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# Anxiety Sensitivity and Aspects of Alexithymia Are Independently and Uniquely Associated with Posttraumatic Distress

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## Abstract

Using a sample of adult survivors of physical trauma requiring hospitalization ($N$ = 677), we examined the relationship of aspects of alexithymia and anxiety sensitivity to symptoms of posttraumatic distress (PTD). At the bivariate level, both aspects of alexithymia and anxiety sensitivity were positively associated with acute PTD symptomatology, but anxiety sensitivity was more strongly related to PTD symptoms. At the multivariate level, both anxiety sensitivity and aspects of alexithymia made unique and independent contributions to both total PTD symptoms and the majority of PTD symptom clusters. At the facet level, anxiety sensitivity Physical Concerns and Psychological Concerns, and the alexithymic dimension of Difficulty Identifying Feelings, were uniquely associated with acute PTD symptoms. Findings are discussed in terms of potential clinical implications.

Shortly after a trauma, individuals often begin to show disrupted emotional experiences: intense trauma-related emotions on the one hand, and emotional numbing or restriction on the other (DSM-IV, APA, 1994). Given that the emotional avoidance and numbing symptoms characteristic of the posttraumatic stress disorder (PTSD) suggest problems with affect regulation (Stone, 1993), and that cognitive factors are thought to contribute to the development and maintenance of PTSD (e.g., Ehlers & Clark, 2000; Foa, Steketee, & Rothbaum, 1989), numerous studies have linked both alexithymia and anxiety sensitivity to PTSD. Yet, no study to date has examined all three together.

Anxiety sensitivity is a trait-like cognitive characteristic that is defined as the fear of anxiety-related bodily sensations (Reiss & McNally, 1985). Insofar as individuals with high anxiety sensitivity fear that these symptoms may have dire consequences (McNally, 1999), it is not surprising that anxiety sensitivity has been shown to have a strong relationship to anxiety (Reiss, 1991). A growing body of literature links anxiety sensitivity to PTSD (see review by Taylor, 2003). Some believe that exploring the relationship between anxiety sensitivity and PTSD may hold considerable promise in explaining the development and maintenance of PTSD (Feldner, Lewis, Leen-Feldner, Schnurr, & Zvolensky, 2006). For example, Fedoroff, Taylor, Asmundson, and Koch (2000) demonstrated that for individuals with motor vehicle accident-related PTSD, anxiety sensitivity was a better predictor of PTSD symptom severity than either maladaptive cognitions about driving (e.g., “I am a poor driver”) or physical pain. Moreover,

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cognitive behavioral treatment-induced reductions in anxiety sensitivity predicted reductions in PTSD symptom severity.

Most empirical work with the Anxiety Sensitivity Index (ASI; Peterson & Reiss, 1992) finds three intercorrelated lower-order components (Taylor, 1999): (1) a fear that the physiological symptoms of anxiety (e.g., palpitating heart) are physically dangerous (Physical Concerns); (2) a fear that the cognitive symptoms of anxiety (e.g., difficulty concentrating) are precursors to mental illness (Psychological Concerns); and (3) a fear that observable anxiety symptoms (e.g., shaking) will result in embarrassment or negative evaluation (Social Concerns). One issue that remains unresolved with respect to the relationship between anxiety sensitivity and PTSD symptoms is whether each anxiety sensitivity component is related to PTSD. At present, three studies (Keogh, Ayers, & Francis, 2002; Lang, Kennedy, & Stein, 2002; Feldner et al., 2006) have examined the relationship between the three lower-order facets of anxiety sensitivity and PTSD in adults, with mixed results. Two of these studies show support for Psychological Concerns being predictive of PTSD (Lang et al., 2002; Feldner et al., 2006), while one shows support for Social Concerns (Keogh, et al., 2002). These studies vary widely in the following ways: 1) sample demographics (only the Feldner et al. study included both men and women); 2) trauma types (e.g., giving birth was the traumatic event for the Keogh et al. study); 3) study design (e.g., the Keogh et al. study was prospective while the others were cross-sectional); and 4) statistical analysis (e.g., Feldner et al. did not control for the possible influence of each of the anxiety sensitivity facets in their regression analyses). Given that only a small number of studies have taken rather different approaches to pursuing this question, further research is warranted.

