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An Investigation of Depression, Trauma History, and Symptom Severity in Individuals Enrolled in a Treatment Trial for Chronic PTSD

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Abstract

Objectives—To explore how factors such as major depressive disorder (MDD) and trauma history, including the presence of childhood abuse, influence diverse clinical outcomes such as severity and functioning in a sample with posttraumatic stress disorder (PTSD).

Method—In this study, 200 men and women seeking treatment for chronic PTSD in a clinical trial were assessed for trauma history and major depressive disorder and compared on symptom severity, psychosocial functioning, dissociation, treatment history, and extent of diagnostic co-occurrence.

Results—Overall, childhood abuse did not consistently predict clinical severity. However, co-occurring MDD, and to a lesser extent a high level of trauma exposure, did predict greater severity, worse functioning, greater dissociation, more extensive treatment history, and additional co-occurring disorders.

Conclusions—These findings suggest that presence of co-occurring depression may be a more critical marker of severity and impairment than history of childhood abuse or repeated trauma exposure. Furthermore, they emphasize the importance of assessing MDD and its impact on treatment seeking and treatment response for those with PTSD.

Keywords

childhood abuse; PTSD; MDD; diagnostic co-occurrence

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Rates of trauma exposure in the US are estimated at 70% of the general population, with approximately 24% of trauma-exposed individuals developing posttraumatic stress disorder (PTSD; Kessler et al., 1995). As evidenced by these high prevalence rates, trauma exposure and resulting psychopathology is a serious mental health issue. A common criticism of treatment research, in psychotherapy trials in general and PTSD trials specifically, is that randomized controlled trials do not include complex, comorbid patients and thus are not generalizable to broader clinical populations (e.g., Seligman, 1995; Weston, 2006). Indeed, by definition controlled treatment trials select for certain patient and treatment factors in order to investigate and explore specific mechanisms of treatment and recovery (Chambless & Crits-Christoph, 2006). However, the assumption that individuals that participate in treatment research studies are qualitatively different than other patients may be premature, and clinical trial samples may be more complex than is often assumed (e.g., Stirman & DeRubeis, 2006).

However, there remains concern that clinical trial samples do not accurately represent the high complexity that is sometimes seen in individuals with PTSD. For example, trauma type (e.g., interpersonal violence, combat, accidents) is often cited as a factor that may influence symptom presentations. Extensive and early traumatic experiences, particularly interpersonal traumas such as childhood physical or sexual abuse, are often identified as likely precipitants of general impairment deficits (e.g., poor psychosocial functioning, emotion dysregulation deficits) accompanying PTSD (e.g., Goodman, 2012; Lindauer, 2012; Terr, 1991; van der Kolk et al., 2005). Specifically, childhood abuse has been proposed to lead not only to an increased likelihood of PTSD compared to other trauma types (Kessler et al., 1995) but also to increased depression (e.g., Browne & Finkelhor, 1986; Paolucci, 2001; Polusny & Follete, 1995), poor social and interpersonal functioning (Cloitre et al., 2005; Cloitre, Petkova, Wang, & Lu, 2012; Zlotnick et al., 1996), increased dissociation (van der Kolk et al., 2005; Zlotnick et al., 1996), and a worse treatment response (e.g., Ford & Kidd, 1998; McDonagh et al., 2005).

Similarly, repeated trauma exposure has been hypothesized to result in more severe outcomes than exposure to single incident traumas (Herman, 1992; Zlotnick et al., 1996). Indeed, presence of a trauma history prior to the index event is a predictor of developing PTSD, albeit a generally small size effect (Brewin, Andrews, & Valentine, 2000; Ozer, Best, Lipsey, & Weiss, 2003). Early, prolonged, or repeated traumatic events are thought to have detrimental effects on developmental processes, such as interfering with acquiring adaptive interpersonal and emotion regulation skills, which results in poor functioning beyond the PTSD diagnosis (e.g., Cloitre et al., 2004; Terr, 1991; van der Kolk et al., 2005). However, exposure to multiple traumatic events is common, and more than half of individuals who report exposure to one traumatic event report exposure to multiple traumatic events (Kessler et al., 1995). Regardless, both childhood abuse and repeated trauma exposure are considered to be associated with poor adjustment and increased severity of functioning (e.g., Goodman, 2012; Lindauer, 2012).

The relationship between trauma type and severity may be better explained by associated depression. Depressive symptoms are common following childhood traumatic events (Browne & Finkelhor, 1986; Cloitre, Koenen, Cohen, & Han, 2002; Cloitre et al., 2005;

