

## Disorders of Extreme Stress: The Empirical Foundation of a Complex Adaptation to Trauma

Bessel A. van der Kolk,<sup>1,4</sup> Susan Roth,<sup>2</sup> David Pelcovitz,<sup>3</sup> Susanne Sunday,<sup>3</sup> and Joseph Spinazzola<sup>1</sup>

---

Children and adults exposed to chronic interpersonal trauma consistently demonstrate psychological disturbances that are not captured in the posttraumatic stress disorder (PTSD) diagnosis. The *DSM-IV* (American Psychiatric Association, 1994) Field Trial studied 400 treatment-seeking traumatized individuals and 128 community residents and found that victims of prolonged interpersonal trauma, particularly trauma early in the life cycle, had a high incidence of problems with (a) regulation of affect and impulses, (b) memory and attention, (c) self-perception, (d) interpersonal relations, (e) somatization, and (f) systems of meaning. This raises important issues about the categorical versus the dimensional nature of posttraumatic stress, as well as the issue of comorbidity in PTSD. These data invite further exploration of what constitutes effective treatment of the full spectrum of posttraumatic psychopathology.

---

In the late 1970s, when hundreds of thousands of Vietnam veterans presented with serious psychiatric problems, a new diagnosis, posttraumatic stress disorder (PTSD) was created in an attempt to capture their psychopathology for inclusion in the *Diagnostic and Statistical Manual of Mental Disorders, 3rd Edition (DSM-III)*; American Psychiatric Association [APA], 1980). At that time, only a sparse literature on “traumatic neuroses” was available to guide the formulation of diagnostic criteria. Hence, the *DSM* committee had to rely on the clinical descriptions of war neuroses, particularly those by Kardiner (1941), on Horowitz’ studies of the biphasic stress response (Horowitz, Wilner, & Kaltreider, 1980), and on a few small studies of predominantly male burn victims (Andreasen & Norris, 1972) and Vietnam

veterans (Shatan, Smith, & Haley, 1977) to arrive at meaningful diagnostic criteria. Despite these humble origins, PTSD has been found to be an enormously useful diagnostic construct with wide applicability to different victim populations and with its own unique neurobiology and therapeutics.

Prior to the conceptualization of PTSD, other posttraumatic syndromes were proposed, such as a rape trauma syndrome (Burgess & Holstrom, 1974) and a battered women’s syndrome (Walker, 1984). These highlighted problems not captured in the PTSD diagnosis: the effects of assaults on victims’ sense of safety, trust, and self-worth; their frequent revictimization; and their loss of a coherent sense of self.

Epidemiological research has shown that, whereas men—the initial population studied to establish the diagnostic criteria for PTSD—most frequently are traumatized by accidents, war, assaults, and natural disasters, childhood abuse is by far the most frequent cause of traumatization in women (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Between 17 and 33% of women in the general population report histories of sexual–physical abuse

---

<sup>1</sup>The Trauma Center and Boston University School of Medicine, Boston, Massachusetts.

<sup>2</sup>Department of Psychology, Duke University, Durham, North Carolina.

<sup>3</sup>North Shore University Hospital/Cornell Medical Center, Manhasset, New York.

<sup>4</sup>To whom correspondence should be addressed at 16 Braddock Park, Boston, Massachusetts 02116; e-mail: bvanderk@aol.com.

(Finkelhor, Hotaling, Lewis, & Smith, 1990; Kessler et al., 1995), and in mental health settings, the rates range from 35 to 50% (Cloitre, Cohen, Han, & Edelman, 2001). More than twice as many women report histories of childhood sexual abuse than of (adult) rape, which occurs in approximately 10% of the general population (Breslau, Davis, Andreski, Peterson, & Schultz, 1997; Kessler et al., 1995).

Women are much more likely to be traumatized in the context of intimate relationships than men are; 63% of the almost 4 million reported assaults on males are by strangers, whereas 62% of the almost 3 million reported attacks on women in the US are by persons they know (Acierno, Resnick, Kilpatrick, Saunders, & Best, 1999). In the United States, 61% of all rapes occur before victims reach age 18; 29% of forcible rapes occur before the age of 11 (Acierno et al., 1999), usually by family members. Studies of physically and sexually abused children, as well as of women who are exposed to prolonged interpersonal violence consistently report a range of psychological sequelae that are not captured in the PTSD diagnostic criteria.

### Developmental and Relational Issues

Abuse and neglect of children are extremely common in our society, and their effects are well documented to persist over time. Each year over 3 million children are reported for abuse–neglect in the United States (Wang & Daro, 1997). Posttraumatic stress disorder may not be the most common psychiatric diagnosis in children with histories of abuse and neglect (Putnam, 2003). For example, in one study of 364 abused children (Ackerman, Newton, McPherson, Jones, & Dykman, 1998), the most common diagnoses in order of frequency were separation anxiety disorder, oppositional defiant disorder, phobic disorders, PTSD, and attention-deficit hyperactivity disorder (ADHD).

From its inception it has been clear that PTSD captures only a limited aspect of posttraumatic psychopathology, particularly in children (e.g., Brett, Spitzer, & Williams, 1988; Briere, 1988; Cole & Putnam, 1992; Scheeringa, Zeanah, Drell, & Larrieu, 1995; Scheeringa, Zeanah, Meyers, & Putnam, 2003; Summit, 1983; Terr, 1979). Many studies of traumatized children find problems with unmodulated aggression and impulse control (e.g., Burgess, Hartman, & McCormack, 1987; Cole & Putnam, 1992; Lewis & Shanok, 1981; Steiner, Garcia, & Matthews, 1997; Van der Kolk, Perry, & Herman, 1991); attentional and dissociative problems (e.g., Teicher et al., 2003); and difficulty negotiating relationships with caregivers, peers, and subsequently, marital partners (e.g.,

Finkelhor, Hotaling, Lewis, & Smith, 1989; Schneider-Rosen & Cicchetti, 1984).

Histories of childhood physical and sexual assaults also are associated with a host of other psychiatric problems in adolescence and adulthood: substance abuse, borderline and antisocial personality, as well as eating, dissociative, affective, somatoform, cardiovascular, metabolic, immunological, and sexual disorders (e.g., Breslau et al., 1997; Cloitre, Tardiff, Marzuk, Leon, & Portera, 2001; Dube et al., 2001; Felitti et al., 1997; Finkelhor & Kendall-Tackett, 1997; Herman, Perry, & Van der Kolk, 1989; Kilpatrick et al., 2000, 2003; Lyons-Ruth & Jacobovitz, 1999; Margolin & Gordis, 2000; Putnam & Trickett, 1997; Van der Kolk, Perry, & Herman, 1991; Wilson, Van der Kolk, Burbridge, Fisler, & Kradin, 1999; Zlotnick et al., 1996).

Complicated adaptations to severe and prolonged trauma are not confined to children; research with rape victims (Burgess & Holstrom, 1974), battered women (Rollstin & Kern, 1998; Walker, 1984), and concentration camp survivors (Krystal, 1968) has shown significant long-term problems in the areas of attention, self-regulation, and personality structure.

