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Early Childhood Trauma and Disorders of Extreme Stress as Predictors of Treatment Outcome with Chronic Posttraumatic Stress Disorder

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History of early childhood trauma was prevalent and highly correlated with Disorders of Extreme Stress Not Otherwise Specified (DESNOS) in a sample of veterans in inpatient treatment for chronic posttraumatic stress disorder (PTSD). DESNOS predicted reliable change on a variety of measures of psychiatric symptomatology (including PTSD) and psychosocial functioning independently of the effects of PTSD diagnosis and early childhood trauma history. DESNOS also predicted treatment outcome on PTSD and quality of life measures after controlling for the effects of ethnicity, war zone trauma exposure severity, initial level of symptomatic severity or quality of life, Axis I (PTSD and major depression) and Axis II (personality disorder) diagnostic status, and early childhood trauma history. Early childhood trauma was not predictive of outcome. DESNOS appears to play an important role in assessment and treatment planning for psychotherapeutic rehabilitation of chronic PTSD.

KEY WORDS: posttraumatic stress disorder; childhood trauma; disorders of extreme stress not otherwise specified; treatment outcome.

Evaluations of the effectiveness of intensive treatment programs for survivors of traumatic abuse have reported mixed and often weak results with military veterans (Fontana & Rosenheck, 1997; Funari, Piekarski, &

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Sherwood, 1991; Hammarberg & Silver, 1994; Hyer, Woods, Bruno, & Boudewyns, 1989; Johnson et al., 1996; Munley, Bains, Frazee, & Schwartz, 1994; Perconte & Griger, 1991; Scurfield, Kenderdine, & Pollard, 1990; Solomon, Shalev et al., 1992), adult civilians (Hall, Mullee, & Thompson, 1995), and children (Berliner & Saunders, 1996; Deblinger, Lippmann, & Steer, 1996; Kolko, 1996). Controlled trials of trauma-focused PTSD treatment have been more encouraging (Solomon, Gerrity, & Muff, 1992), but replication is rare and most positive findings involve relatively acute or subclinical rather than chronic PTSD. Even the best results from controlled trials indicate that a majority of adults with chronic PTSD do not complete or benefit from intensive psychotherapy (see below). The present study explores two complementary strategies to address this dilemma: first, identifying treatment responders so as to proactively match similar individuals with the target intervention in the future, and second, identifying characteristics of nonresponders that can guide development of alternative interventions. From the perspective of aptitude-treatment interaction research (Snow, 1991), explaining and remediating treatment nonresponse depends upon the identification of measurable features of treatment recipients that interact variably with the treatment outcome. Two characteristics that may have promise for optimizing treatment with chronic PTSD are history of early childhood trauma and the associated syndrome known as "Disorders of Extreme Stress Not Otherwise Specified" (DESNOS) or "complex PTSD" (Herman, 1992).

PTSD that lasts (or emerges on a delayed basis) more than approximately 16–18 months following trauma tends to be chronic and refractory to treatment because of persistent symptoms and deteriorating psychosocial adjustment (Friedman & Rosenheck, 1996). Chronic PTSD tends to be characterized by fluctuations in symptomatic severity and periods of remission, but rarely by more than partial recovery (Ronis et al., 1996). The most successful controlled trials of treatment of chronic PTSD have been done with male military veterans, comparing cognitive-behavioral interventions (total $N = 52$) with individual supportive counseling, medication-only, or usual-care treatments (total $N = 44$; Boudewyns, Hyer, Woods, Harrison, & McCranie, 1990; Cooper & Clum, 1989; Keane et al., 1989). Two of these studies identified participants who showed a clear favorable response to treatment ($N = 7$ in Keane et al., 1989; $N = 7$ in Boudewyns et al., 1990), representing 43% of their participants receiving cognitive-behavioral treatment. The number or percentage of favorable responders was not reported by Boudewyns et al. (1990) or Cooper and Clum (1989). Across all four studies, 32 participants refused or dropped out, 25% of their potential samples. Thus, no more than one in three of these veterans with chronic PTSD completed the trials of cognitive-behavioral treatment and showed

clear benefit. However, the "improvers" did show strong evidence of reduced PTSD symptoms from multiple perspectives (e.g., self- and therapist-ratings, reduced trauma-cued reactivity and avoidance). Exactly what distinguishes the "improvers" from the nonresponders is still unclear.

