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Authors

Wardecker, Britney M
Edelstein, Robin S
Quas, Jodi A
[et al.](#)

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Emotion Language in Trauma Narratives is Associated with Better Psychological Adjustment among Survivors of Childhood Sexual Abuse

Britney M. Wardecker^a, Robin S. Edelstein^a, Jodi A. Quas^c, Ingrid M. Cordon^b, and Gail S. Goodman^b

^aDepartment of Psychology, University of Michigan, Ann Arbor, 530 Church Street, Ann Arbor, MI 48109 USA

^bDepartment of Psychology, University of California, Davis, 1 Shields Avenue, Davis, CA 95616 USA

^cDepartment of Psychology and Social Behavior, University of California, Irvine, 4201 Social and Behavioral Sciences Gateway, Irvine, CA 92697 USA

Abstract

Traumatized individuals are often encouraged to confront their experiences by talking or writing about them. However, survivors of childhood sexual abuse (CSA) might find it especially difficult to process abuse experiences, particularly when the abuse is more severe, which could put them at greater risk for mental health problems. The current study examined whether CSA survivors who use emotion language when describing their abuse experiences exhibit better mental health. We analyzed the trauma narratives of 55 adults who, as children, were part of a larger study of the long-term emotional effects of criminal prosecutions on CSA survivors. Abuse narratives were analyzed using the Linguistic Inquiry and Word Count (LIWC) program. We examined whether positive and negative emotion language in participants' abuse narratives were associated with self- and caregiver-reported mental health symptoms and whether these associations differed according to the severity of the abuse. As hypothesized, participants who used more positive and negative emotion language had better psychological outcomes, especially when the abuse was severe. Our findings suggest that survivors of more severe abuse might benefit from including emotion language, whether positive or negative in valence, when describing the abuse.

Keywords

emotion; language; trauma narratives; sexual abuse

Many people experience a traumatic event at some point in their life, such as a serious injury, a life-threatening illness, or childhood exposure to violence or maltreatment (Ogle, Rubin, Berntsen, & Siegler, 2013). Traumatic experiences can leave survivors with distressing emotions, feelings of anxiety, and other severe and long-lasting consequences (Ozer, Best, Lipsey, & Weiss, 2003). As part of the healing process, traumatized individuals

are often encouraged to confront their experiences by talking or writing about them (Pennebaker & Chung, 2007). Although these forms of intervention can help people process painful emotions, they do not always produce benefits for traumatized individuals, particularly those who have experienced highly emotional events. Survivors of childhood sexual abuse (CSA), for instance, may find it especially difficult to reflect on these emotionally charged experiences (Rothbaum, Foa, Riggs, Murdock, & Walsh, 1992), potentially making the reinductees more vulnerable to negative effects following such a process. In fact, many survivors of CSA do not benefit from simply writing or talking about their abuse experiences (e.g., Ullman, 2011), and in some cases, reflection may even do more harm than good (Batten, Follette, Rasmussen Hall, & Palm, 2002).

Differences in the types of emotional expression included in written or spoken narratives might influence the success and efficacy of reflection paradigms following trauma. For example, in a sample of female survivors of sexual trauma, those who used more positive and negative emotion words in their trauma narratives reported lower overall severity of posttraumatic stress disorder (PTSD) and other trauma-related symptoms (Jaeger, Lindblom, Parker-Guilbert, & Zoellner, 2014). Expressing positive emotion through language may foster psychological well-being, such as resilience and optimism (Fredrickson, 2001). Likewise, using negative emotion language may be a way to acknowledge and express deep emotions that otherwise might be ignored (Slatcher & Pennebaker, 2005). Taken together, these findings suggest that expressing emotions (both positive and negative) when describing traumatic events, rather than simply talking or writing about the event, may be associated with positive psychological outcomes.

In the present study, we examined whether CSA survivors who use more positive and negative emotion words in their trauma narratives report better psychological adjustment. We also tested whether abuse severity moderated this association, based on the assumption that emotion language might be especially beneficial for those who experienced severe abuse. Participants were 55 documented survivors of CSA who were prompted to discuss experiences of abuse and subsequent legal involvement that had occurred approximately 13 years earlier. We tested the hypotheses that: (1) greater use of positive and negative emotion words would be associated with fewer psychological problems, as reported by CSA survivors and their caregivers and, (2) abuse severity would moderate the effects of emotion language on psychological functioning, such that those who experienced more severe abuse would show the strongest association between emotion language and psychological functioning.

Emotional Responses to CSA

Survivors of CSA often experience negative emotions in response to their trauma, which may simply be too overwhelming to process (Ehring & Quack, 2010). The most common emotional responses to CSA are depression, anxiety, and anger (Lipovsky & Kilpatrick, 1992). As a way to avoid the pain associated with these emotions, people with a history of sexual abuse may push aside and ignore all emotion, both painful and pleasant, associated with people or topics related to the abuse and its aftermath. In fact, adult survivors of CSA report that emotional avoidance is one of the most common regulatory strategies that they

use to cope with the trauma (Leitenberg, Greenwald, & Cado, 1992). Although avoiding unwanted emotions may reduce stress in the short-term (Park, Goodyer, & Teasdale, 2004), repeated psychological avoidance of the trauma may also prevent people from processing and analyzing their experiences, which may worsen psychological outcomes in the long-term (Batten, Follette, & Aban, 2001; Briere & Rickards, 2007; Tull, Jakupcak, McFadden, & Roemer, 2007). As described next, using emotional language might be a way for survivors of CSA to confront and process—as opposed to avoid—emotions surrounding trauma.

Benefits of Confronting Emotions for Trauma Survivors

Although confronting one's emotions may be painful initially, this emotion regulation strategy may be adaptive in the long-term. For instance, interventions that facilitate emotional expression (e.g., writing about a traumatic experience in an emotional way) have been found to enhance long-term psychological adjustment among bereaved individuals and those with metastatic breast cancer (Pennebaker, Mayne, & Francis, 1997; Stanton et al., 2000). Furthermore, therapeutic techniques that encourage people to confront emotional material can improve psychological outcomes. People who experience severe anxieties, for example, often benefit from participating in exposure therapy, which exposes them to triggers related to their anxiety (Foa & Kozak, 1986). Kircanski, Lieberman, and Craske (2012) suggest, that in the process of exposure therapy, it may be most helpful to have people name negative emotions (e.g., nervous, tense) because the act of *affect labeling*, or simply putting one's feelings into words, can reduce the intensity of that emotion. This approach can help people address their emotions in relation to the trigger that otherwise might be too overwhelming to process.

Building on this work, using emotion language in a trauma narrative might accomplish a similar goal as exposure therapy and affect labeling by encouraging people to reflect on and engage with their emotional responses to the trauma. Moreover, given that people who have experienced severe trauma may be especially likely to attempt to avoid their traumatic memories (Bottoms, Najdowski, Epstein, & Badanek, 2012), those who have experienced severe trauma may have the most to gain from the expression of emotion—both positive and negative—in their trauma narratives.

The Current Research

The goal of the current study was to determine whether using emotion language might be a productive way for abuse survivors, particularly those who experienced severe abuse, to reflect on their experiences. Specifically, we examined the extent to which greater use of positive and negative emotion language in participants' abuse narratives was associated with fewer psychological symptoms, and whether these associations were moderated by abuse severity.

We used the Linguistic Inquiry and Word Count Program (LIWC; Pennebaker, Francis, & Booth, 2001) to analyze participants' abuse narratives. The LIWC is an extensively validated tool for analyzing natural language (Tausczik & Pennebaker, 2010). It has been used to assess emotion language in the narratives of survivors of sexual assault (e.g., Jaeger et al.,

2014) and other emotionally charged traumas (e.g., bereavement; Pennebaker et al., 1997). In the current study, we focused on the two broad LIWC word categories associated with emotionality that have been extensively studied in previous research (Tausczik & Pennebaker, 2010): positive emotion (e.g., happy, laugh) and negative emotion (e.g., sad, angry).