Mullen, Romans-Clarkson, Walton, & Herbison, 1988; Zlotnick et al., 1996), and PTSD commonly co-occurs with major depressive disorder (MDD) in both childhood and adulthood (Kessler et al., 1995). Large-scale studies have reported that as many as 51% to 87% of individuals with PTSD exhibit co-occurring MDD (Hankin, Spiro, Miller, & Kazis, 1999; Rytwinski, Scur, Feeny, & Youngstrom, 2013; Shore, Vollmer, & Tatum, 1989). Moreover, epidemiological studies show significant increases in odds ratios for lifetime MDD in individuals with PTSD (Davidson, Hughes, Blazer, & George, 1991; Helzer, Robins, & McEvoy, 1987; Kessler et al., 1995; Kessler, Chiu, Demler, & Walters, 2005), and the presence of MDD in addition to PTSD predicts greater impairment (Breslau, Davis, Andreski, & Peterson, 1991; Post, Zoellner, Youngstrom, & Feeny, 2011) and possibly worse treatment outcome (e.g., Green, Grace, Lindy, Gleser, & Leonard, 1990). This suggests that co-occurring PTSD and MDD may represent a more severe form of disorder than PTSD alone. In other words, co-occurring MDD may be considered a complicating factor for individuals with PTSD regardless of trauma type. Accordingly, depressive symptoms may better account for greater symptom severity and worse functioning than trauma history, especially given that trauma history is a temporally distal predictor of functioning while depressive symptoms are a more proximal predictor that is occurring concurrent with the individual's PTSD symptoms.

Overall, given the overlap of co-occurring diagnoses such as MDD, multiple traumas, and childhood abuse, it is worthwhile to understand better specifically who is most likely to present with more severe expressions of PTSD. In a sample of patients enrolled in a clinical treatment trial for chronic PTSD, we examined the relationship between childhood abuse index trauma, a history of childhood abuse, high level of exposure to multiple traumatic events, and co-occurring MDD, as well as indices of broader functioning. We hypothesized that these factors would be associated with greater symptom severity, worse functioning, higher dissociation, more extensive treatment history, and greater additional co-occurring diagnoses. In addition to examining the above hypotheses, we also examined the prevalence of pure presentations of PTSD, characterized by single incident trauma exposure and a lack of comorbidity, in order to examine whether this present PTSD clinical trial included a preponderance of "simple" or "pure" PTSD.

Method

Participants

Two hundred individuals with chronic PTSD were recruited, as part of a clinical treatment trial, in two large, metropolitan areas. Recruitment methods were diverse and were conducted via community agency and treatment provider referrals, fliers and brochures placed in the surrounding areas, and newspaper, bus, and magazine advertisements. Recruitment materials included the nature of the study as a clinical trial and presented the study treatment options of both medication and therapy. Inclusion and exclusion criteria were specifically chosen to reflect clinically appropriate standards of care for treatment with individuals with a primary diagnosis of PTSD (e.g., if actively suicidal, appropriate care is to address the suicidality prior to starting PTSD treatment). These inclusion criteria included: current DSM-IV primary chronic PTSD diagnosis and between the age of 18 and

65 years of age. Exclusion criteria included: current diagnosis of schizophrenia or delusional disorder; medically unstable bipolar disorder, depression with psychotic features, or depression severe enough to require immediate psychiatric treatment (e.g., actively suicidal); severe self-injurious behavior or suicide attempt within the past three months; no clear trauma memory or trauma memory only for an event before age of three years of age (i.e., reflecting normal developmental amnesia); current diagnosis of alcohol or substance dependence within the previous three months; or ongoing intimate relationship with the perpetrator (in assault cases; i.e., not post-trauma). Additional exclusion criteria that were related to initiation of prolonged exposure (PE) or sertraline included: unwilling or medically not advisable to stop current cognitive behavioral psychotherapy or antidepressant medication, based on condition assignment; previous non-response to adequate trial of either PE (8 sessions or more) or sertraline (150 mg/d; 8 wks); or medical contraindication for the initiation of sertraline (e.g., pregnancy/likely to become pregnant). Diagnostic comorbidities were allowed (e.g., major depression, panic disorder, etc).

Measures

Demographics—A semi-structured interview was used to assess participant characteristics such as age, gender, race, education and income levels, and information on target trauma including age, type of event, and reports of injury, threat of death, and emotional responses (fear, horror, helplessness) during the traumatic event.

Trauma History—A 12-item semi-structured interview (Resnick, Best, Freedy, Kilpatrick, & Falsetti, 1993) was used to query participants on whether they had ever witnessed or experienced a number of potentially traumatic events including natural disasters, sexual assault, combat, physical illness, and childhood sexual or physical assault. Furthermore, the interviewer queried about Criterion A2 by asking to what degree fear, helplessness, or horror was experienced for each event and age of onset. For this study, this measure was used to assess for the number of different types of past traumatic events experienced by participants (Range: 0–12) and the number of past traumatic experiences overall, as well as the experience of childhood sexual assault (CSA) or childhood physical assault (CPA). For this study, CSA was defined as at least one experience, prior to age 13, in which someone five or more years older than them had sexual contact with them (i.e., hand to genital or genital to genital contact between someone else and the participant's sexual organs or the participant and someone else's sexual organs). CPA was defined as at least one experience, prior to the age of 13, in which someone five or more years older than them assaulted them physically such that they were left with bruises, marks, or injuries.

Treatment history—This semi-structure interview queries participants' current and past psychosocial and pharmacological treatments including individual therapies, group therapies, and pharmacological agents (e.g., anti-depressants, sleep medications). Responses to current and past treatments were coded as "yes" or "no" and a count frequency was obtained for the total number of past treatments.