Recent studies with treatment-seeking war zone military veterans have demonstrated that early childhood trauma is prevalent (Bremner, Southwick, Johnson, Yehuda, & Charney, 1993; Engel et al., 1993; Zaidi & Foy, 1994) and is associated with particularly severe intrusive reexperiencing of PTSD symptomatology (Kidd, Ford, & Nasby, 1996). Research on cumulative trauma (Follette, Polusny, Bechtle, & Naugle, 1996; Turner & Lloyd, 1995) and the developmental impact of trauma (Cicchetti & Toth, 1995; Kendall-Tackett, Williams, & Finkelhor, 1993; Westen, Lohr, Silk, Gold, & Kerber, 1990; Westen, Ludolph, Block, Wixom, & Weiss, 1990) show that childhood trauma has lasting adverse impacts upon psychiatric status and psychosocial adjustment. Military veteran survivors of childhood trauma have prevalent problems with affect regulation (e.g., rage, shame), impulse regulation (e.g., self-harm, risk taking), relational engagement (e.g., intimacy, trust, assertive communication), self-efficacy and self-esteem, and pathological dissociation (Bremner, Southwick, & Charney, 1995). These symptomatic and functional impairments are precisely the core constituents of DESNOS.

DESNOS is conceptualized as a constellation of chronic problems with the regulation of self, consciousness, and relationships that is not formally recognized as a diagnostic entity (American Psychiatric Association [APA], 1994). DESNOS is hypothesized to occur when extreme traumatization compromises the fundamental sense of self and relational trust at critical developmental periods (e.g., child abuse; Herman, 1992; van der Kolk et al., 1996), and therefore has been posited to be a set of "associated features" of PTSD linked to interpersonal childhood trauma (Roth, Newman, Pelcovitz, van der Kolk, & Mandel, 1997). DESNOS is formally defined by a set of seven criteria operationalized in the form of a "Structured Interview for Disorders of Extreme Stress" (Pelcovitz et al., 1997): alterations in affect or impulse regulation (e.g., severe anger, suicidality, risk taking); alterations in consciousness or attention (e.g., pathological dissociation); alterations in self-perception (e.g., self viewed as damaged, shamed, or misunderstood); alterations in perception of the perpetrator (i.e., distorted view of an abuse perpetrator, if applicable); alterations in relations with others (e.g., distrust, revictimization, victimizing others); somatization (e.g., unexplained or exacerbated physical complaints); and, alterations in systems of meaning (e.g., hopelessness; distorted beliefs).

A clinical study of ten treatment-seeking veterans with chronic PTSD, most of whom had histories of childhood abuse, reported high (i.e., 75%+)

prevalences of DESNOS symptoms (Newman, Orsillo, Herman, Niles, & Litz, 1995). Problems with modulation of affect and anger, dissociative "spacing out," amnesia, inability to trust, despair, hopelessness, feeling permanently damaged and misunderstood, and a loss of sustaining beliefs were almost universal in this sample. Many also exhibited dissociative derealization, shame, guilt, and fear of loss of control due to anger or violent impulses. Although suggesting that DESNOS is prevalent in veterans in treatment for chronic PTSD, the study did not investigate treatment outcome and did not assess comparison samples (a) with no history of childhood trauma and (b) not classified as DESNOS. The present study evaluates the contribution of childhood trauma history and DESNOS to treatment outcome over and above the effects of PTSD diagnostic status and psychiatric severity, with a larger sample of chronically posttraumatically impaired military veterans.

A prior report (Ford, Fisher, & Larson, 1997) identified patient object relations (as rated by clinicians) and PTSD as predictors of treatment outcome with the sample, outcome measures, and treatment program used in this study. Moderate (versus low) object relations were predictive of reliable positive change independent of demographics, personality disorder diagnosis, baseline symptom severity, or trauma exposure. Veterans with PTSD and moderate object relations levels showed substantial positive gains, while those with lower object relations levels tended to be unchanged if they had PTSD and to deteriorate if they did not have PTSD. Pretreatment symptomatic severity accounted for significant outcome variance and substantial variance in treatment outcome remained unexplained. Given the possibility that DESNOS may be a factor in the severity of posttraumatic psychiatric symptomatology (Roth et al., 1997), further analyses were conducted to examine the role of DESNOS (and its correlate, early childhood trauma) as a predictor of treatment outcome.

Method

Participants

As reported by Ford et al. (1997), 74 of 75 consecutive admissions to a Department of Veterans Affairs inpatient PTSD Residential Rehabilitation Program (PRRP) participated. All were male, ranging in age from 28 to 67 (M = 48.0, SD = 5.9) and education from 10th grade to Masters level (M = 12.5 years, SD = 1.4). Most (82%) were Caucasian, with 15% Native American and 3% Latino veterans. Most participants (90%) served in Vietnam, and all had definite war trauma exposure and extensive histories of alcohol/substance abuse (but were abstinent at baseline).