Method

Participants

Participants were 55 young adults (49 women) who, as children, were part of a larger study of the long-term emotional effects of criminal prosecutions on CSA victims (Goodman et al., 1992). Between 1985 and 1987, Goodman et al. (1992) followed 218 children, ages 4 to 17 years, during their participation in CSA criminal cases. At that time, detailed information was collected from multiple sources (i.e., prosecutor files, non-offending caregivers, child victims) regarding characteristics of the abuse and the legal case. Approximately 13 years later ($M = 12.51$, $SD = .73$), these former CSA survivors were relocated and interviewed about their experiences with and attitudes toward the legal system (Goodman et al., 2003; Quas et al., 2005). The data in the current report were obtained from a series of follow-up interviews conducted when participants were between 16 and 30 years old ($M = 23.60$, $SD = 3.79$); Interview transcripts were available for 55 participants from the original sample (see below for inclusion criteria). Of these 55 individuals, 69% were Caucasian, 6% were Black or African American, 14% were Hispanic, and 11% were of mixed or other ethnicities.

For the subset of participants included in the present report, age when the abuse began ranged from 2 to 16 years ($M = 9.15$, $SD = 3.54$); age when the abuse ended ranged from 3 to 16 years ($M = 9.87$, $SD = 3.67$). The reported perpetrator of the abuse was classified as a parental figure (e.g., parent, stepparent; 29%) or a non-parental figure/person in a position of trust (e.g., teacher, relative, babysitter, stranger; 71%). Fifty-three percent of the cases involved penetration, 33% involved genital contact, and 14% involved non-genital contact. Abuse severity, indexed by a composite of abuse duration, extent of sexual activity, use of force, and extent of injury to the child, ranged from 2 to 9 (on a 12-point scale; $M = 5.07$, $SD = 1.90$). Forty-five percent of children testified in court at least once. Another 33% went to court at least once but did not testify, and 22% did not go to court.

Procedure

All study procedures were approved by the Human Subjects Review Committees at the University of California, Davis and the University of Denver (the two universities that oversaw recruitment and participation), and a Certificate of Confidentiality was obtained from the National Institutes of Health. Of the original 218 participants, 174 (80% of the original sample) were relocated and interviewed at least once (see Quas et al., 2005, for more detailed information about the follow-up study). Of the participants who were not interviewed, one was deceased, 33 were unlocatable, and nine refused to participate. One additional participant was determined to have experienced sexual assault that did not meet the legal definition of CSA (the perpetrator was not 4 years older than the child) and was not included in follow-up analyses.

The follow-up study was conducted in three phases. In the *first phase*, participants ($n = 172$) were interviewed regarding their mental health and legal attitudes, primarily via phone. In the *second phase*, participants were asked to complete a set of more detailed mental health and legal attitude questionnaires that were sent through the mail. Of the 172 participants who completed the first phase, 36 were subsequently unlocatable, and nine refused to participate in the second phase, leaving 127 participants who completed the second phase. A subset of participants was then targeted to complete a longer semi-structured, in-person interview about their former abuse and legal experiences. Of the 127 participants who completed the second phase, 26 were unlocatable to complete the third phase, leaving 101 participants in the third phase. Exceptions to interview formats were made as necessary (e.g., for participants without telephones, the phone interview portion was conducted via mail or in-person). Of the 101 participants who completed the in-person interview, 6 did not disclose the target case and 1 disclosed the target case but stated that the abuse was a false report, leaving 94 participants who reported the documented CSA case and answered questions about their experiences.

Of the 94 in-person interviews, 55 were audiotaped. To ensure completeness and accuracy of narratives, the current report thus focuses on data from these 55 participants. The 39 other interviews were not audiotaped because of special circumstances (e.g., participants who no longer lived in the Denver area were typically interviewed via phone). The 55 participants in the current subsample were comparable to the 39 disclosing participants who were not audiotaped in terms of age at the beginning and end of the abuse, abuse severity, legal involvement, and victim-perpetrator relationship, $t(89-92) = |1.88|$, $ps > .06$; however, a greater percentage of women were included in the current sample compared to the total in-person sample, $\chi^2(1, N = 94) = 8.51$, $p = .004$.

The audiotaped subsample ($n = 55$) was also comparable to the original Goodman et al. (1992) sample in terms of age at the beginning of abuse, abuse severity, and victim-perpetrator relationship, $t(199-216) = 1.49$, $ps > .14$; however, this subsample was older when the abuse ended, $t(214) = 2.20$, $p = .03$, experienced greater legal involvement $t(216) = 3.42$, $p = .001$, and included a larger percentage of women than the initial sample, $\chi^2(1, N = 218) = 6.39$, $p = .01$. The proportion of women in the current study nonetheless mirrors that found in national prevalence reports of CSA (U.S. Department of Health and Human Services, 2010).

Mental Health Measures Completed by CSA Survivors

Measures of mental health were obtained from the first, second, and third phases of the study. For the current analyses, we selected measures that we deemed particularly relevant to trauma and emotional processing (described in more detail below). The number of respondents differs slightly across measures (n 's range from 48 to 55, as indicated below) because some participants did not complete all measures. Means and standard deviations for measures of mental health can be seen in Table 1.

Brief Symptom Inventory (BSI)—A subset of the BSI, a well-established measure of psychopathology, was completed by all participants ($n = 55$) as part of the phase one

interview. The BSI is standardized for use with adolescents and adults, with good test-retest and internal consistency reliabilities (Derogatis & Melisaratos, 1983). Alpha coefficients range from .71 to .85 across the BSI subscales (e.g., depression, anxiety). Because of time constraints, participants responded to the nine items with the highest factor loadings on each of the nine BSI subscales (as reported by Derogatis & Melisaratos, 1983): *feeling fearful, feeling that most people cannot be trusted, feeling tense or keyed up, feelings of worthlessness, trouble getting their breath, feeling lonely, temper outbursts they could not control, feeling uneasy in crowds, having trouble remembering things*. Respondents rated how frequently they had been distressed by each of these problems during the last seven days, on a 5-point scale, ranging from 1 (*never*) to 5 (*extremely*). Individual's scores were computed as the average of the nine items and higher scores indicate poorer adjustment.

Young Adult Self-Report Behavior Checklist (YASR)—The YASR (Achenbach, 1997) is a standardized self-report measure of young adults' (ages 18–30) emotional and behavioral problems that was completed by participants ($n = 48$) as part of the phase two interview. The reliability and validity of the measure have been extensively documented. For example, 1-week test-retest reliability (r) is .89 for total behavior problems (e.g., Achenbach, 1997). Participants rated the extent to which they currently or within the past six months have experienced internalizing (e.g., anxiety, depression) and externalizing (e.g., aggression, hyperactivity) behaviors. Participants rated 132 items such as, “I cry a lot” and “I feel worthless or inferior” on a 3-point scale ranging from 0 (*not true*), 1 (*somewhat true*) and, 2 (*very true*). Individual's scores were computed as total t-scores and higher scores reflect poorer adjustment.