Despite the ubiquitous occurrence of numerous posttraumatic problems other than PTSD, the relationship between PTSD and these multiple other symptoms associated with early and prolonged trauma has received surprisingly little attention. In the PTSD literature, psychiatric problems that do not fall within the framework of PTSD are generally referred to as “comorbid conditions,” as if they occurred independently from the PTSD symptoms. By relegating them to seemingly unrelated “comorbid” conditions, fundamental trauma-related disturbances may be lost to scientific investigation, and clinicians may run the risk of applying treatment approaches that are not helpful (see Spinazzola, Blaustein, Van der Kolk, 2005). These concerns gave rise to an attempt to carefully delineate posttraumatic adaptations in the *DSM-IV* field trial.

### The *DSM-IV* Field Trial

The *DSM-IV* field trial for PTSD was conducted between 1990 and 1992 to (a) investigate the correct definition of the A criterion and the placement of various PTSD symptoms in the proper symptom clusters (Kilpatrick et al., 1998), and (b) to explore whether victims of chronic interpersonal trauma as a group tended to meet diagnostic criteria for PTSD or whether their psychopathology was more accurately captured by another constellation of symptoms, those commonly mentioned in the research literature on child abuse, concentration camp victims, and domestic battering that were not captured by the PTSD

criteria. The committee thoroughly reviewed the research on these populations and organized the most frequently studied symptoms under the rubric of disorders of extreme stress not otherwise specified (DESNOS; Herman, 1992).

The field trial workgroup hypothesized that (a) chronic interpersonal trauma starting at an early age gives rise to a greater prevalence of DESNOS symptomatology than either interpersonal trauma later in the life cycle or in victims of accidents and natural disasters; and (b) a substantial number of individuals with histories of childhood trauma would meet criteria for DESNOS but not for PTSD. This entire DESNOS data set has not been previously published, though other parts of the field trial—the empirical rationale for criteria A, B, C, and D (Kilpatrick et al., 1998), the interrelation of dissociation, somatization and affect dysregulation (Van der Kolk et al., 1996), the development of a rating scale to measure DESNOS (Pelcovitz et al., 1997), and the relation of childhood physical and sexual abuse to DESNOS versus borderline personality disorder (Roth, Newman, Pelcovitz, Van der Kolk, & Mandel, 1997) have been published.

## Methods

### Item Construction

The DESNOS symptom constellation was the result of a collaborative effort between two groups, one based

in New York (Spitzer, Kaplan, & Pelcovitz as cited in Pelcovitz et al., 1997), the other in Boston (see Herman & Van der Kolk, 1987). They reviewed the existing research literature on trauma in children, women victims of domestic violence, and concentration camp survivors, and generated a list of 27 symptoms frequently described in, but not addressed by *DSM-III-R* criteria for PTSD. Judith Herman (1992) arranged these 27 symptoms into seven categories (see Table 1): Dysregulation of (a) affect and impulses, (b) attention or consciousness, (c) self-perception, (d) perception of the perpetrator, (e) relations with others; (f) somatization, and (g) systems of meaning. Items were put in a structured interview format that was revised by the field trial coordinators prior to inclusion of the instrument in the field trial protocol. The measure consists of 48 items measuring lifetime and current alterations in the seven areas. Items were scored dichotomously; each question is answered with either a “yes” or “no” (Pelcovitz et al., 1997).

### Sample Selection

The PTSD field trial assessed adults and adolescents (age 15 or older) with regard to lifetime prevalence of exposure to “high magnitude” events and past year prevalence of “low magnitude” events, and the relation between exposure to these stressors and the emergence of individual PTSD and DESNOS symptoms. Most

**Table 1.** DESNOS Subcategories

|  |   |
|--|---|
| I. Alteration in Regulation of Affect and Impulses       |   |
| A. Affect Regulation                                     | D. Suicidal Preoccupation                   |
| B. Modulation of Anger                                   | E. Difficulty Modulating Sexual Involvement |
| C. Self-Destructive                                      | F. Excessive Risktaking                     |
| II. Alterations in Attention or Consciousness            |   |
| A. Amnesia   |   |
| B. Transient Dissociative Episodes and Depersonalization |   |
| III. Somatization  |   |
| A. Digestive System                                      | D. Conversion Symptoms                      |
| B. Chronic Pain  | E. Sexual Symptoms                          |
| C. Cardiopulmonary Symptoms                              |   |
| IV. Alterations in Self-Perception                       |   |
| A. Ineffectiveness                                       | D. Shame                                    |
| B. Permanent Damage                                      | E. Nobody Can Understand                    |
| C. Guilt and Responsibility                              | F. Minimizing                               |
| V. Alterations in Perception of the Perpetrator          |   |
| A. Adopting Distorted Beliefs                            |   |
| B. Idealization of the Perpetrator                       |   |
| C. Preoccupation with Hurting Perpetrator                |   |
| VI. Alterations in Relations with Others                 |   |
| A. Inability to Trust                                    |   |
| B. Revictimization                                       |   |
| C. Victimizing Others                                    |   |
| VII. Alterations in Systems of Meaning                   |   |
| A. Despair and Hopelessness                              |   |
| B. Loss of Previously Sustaining Beliefs                 |   |

participants in the sample ( $n = 400$ ) were seeking mental health treatment after exposure to high- or low-magnitude stressful life events (the treatment-seeking sample). The treatment-seeking sample was obtained through the assessment of psychiatric patients at five outpatient mental health treatment sites specializing in the provision of mental health treatment for victims of psychological trauma. These were the Medical University of South Carolina/V.A. Medical Center, Crime Victim Center, Charleston, South Carolina; the Trauma Clinic, Massachusetts General Hospital, Harvard Medical School, Boston, Massachusetts; the Departments of Psychology and Psychiatry, Duke University and Duke University Medical Center, Durham, North Carolina; North Shore University Hospital/Cornell University Medical College Division of Child and Adolescent Psychiatry, Manhasset, New York; and the Community Psychological Services, University of Missouri, St. Louis, Missouri.

The community sample ( $n = 128$ ) was recruited from 704 adults from Charleston and St. Louis via telephone interviews using random digit dialing (RDD) (Kilpatrick et al., 1998). Participants in the community sample were biased towards having experienced high-magnitude stressors. They completed the same assessment protocol administered to participants in the treatment-seeking sample. More detailed participant characteristics have been reported elsewhere (Kilpatrick et al., 1998; Pelcovitz et al., 1997).

### **Instruments**

The High Magnitude Stressor Events Structured Interview (Kilpatrick et al., 1998) comprehensively screened for lifetime history of high-magnitude events: completed rape, other sexual assault, physical assault, other violent crimes, homicide of family members or close friends, serious accidents, natural or manmade disasters, and military combat. The field trial obtained information about up to three high-magnitude and one low-magnitude potentially traumatic events per person.

Posttraumatic stress disorder was assessed by using (a) a version of the Diagnostic Interview Schedule (DIS) PTSD (*DSM-III*) module modified for the National Women's Study PTSD (Robins, Helzer, Croughan, Williams, & Spitzer, 1981); and (b) the PTSD module of the Structured Clinical Interview for *DSM-III* (SCID-PTSD) (Spitzer & Williams, 1986).

The prevalence of each of the DESNOS symptom items (see Table 1) was examined with the SCID-DESNOS instrument specifically designed for this purpose (Pelcovitz et al., 1997). To summarize, the interrater

reliability kappas for current and past DESNOS in the field trial participants ranged from .88 to 1.00, with three of the five sites having perfect interrater reliability. The Cronbach coefficient alphas of the overall DESNOS measure was .96, and the individual DESNOS categories (with the exception of the item measuring alterations in perception of the perpetrator, which therefore was dropped as a requirement for meeting the diagnosis of DESNOS) had internal consistencies ranging from .76 to .90, meaning that the symptoms described in the DESNOS construct had a high degree of internal cohesion, and that these symptoms were likely to occur together in the same individuals.