Measures

For PTSD diagnosis, the first author conducted the Structured Clinical Interview for DSM-III-R (SCID-P) PTSD module (Spitzer, Williams, Gibbon, & First, 1990a) with each participant. In 20 randomly selected cases, a psychiatrist conjointly conducted the PTSD interview. PTSD diagnoses were identical in 19 of 20 cases (kappa = .91, $p < .001$). Forty-four participants (60%) qualified for current military-related PTSD. All participants had experienced trauma in war zone military duty qualifying for DSM-IV's Criterion A and had pervasive avoidance and emotional numbing symptomatology (Foa, Riggs, & Gershuny, 1994), but a substantial minority did not show trauma-related reexperiencing or hyperarousal symptomatology on the SCID-P.

Participants not meeting formal criteria for PTSD diagnosis were included in the study for two reasons. First, they were comparable to participants meeting PTSD diagnostic criteria in having documented military trauma histories and chronic anxiety- and mood-related symptoms and psychosocial impairment. Second, they may constitute a sizable proportion of patients with chronic postmilitary adjustment problems and thus their inclusion provides a representative sample of this large subpopulation of chronically posttraumatically impaired adults (Fontana & Rosenheck, 1997). Moreover, most met criteria for "partial" PTSD, which is associated with substantial impairment (Stein, Walker, Hazen, & Forde, 1997). All analyses described below were repeated excluding the subsample of PRRP patients not meeting PTSD diagnostic criteria, and the pattern of results was unchanged from that obtained with the full sample.

For DESNOS classification, the Structured Interview for Disorders of Extreme Stress (SIDES; Pelcovitz et al., 1997) was administered by the first author. Perceptions of a defined perpetrator (scale IV) could not be assessed for more than half of all participants so, consistent with Pelcovitz et al. (1997), this feature was excluded. Almost all participants had severe health problems associated with chronic and/or acute medical conditions that fulfilled the psychogenic somatization feature (Scale VI; Pelcovitz et al., 1997). Therefore, DESNOS classification in this study was based upon fulfilling criteria for each of the remaining five SIDES scales: (I) regulation of affect and impulses, (II) attention or consciousness, (III) self-perception (e.g., self as damaged or ineffective, shame, guilt), (V) relations with others (e.g., distrust, victimization), and (VII) systems of meaning (e.g., hopelessness). Consistent with psychometric findings reported by Pelcovitz et al. (1997), SIDES subscale internal consistency levels were acceptable in the present sample with Cronbach's alphas: Scale I (.93); Scale II (.80); Scale III (.74); Scale V (.88); and Scale VII (.86). Interrater reliability was es-

tablished by independent SIDES ratings by the second author, who was blind to PTSD diagnosis and psychometric questionnaire results, yielding diagnostic agreement in 14 of 15 randomly selected cases (kappa = .87, $p < .001$).

For Axis I and II psychiatric diagnoses the SCID-P (Spitzer et al., 1990a) and SCID-II (Spitzer et al., 1990b) modules were coded by the first author, with independent corroboration by one of two psychiatrist raters for a third randomly selected sample of 20 cases. Interrater agreement was high for the most frequently occurring current Axis I diagnosis other than PTSD, major depression (39% prevalence, kappa = .81, $p < .001$). Axis II diagnoses were present for 38% of participants, primarily antisocial personality disorder (23% prevalence, kappa = .67, $p < .001$) or mixed other Axis II diagnoses (15% prevalence, kappa = .65, $p < .001$).

Questionnaire measures. Self-report measures with documented internal consistency, temporal stability, and convergent or criterion validity were utilized to assess symptom severity and psychosocial adjustment. The Mississippi Scale for Combat-Related PTSD (Keane, Caddell, & Taylor, 1988) and the Penn PTSD Scale (Hammarberg, 1992) assessed general level of PTSD symptomatology and associated psychosocial impairment, while the Impact of Event Scale Intrusion (IES-I) and Avoidance (IES-A) subscales (Weiss & Marmar, 1997) assessed specific PTSD symptomatology. The trait subscale of the State-Trait Anxiety Inventory (STAI) assessed generalized physiologic and cognitive features of anxiety (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983). The Beck Depression Inventory (BDI) assessed depressive symptoms (Beck, Steer, & Garbin, 1988). Psychosocial adjustment was assessed by (a) the Quality of Life Inventory (QoLI; Frisch, Cornell, Villanueva, & Retzlaff 1992), a measure of the importance and perceived satisfaction of 17 domains of functioning (e.g., self-esteem; work) and social network (e.g., family; community), and (b) the Self-Control Schedule (Rosenbaum, 1980), a measure of self-appraised ability to respond proactively and effectively to stressors and opportunities in life.

