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The Relationship Between Posttraumatic Stress Disorder, Childhood Trauma and Alexithymia in an Outpatient Sample

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One aim of this study was to examine the strength of association between posttraumatic stress disorder (PTSD) and alexithymia relative to other psychiatric disorders in a sample of 252 treatment-seeking psychiatric patients. The other aim of this study was to explore which type of childhood trauma was associated with a greater level of adult alexithymia. The study found that PTSD and borderline personality disorder (BPD) were the two disorders among selected psychiatric disorders to contribute independently to a higher degree of alexithymia. Another finding was that a greater severity of emotional neglect and physical neglect, rather than abuse, was significantly related to higher levels of alexithymia. In addition, the study found that among these variables, BPD had the strongest relationship to alexithymia.

KEY WORDS: alexithymia; posttraumatic stress disorder; borderline personality disorder; childhood trauma and neglect.

Posttraumatic stress disorder (PTSD) is defined by symptoms denoting the reexperiencing of trauma, withdrawal, numbed responsiveness, and heightened arousal that frequently appear after exposure to a variety of traumata. Given this cluster of psychological sequelae, as well as recent formulations of PTSD as a disorder of affect dysregulation (Stone, 1993), it is not surprising that PTSD has been closely associated with the concept of alexithymia. Alexithymia refers to

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deficits in the identification, communication, cognitive processing, and elaboration of affect (reviewed in Taylor, 1984, 1995).

Krystal (1982) introduced the concept of alexithymia as a major posttraumatic sequel based on his observations of concentration camp survivors. According to Krystal (1988), alexithymia represents an "affect regression." Because of the overwhelming nature of a traumatic event, there is a rapid regression of affect to a preconceptual level of organization. At this level of functioning, there is impairment in the ability to tolerate affect and to make emotions useful as "signals" for perceptions about the self and its surroundings. In support of Krystal's view of a relationship between alexithymia and trauma sequelae, research has demonstrated an association of alexithymia with a diagnosis of PTSD (Hyer, Woods, Summers, Boudewyns, & Harrison, 1990; Krystal, Giller, & Cicchetti, 1986; Yehuda et al., 1997). A study that examined alexithymia in four groups of patients (Vietnam veteran inpatients and outpatients with PTSD, medical inpatients with somatic illnesses, and inpatients with affective disorders) found a higher degree of alexithymia in inpatients with PTSD and in those with somatic illness (Krystal, Giller, & Cicchetti, 1986) than in other patients. Another study found that a group of Vietnam veterans with PTSD obtained higher scores on the Minnesota Multiphasic Personality Inventory (MMPI) alexithymia scale than did an unspecified diagnostic group of psychiatric patients but did not score higher than a group of patients with alcohol abuse did (Hyer et al., 1990). Unfortunately, most studies have investigated the relationship between alexithymia and PTSD in select samples of trauma survivors, such as Vietnam veterans (Hyer et al., 1990) or Holocaust survivors (Yehuda et al., 1997).

Because emotional regulation is considered to be fundamental to mental health (Gross & Munoz, 1995), and studies have found that alexithymia is related to a range of psychiatric disorders (see Taylor, Bagby, & Parker, 1997, for review), alexithymia may not be a specific feature of PTSD. For instance, the use of alcohol and drugs has been conceptualized as an attempt to block intolerable emotions (Krystal, 1988). Few, if any, studies have examined the strength of the association between PTSD and alexithymia relative to other psychiatric disorders.

Comorbid disorders, especially borderline personality disorder (BPD), may mediate the relationship between alexithymia and PTSD. Several authors have proposed that alexithymia is an underlying mechanism that accounts for the behavioral and emotional instability of BPD (Bach, Zwaan, Ackard, Nutzinger, & Mitchell, 1994; Grotstein, 1986; Linehan & Kehrer, 1993). In addition, high rates of comorbidity between BPD and PTSD (Swartz, Blazer, George, & Winfield, 1990) suggest a possible overlap between these two disorders. Further, the phenomenological interface between PTSD and BPD has been attributed, in part, to the common features of affect dysregulation and impulsivity (Gunderson & Sabo, 1993; Herman, Perry, & van der Kolk, 1993). Gunderson and Sabo (1993) maintain, however, that a distinction between the symptoms of PTSD and the traits of