The construct of alexithymia was first described by clinicians (e.g., MacLean, 1949; Ruesch, 1948) who believed that patients with psychosomatic disorders suffered from these illnesses because of deficits that resulted in an apparent inability to verbalize feelings (see review by Taylor, Bagby, & Parker, 1991). Nemiah, Freyberger, and Sifneos' (1976) advancement of the construct led to an outpouring of empirical research that culminated in the emergence of psychometrically-sound, self-report measurement tools like the Toronto Alexithymia Scale-20 (TAS-20; Bagby, Parker, & Taylor, 1994). The TAS-20 reflects Taylor et al.'s (1991, 1997) conceptualization of alexithymia as involving deficits in the cognitive processing, recognition, and regulation/modulation of emotions. Specifically, the TAS-20 operationalizes alexithymia in terms of an individual's: 1) difficulty in identifying emotions, 2) difficulty describing emotions, and 3) externally-oriented thinking style.

The core alexithymic deficits are somewhat consistent with emotion/information processing models of PTSD (e.g., Foa & Kozak, 1986) that suggest that PTSD is partially maintained by the individual's reluctance to activate his or her trauma-related memory network, thereby precluding attenuation of the fear response (Foa & Kozak, 1991). However, whereas cognitive avoidance in PTSD is trauma specific and effortful, emotion processing deficits in alexithymia are more global and are thought to represent a relatively stable personality trait (Taylor, Bagby, & Parker, 1991). Empirical studies have demonstrated a relationship between alexithymia and PTSD symptoms in a diverse range of populations (see review by Frewen, Dozois, Neufeld, & Lanius, 2008).

Although it is now well established that anxiety sensitivity and alexithymia are both independently related to PTSD, and that the two constructs are themselves inter-correlated (e.g., Devine, Stewart, & Watt, 1999), little is known about how these two constructs measured together might be associated with PTSD symptoms. To date, there has been one study that measured all three of these constructs in the same participants (Simpson, Jakupcak, & Luterek, 2006); however, for their analysis, Simpson and colleagues (2006) chose to include their data on both anxiety sensitivity and cognitive avoidance but not alexithymia due to concerns about

multicollinearity (Simpson et al., 2006). While they found that both anxiety sensitivity and cognitive avoidance predicted PTSD symptoms at baseline, only anxiety sensitivity predicted PTSD symptoms at follow-up (Simpson et al., 2006). Since cognitive avoidance and alexithymia are distinct constructs, the question of how together anxiety sensitivity and alexithymia might be associated with PTSD symptoms remains unanswered. The present study had three aims: 1) to examine whether aspects of alexithymia and anxiety sensitivity are both positively and uniquely associated with posttraumatic distress (PTD) symptoms; 2) to determine whether both an alexithymia composite and anxiety sensitivity make independent contributions to PTD symptoms at the multivariate level; and 3) to determine whether specific facets of alexithymia and anxiety sensitivity are positively and uniquely linked to PTD symptoms when examined simultaneously. To address these issues, we analyzed data collected as part of a larger study of the mental health consequences of exposure to serious physical injury.

## Methods

### Participants and Procedures

The sample was drawn between February 2004 and August 2006 from four trauma centers in Los Angeles County: Los Angeles County + University of Southern California Medical Center (LAC+USC), UCLA Medical Center, King-Drew Medical Center, and California Hospital Medical Center. At LAC+USC, interviewers attempted to approach all consecutively-admitted persons with one exception. Due to the overrepresentation of Hispanics at this trauma center relative to others in LA County, we approached every other Hispanic patient admitted to the hospital. At the three other trauma centers where interview staff did not have direct access to a census of admissions, trauma nurses identified patients as likely to be eligible and notified research staff. To be eligible, patients were required to (a) be between 18 and 75 years old; (b) have been hospitalized for surgical treatment of sudden physical injuries not sustained from domestic violence or attempted suicide; (c) be able to speak either English or Spanish; and (d) have no severe cognitive impairment.