PTSD Symptom Scale – Interview (PSS-I)—The PSS-I (Foa, Riggs, Dancu, & Rothbaum, 1993) is a 17-item interview measure of PTSD symptoms and was included to

determine both a current PTSD diagnosis and a PTSD severity score. The administration of this measure ensured that symptoms were anchored to a target trauma event, which was the worst and most impactful event the participant reported experiencing. Items are rated on a 0–3 scale combining frequency and severity of symptoms during the past two weeks, with higher scores indicating more severe symptoms (range: 0 – 51). In this study, reliability for overall PTSD severity scores was high ($ICC = .985$) based on the 10% of cases that were coded for reliability.

Hamilton Rating Scale for Depression (HRSD₂₄)—The HRSD₂₄ (Hamilton, 1960) is an interviewer-rated scale of depressive symptoms consisting of 24 items measuring the severity of cognitive, behavioral, and somatic symptoms of depression during the past week. The scale utilized here is the 24-item version that assesses for typical symptoms of MDD. Items were scored on either a 0–2 or 0–4 range, with higher scores indicating higher levels of depression severity. The HRSD has excellent interrater reliability (.90; Rehm & O'Hara, 1985). For this study, reliability was calculated for 10% of the sample and reliability was good ($ICC = .94$).

Structured Clinical Interview for DSM-IV (SCID-IV)—The SCID-IV (Spitzer, William, Gibbon, & First, 1992) is a diagnostic interview used to assess DSM-IV Axis I criteria (symptom criteria, duration, and impairment) for the majority of Axis I disorders. The SCID-IV has acceptable inter-rater reliability with kappas between .70 – .94 (Skre et al., 1991). In this study, the SCID-IV was used to assess a diagnosis of current and lifetime history of MDD, and to assess for the presence of other lifetime and current diagnoses (e.g., substance use disorders, anxiety disorders, psychotic disorders). In the current study, diagnostic reliability for the SCID was good (current MDD $\kappa = .68$, $p_{pos} = .88$, $p_{neg} = .80$; anxiety disorders $\kappa = 1.00$, $p_{pos} = 1.00$, $p_{neg} = 1.00$; substance abuse disorders $p_{pos} = .00$, $p_{neg} = 1.00$; and other diagnoses $p_{pos} = .00$, $p_{neg} = 1.00$) based on the 10% of cases coded for diagnostic agreement.

Sheehan Disability Scale (SDS)—The SDS (Sheehan, 1983) is a self-report measure assessing functional impairment as a result of psychological symptoms in the domains of work, social activities, and family/home responsibilities. This measure is widely used in the literature and exhibits respectable sensitivity (.83), specificity (.69), positive predictive value (.47), and negative predictive value (.92) in distinguishing individuals with mental health diagnoses from those without.

Dissociative Experiences Scale (DES)—The DES (Bernstein & Putnam, 1986) is a 28-item self-report measure included to assess trait dissociation. The DES has good test-retest reliability (ranges from .84 to .96; Carlson & Putnam, 1993) and is widely used as a measure of trait dissociation. Each item is rated on a 0 (*never*) to 100 (*always*) scale, with a mean score across items that reflect the average percent of time an individual experiences dissociative symptoms.

Procedure

An initial telephone screen was conducted with all potential participants. This telephone screen screened for Criterion A trauma exposure and potential PTSD diagnosis and briefly described the nature of the clinical trial. Those who were potentially eligible were invited for an initial diagnostic interview. This interview was conducted by an independent evaluator who obtained informed consent and conducted structured interviews to collect demographic information, trauma history, treatment history, PTSD diagnosis and symptom severity (PSS-I), MDD diagnosis (SCID-IV) and symptom severity (HRSD₂₄), and presence of additional co-occurring diagnoses (SCID-IV). Self-report measures were also completed prior to the start of treatment (SDS, DES).

Of the 426 individuals who were interviewed for eligibility 172 were ineligible. Specifically, 33.2% were excluded due to not having PTSD, 17.7% had other primary diagnoses, 7.5% had a medication related contraindication, and 17.7% had an “other” reason for which they were excluded. In this other category, only two individuals were excluded for prior non-response to an adequate trial of sertraline and no individuals were excluded for a prior non-response to PE. In addition, 54 participants (23.9% of those interviewed) were considered potentially eligible but did not return for randomization to a treatment condition and are not included in this sample.

Results

Demographic Characteristics

Demographic characteristics are reported in Table 1. As shown, a wide range of ethnic backgrounds, education levels, employment status, and income levels were represented, and were generally consistent with the representation of the study areas from which the sample was recruited. The majority of the sample reported receiving some type of past treatment, both pharmacological and psychological. Furthermore, 19.5% of the sample reported receiving in-patient treatment at some point in the past. In addition, the sample was characterized by high rates of diagnostic co-occurrence with the overwhelming majority reporting at least one additional lifetime diagnosis in addition to PTSD, and a smaller majority reporting at least one additional current diagnosis.

PTSD vs. Co-occurring PTSD and MDD

To examine our first study hypothesis, we compared individuals with PTSD to individuals reporting co-occurring PTSD and MDD. The large majority of this sample met criteria for MDD over the lifetime (79.5%) and a smaller majority (54.0%) met criteria for current MDD. For these analyses, we compared individuals with current PTSD only to those with current PTSD and MDD (PTSD + MDD) on indices of symptom severity, psychosocial functioning, and dissociation and on past treatment history and extent and type of co-occurring diagnoses. Means and standard deviations are presented in Table 2.