BPD can be drawn on the basis of longstanding developmental processes. They (Gunderson & Sabo, 1993) argue that BPD stems from an intermingling of negative childhood experiences that often includes trauma, and that the presence of BPD increases the risk of the development of PTSD. In contrast, others (e.g., Kudler, 1993) have suggested that the effects of trauma can lead to disturbances that are similar to those of borderline patients. To date, no studies have investigated whether BPD or PTSD is independently related to alexithymia.

There is some evidence to suggest that certain trauma characteristics are related to the degree of alexithymia. Rape victims with repeated histories of rape are more likely to be alexithymic than those who have experienced a single rape (Zeitlin, McNally, & Cassiday, 1993). Likewise, a positive correlation has been found between level of combat exposure and degree of alexithymia (Zeitlin, Lane, O'Leary, & Schrift, 1989). Recently, researchers have postulated that child abuse and neglect disrupts the psychological and biological affect regulatory processes (van der Kolk & Fisler, 1994). Empirical support for this view has been found in studies that have shown that individuals with histories of childhood abuse are more likely to have greater severity of affect dysregulation than those without such histories (van der Kolk et al., 1996; Zlotnick, 1997). Although research has shown that one form of early trauma, sexual abuse, is related to high scores on a measure of alexithymia (Zlotnick et al., 1996), virtually no studies, to date, have examined if the type of early trauma is a factor in the development of affect disturbances.

This study attempts to address some gaps in the literature. One aim of this study is to examine the strength of the association between PTSD and alexithymia relative to other psychiatric disorders in a sample of treatment-seeking psychiatric patients. The psychiatric disorders included in this study were panic disorder with and without agoraphobia, substance abuse or dependence, eating disorder, and BPD. These disorders were selected on the basis of prior clinical or empirical support for a relationship between that disorder and alexithymia. The other aim of the study was to explore the relationship between various early traumas and alexithymia and to delineate the differential role of specific types of early trauma (i.e., physical abuse, sexual abuse, emotional abuse, physical neglect, and emotional neglect) in the degree of alexithymia.

Method

Participants

Participants were outpatients who attended a hospital-based outpatient practice and who consented to participate in a formal evaluation instead of a routine, unstructured clinical evaluation. A full description of the methodology has been provided elsewhere (Zimmerman & Mattia, 1998, 1999).

Measures

In this study, 500 patients were administered the Structured Clinical Interview for *DSM-IV* (SCID) for Axis I (First, Gibbon, Spitzer, Williams, & Benjamin, 1997) and the BPD section of the Structured Interview for *DSM-IV* Personality (SIDP) (Pfohl, Blum, & Zimmerman, 1997) by a trained diagnostic rater prior to their initial psychiatric evaluation. Of the total number of patients who attended the outpatient practice and received an intake evaluation, 60.3% participated in the study and were interviewed with the SCID and SIDP. Compared to the patients who were administered the SCID, patients who were not administered the SCID were significantly more often female, 69% versus 60%; χ^2 (1, $N = 803$) = 6.03, $p < .05$, widowed, 13% versus 2%; χ^2 (1, $N = 803$) = 34.6, $p < .001$, older, $M = 47.4$, $SD = 19.1$ versus $M = 38.8$, $SD = 13.1$; t (801) = 7.01, $p < .001$ and significantly less likely to have married, 29% versus 37%; χ^2(1, $N = 803$) = 4.34, $p < .05$, and to have graduated high school, 83% versus 92%; χ^2(1, $N = 803$) = 9.44, $p < .01$.

In this study, current Axis I disorders were used, and current was defined as experiencing the diagnostic criteria at the time of the evaluation. During the course of the study, joint-interview diagnostic reliability information was collected on 17 patients. Of the disorders of interest in this study, there was 100% agreement on these disorders. The diagnostic category of any substance abuse included dependence or abuse of alcohol or drugs, and excluded nicotine abuse or dependence. Eating disorder included anorexia, bulimia, binge eating disorder, subbulmia, subanorexia, and eating disorder not otherwise specified (NOS). Data concerning trauma exposure was obtained during the SCID module for PTSD and involved an open-ended question concerning exposure to traumatic event/s.