Face-to-face, fully structured interviews were conducted as soon as was practical after obtaining consent. The interviews took 60-70 minutes and were conducted in either English or Spanish. Interviewers received extensive training prior to conducting interviews and were actively supervised throughout data collection. Signed informed consents were obtained. The IRBs of RAND, and the four participating trauma centers approved and monitored the study protocol. Of 850 eligible approached participants, 677 (79.6%) completed the interview.

Most of the sample (57.6%) had been injured due to a motor vehicle crash; the remaining 36.3% had survived an act of community violence, suffered a serious fall (4.7%), or had something else happen (4.0%). Some individuals recorded multiple events (e.g., fall and violence), so summed percentages exceed one hundred. Approximately 78% were male. Almost half of the participants identified as Hispanic (48.7%), while 25.3% identified as Black, 19.9% as Caucasian, and 6.1% as Asian, Pacific Islander, or American Indian. Participants were 33.3 years of age on average ($SD$ = 11.7). The median length of stay in the trauma center was 6 days ($M$ = 9.3, $SD$ = 9.7), and the median length of time between hospital admission and subsequent interview was 9 days ($M$ = 15.5, $SD$ = 15.9). Most participants (58%) were assessed in their homes after discharge. Given that participants answered questions about their posttraumatic symptoms within a month of their trauma, the term posttraumatic distress (PTD) is used instead of PTSD.

## Measures

Aspects of alexithymia were measured using two subscales of the Toronto Alexithymia Scale-20 (Bagby et al., 1994): Difficulty Identifying Emotions (7 items; e.g., "I am often confused about what emotion I am feeling"; α = .88) and Difficulty Describing Emotions (5 items; e.g., "I am able to describe my feelings easily"; α = .76). Due to concerns about respondent burden, a third subscale assessing externally oriented thinking was not administered. Each item is worded in the form of a statement to which respondents indicate the extent of their agreement-disagreement, using a 5-point scale ranging from *strongly disagree* (1) to *strongly agree* (5). The TAS-20 is a widely used and well-validated measure of alexithymia (Taylor, Bagby, & Parker, 2003). We retained the two subscales for some analyses and we created an *alexithymia composite* score that combined the two subscales (α = .90), as a recent review of factor analytic studies on this measure suggests that these two facets often make one factor (Swift et al., 2006).

Anxiety sensitivity was assessed with the Anxiety Sensitivity Index (Peterson & Reiss, 1992), the most widely-used measure. Numerous studies attest to the reliability and validity of this 16-item measure (e.g., Stewart, Taylor, & Baker, 1997). Participants are asked about their experience of fear as it relates to their interpretation of their own anxiety-related symptoms (e.g., "Unusual body sensations scare me"). Responses are provided on a 5-point scale, ranging from *very little* (scored as 0) to *very much* (scored as 4). For most analyses, we summed across the 16 ASI items to create a total score (α = .90). We also created three anxiety sensitivity subscales—Physical Concerns (8 items; α = .89), Psychological Concerns (4 items; α = .78), and Social Concerns (4 items; α = .58)—based on the scoring algorithm suggested by Zinbarg, Mohlman, and Hong (1999):

Symptoms of posttraumatic distress (PTD) were assessed using English and Spanish versions of the Posttraumatic Stress Disorder (PTSD) Checklist (PCL; Weathers, Litz, Herman, Huska, & Keane, 1993, see Orlando & Marshall, 2002, for translation procedures). The PCL consists of 17 items, each corresponding to one of the three DSM-IV symptom clusters of reexperiencing, avoidance, and hyperarousal (APA, 1994). Responses are provided regarding the extent to which participants were bothered by each symptom, ranging from *not at all* (scored as 1) to *extremely* (scored as 5). The PCL has demonstrated solid psychometric properties (e.g., Blanchard, Jones-Alexander, Buckley, & Forneris, 1996). All items were modified such that answers were provided with respect to the specific incident that resulted in hospitalization. Respondents reported on symptoms experienced since the trauma.

