3.28)	5–20	–5.73 **
Emotional Neglect	6.99(2.25)	5–14	11.96(4.41)	5–25	–11.68 **
Physical Neglect	5.54(1.01)	5–9	8.84(3.40)	5–18	–10.32 **

**
p < .001.

^a Adjusted *t*-test values are reported due to lack of equal variances between groups.

Table 3.

Direct and indirect effects of childhood abuse, parental care, and parental overprotection on borderline features via hostile rumination, controlling for gender.

		Effect	SE _{boot}	BC 95% CI	
				Lower	Upper
Childhood Abuse	Total Effect	2.91 [*]	.70	1.54	4.29
	Direct Effect	2.13 [*]	.65	.85	3.40
	Indirect Effect	.78 [*]	.30	.23	1.42
Parental Care	Total Effect	14.83 [*]	2.28	10.35	19.31
	Direct Effect	11.17 [*]	2.14	6.96	15.38
	Indirect Effect	3.66 [*]	1.11	1.63	5.95
Parental Overprotection	Total Effect	3.55 [*]	.75	2.09	5.02
	Direct Effect	2.74 [*]	.69	1.38	4.10
	Indirect Effect	.81 [*]	.33	.20	1.49

^{*} = Confidence intervals not including zero. BC = Bias corrected. CI = Confidence interval.