### **Results**

#### ***Validity: Relationship Between PTSD and DESNOS Items***

Table 2 shows the percentage of lifetime endorsement for each the 27 DESNOS subcategories, for participants with and without current and lifetime PTSD. These data show that the differences in positive endorsement on each of the DESNOS items between groups with and without PTSD, both lifetime and current, were statistically significant. When participants who met diagnostic criteria for PTSD were compared to those who met DESNOS criteria, lifetime DESNOS without PTSD occurred in only a very small percentage of both the treatment sample (6.2%) and the community sample (4%). Hence, this constellation of symptoms was rare in participants who did not also suffer from PTSD.

#### ***Nature of Trauma***

In an attempt to elucidate the role of age of onset and the nature of the traumatic experience (interpersonal vs. instrumental trauma) in the clinical presentation, the sample was divided into three mutually exclusive trauma groups: (a) participants reporting interpersonal violence (sexual assault and physical assault or no physical assault) starting before age 14 (some of whom also reported subsequent traumas), (b) participants reporting interpersonal violence starting after age 14, and (c) victims of natural disasters who did not report histories of interpersonal victimization. Table 2 shows the percentage of lifetime endorsement for the three groups for 26 of the 27-item subcategories, all of which produced statistically significant effects. Because of the number of statistical tests employed, we accepted a minimum  $p$  level of .005. For

**Table 2.** DESNOS Categories (% positive) in Participants With and Without PTSD: Current and Lifetime

| Subcategories       | PTSD Lifetime    |                 |                      | PTSD Current     |                 |                      |
|---------------------|------------------|-----------------|----------------------|------------------|-----------------|----------------------|
|                     | Yes<br>(n = 275) | No<br>(n = 208) | $\chi^2$<br>(df = 1) | Yes<br>(n = 194) | No<br>(n = 326) | $\chi^2$<br>(df = 1) |
| Affect Regulation   | 84               | 31              | 144.15*              | 89               | 42              | 112.31*              |
| Anger               | 81               | 29              | 133.23*              | 87               | 39              | 115.02*              |
| Self-Destructive    | 56               | 19              | 66.62*               | 62               | 26              | 65.21*               |
| Suicidal            | 61               | 18              | 90.90*               | 69               | 25              | 97.11*               |
| Sexual Involvement  | 75               | 32              | 87.86*               | 84               | 39              | 100.13*              |
| Shame               | 57               | 10              | 112.39*              | 64               | 18              | 111.95*              |
| Nobody Understands  | 84               | 30              | 145.75*              | 90               | 41              | 121.61*              |
| Minimizing          | 29               | 11              | 22.95*               | 31               | 14              | 21.20*               |
| Distorted Beliefs   | 24               | 0               | 57.82*               | 25               | 6               | 38.31*               |
| Idealiz. Perpetrat. | 23               | 2               | 43.66*               | 25               | 7               | 33.46*               |
| Loss of Trust       | 88               | 41              | 120.32*              | 96               | 49              | 119.63*              |
| Revictimization     | 56               | 15              | 84.64*               | 64               | 21              | 96.82*               |
| Victimizing Others  | 23               | 5               | 30.25*               | 25               | 9               | 25.26*               |
| Risk Taking         | 47               | 14              | 58.47*               | 50               | 21              | 47.68*               |
| Amnesia             | 70               | 18              | 129.30*              | 78               | 27              | 126.58*              |
| Dissociation        | 83               | 28              | 148.46*              | 87               | 21              | 215.24*              |
| Ineffective         | 58               | 23              | 58.93*               | 63               | 30              | 53.69*               |
| Permanent Damage    | 73               | 20              | 132.56*              | 83               | 28              | 147.71*              |
| Guilt               | 64               | 19              | 96.01*               | 69               | 34              | 59.87*               |
| Digestive Problems  | 72               | 24              | 109.05*              | 77               | 26              | 126.47*              |
| Chronic Pain        | 57               | 20              | 66.56*               | 63               | 39              | 27.91*               |
| Cardiopulmonary     | 79               | 27              | 130.24*              | 82               | 18              | 203.72*              |
| Conversion          | 54               | 12              | 90.72*               | 63               | 21              | 92.65*               |
| Sexual Dysfunction  | 52               | 15              | 70.71*               | 59               | 41              | 15.20*               |
| Hopelessness        | 84               | 29              | 150.42*              | 89               | 33              | 153.82*              |
| Loss of Beliefs     | 73               | 22              | 123.16*              | 79               | 33              | 101.77*              |

Note. All differences in positive endorsement on each of the DESNOS items between PTSD + vs. PTSD – groups, both life time and current, were significant at the  $p < .0001$  level utilizing  $\chi^2$  analysis.

\* $p < .0001$ .

the 27th subcategory, Ineffectiveness (IIIA), there was no evidence of a reliable difference in the percentage of endorsement among the three groups.

To establish group discriminations according to age of onset and duration of the trauma, the sample was analyzed for both lifetime and current prevalence of PTSD alone, and PTSD + DESNOS. The groups were divided (a) according to age and nature of traumatic experience (Early Onset Interpersonal, < age 14; Late Onset Interpersonal, 14 and up; and Disaster), (b) according to age of first high-magnitude stressor, and (c) according to duration of longest high-magnitude stressor. Early Onset versus Late Onset Interpersonal abuse had significantly different endorsement on at least one item in each of the seven major categories. Late Onset Interpersonal abuse and Disaster were discriminated by items in all categories. These patterns of endorsement confirm that early interpersonal traumatization gives rise to more complex posttraumatic psychopathology than later interpersonal victimization (Table 3).

### *Nature of Posttraumatic Symptoms According to Type, Age, and Duration of the Trauma*

Highly significant differences in posttraumatic symptoms emerged between the Early Onset and Late Onset Interpersonal abuse groups (see Table 4). In the Early Onset Interpersonal abuse group, more participants had a lifetime prevalence of PTSD + DESNOS (61%) than of PTSD alone (16%),  $\chi^2(2, N = 148) = 63.20, p < .01$ . Of the Late Onset Interpersonal abuse group, 33% had PTSD + DESNOS compared to 26% who met criteria for PTSD alone,  $\chi^2(2, N = 87) = .99, ns$ . In the Disaster group, 15% had PTSD only, and 8% had PTSD + DESNOS,  $\chi^2(2, N = 59) = 1.47, ns$ .