Throughout the study, all patients who were administered the SCID were given a booklet of questionnaires to complete at home and return by mail. The booklet included an index of alexithymia, the Toronto Alexithymia Scale (TAS). The TAS is a 26-item self-report measure with good test-retest reliability (Taylor, 1984) and good convergent and discriminant validity (Taylor et al., 1988). A cutoff score of 74 or higher has been established to indicate alexithymia. A series of factor analysis of the TAS has yielded four factors: ability to identify feelings and bodily sensations, externally oriented thinking, ability to communicate feelings, and ability to daydream (Taylor et al., 1988).

Of the 500 patients, 252 (50%) completed the questionnaire on alexithymia. The only difference in demographic variables (i.e., ethnicity, age, sex, education, and marital status) between these two groups was that patients who completed the questionnaire on alexithymia were older, $M = 40.56$, $SD = 14.02$ than those who did not complete these measures, $M = 36.75$, $SD = 12.23$; t (498) = 3.20, $p < .01$. There were no significant differences between these two groups in terms of rates of major depression, various anxiety disorders, or any of the disorders of interest in this study. Thus, patients who did and who did not return the alexithymia questionnaire were diagnostically comparable.

Of the 252 study subjects who completed the questionnaire on alexithymia, 59% ($n = 148$) were female and 41% ($n = 104$) were male. The average age of this sample was 40.43 ($SD = 14.01$). The subjects were predominantly Caucasian (92%). Most subjects were married or cohabiting (50%), or single (29%), and the remaining were separated, widowed, or divorced (21%). The sample consisted of 25% of subjects with a college degree, 43% had some college education, 22% were high school graduates, and 11% had less education than a high school graduate. Of these demographic variables, level of education was the only variable that was significantly related to the degree of alexithymia, $r\ (251) = -.24$, $p < .001$.

This study has included those questionnaires that measure the variables of interest, namely, alexithymia, and childhood abuse and neglect. To assess childhood abuse, the Childhood Trauma Questionnaire (CTQ, Bernstein et al., 1994) was used. The CTQ is a self-report questionnaire that retrospectively measures experiences of childhood abuse and neglect, and provides a continuous index of these constructs. The instrument has demonstrated good test-retest reliability as well as good convergent validity (Bernstein et al., 1994). The CTQ has five empirically derived factors consisting of Physical Abuse, Emotional Abuse, Sexual Abuse, Emotional Neglect, and Physical Neglect.

Data Analysis

For all analyses, educational status was entered as a covariate because research has shown that TAS scores are inversely related to years of education (Lane, Seechrest, & Riedel, 1998). An explanation for this finding of a relationship between these two variables is that alexithymia is a domain of cognitive development, especially in the area of verbal communication (Lane et al., 1998).

With educational status as a covariate, a series of Analysis of Covariances (ANCOVAs) were performed to compare differences in scores on the TAS, between the presence and absence of the identified psychiatric disorders (i.e., panic disorder, any substance use, any eating disorder, and BPD). Next, a hierarchical regression analysis, controlling for level of education and other Non-PTSD disorders related to alexithymia, was conducted to assess the independent contribution of PTSD to the degree of alexithymia. To explore the relative association between various forms of childhood trauma and alexithymia, a regression equation was constructed. In this regression equation, TAS score was the dependent variable and level of education was forced into the equation first to control for educational status, and then each of the five subscales of the CTQ (i.e., Physical Abuse, Emotional Abuse, Emotional Neglect, Physical Neglect, and Sexual Abuse) were entered into the equation as a second block. To explore whether the number of traumas experienced was associated with a higher level of alexithymia, a multiple regression was conducted, controlling for educational status.