For the current study, we summed across the 17 items to create an aggregate score (α = .90). We also created four subscales corresponding to empirically identified symptom clusters (e.g., King, Leskin, King, & Weathers, 1998): Reexperiencing (5 items; e.g., nightmares; α = .85), Hyperarousal (5 items; e.g., exaggerated startle response; α = .78), Avoidance (2 items; e.g., avoiding thinking about the trauma; α = .68), and Numbing (5 items; e.g., feeling emotionally numb; α = .72). In a separate analysis of data derived from this sample, Miles, Marshall, and Schell (in press) found no evidence that responses to the modified version of the PCL differed as a function of Spanish versus English language of administration.

## Data Analysis

Bivariate correlations were used to assess the independent relationships between the predictors (anxiety sensitivity and the alexithymia composite), their facets, and the outcome variables (PTD and its symptoms). To assess whether the positive associations between each of the ASI components were not only different from zero but also different from each other, we compared three pairs of dependent correlations (Steiger, 1980): 1) anxiety sensitivity Physical Concerns and PTD; 2) anxiety sensitivity Psychological Concerns and PTD; and 3) anxiety sensitivity

Social Concerns and PTD. To assess whether anxiety sensitivity and the alexithymia composite were differentially associated with overall PTD symptom severity (and each PTD dimension) we conducted an additional five tests of dependent correlations (Steiger, 1980). To determine whether anxiety sensitivity and the alexithymia composite were significantly and independently associated with overall PTD and each PTD dimension, a series of five multiple regression analyses was conducted. Both anxiety sensitivity and the alexithymia composite were entered into the same regression equation to predict each aspect of PTD. We performed one additional multiple regression analysis to examine which of the facets of anxiety sensitivity (Physical, Psychological, and Social concerns) and alexithymia (Difficulty Identifying and Difficulty Describing Emotions) would make independent contributions to total PTD symptom severity scores. As all IVs were entered simultaneously, the standardized coefficients (β) reported below represent only the unique contribution of each IV to the DV and not shared variance. Furthermore, all reported β and $r^2$ values are those obtained after controlling for demographic variables: gender, ethnicity, injury severity, type of trauma (assault v. accident), and education.

## Results

Bivariate correlation analyses, means, and standard deviations are presented in Table 1. Although a diagnosis of PTSD cannot be made until a month after the traumatic event, PCL screener scores were used to assess symptom severity. In this sample, 255 (37.7%) individuals scored a 3 or more (moderate severity) on the requisite number of items from each symptom cluster to meet the DSM-IV criteria for a diagnosis of PTSD (see Weathers et al., 1993). With respect to bivariate relationships, both anxiety sensitivity ($r = .50$, $p < .001$) and the alexithymia composite ($r = .37$, $p < .001$) were associated with overall PTD symptoms. Overall PTD symptoms were associated with both the anxiety sensitivity and alexithymia subscales. With respect to which components of anxiety sensitivity were more strongly associated with PTD, our three *t*-tests for dependent correlations (Steiger, 1980) demonstrated that: 1) the correlation between anxiety sensitivity Physical Concerns and PTD was greater than the correlation between anxiety sensitivity Social Concerns and PTD ($r = .49 > r = .36$; $t(674) = 4.45$, $p < .001$); 2) the correlation between anxiety sensitivity Psychological Concerns and PTD was greater than the correlation between anxiety sensitivity Social Concerns and PTD ($r = .46 > r = .36$; $t(674) = 4.45$, $p < .01$); but 3) the correlation between anxiety sensitivity Physical Concerns and PTD was not significantly different from the correlation between anxiety sensitivity Psychological Concerns and PTD ($r = .49 = r = .46$; $t(674) = 1.33$, *ns*).