Posttraumatic Diagnostic Scale (PDS)—The PDS (Foa, Cashman, Jaycox, & Perry, 1997) is a widely used and validated 49-item measure to diagnose posttraumatic stress disorder (PTSD) in individuals who have experienced a variety of traumatic events (e.g., survivors of natural disasters). The PDS was completed by participants ($n = 49$) as part of the phase two interview. The PDS has high internal consistency, good test-retest reliability, and strong associations with structured interview assessments of PTSD. For instance, alpha reliability for symptom severity is .92 and, in terms of classification capability, sensitivity is .89 and specificity is .75 (Foa et al., 1997). Participants self-reported on a scale of 0 (*not at all or only one time*) to 3 (*5 or more times a week/almost always*) how often in the past month they have experienced symptoms such as, “Having upsetting thoughts or images about the traumatic event that came into your head when you didn't want them to.” The PDS provides a categorical diagnosis of PTSD (Foa et al., 1997) as well as an index of symptom severity. For the purpose of this report we used the categorical diagnosis of PTSD, coded as 0 = no PTSD diagnosis, 1 = PTSD diagnosis.

Beck Depression Inventory (BDI)—The BDI (Beck & Beamesderfer, 1974) is a widely used measure of depression in youth and adults. It was completed by participants ($n = 54$) as part of the phase three interview. The BDI has been extensively validated as a tool to measure and diagnose depression and demonstrates high internal consistency with an average alpha coefficient of .86 (Beck, Steer, & Garbin, 1988). Participants rated, on a scale of 0 (*never*) to 3 (*quite often*), how often they experienced various symptoms of depression

(e.g., sadness, worthlessness, guilty feelings) during the last two weeks. Individual's scores were computed as the average of the items and higher scores indicate more depressive symptoms.

Mental Health Measures Completed by CSA Survivors' Primary Caregivers

Participants' parents or other primary caregivers were also invited to participate in the original study and follow-up study (see Quas et al., 2005). We had access to caregiver reports (n 's range from 34 to 55, as indicated below) of mental health functioning at the time of the original study and phase two of the follow-up for participants in our audiotaped subsample.

Child Behavior Checklist (CBCL)—We had access to participants' ($n = 55$) scores on the CBCL as children (Achenbach & Edelbrock, 1983). The CBCL is a standardized measure of children's emotional and behavioral adjustment in the previous month. Achenbach and Edelbrock (1983) reported a 1-week test-retest reliability (r) of .95 for total behavior problems. Non-offending caregivers filled it out at the time of the original study (i.e., after the case was referred for prosecution). Participants' caregivers rated the extent to which each item described their child (e.g., "feels worthless or inferior") within the past six months on a scale of 0 (*not true*) to 2 (*very true or often true*). The inclusion of the CBCL allowed for statistical control of emotion and behavior problems (e.g., that may have resulted from the abuse) evident at the start of the criminal prosecution. Children's scores were computed as total t-scores and higher scores reflect poorer adjustment.

Young Adult Behavioral Checklist (YABCL)—Young adults' caregivers ($n = 34$) completed a measure of participants' current emotional and behavioral adjustment as part of the phase two interview. The YABCL (Achenbach, 1997) is a psychometrically sound upward extension of the CBCL, completed by parents (or other caregivers, observers, etc.) of 18 to 30-year-olds. It correlates well with the CBCL and provides age- and gender-normed indices of internalizing and externalizing problems as well as an overall behavioral adjustment score (Achenbach, 1997). Reliability and validity of the YABCL are well documented. For instance, test-retest reliability is high, with $r = .87$ for total behavior problems (Achenbach, 1997). Participants' scores were computed as sums of all items, with higher scores indicating poorer adjustment.

In-Person Interview Transcriptions and Text Analysis

Participants' audiotaped interviews were transcribed verbatim by trained research assistants. For text analysis, we included all of participants' responses to open-ended questions about the documented CSA case and subsequent legal involvement (e.g., "How did you cope with the abuse, that is, how did you deal with it as it was occurring?", "In general, what triggers the memory of your sexual abuse experiences to come back?", "Overall, at the time of the case, how did you feel toward the person who was accused of the crime?"). We did not include responses to yes/no questions or answers that required participants to give a scaled response. However, if participants provided additional follow-up information to a yes/no question (e.g., "yes, because..."), that information was included. Responses that were inaudible or not in response to the interview (e.g., if participants were interrupted by family

members) were not included, nor were any of the interviewers' questions or comments. The word count for these portions of the interview ranged from 122 to 6,751 words ($M=1,744.18$, $SD=1,584.60$).

The selected portions of the interview text were analyzed using the LIWC program (Pennebaker et al., 2001). The LIWC provides over 70 different psychological and grammatical categories as a percentage of total words and has been extensively validated as a tool to examine the psychological implications of the words people use to talk about emotional experiences (Pennebaker, Mehl, & Niederhoffer, 2003). The current study focused on two content categories deemed by past research to be particularly relevant to mental health (e.g., Jaeger et al., 2014; Pennebaker & Chung, 2007; Pennebaker et al., 2001): positive emotion words (e.g., happy, laugh) and negative emotion words (e.g., sad, angry). A total of 409 and 499 words are included in the positive emotion and negative emotion categories, respectively.

Results

Preliminary Analyses

Descriptive statistics and correlations among the primary study variables are presented in Table 1. As shown in Table 1, 1–2% of the words that participants produced during the in-person interview were categorized as positive or negative emotion language. These percentages are similar to the rates of positive (2.74%) and negative (1.63%) emotion words used across clinical and non-clinical populations, including individuals who wrote or talked about deeply emotional experiences (see Pennebaker et al., 2001, for means across 43 studies). Also consistent with previous work, positive and negative emotion language usage were negatively correlated (Pennebaker et al., 2003). In addition, men and participants with more extensive legal involvement were more likely to use positive emotion words in their trauma narratives; however, because we only had six men in our sample, any findings regarding gender should be considered with caution. Age at the end of the abuse and abuse severity were not significantly related to any variables of interest. Finally, as might be expected, self-reported measures of mental health across the three phases of the study were (for the most part) positively intercorrelated.

Associations between Emotion Language and Mental Health

Our first hypothesis was that participants who used more positive and negative emotion words in their trauma narratives would show better self- and caregiver-reported adjustment. As shown in Table 1, this hypothesis was partially supported: Participants who used more positive emotion words reported less psychological distress (BSI) and depression (BDI), and their caregivers reported that they had fewer emotional and behavioral problems (YABCL). Use of positive emotion language was not related to participants' reports of their emotional and behavioral problems (YASR) or posttraumatic stress (PDS). Use of negative emotion words was negatively related to participants' reports of posttraumatic stress (PDS), but (perhaps surprisingly) not to other self-reports of mental health. However, use of negative emotion language was positively associated with caregiver reports of emotional and behavioral problems (YABCL).

Our second hypothesis was that the association between emotion word usage and mental health outcomes would be particularly strong among individuals who experienced more severe abuse. To test this hypothesis, we conducted separate linear regressions predicting each self-reported and caregiver-reported measure of mental health. A logistic regression was conducted to predict posttraumatic stress (PDS) because of the categorical nature of this outcome variable (0 = no diagnosis of PTSD; 1 = diagnosis of PTSD). Eleven of the 49 participants (22%) who completed the PDS had a diagnosis of PTSD. For all regressions, abuse severity, positive emotion language, negative emotion language, and the two-way interactions between (a) abuse severity and positive emotion language and (b) abuse severity and negative emotion language were entered in the same step as predictors. As is recommended (Cohen, Cohen, West, & Aiken, 2003), abuse severity, positive emotion language, and negative emotion language were centered prior to creating the interaction terms. When we included the CBCL, gender, or legal involvement as statistical controls in separate models, results were virtually identical. Thus, these covariates are not considered further.

As shown in Table 2, consistent with our hypotheses and the zero-order correlations, people who used more positive emotion language evidenced significantly less psychological distress (BSI), lower depression (BDI), and fewer caregiver-reported emotional and behavioral problems (YABCL). Interestingly, in the regression analyses, use of negative emotion language was negatively associated with the two mental health outcomes that were not linked to positive emotion language usage: self-reports of emotional and behavioral problems (YASR) and posttraumatic stress (PDS; see Table 3). These findings suggest that the use of positive and negative emotion language might be associated with different psychological outcomes.