For war zone trauma exposure, a dichotomously scored version of the Combat Exposure Scale (Keane, Fairbank, Caddell, Zimering, Taylor, & Mora, 1989) was utilized to quantify severity of war zone trauma exposure based upon: hazardous duty, subject to enemy fire, being surrounded by the enemy, more than 25% of the soldiers in one's unit killed, wounded or missing in action, seeing others hit by incoming rounds, and being in danger of being severely injured or killed. The composite scale, which ranged from 0 to 7 ($M = 5.5$, $SD = 2.1$), was internally consistent (alpha = .88) and stable over a 1 to 3 month retest ($n = 14$, $r = .95$, $p < .001$). War zone trauma scores ranged from 1 to 7. Independent clinician ratings

following a detailed military history for a sample of 24 participants showed convergence with war zone trauma self-ratings ($r = .82$, $p < .001$).

A reliably rated (Ford et al., 1997) clinician interview measure of early childhood trauma exposure was derived from lifetime trauma measures developed by Resnick, Kilpatrick, Dansky, Saunders, and Best (1993) and Weaver and Clum (1993) using a structured interview format similar to that validated by Bremner et al. (1993). If any of three reliably rated types of traumatic events (severe physical abuse, $n = 32$, kappa = .89; sexual abuse, $n = 4$, kappa = 1.00; witnessing family violence or deaths, $n = 14$, kappa = .77; all $p < .001$) had occurred before age 7, the participant was classified as positive for early childhood trauma.

Setting and Procedure

Ford et al. (1997) provide a more detailed description, but in brief, at entry, participants were assessed by (a) independent structured interviews of PTSD, Axis I and II diagnoses, DESNOS, and early childhood trauma, and (b) questionnaires regarding combat exposure, level of perceived self-control and quality of life, and severity of PTSD, depressive, and anxiety symptoms. At a posttest following inpatient treatment, all questionnaires were readministered.

The treatment program provided intensive multimodal care in a 3-month inpatient stay[4] with a mix of exploratory-expressive, behavioral practice, and psychoeducational modalities and foci similar to those of "second generation" PTSD programs (Johnson, Rosenheck, & Fontana, 1997): war zone experiences (10% of program time), life skills (33%), current relationships (25%), and PTSD symptom management skills (16%). Individual psychotherapy was provided on a once or twice weekly basis for each participant by one of six clinicians experienced in the treatment of chronic PTSD ($M = 9.0$ years). This therapist served as the participant's clinical case manager, developing and overseeing an individualized evaluation, treatment and rehabilitation plan for: (a) here-and-now coping skills, (b) community reintegration, and (c) therapeutic exposure and narrative reconstruction of unresolved trauma from any developmental epoch. Group therapy was conducted in a 4-times-weekly "process group" designed to help each veteran to experiment with, elaborate, integrate, and reinforce (with peer validation) skills for fear reduction, affect regulation, and self-schema consolidation (Harvey, 1996). An array of psychoeducational classes and *in vivo* experiences was programmed daily or weekly, covering the following core areas of PTSD rehabilitation: trauma, the body, and health; family relationships; intimate relationships; dreams, nightmares, and sleep hy-

[4]A clinician guide to the multimodal treatment protocol is available from Julian D. Ford.

Table 1. Sample Demographic Characteristics and Outcome Measures as a Function of Early Childhood Trauma and DESNOS Classification

	Early Trauma History/DESNOS Status			
	Trauma+ DESNOS+ n = 32	Trauma+ DESNOS- n = 9	Trauma- DESNOS+ n = 11	Trauma- DESNOS- n = 22
Age	48.3 (5.0)	48.9 (7.2)	47.1 (6.4)	47.7 (6.0)
Education	12.2 (0.5)	12.4 (1.1)	12.5 (1.3)	12.7 (2.2)
% Married	38	34	36	36
% Ethnic minority	28	11	18	5
War zone trauma	5.5 (1.3)	5.9 (1.2)	6.3 (1.2)	5.4 (1.3)
Mississippi Scale				
Pretest	129 (18)	122 (12)	124 (22)	126 (14)
Posttest	129 (16)	119 (13)	129 (15)	119 (14)
Penn PTSD Scale				
Pretest	51 (10)	47 (9)	46 (12)	50 (10)
Posttest	50 (9)	44 (9)	47 (9)	44 (7)
Impact of Events Scale-Intrusion Subscale				
Pretest	33 (4)	31 (3)	27 (5)	24 (5)
Posttest	32 (4)	29 (3)	29 (6)	23 (5)
Impact of Events Scale-Avoidance Subscale				
Pretest	33 (5)	31 (3)	27 (4)	25 (4)
Posttest	33 (6)	28 (4)	29 (4)	23 (7)
State-Trait Anxiety Inventory Trait Anxiety Scale				
Pretest	60 (9)	60 (7)	59 (9)	62 (9)
Posttest	59 (10)	56 (11)	59 (8)	57 (9)
Beck Depression Inventory				
Pretest	29 (10)	26 (6)	27 (9)	28 (9)
Posttest	26 (8)	23 (7)	26 (7)	23 (10)
Quality of Life Inventory				
Pretest	1.4(0.4)	-1.2 (0.4)	-1.2 (0.5)	-1.2 (0.4)
Posttest	-0.6 (0.4)	+0.2 (0.8)	-1.0 (0.9)	+0.4 (0.7)
Self-control schedule				
Pretest	12 (9)	4 (7)	8 (17)	17 (11)
Posttest	21 (9)	9 (8)	11 (14)	29 (11)