### Differential Associations Between Predictors and PTD

To determine whether anxiety sensitivity or our alexithymia composite was more strongly related to PTD symptoms, we performed five *t*-tests for dependent correlations (Steiger, 1980). The correlation between anxiety sensitivity and overall PTD was significantly greater than the correlation between the alexithymia composite and overall PTD ($r = .50 > r = .37$; $t(674) = 3.98$, $p < .001$). This same pattern held true for three of the four PTD symptom clusters—Reexperiencing ($r = .45 > r = .28$; $t(674) = 5.00$, $p < .001$), Avoidance ($r = .38 > r = .25$; $t(674) = 3.69$, $p < .001$), and Hyperarousal ($r = .43 > r = .31$; $t(674) = 3.51$, $p < .001$)—but not the PTD Numbing cluster ($r = .40 = r = .36$; $t(674) = 1.17$, *ns*).

### Regression Analyses

The total scores of the two predictor variables (i.e., anxiety sensitivity and alexithymia composite) were each entered into five separate standard multiple regression analyses to predict the various aspects of acute PTD: (a) total PTD symptoms; (b) Reexperiencing; (c) Avoidance; (d) Numbing; and (e) Hyperarousal (see Table 2). In each case, the full model, which controlled for demographic variables, significantly predicted each aspect of PTD. In all but one instance,

anxiety sensitivity and the alexithymia composite were both found to be significant independent predictors of overall PTD and its individual facets. Reexperiencing emerged as the sole exception to this pattern, in that only anxiety sensitivity acted as a significant predictor. Thus, while the alexithymia composite was a significant bivariate predictor of reexperiencing, it was not a multivariate predictor.

To examine which aspects of anxiety sensitivity and alexithymia were significantly and independently associated with overall PTD, anxiety sensitivity subscales (i.e., Physical, Psychological, and Social Concerns) and alexithymia subscales (i.e., Difficulty Identifying and Difficulty Describing Emotions) were entered simultaneously in a single regression model as predictors of PTD, after controlling demographic variables. Three aspects emerged as independent predictors of PTD: Difficulty Identifying Emotions ($\beta = 0.16$, $p < .01$), Physical Concerns ($\beta = 0.25$, $p < .001$), and Psychological Concerns ($\beta = 0.14$, $p < .01$). Together, these three variables accounted for 29% of the variance.

## Discussion

The goals of this study were threefold: 1) to examine whether anxiety sensitivity and aspects of alexithymia are both positively and uniquely associated with posttraumatic distress; 2) to assess the relative strength of associations involving anxiety sensitivity and alexithymia with PTD; and 3) to both determine whether specific facets of alexithymia and anxiety sensitivity are positively and uniquely linked to PTD when examined simultaneously. With respect to our first objective, we found that at the bivariate level PTD was positively related to both anxiety sensitivity and our alexithymia composite, consistent with previous research (e.g., Fedoroff et al., 2000; Feldner et al., 2006; Keogh et al., 2002; Lang et al., 2002 for anxiety sensitivity; and Frewen et al., 2008a for alexithymia).

With respect to our second aim, a series of t-tests for dependent correlations allowed us to examine the relative strength of associations involving anxiety sensitivity and the alexithymia composite with PTD. These tests revealed that, at the bivariate level, the associations between anxiety sensitivity and most aspects of acute PTD symptomatology were stronger than the associations between the alexithymia composite and PTD, except for the PTD Numbing cluster. Furthermore, as evidenced by our multiple regression analyses, while both anxiety sensitivity and the alexithymia composite made unique contributions to the prediction of acute PTD symptomatology (except for the PTD Reexperiencing, where only anxiety sensitivity was significant), the respective beta weights in these regression analyses show a similar pattern to the results of our t-tests for dependent correlations— anxiety sensitivity appeared to have larger beta weights than the alexithymia composite. Nonetheless, we must emphasize that our results demonstrate that both anxiety sensitivity and the alexithymia composite make *independent* contributions to the prediction of acute PTD symptom severity. Furthermore, these relationships were observed even though important covariates—gender, ethnicity, education, trauma type, and injury severity—were taken into account.