The relationship between age of onset of the trauma and prevalence of DESNOS and PTSD was calculated with the Permutation Exact Test (Luger, 2004). There was no trend in regards to age of onset and the development of lifetime PTSD. However, there was a trend between the diagnosis of lifetime PTSD + DESNOS and age of onset

**Table 3.** Percent Endorsement of DESNOS Items by Trauma Category

| Subcategories         | Early onset                  | Late onset                 | Disaster<br>(n = 58) | $\chi^2(df = 1)$              | $\chi^2(df = 1)$           |
|-----------------------|------------------------------|----------------------------|----------------------|-------------------------------|----------------------------|
|                       | abuse<br>(<14).<br>(n = 149) | Abuse<br>(14>)<br>(n = 87) |                      | early onset<br>vs. late onset | late onset<br>vs. disaster |
| Affect Regulation     | 77                           | 66                         | 38                   | 3.78                          | 10.68*                     |
| Anger                 | 77                           | 61                         | 33                   | 7.08                          | 11.04*                     |
| Self-destructive      | 62                           | 36                         | 21                   | 15.01*                        | 3.72                       |
| Suicidal              | 66                           | 39                         | 12                   | 15.88*                        | 12.52*                     |
| Sexual Involvement    | 81                           | 66                         | 9                    | 7.30                          | 46.03*                     |
| Risk Taking           | 54                           | 26                         | 16                   | 16.59*                        | 2.41                       |
| Amnesia               | 78                           | 46                         | 15                   | 24.91*                        | 14.43*                     |
| Dissociation          | 80                           | 59                         | 44                   | 12.31*                        | 2.66                       |
| Permanent damage      | 72                           | 53                         | 26                   | 8.64*                         | 10.42*                     |
| Guilt                 | 69                           | 49                         | 24                   | 9.04*                         | 9.33*                      |
| Shame                 | 60                           | 39                         | 17                   | 9.39*                         | 7.85*                      |
| Nobody can understand | 80                           | 57                         | 38                   | 13.55*                        | 5.32                       |
| Minimizing            | 28                           | 23                         | 3                    | 0.77                          | 10.32*                     |
| Distorted beliefs     | 30                           | 12                         | NA                   | 10.75*                        | —                          |
| Idealiz. Perpetrator  | 36                           | 8                          | NA                   | 22.78*                        | —                          |
| Loss of trust         | 71                           | 56                         | 26                   | 5.35                          | 13.09*                     |
| Revictimization       | 54                           | 38                         | NA                   | 5.47                          | —                          |
| Victimizing others    | 27                           | 8                          | +                    | 12.17*                        | —                          |
| Digestive problems    | 69                           | 60                         | 29                   | 2.13                          | 12.95*                     |
| Chronic pain          | 54                           | 43                         | 28                   | 2.74                          | 3.35                       |
| Cardiopulmonary       | 71                           | 60                         | 33                   | 3.21                          | 10.16*                     |
| Conversion            | 54                           | 30                         | 14                   | 12.58*                        | 5.02                       |
| Sexual Problems       | 58                           | 45                         | 10                   | 3.66                          | 19.33*                     |
| Hopelessness          | 75                           | 64                         | 38                   | 3.12                          | 9.79*                      |
| Loss of beliefs       | 71                           | 46                         | 21                   | 56.07*                        | 9.67*                      |

Note. Significant early vs. late onset comparisons are noted by a “+”, and significant late onset abuse vs. disaster comparisons are noted by a “\*\*\*”. The minimum *p* level accepted for all these comparisons was .005, rather than the customary .05, in order to avoid spurious results.  
\* *p* < .005.

(Permutation Exact Test = 1680, *p* < .001): the younger the age of onset of the trauma, the more likely one is to suffer from the cluster of DESNOS symptoms, in addition to PTSD (Table 5). Comparing current diagnosis of PTSD to age of onset of the trauma yielded a significant trend (Permutation Exact Test = 1057, *p* < .001). Thus, the younger the age of onset, the higher the likelihood the individual currently had DESNOS. The relationship between age of onset and current PTSD + DESNOS showed the same trend (Permutation Exact Test = 783, *p* < .001).

The relationships between duration of the longest high-magnitude stressor (in years) and lifetime diagnoses

were calculated by subtracting age of onset from age of offset. Although there was no trend in the proportion of those developing PTSD alone across groups, there was a trend between the diagnoses of lifetime PTSD + DESNOS and duration of the trauma (Permutation Exact Test = 916, *p* < .001). Similar results were obtained for current diagnoses and duration of the trauma: There was no significant trend for PTSD alone, but the relationship between PTSD + DESNOS and duration of the trauma revealed a significant trend (Permutation Exact Test = 528, *p* < .001). This finding demonstrates that the longer people were exposed to traumatic events, the more likely they were to develop both PTSD and DESNOS (Table 6).

**Table 4.** Percentage of Various Trauma Groups With PTSD Only and With PTSD + DESNOS

| Subcategories   | Early onset        | Late onset        | Disaster<br>(n = 59) | Other<br>(n = 226) |
|-----------------|--------------------|-------------------|----------------------|--------------------|
|                 | abuse<br>(n = 148) | abuse<br>(n = 87) |                      |                    |
| <b>Lifetime</b> |                    |                   |                      |                    |
| PTSD Only       | 16                 | 26                | 15                   | 20                 |
| PTSD + DESNOS   | 61                 | 33                | 8                    | 25                 |
| <b>Current</b>  |                    |                   |                      |                    |
| PTSD Only       | 27                 | 28                | 8                    | 15                 |
| PTSD + DESNOS   | 35                 | 16                | 2                    | 11                 |

**Discussion**

The *DSM-IV* Field Trial for PTSD supported the notion that trauma, particularly trauma that is prolonged, that first occurs at an early age and that is of an interpersonal nature, can have significant effects on psychological functioning above and beyond PTSD symptomatology. These effects include problems with affect dysregulation,

**Table 5.** Age of First High Magnitude Stressor by Diagnosis

| Subcategories | 0-4<br>(n = 83) | 5-8<br>(n = 108) | 9-13<br>(n = 90) | 14-19<br>(n = 94) | 20-25<br>(n = 38) | 26+<br>(n = 44) |
|---------------|-----------------|------------------|------------------|-------------------|-------------------|-----------------|
| Lifetime      |                 |                  |                  |                   |                   |                 |
| PTSD          | 19              | 21               | 14               | 20                | 13                | 30              |
| PTSD + DESNOS | 66              | 46               | 29               | 40                | 24                | 9               |
| Current       |                 |                  |                  |                   |                   |                 |
| PTSD          | 28              | 26               | 17               | 20                | 13                | 16              |
| PTSD + DESNOS | 41              | 21               | 14               | 19                | 11                | 2               |

aggression against self and others, dissociative symptoms, somatization, and character pathology. These various symptoms tend to cluster into distinct patterns and to be highly interrelated.

The field trial demonstrated that (a) early interpersonal traumatization gives rise to more complex posttraumatic psychopathology than later interpersonal victimization; (b) these symptoms occur in addition to PTSD symptoms and do not necessarily constitute a separate cluster of symptoms; (c) the younger the age of onset of the trauma, the more likely one is to suffer from the cluster of DESNOS symptoms, in addition to PTSD; (d) The longer individuals were exposed to traumatic events, the more likely they were to develop both PTSD and DESNOS; and (e) although the community sample and the treatment-seeking sample had approximately the same prevalence of PTSD symptoms, almost half of the treatment-seeking sample also met criteria for DESNOS, suggesting that DESNOS symptoms, rather than PTSD, may cause patients to seek treatment.

Subsequent studies on both veteran and civilian samples (Ford, 1999; McDonagh-Coyle et al., 1999; Vielhauer, 1996) found DESNOS in a sizable subset of trauma patients (25–45%) who failed to meet criteria for PTSD. This finding contrasts with the *DSM-IV* field trial in which the vast majority of participants with DESNOS also met criteria for PTSD.