Symptom severity, psychosocial functioning, and dissociation—Individuals with PTSD + MDD reported significantly more severe symptoms of PTSD than the PTSD only group ($F(1, 199) = 46.70, p < .001$, Cohen’s $d = 0.97$). Perhaps not surprisingly, the co-

occurring group also reported significantly more severe MDD symptoms than the PTSD only group ($F(1, 199) = 98.20, p < .001$, Cohen's $d = 1.41$). Individuals with PTSD + MDD reported worse occupational functioning than individuals with only PTSD ($F(1, 197) = 12.16, p = .001$, Cohen's $d = 0.49$). Similarly, individuals with PTSD + MDD showed greater impairment than individuals with only PTSD in social ($F(1, 197) = 28.10, p < .001$, Cohen's $d = 0.75$) and family functioning ($F(1, 198) = 9.30, p = .003$, Cohen's $d = 0.43$). In terms of trait dissociation, the co-occurring group (PTSD + MDD) self-reported significantly more dissociation ($F(1, 187) = 16.46, p < .001$, Cohen's $d = 0.58$) than the PTSD only group.

Treatment received—The PTSD + MDD group reported receiving more different types of past treatments ($F(1, 199) = 4.17, p = .04$, Cohen's $d = 0.29$) and specifically reported more past pharmacological treatments ($F(1, 199) = 6.01, p = .02$, Cohen's $d = 0.35$) than the PTSD only group. However, there was no difference in the number of past psychological treatments reported by the PTSD + MDD and PTSD only groups ($F(1, 199) = 0.89, p = .35$, Cohen's $d = 0.13$). Lastly, the PTSD + MDD group (25%) was more likely to endorse having been in in-patient treatment in the past compared to the PTSD only group (13%), $\chi^2(3, N = 200) = 4.52, p = .03$.

Diagnostic co-occurrence—Analyses of co-occurring diagnoses other than MDD yielded no significant difference between the PTSD and the PTSD + MDD groups ($F(1, 199) = 1.43, p = .23$, Cohen's $d = 0.22$) in the number of additional *lifetime* co-occurring diagnoses. However, the PTSD + MDD group were given significantly more *current* co-occurring diagnoses, other than MDD, than the PTSD only group ($F(1, 199) = 8.86, p = .003$, Cohen's $d = 0.42$), albeit the effect was only in the small to moderate range. The only difference between the groups in type of co-occurring diagnoses was that the PTSD + MDD group (36%) was more likely to have a current diagnosis of an anxiety disorder, $\chi^2(3, N = 200) = 4.93, p = .03$, than the PTSD only group (22%).

In summary, a picture emerges in which the PTSD + MDD group appears more severe than the PTSD only group, including reporting significantly greater symptom severity, worse functioning, more dissociation, more past pharmacological and inpatient treatment, and more current co-occurring diagnoses.

Index Trauma: Childhood Abuse vs. No Childhood Abuse

A variety of traumatic events were reported as the index trauma, which was defined as the traumatic event that motivated the participant to seek treatment (see Table 1). For these analyses, individuals reporting childhood abuse, either sexual (17.5%) or physical abuse (6.5%), were compared to individuals reporting other types of traumatic events from childhood or adulthood as their index trauma. We used a dichotomous definition of childhood abuse given that past research has shown that defining childhood abuse experiences using a severity score does not have greater predictive ability than dichotomous definitions of abuse (Fassler et al., 2005). We also combined exposure to childhood sexual abuse and physical abuse into one category due to small sample sizes of endorsement of each event type. This analytical decision is consistent with literature reporting that exposure

to physical and sexual abuse in childhood yields similar adult negative outcomes (e.g., MacMillan et al., 2001; Mullen, Martin, Anderson, Romans, & Herbison, 1996). Moreover, there is a high degree of overlap in experiencing different types of childhood abuse (Dong et al., 2004). Indeed, in this sample the degree of overlap was high, with 60% of individuals who reported childhood physical abuse also reporting sexual abuse, and 65% of individuals reporting childhood sexual abuse also reporting physical abuse.¹

Means and standard deviations for symptom severity, functioning, treatment history, diagnostic co-occurrence, and dissociation are presented in Table 3.

Symptom severity, psychosocial functioning, and dissociation—There were no significant differences in level of PTSD severity ($F(1, 199) = 0.36, p = .55$, Cohen's $d = 0.09$) for individuals with childhood abuse as the index traumatic event versus those not reporting childhood abuse as the index trauma. Similarly, there was not a significant difference in depression severity ($F(1, 199) = 0.12, p = .74$, Cohen's $d = 0.06$). Individuals reporting childhood abuse as their index trauma did not differ with individuals not reporting childhood abuse as their index trauma on measures of occupational ($F(1, 197) = 0.96, p = .33$, Cohen's $d = 0.16$), social ($F(1, 197) = 0.51, p = .48$, Cohen's $d = 0.12$), and family ($F(1, 170) = 0.68, p = .41$, Cohen's $d = 0.14$) functioning. There was also no difference in level of trait dissociation for those with or without childhood abuse as the index trauma ($F(1, 171) = 0.35, p = .56$, Cohen's $d = 0.10$).