Also largely consistent with our hypotheses, the interaction between abuse severity and positive emotion word usage was significant for all self-reported mental health outcomes (BSI, YASR, BDI, PDS), but not those reported by the caregiver (YABCL). Likewise, the interaction between abuse severity and negative emotion word usage was significant, but only for two self-reported outcomes: psychological distress (BSI) and emotional and behavioral problems (YASR).

To examine the nature of the significant interactions between abuse severity and emotion language usage, we calculated the simple slopes for each effect using the PROCESS macro for SPSS (Dawson, 2014; Hayes, 2012). Simple slopes were calculated at one standard deviation above and below the means of abuse severity. These analyses indicated that the negative associations between *positive emotion language usage* and mental health outcomes were significant only for participants who experienced more severe sexual abuse. That is, among those who experienced more severe abuse, positive emotion language was negatively related to psychological distress (BSI), $b = -.91$, $t = -3.84$, $p = .001$, emotional and behavior problems (YASR), $b = -12.42$, $t = -3.69$, $p = .001$, and depression (BDI), $b = -.37$, $t = -2.84$, $p = .01$. These associations were not significant for participants who experienced less severe abuse, $bs = 3.15$, $ts = 1.45$, $ps = .16$ (see Figures 1a, 1b, and 1c). Figure 1d shows a similar pattern of findings for the dichotomous variable of posttraumatic stress (PDS): the negative association between positive emotion language usage and PDS diagnosis was

significant among those who experienced more severe abuse, $b = -4.13$, $Z = -2.22$, $p = .03$, but not among those who experienced less severe abuse, $b = .35$, $Z = .45$, $p = .66$.

Additionally, *negative emotion language usage* was inversely related to psychological distress (BSI) and emotion and behavioral problems (YASR) only among individuals who experienced more severe abuse, $b = -.43$, $t = -2.37$, $p = .02$ and $b = -8.79$, $t = -2.02$, $p = .05$, respectively; the association between negative emotion language usage and these outcomes was not significant among those who experienced less severe abuse, $bs = .30$, $ts = .86$, $ps = .40$ (see Figures 2a and 2b)¹.

Discussion

The goal of the present study was to examine emotion language and mental health outcomes when survivors of childhood sexual abuse reflect on their traumatic experiences. Previous research suggests that reflection is only sometimes beneficial and that in some cases it may even be detrimental, for sexual abuse survivors (Batten et al., 2002; Ullman, 2011). One reason for divergent effects may be that participants differ in the way they emotionally appraise their experience. Thus, we investigated whether the use of emotion language was associated with better mental health for CSA survivors, who may have difficulty processing emotionally charged experiences. We addressed two questions: (1) Is emotion language associated with better psychological outcomes for CSA survivors? and, (2) Is emotion language differentially associated with psychological outcomes for people who have experienced more versus less severe abuse? We expected that people who used more positive and negative emotion language in their abuse narratives would show better self- and caregiver-reported mental health, but also that the association between emotion language and psychological outcomes would be particularly strong for participants who had experienced especially severe abuse.

Consistent with recent work, our findings suggest that *what* individuals say in their trauma narratives is important for their psychological reactions (e.g., Jaeger et al., 2014; Kross et al., 2014). Simply talking about the experience might not be as important as what individuals say. For example, Jaeger et al. (2014) found that people who used more content words (i.e., positive and negative emotion language) were less likely to develop PTSD and other trauma-related symptoms than people who used fewer such words. Of interest, the structure of the trauma narrative (e.g., disorganization and fragmentation) was largely unrelated to psychological outcomes. Thus, people's psychological reactions to trauma may be more closely tied to how they emotionally appraise a traumatic event rather than to other aspects of the narrative such as grammatical structure.

¹The negative emotion category of the Linguistic Inquiry and Word Count (LIWC) includes the subcategories of anxiety, anger, and sadness. We ran separate regressions to determine if each of these three emotion categories separately predicted any of our outcome variables. We found that in the majority of cases, none of the negative emotion subcategories, or their interactions with abuse severity, significantly predicted scores on our continuous, $bs = .14$, $ts = .75$, $ps = .06$, or dichotomous outcome variables, $exp(bs) = .93$, $Zs = 3.09$, $ps = .08$. There were two exceptions: 1) the anger subcategory was significantly negatively associated with scores on the YASR, $b = -.39$, $t = -2.74$, $p = .01$ and, 2) the interaction between the sadness subcategory and abuse severity significantly predicted scores on the BSI, $b = -.43$, $t = -2.77$, $p = .01$. In both cases these results were consistent with those obtained using the overall negative emotion category. However, neither exception differed from the results when the negative emotion category was used, so we reported our analyses using the negative emotion category, which combines all three subcategories into one composite. The positive emotion category of the LIWC does not include subcategories.

Perhaps psychological adjustment is reflected in emotion language because people who use such language are more in-tune with, or mindfully aware of, their emotions. Participants in the current study answered a standardized set of questions about a highly emotional experience. Yet, they differed markedly in the extent to which they used positive and negative words when describing that experience. Those who naturally used emotion language in their narratives may have been able to find the words to describe how they felt, a skill known as *emotion differentiation* or *emotional granularity* (Barrett, Gross, Christensen, & Benvenuto, 2001; Kashdan, Barrett, & McKnight, 2015). More granular individuals tend to use discrete positive and negative emotion labels (e.g., happiness, sadness) rather than more general or global labels (e.g., pleasantness, unpleasantness) to describe their emotional experiences, and greater emotion granularity is associated with healthier psychological outcomes (Barrett et al., 2001; Kashdan et al., 2015; Tugade, Fredrickson, & Barrett, 2004). Increasing people's ability to recognize and utilize information about their emotions, therefore, may be beneficial, perhaps especially when people describe highly emotional experiences.

Our findings are also consistent with previous research in suggesting that using emotion words can be helpful in times of stress; however, positive and negative emotion language might foster psychological improvements in different ways. In fact, as has been observed in other samples, we found a negative correlation between positive and negative emotion language usage, suggesting that people tend to use one category of words more than the other, and usage of the two valence categories were associated with different outcomes. Positive emotion language was linked to lower depression and psychological distress in our sample. Positive emotion language was similarly associated with decreases in depression and increases in resilience following the September 11th terrorist attacks (Fredrickson, Tugade, Waugh, & Larkin, 2003). The use of positive emotion language may be a way for survivors of particularly severe abuse to reappraise their experiences in ways that makes them feel more resilient and optimistic about the future (Fredrickson, 2001). Consistent with the broaden-and-build theory, when individuals are able to see the "good in the bad" or represent their experiences with positivity, they are able to think more broadly and organize and make sense of experiences (Fredrickson & Branigan, 2005). Thus, survivors of CSA may experience healthier outcomes if they are able to harness positive emotion in times of stress.

Nevertheless, confronting unpleasant emotions may be just as important for healing after severe trauma, perhaps by helping people to reappraise their experiences, and greater use of negative emotion was associated with fewer emotional and behavioral problems and a lower likelihood of PTSD diagnosis. Our findings are consistent with the literature on exposure therapy, in which people are repeatedly exposed to anxiety-provoking stimuli until their fear response is diminished (Foa & Rothbaum, 1998). In fact, exposure therapy can help sexual assault survivors become less focused on the specific details of the assault and more focused on emotional processing and meaning-making associated with the trauma (Foa, Molnar, & Cashman, 1995). Repeated use of negative emotion language may therefore allow survivors of sexual abuse to express words such as *angry*, without experiencing the physiological sensations that come along with that emotion. Over time, negative emotions may become less painful and more manageable to process.