The finding that the traumatized participants whose high-magnitude traumatic stressors started before age 14 were most likely to meet criteria for DESNOS is not sur-

prising in view of the fact that the formulation of the DESNOS syndrome was largely based on the research literature on childhood trauma. The prevalence estimates of childhood trauma histories in general psychiatric populations range from 40 to 70%. Patients with these histories are consistently found to have high degrees of problems with affect dysregulation, loss of impulse control, dissociative, somatization, and severe character pathology (e.g., Bryer, Nelson, Miller, & Krol, 1987; Chu & Dill, 1989; Herman et al., 1989; Mueser et al., 1998; Saxe et al., 1993, 1994; Van der Kolk, 2003).

The results of the *DSM-IV* Field Trial suggested that trauma has its most pervasive impact during the first decade of life and becomes more circumscribed, i.e., more like “pure” PTSD, with age. However, participants’ DESNOS symptoms may have been a function of not only the age at which they were first traumatized, but also the number of traumatic experiences they subsequently suffered. The field trial did not analyze the data according to the number of separate A criterion events across the participants’ life span.

The presence of comorbid trauma-related psychiatric problems excludes a large number of traumatized individuals from treatment outcome studies (see Spinazzola et al., 2005). Lack of assessment of other sequelae, or worse, the systematic exclusion of individuals with complex adaptations to trauma from PTSD outcome studies, is likely to interfere with exploring the most effective treatments for the most severely affected traumatized individuals. For example, there is increasing evidence that having a history of child abuse may significantly change treatment outcome in other psychiatric conditions (e.g., Ford & Kidd, 1998; Keller et al., 2000; Nemeroff et al., 2003).

### *Comorbidity or Pervasive Impact of Trauma?*

Although the *DSM-IV* Subcommittee on PTSD favored the creation of a separate diagnosis to capture the psychiatric symptomatology related to chronic exposure

**Table 6.** Duration (in Years) of High Magnitude Stressor by Diagnosis

| Subcategories | <1<br>(n = 240) | 1-3<br>(n = 68) | 4-10<br>(n = 70) | 11-17<br>(n = 26) | 18+<br>(n = 20) |
|---------------|-----------------|-----------------|------------------|-------------------|-----------------|
| Lifetime      |                 |                 |                  |                   |                 |
| PTSD only     | 18              | 21              | 23               | 15                | 20              |
| PTSD + DESNOS | 29              | 35              | 51               | 77                | 70              |
| Current       |                 |                 |                  |                   |                 |
| PTSD Only     | 17              | 28              | 27               | 27                | 30              |
| PTSD + DESNOS | 12              | 21              | 27               | 54                | 62              |

to interpersonal trauma, the *DSM-IV* lists the DESNOS symptoms not as a distinct diagnosis, but under the rubric of “associated and descriptive features” of PTSD (APA, 1994, p. 425). The PTSD diagnosis is likely to fit some of the psychiatric problems of many psychiatrically impaired traumatized individuals. However, focusing on PTSD symptoms and, at best, relegating other posttraumatic sequelae to comorbidities may interfere with a comprehensive and effective treatment approach. For example, the Treatment Guidelines of the International Society for Traumatic Stress Studies (Foa, Keane, & Friedman, 2000), while recognizing that over 80% of PTSD patients suffer from comorbid conditions, including depression, phobias, anxiety, dissociative and somatoform disorders, refers readers to the “rich empirical literature of these comorbid conditions” (p. 375) for treatment guidance. This statement is puzzling because there is no evidence that other treatment manuals are, in fact, applicable to these comorbid conditions in patients with PTSD.

Numerous studies have shown that PTSD consistently co-occurs with other disorders. The National Comorbidity Survey (Kessler et al., 1995) found that approximately 84% of people with PTSD had another lifetime diagnosis, with PTSD typically being the primary disorder. The odds ratios that individuals with PTSD meet criteria for three or more additional disorders range from 8 to 14. The Australian National Comorbidity study (Creamer, Burgess, & McFarlane, 2001) assessed 10,600 individuals and found that 88% of the sample with PTSD had at least one other diagnosis: most commonly major depressive disorder (48%) and alcohol abuse (52%). Of persons with PTSD, 59% had three or more disorders, and 51% (versus 6% of non-PTSD) met criteria for an Axis II diagnosis. In most cases, PTSD was the initiating disorder in all comorbid disorders, including personality disorders. The study concluded that it is rare, even in a community sample, to find pure PTSD and that traumatized individuals present with a variable constellation of depression, anxiety, and somatization.

In studies of psychiatric populations in which trauma is not a central concern, PTSD is rarely assessed. Yet, histories of trauma consistently show up in studies of (a) various personality disorders (e.g., Herman et al., 1989; Oates, 1984; Yen et al., 2003; Zanarini, Ruser, Frankenburg, Hennen, & Gunderson, 2000), (b) affective disorders (e.g., Kendall-Tackett, 2002; Levitan et al., 1998; Nemeroff et al., 2003; Schneider-Rosen & Cicchetti, 1984); (c) impulse disorders (e.g., Barahal, Waterman, & Martin, 1987; Green, 1983; Romano & deLuca, 1997), (d) antisocial disorders (e.g., Adshead, 1994; Steiner et al., 1997; Widom, 1987; Zlotnick, 1999), (e) substance abuse (e.g., Creamer et al., 2001; Kilpatrick et al., 2000), (f) somati-

zation (e.g., Resnick, Acierno, & Kilpatrick, 1997; Saxe et al., 1994), and (g) dissociative disorders (e.g., Bremner et al., 1992; Chu & Dill, 1989; Marshall et al., 2000). The *DSM-IV* Field Trial did not specifically assess for other *DSM-IV* Axis I and Axis II diagnoses, leaving the overlap between DESNOS and these various disorders open to further investigation.

It seems of paramount importance to address critically the fact that psychiatric disorders, categorically defined, frequently occur together, and that many disorders, in particular PTSD, seem to occur rarely in pure form, without comorbidities. It is clear that traumatized individuals develop a range of shifting maladaptive patterns, depending on their stage of development, social support, and relationship to the origin of the trauma.

This implies that the focus of trauma research needs to extend beyond the traditional preoccupation with PTSD as the sole outcome of traumatization and more closely attend to the full range of disordered psychological domains, including disturbances in perception, information processing, affect regulation, impulse control, and personality development, that are now relegated to various other comorbidities. The DESNOS construct, although still a work in progress, is an attempt to capture the multidimensional nature of breakdown of adaptation in the face of trauma.

### ***Treatment Implications***

The presence of DESNOS has been shown to be a powerful negative prognostic indicator of PTSD treatment outcome and behavioral disturbance in diverse clinical samples (Ford & Kidd, 1998; McDonagh-Coyle et al., 1999; Zlotnick, 1999). The phenomenological differences between DESNOS and PTSD have important treatment implications. The diagnosis of PTSD focuses on the memory imprint of particular experiences. Posttraumatic stress disorder as the central psychological consequence of traumatization implies treatment that focuses on the impact of specific past events and the processing of specific traumatic memories. In contrast, in traumatized patients with histories of early abuse and DESNOS, the treatment of other problems, such as loss of emotion regulation, dissociation and interpersonal problems, may be the first priority because they cause more functional impairment than the PTSD symptoms (Cloitre, Koenen, Cohen, & Han, 2002; see Briere & Spinazzola, 2005; Ford, Courtois, Steele, Van der Hart, & Nijenhuis, 2005; Pearlman & Courtois, 2005; all in this issue).