Our results are consistent with cognitive theories of PTD (e.g., Ehlers & Clark, 2000), in which negative interpretations of psychological symptoms (e.g., intrusive memories and hypervigilance) are thought to play an important role in predicting PTD symptoms, and therefore likely to lead to more avoidance of stimuli (e.g., trauma memories). Avoidance of trauma related stimuli, especially by way of thought suppression, is more likely to enhance and maintain PTSD symptoms than to attenuate them (Steil & Ehlers, 2000; Yoshizumi & Murase, 2007). Anxiety sensitivity might then play a role in the expression of PTD symptom severity such that people with more anxiety sensitivity might perceive their posttraumatic anxiety more negatively, which could lead to an increase in avoidance behavior and emotional numbing, which in turn could maintain or exacerbate their active/intrusive PTD symptoms.

Of interest is that the composite TAS score was a robust predictor of PTD numbing. This finding is consistent with the results of other research in this area (e.g., Frewen et al., 2008b). While it has been argued that the relationship between alexithymia and PTD Numbing can be understood as avoidance-based coping (Badura, 2003), some evidence suggests that alexithymia is related to Numbing but not Avoidance symptoms (Frewen et al., 2008b). Whether the relationship between alexithymia and PTD Numbing is best understood as either a purposeful avoidant coping style (Badura, 2003) or a non-conscious processing deficiency (Frewen et al., 2008), either account suggests that early work in emotional awareness training might help reduce the risk of developing later PTSD.

With respect to the third aim of our study, at the bivariate level we demonstrated that the lower-order anxiety sensitivity facets of Physical and Psychological concerns were equally associated with PTD. In addition, these associations were stronger than the association between Social Concerns and PTD. At the multivariate level, both Physical and Psychological Concerns (and the alexithymic feature of Difficulty Identifying Emotions) contributed independently to the prediction of PTD, but Social Concerns was not a significant predictor. As previously mentioned, there is an inconsistency in the literature that has examined this issue to date, as two studies found support for Psychological Concerns (Feldner et al., 2006; Lang et al., 2002) and one study found support for Social Concerns (Keogh et al., 2002). Furthermore, these studies differed noticeably with respect to the following: the gender of the samples, the types of traumas, the design of the studies, and the statistical analysis of the data. These differences make it difficult to resolve the issue; however, our study lends further empirical support to the documented relationship between the Psychological Concerns component of anxiety sensitivity and PTD. Although further research is needed to confirm this interpretation, it is possible that the underlying fear of losing control or going crazy (anxiety sensitivity Psychological Concerns) that accompany the cognitive symptoms of PTD (e.g., intrusive thoughts) fuels avoidance behavior, which in turn exacerbates PTD symptoms in both the short and long term.

A few limitations to our study should be considered in interpreting the results. First, important demographic variables such as gender and ethnicity have been demonstrated to relate to all three of our studied variables. Therefore, although our pattern of results remained consistent after controlling for gender and ethnicity, they may not generalize to a broader population and need to be replicated in a sample that is not made up of predominantly Hispanic, male survivors of motor-vehicle accidents and community violence. Second, although previous data analyses (e.g., Miles et al., in press) with this sample have revealed no evidence of differential responding as a function of Spanish versus English administration of the PCL, we do not know whether this holds true for our measurement of anxiety sensitivity and aspects of alexithymia. Third, although merging the two alexithymia facets of difficulties identifying and describing emotions is consistent with several factor analytic studies (e.g., Swift et al., 2006), our study did not measure the Externally Oriented Thinking subscale of the TAS-20. Given that a recent study (Monson, Price, Rodriguez, Ripley, & Warner, 2004) reported that Externally-Oriented Thinking was the best of the TAS-20 subscales in predicting PTSD in a sample of military veterans, our ability to draw conclusions regarding the impact of the full range of alexithymic responses as operationalized by the TAS-20 is limited. Fourth, since our study and most other research on this issue to date has been cross-sectional, additional longitudinal research is needed. Such research should examine issues that pertain to the directionality of these relationships across time—for an example of how levels of anxiety sensitivity effect levels of PTSD across time, as well as whether or not our findings might apply to chronic PTSD beyond the acute phase (e.g., at 6 months post hospital admission), see Wald and Taylor (2007). And finally, the relatively low reliability of the ASI Social Concerns scale ($\alpha$ = .58) in our sample could be contributing to its failure to emerge as a significant bivariate correlate or multivariate predictor of PTD.