Note. Data reported as Mean (Standard Deviation) or percentage. DES+ = Classified Positive for DESNOS; DES- = Classified Negative for DESNOS; Trauma+ = History of early childhood trauma; Trauma- = No History of early childhood trauma.

giene; coping with emotions; trauma symptom management; stress management; anger management; reentry to work and school; pleasure and recreation; the sobriety lifestyle; understanding and managing medications; loss and grieving; spirituality; personal journalling; and relapse prevention.

Results

Pretest questionnaire scores (Mississippi, Penn, IES-I, IES-A, STAI, BDI, QoLI, SCS) had a median intercorrelation of .38, indicating moderate collinearity (i.e., 15% shared variance) but substantial unique variance. The

IES-A and SCS were uncorrelated with any other variable. Thus the outcome measures appeared to be reasonably independent indices.

The prevalences of early childhood trauma (54%) and of DESNOS (57%) were high. Early trauma history and DESNOS were clearly intercorrelated (phi = .38, $p < .001$). Four subgroups were identified within the sample: 42% of participants had both history of childhood trauma and DESNOS; 12% had a history of early childhood trauma but were negative for DESNOS; 15% had no history of childhood trauma but met criteria for DESNOS; 31% had neither a history of childhood trauma nor met criteria for DESNOS (Table 1). The subgroups were comparable on demographics except that Native American participants were significantly more likely than Caucasians to be classified as DESNOS, 87% vs. 55%; $\chi^2(1, N = 74) = 4.6$, $p < .05$, and tended to more frequently have histories of childhood trauma, 77% vs. 52%; $\chi^2(1, N = 74) = 3.0$, $p = .08$.

Two multivariate analyses of variance (MANOVAs) for repeated measures were conducted, each with DESNOS classification and history of early childhood trauma as between-groups independent variables, and time of testing (i.e., pretest versus posttest) as a within-subjects independent variable. The first MANOVA, with the 4 PTSD scores as dependent measures, resulted in a nonsignificant multivariate interaction of DESNOS with time, $F(4, 61) = 2.10$, $p = .09$, so univariate follow-up ANOVAs were not performed. In the second MANOVA, with the 4 psychosocial distress and adjustment scores as dependent measures, DESNOS classification interacted on a multivariate basis with the pretest-posttest time period, $F(4, 60) = 2.51$, $p = .05$. Univariate tests resulted in a significant effect for the interaction of DESNOS with time of testing on two measures: the STAI, $F(1, 63) = 5.54$, $p < .05$, and the QoLI, $F(1, 63) = 5.05$, $p < .01$. Scheffe comparisons of pretest-adjusted posttest scores showed that participants not classified as DESNOS improved significantly ($p < .05$) more than participants with DESNOS on both measures. The multivariate interaction of early trauma with time of testing and the three-way interaction of early trauma, DESNOS, and time of testing, were nonsignificant in both MANOVAs (Fs < 1).

Jacobson and Truax's (1991) formula using a standard error-based change score was used to dichotomously code each participant for reliable change ($p < .05$) on each measure. Reliable gains were found for between 23 and 36% of participants on the outcome scores (median = 30%). PTSD, DESNOS and Early Trauma were examined as predictors of outcome via logistic regression analyses conducted with the reliable change classification coding for each outcome measure as the dependent variable (Table 2). Odds ratios for DESNOS show that DESNOS participants were less likely to achieve reliable change than those without DESNOS on measures of