Results

The diagnostic composition of the sample of 252 patients consisted of 12% ($n = 29$) of subjects with posttraumatic stress disorder (PTSD), 6% ($n = 16$) of subjects with any eating disorder, 8.3% ($n = 21$) of subjects with any substance use disorder, and 17% ($n = 42$) of subjects with panic disorder with or without agoraphobia. Of the 252 subjects, 206 (81%) patients were assessed for BPD because the SIDP was introduced later in the study. Of the 206 patients, 16% (n = 34) of subjects met criteria for BPD.

The average age of onset for PTSD was 21.71 ($SD = 14.61$). The PTSD-related traumas reported were sexual assault by a family member or someone known to the subject (48%) and nonsexual assault by a family member or someone known to the subject (21%), a serious accident, fire, or explosion (10%), and the remaining traumas were sexual or nonsexual assault by a stranger, a life-threatening illness or other trauma (21%). The average number of traumas for the 252 patients was 1.83 ($SD = 3.64$).

Table 1 shows the mean and standard deviation of TAS scores for each of the identified disorder. A series of ANCOVAs (controlling for level of education) found that there were significant differences in level of alexithymia between subjects with PTSD and those without PTSD, $F(2, 249) = 4.04$, $p < .05$, and those with and without BPD, $F(2, 203) = 18.87$, $p < .0001$. There were no significant differences between subjects with substance abuse and those without, $F(2, 249) = 2.12$, ns, those with and without an eating disorder, $F(2, 249) = 1.89$, ns, and those with and without panic disorder, $F(2, 249) = 1.60$, ns, controlling for level of education.

In examining if PTSD is associated with a higher level of alexithymia, independent of BPD, a hierarchical regression analysis showed that PTSD was related to alexithymia, independent of BPD, $t(203) = 2.14$, $B = .14$, $p < .05$ (see Table 2). (Likewise, a hierarchical regression analysis showed that BPD was related to alexithymia, independent of PTSD, $t(203) = 3.81$, $B = .25$, $p < .001$.)

With the covariate of educational status, the TAS score as the dependent variable, and the five subscales of the CTQ as independent variables entered into

Table 1. Means, Standard Deviations of Measure of Alexithymia for Different Psychiatric Disorders

	Psychiatric disorder present			Psychiatric disorder absent		
TAS[a]	*n*	*M*	*SD*	*n*	*M*	*SD*
Posttraumatic stress disorder	29	76.69	14.43	223	70.20	12.45
Substance abuse/dependence	21	73.96	14.43	231	69.89	12.08
Eating disorder	16	70.43	12.76	236	70.98	12.85
Panic disorder	42	74.40	13.00	210	70.26	12.71
Borderline personality disorder	34	80.53	9.44	218	69.45	12.66

[a] TAS: Toronto Alexithymia Scale (Taylor, 1984).

Table 2. Summary of Hierarchical Regression Analysis for the Relationship Between Posttraumatic Stress Disorder (PTSD) and A Measure of Alexithymia (TAS[a] Score) ($N = 206$)

Variable	*B*	*SE B*	β
Step 1			
Educational status	−1.29	.43	−.19*
Borderline personality disorder	8.81	2.31	.25*
Step 2			
Posttraumatic stress disorder	5.63	2.63	.14*

Note. $R^2 = .14$ for Step 1. $\Delta R^2 = .02$ for Step 2 ($p < .05$).
[a]TAS: Toronto Alexithymia Scale (Taylor, 1984).
*$p < .05$.

the equation as a block, a regression was conducted to explore the relationship of the various early traumas to alexithymia levels. This regression analysis showed that only a greater degree of emotional neglect, $t(245) = 2.01$, $B = .17$, $p < .05$, and a greater degree of physical neglect, $t(245) = 2.92$, $B = .24$, $p < .01$, were significantly associated with a higher level of alexithymia, controlling for level of education (see Table 3). In examining the relationship between number of traumas and TAS scores, a regression analysis with education status as a covariate showed that number of traumas was significantly related to TAS scores, $t(249) = 2.18$, $B = .13$, $p < .05$.