Presuming that our results are replicated in future longitudinal research, they suggest the following clinical implications. Insofar as acute PTD symptoms are a strong predictor of a subsequent PTD symptom severity (Denson et al., 2007) our study suggests that clinicians might focus on reducing both anxiety sensitivity and alexithymia as a means by which to lower the risk for a subsequent diagnosis of PTSD. In this vein, there exist treatment strategies for lowering anxiety sensitivity. Such treatments often consist of psychoeducation, cognitive restructuring, and interoceptive exposure (e.g., Watt, Stewart, Birch, & Bernier, 2006) and often require few treatment sessions to be efficacious in reducing anxiety sensitivity (Schmidt, et al., 2007). In making this recommendation, it is important to note that early intervention to lower anxiety sensitivity should not be confused with critical incident stress debriefing (CISD), which a recent meta-analytic review suggests is not helpful and is perhaps even counterproductive (Rose, Bisson, & Wessley, 2003). Our pattern of results suggest that it is worth investigating whether or not acute treatment for anxiety sensitivity, and not the trauma per se, might simultaneously reduce the risk of developing PTSD following trauma exposure. We base this recommendation not only on our own results, but in conjunction with previous findings that lower post-treatment levels of anxiety sensitivity predicted symptom reduction of PTSD (Federoff et al., 2000), and that anxiety sensitivity -focused treatment that precedes PTSD treatment can be beneficial in reducing the latter (Watt & Taylor, 2007).

Given alexithymia's trait-like status, its treatment has been described as "slow" (Taylor et al., 1991, p. 159). Thus, the briefer course of treatment for anxiety sensitivity suggests that anxiety sensitivity could be targeted first so as to increase motivation and provide encouragement while clients pursue the more challenging work of addressing their alexithymia. On the other hand, Cloitre, Koenen, Cohen, and Han (2002) have recently demonstrated that alexithymia levels declined over the course of a 16-session treatment for women with abuse-related PTSD that consisted of two parts: emotional and interpersonal skill development, followed by PTSD related exposure therapy. To the degree that our results show that both anxiety sensitivity and alexithymia contribute independently to acute PTD symptom severity, it makes theoretical sense that a reduction in both of these would be helpful in preventing PTSD following trauma exposure.

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**Table 1**

Correlations Among Variables

| Variables | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | *M* | *SD* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.PTD Total | .87 | .74 | .74 | .80 | .36 | .37 | .30 | .50 | .49 | .46 | .36 | 39.1 | 15.2 |
| 2.PTD Reexperiencing | | .57 | .63 | .52 | .28 | .30 | .22 | .45 | .45 | .39 | .30 | 12.1 | 5.7 |
| 3.PTD Avoidance | | | .50 | .53 | .25 | .24 | .21 | .38 | .37 | .39 | .23 | 4.2 | 2.4 |
| 4.PTD Numbing | | | | .59 | .36 | .35 | .30 | .40 | .37 | .38 | .29 | 10.2 | 4.8 |
| 5.PTD Hyperarousal | | | | | .31 | .32 | .25 | .43 | .46 | .37 | .33 | 12.8 | 5.3 |
| 6.TAS Composite | | | | | | .96 | .91 | .51 | .48 | .51 | .35 | 29.2 | 9.6 |
| 7.TAS Difficulty Identifying Emotions | | | | | | | .74 | .51 | .48 | .52 | .34 | 16.2 | 6.0 |
| 8.TAS Difficulty describing Emotions | | | | | | | | .44 | .40 | .42 | .32 | 13.0 | 4.3 |
| 9.ASI Total | | | | | | | | | .96 | .85 | .78 | 17.8 | 12.9 |
| 10.ASI Physical | | | | | | | | | | .74 | .62 | 8.7 | 7.8 |
| 11.ASI Psychological | | | | | | | | | | | .56 | 2.7 | 3.3 |
| 12.ASI Social | | | | | | | | | | | | 6.4 | 3.5 |