Finally, we found some evidence that abuse severity can help to explain *how* and *why* therapeutic techniques might be more effective for some individuals than others. People who experienced more severe abuse showed the strongest association between emotion language and psychological functioning, suggesting that they may then benefit the most from using emotion words when describing their experiences. Those who experience more severe trauma are also especially likely to avoid unwanted thoughts and emotions (Begotka, Woods, & Wetterneck, 2004). These individuals might therefore benefit the most psychologically from the use of positive and negative emotion language because the severity of their trauma might generally push them to ignore these emotions.

Of note, our measure of abuse severity was objective (i.e., indexed by a composite of abuse duration, extent of sexual activity, use of force, and extent of injury to the child), which gave us a standardized way to compare all participants on the same variable. However, it will also be important for future research to look at *perceived* severity of abuse from the survivor's perspective. Additionally, it should be noted that our measures of emotion language and those of psychological functioning were collected at different times (albeit within a few months of each other), yet they were related to one another in expected ways, suggesting that we are not just capturing participants' transient moods. Thus, we demonstrate that people are naturally using, or are capable of learning to use, emotion language, perhaps as a coping mechanism to combat the negative effects of trauma.

Although we have argued that people may benefit from using emotion language in their trauma narratives, it is important to note that the correlational nature of our data precludes causal inferences. Thus, it is possible that better adjustment helped people use emotion language when talking about their experiences. One way to address questions about causality would be to randomly assign trauma survivors to use certain kinds of words when describing their experiences. Experimental paradigms that shift people's language usage under stressful situations can influence the way people think and feel (Kross et al., 2014). For example, people are better at controlling and regulating their thoughts and feelings during stressful situations when they are prompted to refer to themselves by their first name or other non-first-person pronouns (e.g., you) during self-talk (Kross et al., 2014). These shifts in language can encourage detachment from a stressor and therefore allow a person to gain better insight into their thoughts and feelings. Future research should examine whether prompting trauma survivors to include positive (e.g., happy, love, kind, nice) and/or negative emotion (e.g., sad, hurt, ugly, nasty) words can improve psychological health and allow people access to emotions that they otherwise might avoid and be unable to process.

Future research should also examine whether the beneficial effects of emotion language persist over extended periods of time. Unfortunately, our mental health measures were collected in close proximity to the abuse narratives, so we cannot determine whether there are long-term benefits of emotion language in our sample. However, other studies have documented the long-term effects of language on psychological outcomes (e.g., Ayduk & Kross, 2010). For instance, people who spontaneously used a more distanced perspective (i.e., used more first-person words) to recount a negative experience reported less distress and rumination up to seven weeks later (Ayduk & Kross, 2010). Thus, there are reasons to

expect that use of emotion language when recalling experiences of sexual abuse would enhance trauma survivors' long-term mental health.

It is also important to note that unique characteristics of our sample could have influenced our results. All of our participants were involved in the legal system, with about half actually testifying in their cases, and presumably our participants talked much more about their abuse experiences than most CSA survivors who are not involved in the legal system and may not have disclosed the abuse (Freyd, 2003; Goodman et al., 2003). Therefore, our participants may have been more practiced in adaptively recounting their experiences. Future research should examine whether the benefits of emotion language extend to CSA survivors who may not have had prior opportunities to discuss their experiences.

Finally, our sample was comprised of mostly women. This mirrors that found in national prevalence reports of CSA (U.S. Department of Health and Human Services, 2010). But, the small number of men in our study limited our ability to draw conclusions about gender differences, and future research should include more male participants to probe for potential gender differences in how emotion language might be adaptive after trauma.

Conclusion

Our study makes several novel contributions to emotion and trauma-related research by suggesting that expressing both good and bad emotions may help people heal from trauma. Most importantly, we provide evidence that, after a trauma, people might benefit psychologically if they use emotion language when discussing their experiences. In a treatment setting, examining how people naturally use emotion language when they recall trauma could provide mental health professionals with insight about a person's extent of emotional processing and psychological health. Future research should assess the causal effect of emotion word usage on psychological health outcomes, which could have major implications for therapeutic techniques. The current study offers new directions for trauma research and contributes innovative insights into the emotion literature.

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References

- Achenbach, TM. Manual for the young adult self-report and young adult behavior checklist. Burlington VT: University of Vermont Department of Psychiatry; 1997.
- Achenbach, TM., Edelbrock, C. Child behavior checklist. Burlington, VT: University Associates in Psychiatry; 1983.

- Ayduk O, Kross E. From a distance: Implications of spontaneous self-distancing for adaptive self-reflection. *Journal of Personality and Social Psychology*. 2010; 98:809–829. [PubMed: 20438226]
- Barrett LF, Gross J, Christensen TC, Benvenuto M. Knowing what you're feeling and knowing what to do about it: Mapping the relation between emotion differentiation and emotion regulation. *Cognition and Emotion*. 2001; 15:713–724.
- Batten SV, Follette VM, Aban IB. Experimental avoidance and high-risk sexual behavior in survivors of child sexual abuse. *Journal of Child Sexual Abuse*. 2001; 10:101–120. [PubMed: 15154403]
- Batten SV, Follette VM, Rasmussen Hall ML, Palm KM. Physical and psychological effects of written disclosure among sexual abuse survivors. *Behavior Therapy*. 2002; 33:107–122.
- Beck AT, Beamesderfer A. Assessment of depression: The depression inventory. *Modern Problems of Pharmacopsychiatry*. 1974; 7:151–169. [PubMed: 4412100]
- Beck AT, Steer RA, Garbin MG. Psychometric properties of the beck depression inventory: Twenty-five years of evaluation. *Clinical Psychology Review*. 1988; 8:77–100.
- Begotka AM, Woods DW, Wetterneck CT. The relationship between experiential avoidance and the severity of trichotillomania in a nonreferred sample. *J Behav Ther Exp Psychiatry*. 2004; 35(1):17–24. [PubMed: 15157815]
- Bottoms BL, Najdowski CJ, Epstein MA, Badanek MJ. Trauma severity and defensive emotion-regulation reactions as predictors of forgetting childhood trauma. *Journal of Trauma & Dissociation*. 2012; 13:291–310. [PubMed: 22545564]
- Briere J, Rickards S. Self-awareness, affect regulation, and relatedness: Differential sequels of childhood versus adult victimization experiences. *The Journal of Nervous and Mental Disease*. 2007; 195:497–503. [PubMed: 17568298]
- Cohen, J., Cohen, P., West, SG., Aiken, LS. *Applied multiple regression/correlation analysis for the behavioral sciences*. Mahwah, NJ: Lawrence Erlbaum; 2003.
- Dawson JF. Moderation in management research: What, why, when, and how. *Journal of Business and Psychology*. 2014; 29:1–19.
- Derogatis LR, Melisaratos N. The brief symptom inventory: An introductory report. *Psychological Medicine*. 1983; 13:595–605. [PubMed: 6622612]
- Ehring T, Quack D. Emotion regulation difficulties in trauma survivors: The role of trauma type and ptsd symptom severity. *Behavior Therapy*. 2010; 41:587–598. [PubMed: 21035621]
- Foa EB, Cashman L, Jaycox L, Perry K. The validation of a self-report measure of posttraumatic stress disorder: The posttraumatic diagnostic scale. *Psychological Assessment*. 1997; 9:445–451.
- Foa EB, Kozak MJ. Emotional processing of fear: Exposure to corrective information. *Psychological Bulletin*. 1986; 99:20–35. [PubMed: 2871574]
- Foa EB, Molnar C, Cashman L. Change in rape narratives during exposure therapy for posttraumatic stress disorder. *Journal of Traumatic Stress*. 1995; 8:675–690. [PubMed: 8564278]
- Foa, EB., Rothbaum, B. *Treating the trauma of rape: Cognitive-behavior therapy for ptsd*. New York: Guilford; 1998.
- Fredrickson BL. The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *The American Psychologist*. 2001; 56:218–226. [PubMed: 11315248]
- Fredrickson BL, Branigan C. Positive emotions broaden the scope of attention and thought-action repertoires. *Cognition & emotion*. 2005; 19:313–332. [PubMed: 21852891]
- Fredrickson BL, Tugade MM, Waugh CE, Larkin GR. What good are positive emotions in crisis? A prospective study of resilience and emotions following the terrorist attacks on the united states on september 11th, 2001. *Journal of Personality and Social Psychology*. 2003; 84:365–376. [PubMed: 12585810]
- Freyd JJ. Memory for abuse: What can we learn from a prosecution sample? *Journal of Child Sexual Abuse*. 2003; 12:97–103. [PubMed: 15105085]
- Goodman GS, Ghetti S, Quas JA, Edelstein RS, Alexander KW, Redlich AD, Jones DPH. A prospective study of memory for child sexual abuse: New findings relevant to the repressed-memory controversy. *Psychological Science*. 2003; 14:113–118. [PubMed: 12661671]