Treatment received—There were no differences between individuals with childhood abuse as their index trauma versus individuals with other index traumas in the number of past treatments received ($F(1, 199) = 0.36, p = .55$, Cohen's $d = 0.09$). Consistently, neither group reported receiving significantly more past psychological treatments, ($F(1, 199) = 0.93, p = .34$, Cohen's $d = 0.16$) or pharmacological treatments ($F(1, 199) = 0.01, p = .92$, Cohen's $d = 0.02$). Finally, there was no difference in past history of inpatient treatment, $\chi^2(3, N = 200) = 2.31, p = .15$, between individuals with childhood abuse as the index event (27%) versus those with other types of index events (17%).

Diagnostic co-occurrence—There were no significant differences between participants with childhood abuse versus other index traumas in the number of current ($F(1, 199) = 0.41, p = .41$, Cohen's $d = .11$) or lifetime co-occurring diagnoses ($F(1, 199) = 0.93, p = 0.34$, Cohen's $d = 0.16$). In addition, there were no significant differences between those reporting childhood abuse as their index trauma and those reporting other types of traumatic events as their index trauma in the likelihood of having current or lifetime anxiety, mood, or substance use disorders.

¹We conducted additional analyses looking at differences between those with CSA compared to those with CPA on all outcomes. The only differences to emerge were for individuals with CSA to report significantly more past therapy treatment than individuals with CPA ($F(1, 140) = 15.08, p < .001$, Cohen's $d = .65$). In addition, individuals with CSA were more likely to have had past inpatient treatment than individuals with CPA ($\chi^2(3, N = 200) = 16.33, p < .001$). On all other outcomes of severity, depression, dissociation, functioning, past treatment, and comorbidity individuals with CSA and CPA did not significantly differ. This suggests that the two groups are similar and that combining them in analyses is warranted.

In summary, those reporting childhood abuse versus those reporting other types of traumatic events as their index trauma, looked similar on measures of symptom severity, functioning, dissociation, past treatment history, and diagnostic co-occurrence.

History of Childhood Abuse vs. No History of Childhood Abuse

In addition to reports of childhood abuse as the index trauma, reporting a history of childhood abuse was common in this sample, with 36.0% reporting a sexual assault in childhood and 46.5% reported a physical assault from childhood. Thus, in addition to examining childhood abuse as the index traumatic event, we examined individuals reporting a history of childhood abuse. For purposes of these analyses, participants were included in the childhood abuse group if they endorsed childhood physical or sexual abuse as their target traumatic event or as an event occurring in their history. In this sample 65.0% ($n = 130$) of participants endorsed childhood abuse, suggesting that, for participants seeking treatment in this trial, childhood abuse was a common occurrence. Table 3 also presents descriptive statistics for outcomes separately by history of childhood abuse.

Symptom severity, psychosocial functioning, and dissociation—There were no significant differences between the groups in PTSD severity ($F(1, 199) = 0.08, p = .78$, Cohen's $d = 0.04$), but there was a trend of a difference in depression severity ($F(1, 199) = 2.89, p = .09$, Cohen's $d = 0.25$) with individuals with a history of childhood abuse reporting greater depression than those without a history, although the effect size was small. There were no significant differences in occupational ($F(1, 197) = 0.34, p = .56$, Cohen's $d = 0.09$), social ($F(1, 197) = 0.82, p = .37$, Cohen's $d = 0.14$) or family functioning ($F(1, 198) = 1.85, p = 0.18$, Cohen's $d = 0.20$) between the two groups. There were no significant differences in trait dissociation ($F(1, 185) = 0.96, p = .33$, Cohen's $d = 0.15$) between the two groups.

Treatment received—There were no differences between those with a childhood abuse history versus no childhood abuse history in the number of past treatments received ($F(1, 199) = 0.49, p = .49$, Cohen's $d = 0.10$). Consistently, neither group received significantly more past pharmacological treatments ($F(1, 199) = 0.14, p = .71$, Cohen's $d = 0.06$). However, there was a no difference in likelihood to report more past psychological treatments ($F(1, 199) = 2.78, p = .10$, Cohen's $d = 0.25$). Finally, individuals with a history of childhood abuse (24%) were more likely to report a past history of inpatient treatment, $\chi^2(3, N = 200) = 4.47, p = .02$, than those without a history (11%).

Diagnostic co-occurrence—When examining diagnostic co-occurrence, individuals reporting a history of childhood abuse did not significantly differ from those without a history of childhood abuse on current DSM-IV Axis I diagnoses ($F(1, 199) = 2.68, p = .10$, Cohen's $d = 0.24$). There were also no differences on lifetime diagnoses ($F(1, 199) = 1.00, p = .32$, Cohen's $d = 0.15$). When looking at different co-occurring diagnoses, there were no differences between the groups on lifetime or current diagnostic co-occurrence for anxiety, mood, or substance use disorders.

In summary, individuals reporting a history of childhood physical or sexual abuse did not consistently differ from individuals without a history of childhood abuse, and differences that did emerge tended to be small, with individuals with a history of childhood abuse reporting slightly more severe current depression and slightly more previous inpatient treatment.