Note: All correlations are significant at $p < .001$. TAS Composite = Toronto Alexithymia Scale-20 difficulty identifying and describing emotions subscales combined; ASI = Anxiety Sensitivity Index total score; PTD = Posttraumatic distress

**Table 2**

Linear Regression Analyses of Alexithymia Composite and Anxiety Sensitivity as Predictors of Posttraumatic Distress Symptoms after Controlling for Demographic Variables

| | PTD total | | | PTD reexperiencing | | | PTD avoidance | | | PTD numbing | | | PTD hyper-arousal | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ***B*** | ***SE B*** | **β** | ***B*** | ***SE B*** | **β** | ***B*** | ***SE B*** | **β** | ***B*** | ***SE B*** | **β** | ***B*** | ***SE B*** | **β** |
| Ed = HS/GED | -0.31 | 1.19 | -.01 | -0.31 | 0.46 | -.03 | -0.15 | 0.20 | -.03 | -0.46 | 0.39 | -.05 | 0.61 | 0.44 | .06 |
| Ed > HS | 1.03 | 1.63 | .03 | 0.32 | 0.64 | .02 | 0.21 | 0.28 | .03 | 0.07 | 0.54 | .01 | 0.42 | 0.60 | .03 |
| Latino | -0.15 | 1.26 | -.01 | -0.09 | 0.49 | -.01 | 0.53 | 0.22 | .11* | -0.03 | 0.42 | -.00 | -0.55 | 0.46 | -.05 |
| Caucasian | -3.90 | 1.57 | -.10 | -1.85 | 0.61 | -.13** | -0.29 | 0.27 | -.05 | -0.59 | 0.52 | -.05 | -1.17 | 0.58 | -.09* |
| Asian/Pacific Island | -1.22 | 2.29 | -.02 | -0.49 | 0.89 | -.02 | 0.37 | 0.39 | .04 | 0.36 | 0.76 | .02 | -1.46 | 0.84 | -.07 |
| Female | 4.20 | 1.24 | .12** | 2.05 | 0.48 | .15*** | 0.55 | 0.21 | .10** | 0.61 | 0.41 | .05 | 1.00 | 0.46 | .08* |
| Injury Severity | 0.13 | 0.07 | .07* | 0.03 | 0.03 | .04 | 0.00 | 0.01 | .00 | 0.08 | 0.02 | .12** | 0.03 | 0.03 | .04 |
| Assault | 0.97 | 1.13 | .03 | 0.87 | 0.44 | .07* | 0.45 | 0.19 | .09* | -0.98 | 0.37 | -.10** | 0.63 | 0.41 | .06 |
| TAS Composite | 0.23 | 0.06 | .14*** | 0.04 | 0.02 | .07 | 0.03 | 0.01 | .09* | 0.08 | 0.02 | .21*** | 0.07 | 0.02 | .13** |
| ASI Total | 0.50 | 0.05 | .42*** | 0.18 | 0.02 | .40*** | 0.08 | 0.01 | .34*** | 0.09 | 0.01 | .29*** | 0.15 | 0.02 | .36*** |
| Full Model (df) | (10, 666) | | | (10, 666) | | | (10, 666) | | | (10, 666) | | | (10, 666) | | |
| $R^2$ | .30*** | | | .25*** | | | .19*** | | | .22*** | | | .22*** | | |

Note: TAS Composite = Toronto Alexithymia Scale-20 difficulty identifying and describing emotions subscales combined; ASI = Anxiety Sensitivity Index total score; PTD = Posttraumatic Distress; Ed = education; HS = high school; GED = general equivalency diploma; Ed > HS = 2 year associate degree or greater; Assault = physical assault. The variables related to having an education lower than high school and being Black were removed from the analysis due to multicollinearity.

* $p < .05$.

** $p < .01$.

*** $p < .001$.