Table 2. Prediction of Reliable Change by Logistic Regression

Outcome	% Reliable Change		Predictor: PTSD Diagnosis		% Reliable Change		Predictor: DESNOS Classification	
	PTSD+	PTSD-	OR[a]	95% CI[b]	DESNOS+	DESNOS-	OR[a]	95% CI[b]
Mississippi PTSD Scale	43	04	28.14*	3.04–256.78	08	47	0.04*	0.01–37
Penn PTSD Inventory	38	04	21.10*	7.08–189.65	06	44	0.06*	0.01–0.09
IES-Intrusion Subscale	41	08	9.45*	1.86–49.12	12	44	0.13*	0.07–0.57
IES-Avoidance Subscale	33	04	17.49*	1.86–159.66	03	41	0.04*	0.01–0.37
State Trait Anxiety Inv.	45	12	7.31*	1.71–31.09	15	50	0.15*	0.04–0.56
Beck Depression Inv.	29	26	1.02	0.32–3.12	17	38	0.35	0.11–1.11
Quality of Life Inv.	50	22	3.37*	1.08–9.60	26	53	0.28*	0.09–0.89
Self-Control Scale	48	04	2.32	0.67–8.02	15	47	0.23*	0.05–0.98

Note. Odds ratio adjusted for early trauma and the other predictor variable (PTSD diagnosis or DESNOS classification); % Reliable Change = Percent of participants achieving reliable change on the outcome measure; DESNOS+ = Classified Positive for DESNOS; DESNOS- = Classified Negative for DESNOS.

[a]OR = Odds Ratio.

[b]95% CI = 95% Confidence Interval.

*$p < .05$.

Table 3. Prediction of Treatment Outcome by Hierarchical Linear Regression

Outcome Variables	Model R^2	ΔR^2	Outcome Variables	Model R^2	ΔR^2
Mississippi PTSD Scale			Quality of Life Inventory		
First step	.42	.42*	First step	.22	.22*
Second step	.50	.08*	Second step	.31	.09*
Third step	.62	.12*	Third step	.45	.14*
Penn PTSD Scale			State Trait Anxiety Inventory		
First step	.40	.40*	First step	.56	.56*
Second step	.58	.18*	Second step	.60	.04
Third step	.60	.02	Third step	.60	.00
IES-Intrusion			Beck Depression Inventory		
First step	.53	.53*	First step	.43	.43*
Second step	.64	.11*	Second step	.49	.06*
Third step	.67	.03*	Third step	.50	.01
IES-Avoidance			Self-Control Scale		
First step	.48	.48*	First step	.56	.56*
Second step	.59	.11*	Second step	.62	.06*
Third step	.70	.11*	Third step	.63	.01

Note. Predictors entered in the following blocks in three hierarchical steps: (1) ethnicity, baseline score, war zone trauma; (2) PTSD, depression, and personality disorder diagnoses; and, (3) DESNOS.
*$p < .001$.

PTSD, quality of life, anxiety, and self-control. For example, DESNOS was associated with a 77% lesser likelihood of reliable change on the Self Control Scale and an 87% lesser likelihood of reliable change on the IES-I. By contrast, PTSD was associated with an increased likelihood of reliable change on PTSD scores, anxiety, and quality of life. Early Trauma was not predictive of any measure's reliable change.

Hierarchical multiple regression analyses paralleling those reported by Ford et al. (1997) were conducted to evaluate DESNOS's unique contribution to predicting posttest scores. Predictors were entered as blocks in three successive steps: (a) baseline score of the outcome variable; ethnicity (Caucasian vs. non-Caucasian), and war zone trauma exposure; (b) diagnostic status (present vs. absent) of PTSD, major depression, and personality disorder; and (c) DESNOS classification. DESNOS was inversely predictive of posttest scores, after controlling for the contributions of all other predictors, on three PTSD measures (Mississippi Scale, IES-I, IES-A) and on the Quality of Life Inventory (Table 3). DESNOS uniquely accounted for between 3-14% variance (median = 11%) in posttest outcome on these measures. PTSD diagnosis was predictive of posttest scores on three PTSD measures (Penn Inventory, IES-I, IES-A) and on the Self-Control Scale. Baseline scores were significant predictors of posttest scores on all measures. Depression diagnosis was predictive of posttest outcome on

the Beck Depression Inventory. Ethnicity, war trauma, and Axis II diagnosis were not predictors for any outcome measure.

Discussion

DESNOS emerged as a consistent and robust predictor of poor inpatient PTSD treatment outcome, and a history of early childhood trauma did not. Whereas PTSD diagnosis predicted an increased likelihood of clinically meaningful change, DESNOS predicted a substantially decreased likelihood of clinically meaningful change. Specifically, the presence of DESNOS was associated with an absence of therapeutic change, while the absence of DESNOS was associated with evidence of therapeutic change. When outcome was operationalized as multivariate change from pretest to posttest, the absence of DESNOS was associated with improvement on measures of quality of life and anxiety. In the reliable change analyses, DESNOS predicted a dramatically decreased likelihood of improvement on several PTSD scores and on quality of life. Finally, DESNOS predicted poorer self-reported PTSD and quality of life outcome over and above the effect of baseline score, prior level of trauma exposure (in war zone or early childhood), ethnicity, and Axis I (PTSD or major depression) or Axis II diagnosis.