- Goodman GS, Taub EP, Jones DP, England P, Port LK, Rudy L, Melton GB. Testifying in criminal court: Emotional effects on child sexual assault victims. *Monographs of the Society for Research in Child Development*. 1992; 57:1–142.
- Hayes, AF. Process: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling. 2012. Retrieved from <http://www.afhayes.com/public/process2012.pdf>
- Jaeger J, Lindblom KM, Parker-Guilbert K, Zoellner LA. Trauma narratives: It's what you say, not how you say it. *Psychological Trauma*. 2014; 6:473–481. [PubMed: 25379123]
- Kashdan TB, Barrett LF, McKnight PE. Unpacking emotion differentiation: Transforming unpleasant experience by perceiving distinctions in negativity. *Current Directions in Psychological Science*. 2015; 24:10–16.
- Kircanski K, Lieberman MD, Craske MG. Feelings into words: Contributions of language to exposure therapy. *Psychological Science*. 2012; 23:1086–1091. [PubMed: 22902568]
- Kross E, Bruehlman-Senecal E, Park J, Burson A, Dougherty A, Shablack H, Moser J. Self-talk as a regulatory mechanism: How you do it matters. *Journal of Personality and Social Psychology*. 2014; 106:304–324. [PubMed: 24467424]
- Leitenberg H, Greenwald E, Cado S. A retrospective study of long-term methods of coping with having been sexually abused during childhood. *Child Abuse and Neglect*. 1992; 16:399–407. [PubMed: 1617474]
- Lipovsky, JA., Kilpatrick, DG. The child sexual abuse victim as an adult. In: O'Donohue, W., Geer, JH., editors. *The sexual abuse of children: Clinical issues*. Vol. 2. Hillsdale, New Jersey: Lawrence Erlbaum Associates; 1992. p. 430-477.
- Ogle CM, Rubin DC, Berntsen D, Siegler IC. The frequency and impact of exposure to potentially traumatic events over the life course. *Clinical Psychological Science*. 2013; 1:426–434. [PubMed: 24660131]
- Ozer EJ, Best SR, Lipsey TL, Weiss DS. Predictors of posttraumatic stress disorder and symptoms in adults: A meta-analysis. *Psychological Bulletin*. 2003; 129:52–73. [PubMed: 12555794]
- Park RJ, Goodyer IM, Teasdale JD. Effects of induced rumination and distraction on mood and overgeneral autobiographical memory in adolescent major depressive disorder and controls. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*. 2004; 45:996–1006.
- Pennebaker, JW., Chung, CK. Expressive writing, emotional upheavals, and health. In: Friedman, HS., Silver, RC., editors. *Foundations of health psychology*. New York, NY US: Oxford University Press; 2007. p. 263-284.
- Pennebaker, JW., Francis, ME., Booth, RJ. *Linguistic inquiry and word count (liwc)*. Mahwah, NJ: Erlaum; 2001.
- Pennebaker JW, Mayne TJ, Francis ME. Linguistic predictors of adaptive bereavement. *Journal of Personality and Social Psychology*. 1997; 72:863–871. [PubMed: 9108699]
- Pennebaker JW, Mehl MR, Niederhoffer KG. Psychological aspects of natural language. Use: Our words, our selves. *Annual Review of Psychology*. 2003; 54:547–577.
- Quas JA, Goodman GS, Ghetti S, Alexander KW, Edelstein R, Redlich AD, Haugaard J. Childhood sexual assault victims: Long-term outcomes after testifying in criminal court. *Monographs of the Society for Research in Child Development*. 2005; 70:118–128.
- Rothbaum B, Foa EB, Riggs D, Murdock T, Walsh W. A prospective examination of post-traumatic stress disorder in rape victims. *Journal of Traumatic Stress*. 1992; 5:455–475.
- Slatcher, RB., Pennebaker, JW. Emotional processing of traumatic events. In: Cooper, C., editor. *Handbook of stress medicine and health*. 2. Boca Raton, FL: CRC Press; 2005. p. 289-303.
- Stanton AL, Danoff-Burg S, Cameron CL, Bishop M, Collins CA, Kirk SB, Twillman R. Emotionally expressive coping predicts psychological and physical adjustment to breast cancer. *Journal of Consulting and Clinical Psychology*. 2000; 68:875–882. [PubMed: 11068973]
- Tausczik YR, Pennebaker JW. The psychological meaning of words: Liwc and computerized text analysis methods. *Journal of Language and Social Psychology*. 2010; 29:24–54.
- Tugade MM, Fredrickson BL, Barrett LF. Psychological resilience and positive emotional granularity: Examining the benefits of positive emotions on coping and health. *Journal of personality*. 2004; 72:1161–1190. [PubMed: 15509280]