Issues of affect regulation and dissociation have been largely neglected in the treatment research literature for



PTSD. For example, in the International Society for Traumatic Stress Studies (ISTSS) treatment guidelines for PTSD, there is no mention of techniques to deal with loss of self-regulation or dissociative problems. In recent years, an emerging research literature has started to demonstrate the importance of helping patients with the management of current problems with dissociation, affect regulation, and altered relationships with themselves and others prior to engaging them in trauma exposure (Cloitre, Chase Stovall-McClough, Miranda, & Chemtob, 2004; Ford et al., 2005; Ford, Fisher, & Larson, 1997; Ford & Frisman, 2002).

### Acknowledgments

The research reported on was supported, in part, by National Institutes of Mental Health grant #1 PO1 MH47200-01. The authors wish to acknowledge the critical contributions of Dean Kilpatrick, PhD, Heidi Resnick, PhD, Patti Resick, PhD, and John Freedy, PhD, in the design, data collection, and data analyses of the field trials, as well as Margaret Blaustein, PhD, for her assistance in the data analysis. The authors also gratefully acknowledge Marla Zucker, PhD and Richard LaDue for their assistance with the preparation of this manuscript.

### References

- Acierno, R., Resnick, H.S., Kilpatrick, D.G., Saunders, B.E., & Best, C.L. (1999). Risk factors for rape, physical assault, and posttraumatic stress disorder in women: Examination of differential multivariate relationships. *Journal of Anxiety Disorders*, 13(6), 541-563.
- Ackerman, P.T., Newton, J.E.O., McPherson, W.B., Jones, J.G., & Dykman, R.A. (1998). Prevalence of posttraumatic stress disorder and other psychiatric diagnoses in three groups of abused children (sexual, physical, and both). *Child Abuse and Neglect*, 22(8), 759-774.
- Adshead, G. (1994). Damage: Trauma and violence in a sample of women referred to a forensic service. *Behavioral Sciences and the Law*, 12, 235-249.
- American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders* (3rd ed.). Washington, DC: Author.
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- Andreasen, N.J.C., & Norris, A.S. (1972). Long-term adjustment and adaptation mechanisms in severely burned adults. *Journal of Nervous and Mental Disease*, 154, 352-362.
- Barahal, R., Waterman, J., & Martin, H. (1987). The social-cognitive development of abused children. *Journal of Consulting and Clinical Psychology*, 49, 508-516.
- Bremner, J.D., Southwick, S., Brett, E., Fontana, A., Rosenheck, R., & Charney, D.S. (1992). Dissociation and posttraumatic stress disorder in Vietnam combat veterans. *American Journal of Psychiatry*, 149, 328-332.
- Breslau, N., Davis, G.C., Andreski, P., Peterson, E.L., & Schultz, L.R. (1997). Sex differences in posttraumatic stress disorder. *Archives of General Psychiatry*, 54(11), 1044-1048.
- Brett, E., Spitzer, R., & Williams, J. (1988). DSM-III-R criteria for posttraumatic stress disorder. *American Journal of Psychiatry*, 144, 1232-1236.
- Briere, J. (1988). Long-term clinical correlates of childhood sexual victimization. *Annals of the New York Academy of Sciences*, 528, 327-334.
- Briere, J., & Spinnazola, J. (2005). Phenomenology and psychological assessment of complex posttraumatic states. *Journal of Traumatic Stress*, 18, 401-412.
- Bryer, J.B., Nelson, B.A., Miller, J.B., & Krol, P.A. (1987). Childhood sexual and physical abuse as factors in adult psychiatric illness. *American Journal of Psychiatry*, 144, 1426-1430.
- Burgess, A.W., Hartman, C.R., & McCormack, A. (1987). Abused to abuser: Antecedents of socially deviant behavior. *American Journal of Psychiatry*, 144, 1431-1436.
- Burgess, A.W., & Holmstrom, L.L. (1974). Rape trauma syndrome. *American Journal of Psychiatry*, 131, 981-986.
- Chu, J.A., & Dill, D.L. (1989). Dissociative symptoms in relation to childhood physical and sexual abuse. *American Journal of Psychiatry*, 148, 50-54.
- Cloitre, M., Chase Stovall-McClough, K., Miranda, R., & Chemtob, C. (2004). Therapeutic alliance, negative mood regulation, and treatment outcome in child abuse-related posttraumatic stress disorder. *Journal of Consulting and Clinical Psychology*, 72(3), 411-416.
- Cloitre, M., Cohen, L., Han, H., & Edelman, R. (2001). Posttraumatic stress disorder and extent of trauma exposure as correlates of medical problems and perceived health among women with childhood abuse. *Women and Health*, 34, 1-17.
- Cloitre, M., Koenen, K.C., Cohen, L.R., & Han, H. (2002). Skills training in affective and interpersonal regulation followed by exposure: A phase-based treatment for PTSD related to childhood abuse. *Journal of Consulting and Clinical Psychology*, 70, 1067-1074.
- Cloitre, M., Tardiff, K., Marzuk, P.M., Leon, A.C., & Portera, L. (2001). Consequences of childhood abuse among male psychiatric inpatients: Dual roles as victims and perpetrators. *Journal of Traumatic Stress*, 14(1), 47-61.
- Cole, P., & Putnam, F.W. (1992). Effect of incest on self and social functioning: A developmental psychopathology perspective. *Journal of Consulting and Clinical Psychology*, 60, 174-184.
- Creamer, M., Burgess, P.M., & McFarlane, A.C. (2001). Posttraumatic stress disorder: Findings from the Australian National Survey of Mental Health and Well-Being. *Psychological Medicine*, 31(7), 1237-1247.
- Dube, S.R., Anda, R.F., Felitti, V.J., Chapman, D.P., Williamson, D.F., & Giles, W.H. (2001). Childhood abuse, household dysfunction, and the risk of attempted suicide throughout the life span: Findings from the Adverse Childhood Experiences Study. *Journal of the American Medical Association*, 286(24), 3089-3096.
- Felitti, V.J., Anda, R.F., Nordenberg, D., Williamson, D.F., Spitz, A.M., Edwards, V., et al. (1997). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine*, 14, 245-258.
- Finkelhor, D., Hotaling, G., Lewis, I.A., & Smith, C. (1989). Sexual abuse and its relationship to later sexual satisfaction, marital status, religion, and attitudes. *Journal of Interpersonal Violence*, 4, 279-399.
- Finkelhor, D., Hotaling, G., Lewis, I.A., & Smith, C. (1990). Sexual abuse in a national survey of adult men and women: Prevalence, characteristics, and risk factors. *Child Abuse and Neglect*, 14(1), 19-28.
- Finkelhor, D., & Kendall-Tackett, K. (1997). A developmental perspective on the childhood impact of crime, abuse and violent victimization. In D. Cicchetti & S. Toth (Eds.), *Rochester symposium on developmental psychopathology and developmental perspectives on trauma* (pp. 1-32). Rochester, NY: University of Rochester Press.