High versus Low Level of Trauma Histories

When looking at traumatic events across the lifespan, most participants reported a history of multiple different types of Criterion A traumatic events ($M = 4.06$, $SD = 2.89$) in addition to their index trauma. The mean number of other Criterion A traumatic events experienced over the course of their lives was also high ($M = 9.05$, $SD = 6.23$)². Overall, in terms of lifetime traumatic events, rates of assault were high, with 43.5% of the sample reporting a sexual assault in adulthood and 29.5% reporting a sexual assault in childhood. Furthermore, 59.5% reported a physical assault in adulthood and 43.0% reported a physical assault from childhood. In addition, just over half (52.0%) of the sample reported experiencing a motor vehicle or other type of accident and 59.0% reported experiencing an unexpected death of a loved one.

In order to examine differences between individuals with extensive trauma histories and those with less extensive trauma histories we divided the sample using a cutoff of five or more additional traumatic events in the past. We used a cut off to classify individuals as high or low trauma exposure due to the wide range of number of events reported, from 0 to "too many to count," and the highly skewed nature of the data. Past research often distinguishes individuals based on exposure to one past event versus exposure to more than one event (e.g., Green et al., 2000). However, in this sample, a cutoff of more than one event resulted in only 5.6% of the sample being included in the low level trauma exposure group. Given that treatment-seeking individuals often have high levels of trauma exposure, we used a conservative definition of high trauma exposure and chose a cutoff of five traumas, based on the median number of four other types of traumatic events. This definition resulted in 74.1% ($n = 146$) of individuals being classified as having a high level of trauma exposure (i.e., five or more past traumatic events) and 25.9% ($n = 51$) being classified in the low level of trauma exposure group (i.e., less than five past traumatic events). Means and standard deviations for the two groups are presented in Table 4.

Symptom severity, psychosocial functioning, and dissociation—There was no significant difference between the high level and low level trauma exposure groups on PTSD severity ($F(1, 196) = 2.15$, $p = .14$, Cohen's $d = 0.24$). However, the high exposure group reported more severe symptoms of depression than the low exposure group ($F(1, 196) = 4.54$, $p = .03$, Cohen's $d = 0.35$). There were no differences between the trauma exposure groups on work ($F(1, 194) = .02$, $p = .90$, Cohen's $d = 0.02$), social ($F(1, 194) = 2.11$, $p = .15$, Cohen's $d = 0.24$), or family functioning ($F(1, 195) = 1.23$, $p = .27$, Cohen's $d = 0.18$). There was also no difference in trait dissociation between the high and low level trauma exposure groups ($F(1, 185) = 1.65$, $p = .20$, Cohen's $d = 0.21$).

²Given that many participants endorsed having experienced one or more traumatic events "too many times to count" or "more than 100 times", the reported maximum

Treatment received—There were significant differences in the number of past treatments, both psychological and pharmacological, that were reported. Specifically, the high trauma exposure group reported significantly more past treatment ($F(1, 196) = 3.94, p = .049$, Cohen's $d = 0.32$) and more past psychological treatment ($F(1, 196) = 4.93, p = .03$, Cohen's $d = 0.36$), although these differences were significant they were not large in magnitude with effect sizes in the small to moderate range. The trauma exposure groups reported similar past pharmacological treatment ($F(1, 196) = 1.78, p = .18$, Cohen's $d = 0.22$) to the low trauma exposure group. There were no significant differences in reports of past inpatient treatment for the high level of trauma exposure group (23%) compared to those with lower levels of trauma exposure (10%).

Diagnostic co-occurrence—When looking at diagnostic co-occurrence individuals with high trauma exposure had significantly more current ($F(1, 196) = 9.69, p = .002$, Cohen's $d = 0.51$) and lifetime ($F(1, 196) = 12.65, p < .001$, Cohen's $d = 0.58$) DSM-IV Axis I diagnoses than individuals with less trauma exposure. When looking at different current co-occurring disorders, the high trauma exposure group (62%) was more likely to endorse a current mood disorder, $\chi^2(3, N = 197) = 4.23, p = .04$, than the low trauma exposure group (45%). There were no differences in current anxiety or substance use disorders. When looking at lifetime diagnoses individuals with a high level of trauma exposure (53%) were more likely to report a lifetime diagnosis of a substance use disorder, $\chi^2(3, N = 197) = 11.31, p < .001$, than the low trauma exposure group (25%). There were no significant differences between individuals with a high level of trauma exposure and those with a lower level of trauma exposure on reports of lifetime anxiety or mood disorders.

In summary, individuals reporting a history of high trauma exposure show significantly more depression symptoms and past treatment, although these differences tended to be small. In addition, individuals with a high level of past trauma exposure reported greater lifetime and current diagnostic co-occurrence, particularly current mood disorders and lifetime substance use disorders.

What about “pure PTSD”?

Given the commonly observed role of childhood abuse, repeated trauma exposure, and co-occurring diagnoses contributing to more severe clinical presentations with PTSD, we investigated cases of “pure” PTSD in this sample. Combining our above indices, we defined pure PTSD as participants reporting no experiences of childhood abuse (either index or history), no current co-occurring MDD, and the presence of only a single traumatic event. By this definition only 2.5% ($n = 5$) of the sample met criteria for “pure” PTSD. The small sample size for this pure PTSD group precluded any further analyses.