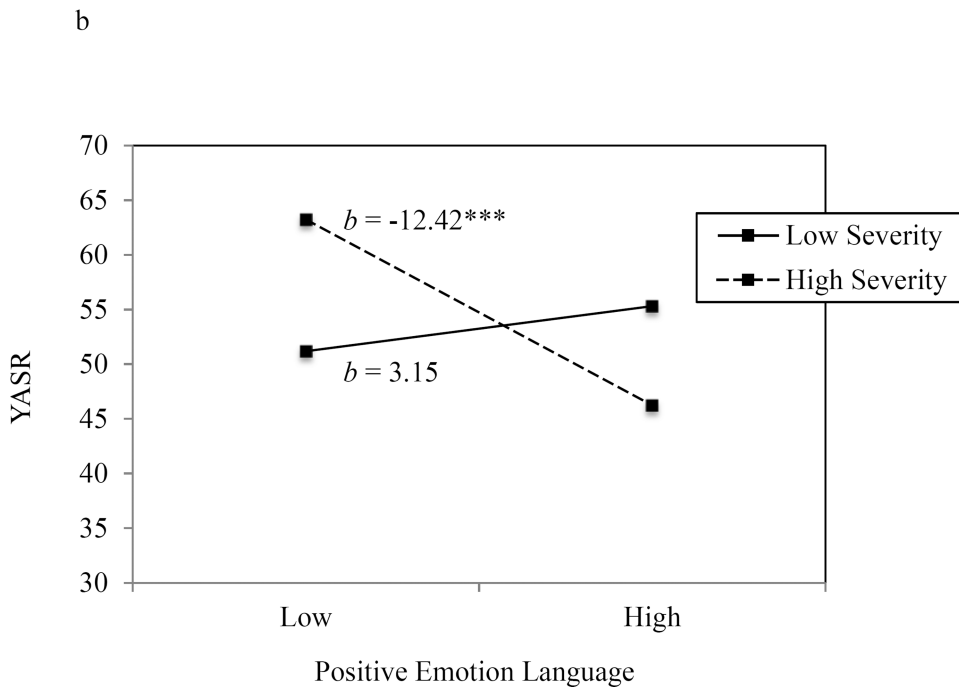
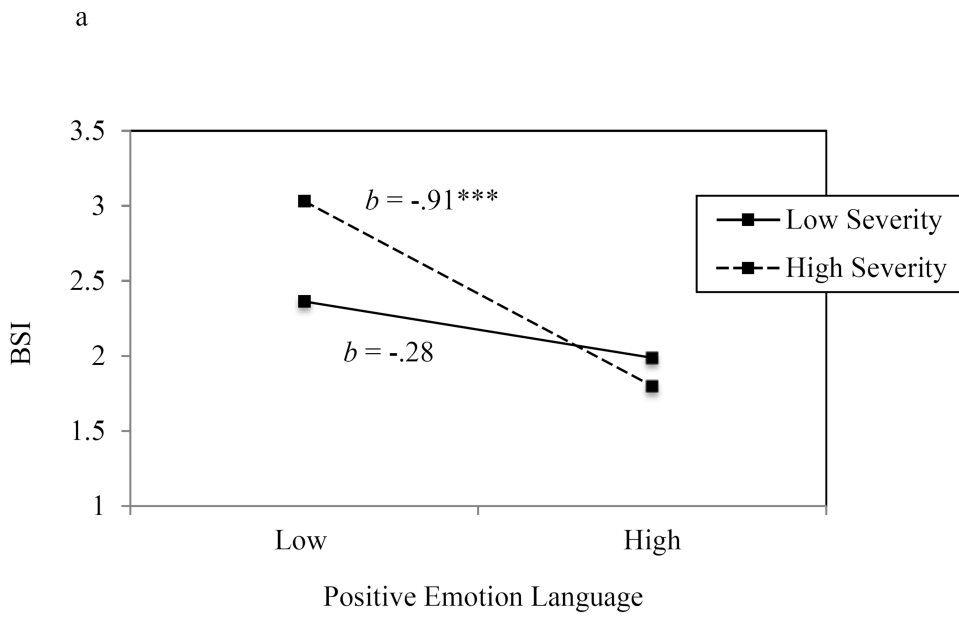
- Tull MT, Jakupcak M, McFadden ME, Roemer L. The role of negative affect intensity and the fear of emotions in posttraumatic stress symptom severity among victims of childhood interpersonal violence. *The Journal of Nervous and Mental Disease*. 2007; 195:580–587. [PubMed: 17632248]
- U.S. Department of Health and Human Services. *Child maltreatment 2009: Reports from the states to the national child abuse and neglect data system*. Washington, DC: U.S. Government Printing Office; 2010.
- Ullman SE. Is disclosure of sexual traumas helpful? Comparing experimental laboratory versus field study results. *Journal of Aggression, Maltreatment and Trauma*. 2011; 20:148–162.

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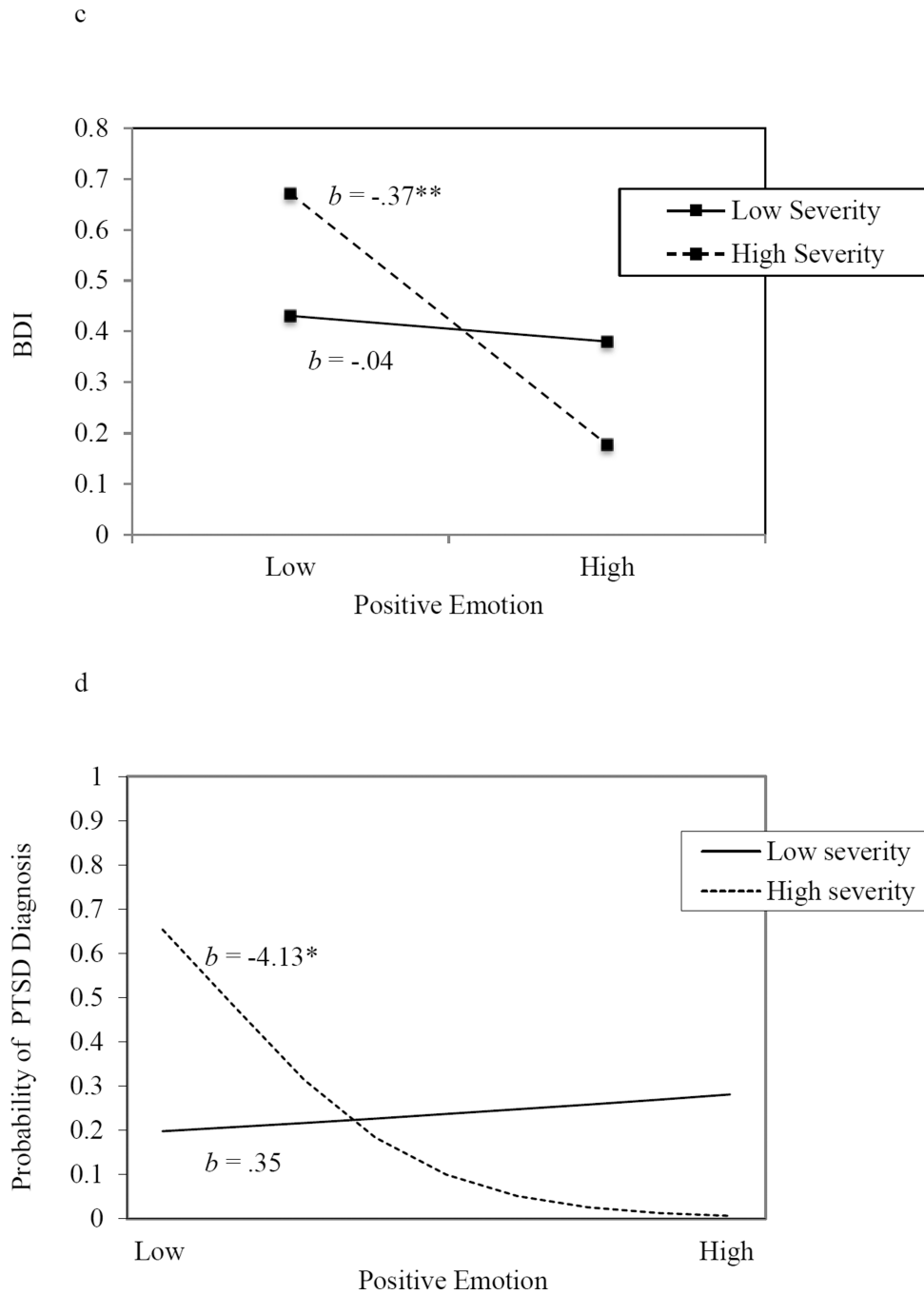


Figure 1.
a, b, c. The interactions between abuse severity and positive emotion in predicting overall psychological functioning (BSI), emotional and behavioral problems (YASR) and depressive symptoms (BDI). Higher scores on these measures indicate poorer psychological health. Following procedures recommended by Cohen et al. (2003), regression lines are plotted at one standard deviation above and below the mean of positive emotion word usage and abuse severity. * $p < .05$, ** $p < .01$, *** $p < .001$.

d. The interaction between abuse severity and positive emotion in predicting PTSD diagnosis. Following procedures recommended by Dawson (2014) to plot a two-way interaction effect for a logistic regression analysis, slopes are plotted at one standard deviation above and below the mean of the moderator (abuse severity). Y-axis indicates the probability of a PTSD diagnosis: 0 indicates no diagnosis of PTSD and 1 indicates a diagnosis of PTSD. * $p < .05$.