- Foa, E.B., Keane, T., & Friedman, M.J. (2000). *Effective treatments for PTSD: Practice guidelines from the International Society of Traumatic Stress Studies*. New York: Guilford Press.
- Ford, J.D. (1999). Disorders of extreme stress following war-zone military trauma: Associated features of posttraumatic stress disorder or comorbid but distinct syndromes? *Journal of Consulting and Clinical Psychology, 67*(1), 3–12.
- Ford, J.D. (2001). Treatment and clinical course of complex posttraumatic stress disorder in patients with severe mental illness. Unpublished manuscript, National Institute of Mental Health, Rockville, MD.
- Ford, J.D., Courtois, C.A., Steele, K., Van der Hart, O., & Nijenhuis, E.R.S. (2005). Treatment of complex posttraumatic self-dysregulation. *Journal of Traumatic Stress, 18*, 437–447.
- Ford, J.D., Fisher, P., & Larson, L. (1997). Object relations as predictors of treatment outcome with chronic PTSD. *Journal of Consulting and Clinical Psychology, 64*, 547–559.
- Ford, J.D., & Frisman, L. (2002, November). Controlled evaluation of a present-focused trauma-processing therapy. Paper presented at the Annual Meeting of the International Society for Traumatic Stress Studies, Baltimore, MD.
- Ford, J.D., & Kidd, P. (1998). Early childhood trauma and disorders of extreme stress as predictors of treatment outcome with chronic PTSD. *Journal of Traumatic Stress, 18*, 743–761.
- Green, A.H. (1983). Dimension of psychological trauma in abused children. *American Journal of Psychiatry, 22*(3), 231–237.
- Herman, J.L. (1992). Complex PTSD: A syndrome in survivors of prolonged and repeated trauma. *Journal of Traumatic Stress, 5*(3), 377–391.
- Herman, J.L., Perry, J.C., & Van der Kolk, B.A. (1989). Childhood trauma in borderline personality disorder. *American Journal of Psychiatry, 22*, 231–237.
- Herman, J.L., & Van der Kolk, B.A. (1987). Traumatic antecedents of borderline personality disorder. In B. Van der Kolk (Ed.), *Psychological trauma* (pp. 111–126). Washington, DC: American Psychiatric Press.
- Horowitz, M., Wilner, N., & Kaltreider, N. (1980). Signs and symptoms of post-traumatic stress disorder. *Archives of General Psychiatry, 37*, 85–92.
- Kardiner, A. (1941). *The traumatic neuroses of war*. New York: Hoeber.
- Keller, M.B., McCullough, J.P., Klein, D.N., Arnow, B., Dunner, D.L., Gelenberg, A.J., et al. (2000). A comparison of nefazodone, the cognitive-behavioral-analysis system of psychotherapy, and their combination for the treatment of chronic depression. *New England Journal of Medicine, 342*(20), 1462–1470.
- Kendall-Tackett, K. (2002). The health effects of childhood abuse: Four pathways by which abuse can influence health. *Child Abuse & Neglect, 26*(6-7), 715–729.
- Kessler, R.C., Sonnega, A., Bromet, E., Hughes, M., & Nelson, C.B. (1995). Posttraumatic stress disorder in the national comorbidity survey. *Archives of General Psychiatry, 52*, 1048–1060.
- Kilpatrick, D.G., Acierno, R., Saunders, B.E., Resnick, H.S., Best, C.L., & Schnurr, P.P. (2000). Risk factors for adolescent substance abuse and dependence: Data from a national sample. *Journal of Consulting and Clinical Psychology, 68*(1), 19–30.
- Kilpatrick, D.G., Resnick, H.S., Freedy, J.R., Pelcovitz, D., Resick, P.A., Roth, S., et al. (1998). Posttraumatic stress disorder field trial: Evaluation of the PTSD construct—Criteria A through E. In T.A. Widiger, A.J. Frances, H.A. Pincus, R. Ross, M.B. First, W. David et al. (Eds.), *DSM-IV sourcebook* (Vol. 4, 4th ed., pp. 803–844). Washington, DC: American Psychiatric Association.
- Kilpatrick, D.G., Ruggiero, K.J., Acierno, R., Saunders, B.E., Resnick, H.S., & Best, C.L. (2003). Violence and risk of PTSD, major depression, substance abuse/dependence and comorbidity: Results from the National Survey of Adolescents. *Journal of Consulting and Clinical Psychology, 71*, 692–700.
- Krystal, H. (1968). *Massive psychic trauma*. New York: International Universities Press.
- Leeds, A.M., & Shapiro, F. (2000). EMDR and resource installation: Principles and procedures for enhancing current functioning and resolving traumatic experiences. In J. Carlson & L. Sperry (Eds.), *Brief therapy with individuals & couples* (pp. 469–534). Phoenix, AZ: Tucker & Theisen, Inc.
- Levitan, R.D., Parikh, S.V., Lesage, A.D., Hegadore, K.M., Adams, M., Kennedy, S.H., et al. (1998). Major depression in individuals with a history of childhood physical or sexual abuse: Relationship to neurovegetative features, mania, and gender. *American Journal of Psychiatry, 155*(12), 1746–1752.
- Lewis, D.O., Lovely, R., Yeager, C., & Della Femina, D. (1989). Toward a theory of the genesis of violence: A follow-up study of delinquents. *Journal of the American Academy of Child and Adolescent Psychiatry, 28*, 431–436.
- Lewis, D.O., & Shanok, S.S. (1981). Perinatal difficulties, head and face trauma, and child abuse in the medical histories of seriously delinquent children. *American Journal of Psychiatry, 136*(4A), 419–423.
- Luger, R. (2004). Exact permutation tests for non-nested nonlinear regression models. Retrieved November 1, 2004, from [http://www.economics.emory.edu/Working\\_Papers/wp/luger\\_04\\_19\\_paper.pdf](http://www.economics.emory.edu/Working_Papers/wp/luger_04_19_paper.pdf)
- Margolin, G., & Gordis, E.B. (2000). The effects of family and community violence on children. *Annual Review of Psychology, 51*, 445–479.
- Marshall, R.D., Schneier, F.R., Lin, S.H., Simpson, H.B., Vermes, D., & Liebowitz, M.R. (2000). Childhood trauma and dissociative symptoms in panic disorder. *American Journal of Psychiatry, 157*(3), 451–453.
- McDonagh-Coyle, A., McHugo, G., Ford, J., Mueser, K., Demment, C., & Descamps, M. (1999, December). Cognitive-behavioral treatment for childhood sexual abuse survivors with PTSD. Paper presented at the 15th Annual Meeting of the International Society for Traumatic Stress Studies, Miami, FL.
- Mueser, K.T., Trumbetta, S.L., Rosenberg, S.D., Vidaver, R.M., Goodman, L.B., Osher, F.C., et al. (1998). Trauma and posttraumatic stress disorder in severe mental illness. *Journal of Consulting and Clinical Psychology, 66*(3), 493–499.
- Nemeroff, C.B., Heim, C.M., Thase, M.E., Klein, D.N., Rush, A.J., Schatzberg, A.F., et al. (2003). Differential responses to psychotherapy versus pharmacotherapy in patients with chronic forms of major depression and childhood trauma. *Proceedings of the National Academy of Sciences of the United States of America, 100*(24), 14293–14296.
- Oates, R.K. (1984). Personality development after physical abuse. *Archives of Disease in Childhood, 59*, 147–150.
- Pearlman, L.A., & Courtois, C.A. (2005). Clinical applications of the attachment framework: Relational treatment of complex trauma. *Journal of Traumatic Stress, 18*, 449–459.
- Pelcovitz, D., Van der Kolk, B.A., Roth, S., Mandel, F., Kaplan, S., & Resick, P. (1997). Development of a criteria set and a structured interview for disorders of extreme stress (SIDES). *Journal of Traumatic Stress, 10*(1), 3–16.
- Putnam, F. (2003). Ten-year research update review: Child sexual abuse. *Journal of the American Academy of Child and Adolescent Psychiatry, 43*, 269–278.
- Putnam, F., & Trickett, P.K. (1997). The psychobiological effects of sexual abuse, a longitudinal study. *Annals of the New York Academy of Science, 821*, 150–159.
- Resnick, H.S., Acierno, R., & Kilpatrick, D.G. (1997). Health impact of interpersonal violence. Section II: Medical and mental health outcomes. *Behavioral Medicine, 23*, 65–78.
- Robins, L.N., Helzer, J.E., Croughan, J.L., Williams, J.B.W., & Spitzer, R.L. (1981). NIMH Diagnostic Interview Schedule, Version III (Publication no. ADM-T-42-3 [5–81, 8–81]). Rockville, MD: National Institute of Mental Health, Public Health Service.
- Rollstin, A.O., & Kern, J.M. (1998). Correlates of battered women's psychological distress: Severity of abuse and duration of the postabuse period. *Psychological Reports, 82*(2), 387–394.