Thus, assessment and treatment for chronic PTSD may need to focus not only on PTSD's cardinal fear, avoidance, and hyperarousal symptoms but also on complex alterations (Yehuda & McFarlane, 1995) in affect regulation, consciousness, interpersonal engagement, and meaning/spirituality—even when the most prominent trauma exposure initially reported involves war experiences in adulthood rather than childhood trauma. This conclusion has several precedents and implications.

Trauma experienced at early points in psychological development may severely compromise the survivor's core sense of self (Kohut & Wolf, 1978) and capacity for secure attachment (Cicchetti & Toth, 1993), as well as fundamental self and relational schemata (McCann & Pearlman, 1990). As a result, fear of harm or death may be infused with an additional sense of terror in the face of betrayal (Freyd, 1994) or of irreparable psychic damage (Roth et al., 1997). Should this be a survivor's frame of reference, the treatment of fear-based PTSD by therapeutic re-experiencing of trauma memories and associated emotions in a narrative-building and control-enhancing manner (e.g., therapeutic exposure) may need to be preceded and/or accompanied by intervention bolstering the survivor's capacities to ego-syntonically manage pathological dissociation and cognitive schemata, and primitive affect states and impulses.

Furthermore, avoidant and emotional numbing symptomatology in DESNOS appears to be complicated by pathological dissociation (van der Kolk et al., 1996) and fragmentation of normal memory (van der Kolk & Fisler, 1995), as well as by the conscious avoidance and alexithymia characteristic of PTSD (Kosten, Krystal, Giller, Frank, & Dan, 1992). DESNOS also is typified by *hypo*arousal and a sense of impotent helplessness in the face of betrayal and malevolence, as opposed to the energizing (although dysfunctional) hyperarousal and hypervigilance characteristic of PTSD (van der Kolk et al., 1996). Although intended to help survivors therapeutically experience trauma memories and associated bodily and affective reactions (Foa, Molnar, & Cashman, 1995) with increasing conscious awareness (Marmar et al., 1995), trauma-focused treatment may inadvertantly expose patients with DESNOS to overwhelming affects that elicit dissociative avoidance—and thus to instantiate traumatization rather than fostering a therapeutic course of cognitive-behavioral habituation or dynamic-interpersonal working through. The apparent indifference and numbing of DESNOS may conceal a profound reactivity that must be managed therapeutically when treatment involves reworking of trauma or posttraumatic sequelae.

Affect dysregulation has been described as a cardinal feature of chronic war zone-related PTSD, in particular problems modulating anger (Chemtob, Hamada, Roitblatt, & Muraoka, 1994). Consciously recognized levels of anger may not be as problematic in DESNOS as a more implicit and automatic sense of self-protective hostility and rage (Herman, 1992). Therapeutic or educational approaches to anger management with chronic PTSD may require attention to skills for identifying and gaining autonomous control over subtler states of mind that are precursors to sudden and overwhelming states of primitive rage, as well as to skills for coping with recognized anger.

The fact that a history of early childhood trauma was not associated strongly with treatment outcome may be due to its substantial correlation with DESNOS. Assessment of early childhood trauma history may be a key to identifying patients for whom thorough evaluation and treatment planning with regard to DESNOS are especially warranted. Although in programs such as the PRRP military trauma tends to be the focus of treatment, memories or military trauma and its sequelae often are more readily reconstructed and understood in the context of traumagenic states of mind (Kendall-Tackett et al., 1993) such as feeling betrayed, victimized or stigmatized. Thus, a focus on understanding how childhood trauma can exacerbate intrusive reexperiencing of military-related trauma memories and affect states, and empathic (Kohut & Wolf, 1978) as well as pragmatic cognitive-behavioral assistance in gaining a sense of control in the face of these

formerly overwhelming symptomatic exacerbations, may enable patients who might otherwise be unable to tolerate DESNOS symptomatology to benefit from intensive treatment.

Over and above the effects of childhood trauma history *per se*, DESNOS appeared to be an impediment to therapeutic change. The negative prognostic capacity of DESNOS was independent of PTSD diagnostic status. In fact, DESNOS was uncorrelated with PTSD diagnosis, and independently predictive of reliable change and posttest scores after controlling for PTSD diagnostic status and predictive of outcome on PTSD measures after controlling for baseline PTSD symptom severity. Nor was the DESNOS effect accounted for by personality disorder diagnosis. Both the severity of psychiatric symptomatology (Luborsky et al., 1993) and of PTSD *per se* (Follette, Alexander, & Follette, 1991), as well as personality disorder diagnoses (Reich & Vasile, 1993), have been linked to treatment outcome in several prior studies. None of these indices, however, facilitates an individualized treatment "formulation" (Horowitz, Eells, Singer, & Salovey, 1995). Although personality disorder diagnoses were warranted for a substantial minority of this study's participants, consistent with other findings concerning military veterans with chronic PTSD (Southwick, Yehuda, & Giller, 1993), DESNOS offers an additional approach to assessment formulation and treatment planning that appears to capture unique outcome variance.