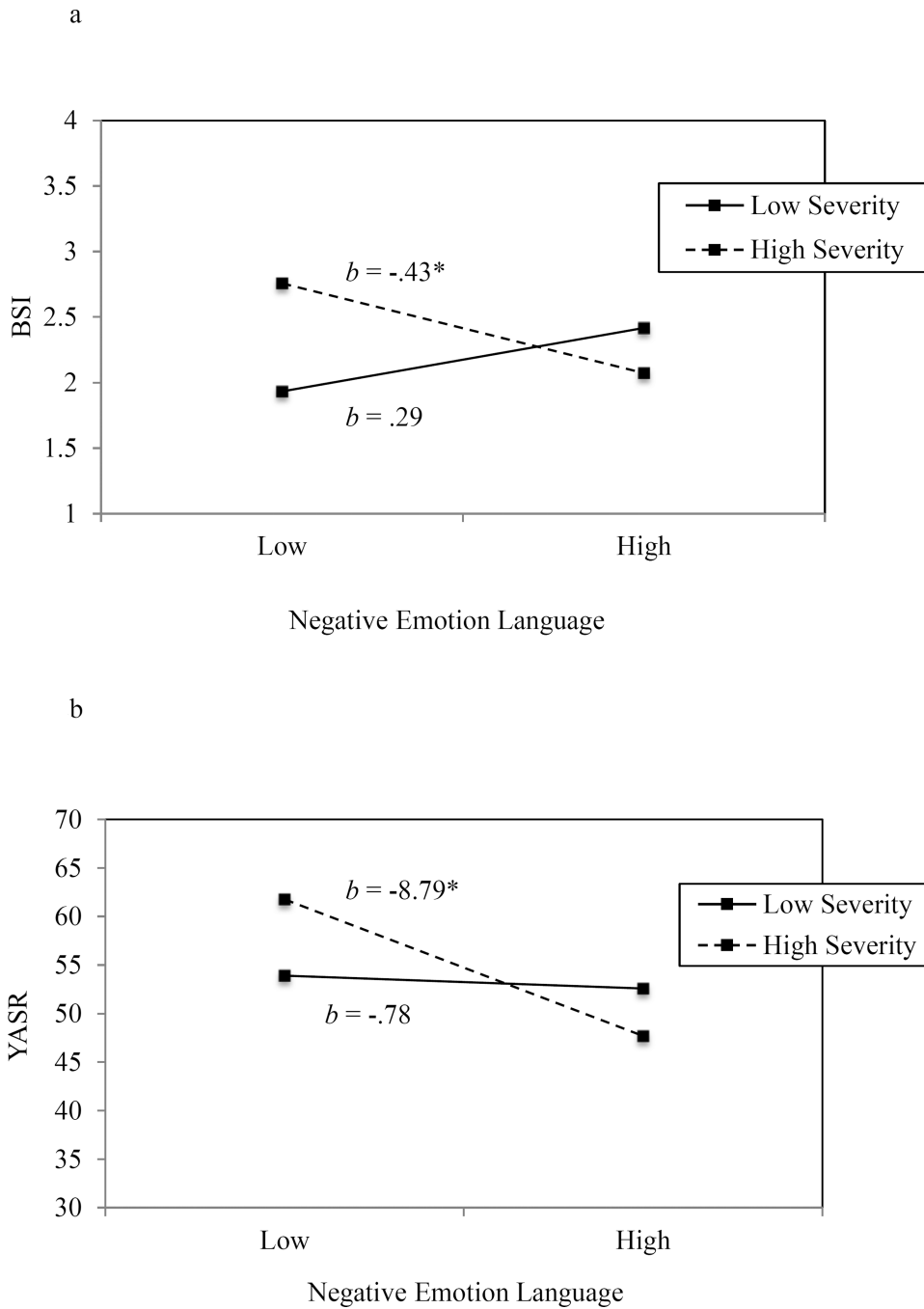


Figure 2. *a, b.* The interactions between abuse severity and negative emotion in predicting overall psychological functioning (BSI) and emotional and behavioral problems (YASR). Higher scores on these measures indicate poorer psychological health. Following procedures recommended by Cohen et al. (2003), regression lines are plotted at one standard deviation above and below the mean of negative emotion word usage and abuse severity (CSA). * $p < .05$.

Table 1

Descriptive Statistics and Correlations Among Primary Study Variables

	1	2	3	4	5	6	7	8	9	10	11	12
1. Positive emotion	–											
2. Negative emotion	-.38**	–										
3. BSI	-.40**	.10	–									
4. YASR	-.03	-.23	.53**	–								
5. PDS	-.06	-.29*	.30*	.40**	–							
6. BDI	-.27*	-.05	.66**	.71**	.54**	–						
7. YABCL	-.36*	.38*	.48**	.37*	.07	.28	–					
8. CBCL	-.18	.00	.35**	.22	.01	.25	.24	–				
9. Age at end of abuse	.02	-.08	-.01	.17	.25	.08	-.01	.00	–			
10. Gender	-.28*	.22	-.03	-.06	-.10	-.06	-.16	-.05	.05	–		
11. Legal involvement	.36**	.07	.00	.16	.01	.03	.21	-.09	.07	-.19	–	
12. Abuse severity	.05	-.01	.11	.13	-.04	.06	.15	.08	.05	.01	-.01	–
<i>M</i>	1.49	1.74	2.29	54.10	--	.41	58.79	63.60	9.87	--	2.24	5.07
<i>SD</i>	.68	.80	.81	11.68	--	.35	8.75	10.46	3.67	--	.79	1.90

Note. Self-report measures = BSI (phase 1), YASR and PDS (phase 2), BDI (phase 3); caregiver report measures = YABCL (phase 2), CBCL (initial phase); Because of missing data for some variables, *Ns* range from 34 – 55. PDS (0 = no diagnosis of PTSD, 1 = diagnosis of PTSD); age at end of abuse (in years); gender (0 = men, 1 = women); legal involvement (1 = did not go to court, 2 = went to court but did not testify, 3 = testified).

* $p < .05$,

** $p < .01$.

Table 2
 Regression Analysis Predicting Self-Report and Caregiver-Report Mental Health Outcomes

	Outcome											
	BSI			YASR			BDI			YABCL		
	B	SE	β	B	SE	β	B	SE	β	B	SE	β
Abuse severity	.06	.05	.14	.39	.83	.06	.00	.02	.03	.89	.87	.18
Positive emotion	-.59	.16	-.50***	-4.75	2.59	-.26	-.20	.07	-.39**	-6.34	2.74	-.46*
Negative emotion	-.06	.14	-.06	-4.84	2.06	-.33*	-.10	.06	-.23	.71	2.63	.06
Abuse severity x positive emotion	-.17	.08	-.28*	-4.09	1.26	-.47**	-.09	.04	-.34*	-2.84	1.55	-.40
Abuse severity x negative emotion	-.19	.07	-.37**	-2.11	1.04	-.28*	-.04	.03	-.16	-2.77	1.59	-.41

Note. Ns range from 48 – 55.

* $p < .05$,

** $p < .01$,

*** $p < .001$.

Table 3

Logistic regression Predicting PTSD Diagnosis (as measured with the PDS)

	B	SE	Wald	Exp B
Abuse severity	-.27	.25	1.16	.76
Positive emotion	-1.93	1.06	3.29	.15
Negative emotion	-1.88	.84	4.95*	.15
Abuse severity x positive emotion	-1.19	.52	5.35*	.30
Abuse severity x negative emotion	-.47	.48	.96	.63

Note. $N = 49$. PDS (0 = no PTSD diagnosis, 1 = PTSD diagnosis).

* $p < .05$.

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