Finally, in order to explore which feature (i.e., PTSD, BPD, number of traumas, emotional neglect, and physical neglect) was most associated with alexithymia, a regression was constructed with the TAS score as the dependent variable and with the level of education forced into the equation first to control for educational status. Then, each of the variables, PTSD, BPD, number of traumas, emotional neglect, and physical neglect, were entered into the equation as a second

Table 3. Summary of Hierarchical Regression Analysis for the Relationship between the Five Subscales of the Childhood Trauma Questionnaire[a] and a Measure of Alexithymia (TAS[b] Score) ($N = 252$)

Variable	*B*	*SE B*	β
Step 1			
Educational status	−1.63	.41	−.25*
Step 2			
Emotional Abuse	.12	.11	.11
Emotional Neglect	.14	.06	.18*
Physical Abuse	−.18	.19	−.09
Physical Neglect	.51	.23	.17*
Sexual Abuse	.03	.14	.03

Note. $R^2 = .06$ for Step 1. $\Delta R^2 = .12$ for Step 2 ($p < .05$).
[a]Bernstein et al., 1994.
[b]TAS: Toronto Alexithymia Scale (Taylor, 1984).
*$p < .05$.

block. The regression, controlling for education, found that the following variables were significantly related to higher TAS scores, BPD, $t(199) = 3.13$, $B = .19$, $p < .05$, physical neglect, $t(199) = 2.36$, $B = .18$, $p < .05$, and emotional neglect, $t(199) = 1.99$, $B = .16$, $p < .05$.

In repeating the above analyses, using the smaller sample size (i.e., the sample that included only those patients who were also administered the SIDP) rather than the larger sample of 252 patients, the above findings remained the same.

Discussion

This study found that outpatients with PTSD reported higher degrees of alexithymia than those without PTSD in a sample of general psychiatric patients. Furthermore, the study found that PTSD and BPD were the only disorders among the selected psychiatric disorders (i.e., panic disorder, substance use, eating disorder, and PTSD) to contribute uniquely to levels of alexithymia. These findings support the view that BPD and PTSD are disorders of the emotion regulation system (Linehan & Kehrer, 1993; Stone, 1993).

This study extends the findings of prior studies of a positive correlation between alexithymia and PTSD (Hyer et al., 1989; Krystal et al., 1986; Yehuda et al., 1997). This study is the first, to our knowledge, to demonstrate a relationship between alexithymia and PTSD in a sample of psychiatric patients unselected for PTSD or for a specific type of traumatic event. Also, this study, unlike other studies, examined the strength of the relationship of alexithymia and PTSD relative to other psychiatric disorders. The finding that PTSD was significantly related to higher levels of alexithymia independent of BPD is against the notion that alexithymia is a preexisting personality trait that facilitates the expression of PTSD in response to trauma. Likewise, the finding that BPD was related to alexithymia, independent of PTSD, does not support previous speculations that PTSD may induce the formation of borderline characteristics, in particular in the domain of affect dysfunction. Further research is needed to examine if the etiology and role of alexithymia is similar in both these disorders.

There are several explanations for the finding of a relationship between PTSD and alexithymia. This study supports Krystal's (1988) view that trauma survivors have a reduced ability to utilize affect as a signal for mobilizing adaptive responses. Alternatively, alexithymia may be a function of PTSD. Possibly, the profound and persistent symptoms of PTSD disturb the individual's emotion-processing and emotion-regulating capacities. Because most patients in this study reported longstanding PTSD, alexithymia is perhaps associated with chronic PTSD or chronic psychiatric illness, in general. Finally, it is possible that common pathogenic factors are related to the presence of both alexithymia and PTSD, such as childhood neglect.

Irrespective of whether or not alexithymia is a specific feature of PTSD, the relationship between alexithymia and PTSD found in this and other studies suggests

that treatment that targets affect regulation skills, such as Dialectical Behavior Therapy (Linehan, 1993), may be effective in reducing distress in patients with PTSD. The question that remains, however, is if these treatments would result in significant changes in PTSD status. Recently, a study showed that a group treatment designed to address deficits in affect management compared to a wait-list control group was beneficial in reducing symptoms of PTSD in women with PTSD and a history of childhood sexual abuse (Zlotnick et al., 1997).