- Romano, E., & De Luca, R.V. (1997). Exploring the relationship between childhood sexual abuse and adult sexual perpetration. *Journal of Family Violence*, 12(1), 85–98.
- Roth, S., Newman, E., Pelcovitz, D., Van der Kolk, B.A., & Mandel, F.S. (1997). Complex PTSD in victims exposed to sexual and physical abuse: Results from the DSM-IV field trial for posttraumatic stress disorder. *Journal of Traumatic Stress*, 10(4), 539–555.
- Saxe, G.N., Chinman, G., Berkowitz, R., Hall, K., Lieberg, G., Schwartz, J., et al. (1994). Somatization in patients with dissociative disorders. *American Journal of Psychiatry*, 151(9), 1329–1334.
- Saxe, G.N., Van der Kolk, B.A., Berkowitz, R., Chinman, G., Hall, K., Lieberg, G., et al. (1993). Dissociative disorders in psychiatric inpatients. *American Journal of Psychiatry*, 150(7), 1037–1042.
- Scheeringa, M.S., Zeanah, C.H., Drell, M.J., & Larrieu, J. (1995). Two approaches to the diagnosis of posttraumatic stress disorder in infancy and early childhood. *Journal of the American Academy of Child and Adolescent Psychiatry*, 34(2), 191–200.
- Scheeringa, M.S., Zeanah, C.H., Meyers, L., & Putnam, F.W. (2003). New findings on alternative criteria for PTSD in preschool children. *Journal of the American Academy of Child and Adolescent Psychiatry*, 42(5), 561–570.
- Schneider-Rosen, K., & Cicchetti, D. (1984). The relationship between affect and cognition in maltreated infants: Quality of attachment and the development of visual self-recognition. *Child Development*, 55, 648–658.
- Shatan, C.F., Smith, J., & Haley, S. (1977, October). Johnny comes marching home: DSM III and combat stress. Paper presented at the 130th Annual Meeting of the American Psychiatric Association, Toronto, Ontario, Canada.
- Spinnazola, J., Blaustein, M., & Van der Kolk, B.A. (2005). Posttraumatic stress disorder treatment outcome research: The study of unrepresentative samples? *Journal of Traumatic Stress*, 18, 425–436.
- Spitzer, R.J., & Williams, J.B. (1986). Structured Clinical Interview for DSM-III (SCID 3/15/83). Unpublished manuscript, Biometrics Research Department, New York State Psychiatric Institute, New York City.
- Steiner, H., Garcia, I.G., & Matthews, Z. (1997). Posttraumatic stress disorder in incarcerated juvenile delinquents. *Journal of the American Academy of Child and Adolescent Psychiatry*, 36(3), 357–365.
- Summit, R. (1983). The child sexual abuse accommodation syndrome. *Child Abuse & Neglect*, 7(2) 177–193.
- Teicher, M.H., Andersen, S.L., Polcari, A., Anderson, C.M., Navalta, C.P., & Kim, D.M. (2003). The neurobiological consequences of early stress and childhood maltreatment. *Neuroscience and Biobehavioral Reviews*, 27(1–2), 33–44.
- Terr, L.C. (1979). Children of Chowchilla: A study of psychic trauma. *The Psychoanalytic Study of the Child*, 34, 552–623.
- Van der Kolk, B.A. (1989). The compulsion to repeat trauma: Revictimization, attachment and “masochism.” *The Psychiatric Clinics of North America*, 12, 389–411.
- Van der Kolk, B.A. (2003). The neurobiology of childhood trauma and abuse. *Child and Adolescent Clinics of North America* 12, 293–317.
- Van der Kolk, B.A., Pelcovitz, D., Roth, S., Mandel, F., McFarlane, A., & Herman, J.L. (1996). Dissociation, somatization, and affect dysregulation: The complexity of adaptation to trauma. *American Journal of Psychiatry*, 153(7), 83–93.
- Van der Kolk, B.A., Perry, J.C., & Herman, J.L. (1991). Childhood origins of self-destructive behavior. *American Journal of Psychiatry*, 148, 1665–1671.
- Vielhauer, M.J. (1996). Complex post-traumatic stress disorder associated with childhood sexual and physical abuse in male veterans with histories of substance abuse disorders. Unpublished doctoral dissertation, State University of New York at Buffalo.
- Walker, L.E. (1984). *The battered woman syndrome*. New York: Springer.
- Wang, C.T., & Daro, D. (1997). Current trends in child abuse reporting and fatalities: The results of the 1997 annual fifty state survey. Chicago: National Committee to Prevent Child Abuse.
- Weine, S.M., Becker, D.F., Vojvoda, D., Hodzic, E., Sawyer, M., Hyman, L., et al. (1998). Individual change after genocide in Bosnian survivors of “ethnic cleansing”: Assessing personality dysfunction. *Journal of Traumatic Stress*, 11(1), 147–153.
- Widom, C.S. (1987). The cycle of violence. *Science*, 244, 160–165.
- Wilson, S.N., Van der Kolk, B.A., Burbridge, J.A., Fisler, R.E., & Kradin, R. (1999). Phenotype of blood lymphocytes in PTSD suggests chronic immune activation. *Psychosomatics*, 40, 222–225.
- Yen, S., Shea, M.T., Pagano, M.E., Sanislow, C.A., Grilo, C.M., McGlashan, T.H., et al. (2003). Axis I and Axis II disorders as predictors of prospective suicide attempts: Findings from the Collaborative Longitudinal Personality Disorders Study. *Journal of Abnormal Psychology*, 112(3), 375–381.
- Zanarini, M.C., Ruser, T.F., Frankenburg, F.R., Hennen, J., & Gunderson, J.G. (2000). Risk factors associated with the dissociative experiences of borderline patients. *Journal of Nervous and Mental Disease*, 188(1), 26–30.
- Zlotnick, C. (1999). Antisocial personality disorder, affect dysregulation and childhood abuse among incarcerated women. *Journal of Personality Disorders*, 13(1), 90–95.
- Zlotnick, C., Zakriski, A.L., Shea, M.T., Costello, E., Begin, A., Pearlstein, T., et al. (1996). The long-term sequelae of sexual abuse: Support for a complex posttraumatic stress disorder. *Journal of Traumatic Stress*, 9(2), 195–205.

Copyright of Journal of Traumatic Stress is the property of John Wiley & Sons, Inc.. The copyright in an individual article may be maintained by the author in certain cases. Content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.