Our findings suggest that DESNOS may provide an empirical basis for outcome-relevant treatment formulations with chronic PTSD. In addition to formulations based upon reprocessing of fear-based associative networks and associated therapy techniques such as direct therapeutic exposure (Foa, Riggs, et al., 1995), DESNOS draws clinicians' attention to the potentially overwhelming phenomenological and physiological character of intrusive trauma reexperiencing. Variants of self psychology (Kohut & Wolf, 1978; Parson, 1988) may be of value with DESNOS disturbances of self in which PTSD and psychiatric distress are complicated by dysregulation of primitive affects and dissociative or other forms of primitive avoidance. Incorporation of moral and spiritual issues immediately within core psychotherapy (Lifton, 1979), as opposed to as an external adjunct or afterthought, also may address the sense of shame and emptiness in DESNOS.

Characterologically based formulations emphasizing supportive and educative interventions, such as dialectic behavior therapy (Linehan, Tutek, Heard, & Armstrong, 1994), target Axis II features related to yet distinct from DESNOS (e.g., impulsivity, dependency, parasuicidality, or psychopathy). Including DESNOS in assessment and treatment formulation may enable treatment of trauma survivors who present with such Axis II features to also address issues such as extremes of numbing and hypervigilance, de-

pressive hopelessness and shame, and terror based upon a sense not only of impending physical harm or death but of annihilation. Ecologically based (Harvey, 1996) and recovery-focused (Herman, 1992) psychotherapies explicitly deal with DESNOS by establishing a context of safety in which to re-examine one's own body, thoughts and feelings, and safety and intimacy with trusted others. Variants of the interpersonal model (Frank & Spanier, 1995) also may permit formerly overwhelming impulses and self-defeating interpersonal styles to be affectively as well as rationally re-constructed via relational problem solving. Therapeutic attention to DESNOS thus may provide a "holding environment" (Parson, 1988) in which trauma-focused and cognitive-behavioral treatment methods can be utilized without iatrogenic results. A focus on defining DESNOS also may be a basis for treatment of the object relational deficits that are associated with poor response to intensive PTSD treatment (Ford et al., 1997). Assessing DESNOS opens the option of differential treatment planning and patient-treatment matching, although any prescription of such approaches to individualizing treatment must await empirical evidence.

The study has several limitations. The sample size was relatively small and the setting was a single inpatient PTSD treatment program. Longterm posttreatment outcomes were not assessed. Given the potentially complex multivariate relationships among personal characteristics (e.g., ethnicity, trauma history), PTSD, DESNOS, and comorbid Axis I and II diagnoses, a larger and more varied sample and a longitudinal assessment of pre- and posttreatment clinical course is advisable for future study. For example, the nonsignificant MANOVA interaction effect for DESNOS and time of assessment may have been due, in part, to insufficient power. Means at pretest and posttest for the PTSD scales (Table 1) suggest that participants with DESNOS failed to change but those without DESNOS showed improvement—which was consistent with findings of the regression analyses.

The Axes I and II diagnoses were assessed by a single clinician, albeit with independent and blind reliability checks. Although childhood trauma history was thoroughly and specifically determined by combining structured inquiry (Bremner et al., 1993) with sensitive clinical history taking using carefully worded trauma probes (Resnick et al., 1993; Weaver & Clum, 1993), the resultant dichotomous measure may not have had the precision or variability to adequately test its relation to treatment outcome. However, dichotomous scoring did not prevent PTSD diagnosis or DESNOS classification from being effective predictors of treatment outcome.

Our findings suggest that DESNOS may be a basis for identifying responders and nonresponders to treatment for chronic posttraumatic impairment. Rehabilitation of chronic PTSD involves the remediation of longstanding and pervasive Axis I symptomatic and Axis II characterologic

problems (Friedman & Rosenheck, 1996) that are likely to be exacerbated by the dysregulations of affect and impulse control, consciousness and self-organization, and essential relatedness associated with DESNOS. Thus, treatment planning may be enhanced by clinician recognition of the symptomatic intensification of PTSD for which, although early childhood trauma may serve as a marker, nevertheless DESNOS appears to best serve as a clinical and conceptual framework.

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