Discussion

This study assessed clinical diversity in more detail than earlier PTSD treatment trials, and potentially suggests greater clinical diversity in PTSD clinical treatment trial samples than is often assumed. We found high rates of comorbidity, multiple trauma exposures, prior treatment seeking, impaired functioning and dissociation. Rates of “pure PTSD,” defined as individuals with no trauma history, adult trauma exposure only, and comorbidity, were only

2.5% of the sample. This goes against the assumption that clinical trials such as this one focus predominately on what some have termed simple or pure PTSD. Benchmarking our data, rates of trauma exposure and comorbidity are consistent with past large-scale PTSD treatment trials (Foa et al., 2005; Resick et al., 2002; Schnurr et al., 2007). Our more in-depth examination of these and other factors lends further support to the notion that samples in recent PTSD research trials are at times more diverse and complex than often acknowledged. This is not surprising given that treatment-seeking samples, whether seen in a clinical trial or in a community-based clinical practice, have higher rates of severity or comorbidity than non-seeking treatment seeking samples. This phenomenon is well known and commonly referred to as Berkson's bias (Berkson, 1946; Westreich, 2012).

Co-occurring MDD emerged as highly associated with more severe symptoms, poorer functioning, more dissociation, greater past treatment attempts, and more current co-occurring diagnoses. To a lesser extent, the presence of a high level of past trauma exposure was also associated with greater depression, greater past treatment attempts, and more diagnostic co-occurrence. In addition, a sizeable number of patients reported traumatic events from childhood, specifically childhood sexual or physical abuse. However, the overall lack of differences for childhood abuse compared to other traumatized individuals suggests that these two groups may not be as qualitatively different as often proposed, at least not for those individuals seeking treatment in a clinical trial. Thus, these findings run contrary to theories of PTSD that suggest childhood abuse is a universal marker for greater severity and impairment, poorer functioning, greater treatment resistance, and increased diagnostic co-occurrence compared to those without childhood trauma (e.g., Herman, 1992; Terr, 1991; van der Kolk et al., 2005) and suggests that at minimum a subset of individuals with childhood abuse histories look similar to individuals with PTSD related to other types of traumatic experiences. It appears that co-occurring MDD, and to a lesser extent a history of high trauma exposure, may be more likely to be associated with factors indicative of poorer overall functioning.

Co-occurring MDD was common in this sample, and individuals with both PTSD and MDD appeared to exhibit overall greater severity of disorder and impairment, consistent with other investigations of PTSD and MDD co-occurrence (e.g., O'Donnell, Creamer, & Pattison, 2004; Post et al., 2011). Some have suggested that, when they persist chronically, PTSD and MDD following trauma exposure might best be conceptualized as a general severe traumatic stress reaction, resulting from similar vulnerability factors and not meaningfully distinguishable (Breslau et al., 2000; O'Donnell et al., 2004; Forbes et al., 2010). These findings are consistent with the notion that the overlap of PTSD and MDD represents a more severe form of psychopathology.

In addition, it appears that a history of a high level of trauma exposure across the lifespan is also a marker for severity, at least in terms of increased depressive symptom severity, greater psychological treatment history, and increased mood and substance use disorder co-occurrence. This may in fact be related to greater depressive symptomatology, as individuals with multiple traumas reported more severe depression symptoms and were likely to meet criteria for current MDD (74.9%). This is consistent with previous meta-analyses reporting that history of previous traumatic events is a modest predictor of developing PTSD

following trauma (Brewin et al., 2000; Ozer et al., 2003), and indeed the majority of this sample reported extensive trauma histories.

Perhaps surprisingly, given theories of childhood abuse and symptoms of PTSD (e.g., Herman, 1992), few consistent differences emerged between individuals reporting childhood abuse and those not reporting childhood abuse on measures included in this study. In particular, individuals presenting with childhood abuse as their index trauma did not differ from those reporting other types of index events across multiple indices. More differences emerged when we looked at those reporting a history of childhood abuse compared to those without such a history, but the observed trend difference on greater depression severity and significant difference on greater past inpatient treatment for individuals with a history of childhood abuse were generally small in magnitude. It is important to note that although several studies have shown a link between childhood traumatic experiences, particularly CSA, and adult functioning (see Putnam, 2003 for a review), childhood abuse may also be thought of as a nonspecific risk factor for adult symptomatology with a host of other related factors (e.g., family environment, coping skills) also playing a role (e.g., Chaffin et al., 1997; Fassler et al., 2005; Romans et al., 1997). This does not suggest that there are not downstream consequences of childhood abuse, solely that, when examining a PTSD treatment-seeking sample, these consequences are not easily distinguished from those without childhood abuse.

In addition, there is considerable overlap of childhood trauma exposure with more severe PTSD symptomatology and emotion regulation difficulties (Ehring & Quack, 2010), though this was not evident on dissociative symptoms in the present sample. Specifically, these findings might be due to the use of a sample that is severe enough to warrant seeking treatment for PTSD, and our ability to see associations between childhood abuse and outcomes might have been hindered by the overall severity of our sample. Nonetheless, our findings suggest that PTSD is associated with impairment across a variety of domains and that the unique association between childhood trauma and adult outcomes may be less than is often assumed. At the very least, these findings suggest that, in individuals with PTSD, the unique and detrimental effects of childhood abuse on functioning should not be universally assumed, as at least some individuals with chronic PTSD and a history of childhood trauma do not present with more severe symptoms, impaired psychosocial functioning, dissociation, or more prior treatment.