Another key finding of this study was that greater severity of physical and emotional neglect were those childhood traumas that were independently related to higher levels of alexithymia. Studies have previously identified affect dysregulation as a prominent sequelae of early trauma, in particular sexual and physical abuse (van der Kolk et al., 1996; Zlotnick, 1997; Zlotnick et al., 1996). However, these studies did not assess for childhood neglect, nor did these studies assess the differential role of the various forms of early trauma.

Some researchers have suggested that early traumas such as physical and sexual abuse are likely to lead to affect dysregulation because the excessive stimulation of the central nervous system as a result of this early trauma exposure kindles ongoing neural circuits of affect arousal that are difficult to dampen (Krystal, 1988). Alternative views on the etiology of affect dysregulation support our finding that childhood neglect (underarousal) is related to alexithymia levels. Theoretical formulations on the development of affect regulation have suggested that the insensitivity and emotional unresponsiveness of a caretaker to the child's needs contributes to emotional dysregulation because the caretaker fails to teach the child how to label emotions with words, to discriminate his or her own and others' emotions, and to trust his or her own emotional responsiveness as valid interpretations of events (Linehan & Kehrer, 1993). Research has also shown that when the caretaker is unavailable to the child or inadequately attuned to the child's affective cues, the child is less adept at organizing and regulating affect (Stern, 1985).

Finally, the study found that, among those variables related to alexithymia (i.e., PTSD, BPD, number of traumatic experiences, and childhood neglect), BPD was the most powerful factor associated with a higher degree of alexithymia. To date, no study, has examined alexithymia in individuals with a diagnosis of BPD, or the relative contribution of BPD to alexithymia. The finding of a strong relationship between BPD and alexithymia is consistent with current formulations of BPD, that affect dysregulation (a difficulty in regulating affect) is central to the disorder (Linehan, 1993). The alexithymia construct focuses on cognitive characteristics in the subjective and interpersonal realms. More specifically, alexithymia refers to a failure in the identification and verbal communication of emotions through cognitive processing (Taylor et al., 1997). In understanding the phenomenon of BPD, alexithymia, rather than affect dysregulation, might be a more meaningful and comprehensive concept. Future research should determine whether alexithymia is a core and discriminating feature of BPD or a general feature of personality disorders.

There are several limitations to this study. First, this study did not examine if other disorders, such as somatization, partially account for the relationship between alexithymia and PTSD. This study was unable to include somatization because of the small sample size of patients with this disorder. Second, this study had a cross-sectional design that precludes a causal relationship between early trauma and alexithymia in adulthood. In addition, the positive association between alexithymia levels and childhood neglect found in this study could be explained by other aversive childhood experiences (such as maternal loss) or an interaction of these stressors. Prospective, longitudinal studies of community samples are needed to clarify the distinct role of various traumas in the development of alexithymia. Third, although the study controlled for educational level, the study did not control for other factors, such as income and occupational status, which have been found to be related to alexithymia levels (Kauhanen, Kaplan, Julkunen, Wilson, & Salonen, 1993). Fourth, the psychometric properties of the measure of trauma exposure used in this study are unknown. Furthermore, because the measure of trauma exposure involved an open-ended question, the complete range of traumatic events was not systematically assessed. Therefore, the number of traumas reported in this study may have been underestimated. Fifth, the construct validity of the measure of childhood abuse and neglect, the CTQ, used in this study has not been established. Also, this study relied on patients' reports of abuse and neglect without any independent corroborating evidence. Because the veracity of these retrospective reports of childhood abuse and neglect cannot be ensured, potential confounding factors exist in this study.

Despite these limitations, the present study highlights the relationship between alexithymia and a diagnosis of PTSD in general psychiatric outpatients and that this relationship cannot be explained solely by the presence of other psychiatric disorders, including BPD, that have been linked to alexithymia. This study also contributes to the literature by demonstrating that childhood neglect, as opposed to other early traumas, is related to alexithymia levels: a finding that supports a longheld view that childhood neglect plays an important role in the development of alexithymia. Last, this study's finding that BPD was strongly associated with alexithymia beyond the effects of childhood neglect and PTSD provides some empirical evidence for current theoretical formulations that alexithymia is a central feature of BPD.

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