Results of this study must be interpreted in light of several limitations. The measures of trauma history and treatment history were designed to survey diversity of traumatic events and treatments, inquiring for endorsements of each event and treatment type. These measures assess retrospective recall of events and treatments and thus are biased by limitations of recall. In particular, in cases of chronic abuse it can be difficult for individuals to identify the exact number of traumatic events, although our method of classifying individuals into high versus low trauma exposure likely helps account for this bias. Further, this study was cross-sectional and cannot comment on the predictive ability of these characteristics. Alternatively, the effects of childhood abuse may be more subtle than captured by measures in this study, such that long-standing patterns of avoidance and altered lifestyles may not be perceived by the trauma survivor as severe or functionally impairing.

We also did not include a comparison sample of individuals recruited from clinical practice or directly benchmark our data to other clinical trial samples; and, thus, we cannot directly compare our individuals seeking treatment in a clinical trial to those seen in a purely clinical context or those in other clinical trials. It is possible that this study excluded some individuals that would not be excluded from trauma-focused treatment in clinical practice. However, our observed levels of severity demonstrate that individuals randomized for treatment in a PTSD clinical trial are more severe and complex than is often assumed, as evidenced by the strikingly low rate of participants with single incident traumas, no MDD comorbidity, and only adult trauma.

The current study suggests that the typical individual seeking treatment for PTSD in a clinical trial presents with a much more complicated symptom presentation than is often assumed. Co-occurring MDD, childhood trauma exposure, and a high level of past trauma exposure were all common in our sample. Across these, co-occurring MDD was a consistent marker of higher symptom severity and worse functioning. Overall, one of the implications of this study is that there may not be anything such as “pure” PTSD, particularly within clinical trial samples, and that pure PTSD may be a construct that exists more as a theoretical ideal than an actual clinical entity. Dissociation, prior treatment resistance, psychosocial impairment, and diagnostic co-occurrence, which are not often thought of as expected concurrent reactions with PTSD, are commonly reported and appear most strongly related to severity of disorder and the presence of co-occurring depressive symptoms.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1

Demographics

	<i>M (SD) or %</i>	Range
Age (years)	37.41 (11.30)	19 – 62
Gender (% Female)	75.5	
Ethnicity		
Caucasian	65.5	
African American	21.5	
Other Background	13.0	
Education (% not college educated)	70.0	
Income (% less than \$20,000/year)	48.5	
Trauma Type		
Adult Sexual Assault	31.0	
Childhood Assault	24.0	
Adult Assault (non-sexual)	22.5	
Accident (motor vehicle, natural disaster)	13.5	
Death/violence to loved one	6.5	
Combat/war	2.5	
Time Since Trauma Exposure (years)	11.97 (12.69)	0.2 – 51.4
Number of Other Criteria A Events	9.05 (6.23)	0.0 – 26.00
Axis I Co-occurrence (SCID-IV)		
Current	67.0	
Lifetime	96.0	
Prior Psychiatric Treatment		
Any Treatment	85.5	
Inpatient Treatment	19.5	

Table 2

Comparison of PTSD and PTSD + MDD

	PTSD (<i>n</i> = 92)		PTSD + MDD (<i>n</i> = 108)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
PTSD Severity (PSS-I)	26.41 _a	5.59	32.26 _b	6.38
Depression Severity (HRSD ₂₄)	17.31 _a	7.75	29.16 _b	8.98
Functioning (SDS)				
Occupational	4.97 _a	3.42	6.51 _b	2.82
Social	5.87 _a	2.56	7.64 _b	2.15
Family	5.74 _a	2.57	6.80 _b	2.33
Past Treatment Received				
All Treatments	3.33 _a	3.29	4.27 _b	3.23
Pharmacological	1.47 _a	1.68	2.14 _b	2.12
Psychosocial	1.89	2.06	2.14	1.66
Number of Lifetime Diagnoses (SCID-IV)	2.08	1.72	2.38	1.85
Number of Current Diagnoses (SCID-IV)	0.36 _a	0.67	0.73 _b	1.03
Trait Dissociation (DES)	12.47 _a	10.60	20.24 _b	15.03

Note. PTSD = posttraumatic stress disorder; MDD = major depressive disorder (current); PSSI = Posttraumatic Symptom Scale- Interview Version; HRSD₂₄ = Hamilton Rating Scale for Depression, 24 item version; SDS = Sheehan Disability Scale; SCID-IV = Structured Clinical Interview for DSM-IV; DES = Dissociative Experiences Scale. Means in the same row that do not share subscripts differ at the $p < .05$ level.

Table 3

Reports of Childhood Abuse: Index Event and History

	Index Event				Abuse History			
	No CA (<i>n</i> = 152)		CA (<i>n</i> = 48)		No CA (<i>n</i> = 70)		CA (<i>n</i> = 130)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
PTSD Severity (PSS-I)	29.73	6.64	29.06	6.88	29.39	6.68	29.67	6.71
Depression Severity (HRSD ₂₄)	23.85	10.59	23.27	9.38	22.03	10.42	24.61	10.14
Functioning (SDS)								
Occupational	5.93	3.17	5.40	3.30	5.99	3.14	5.71	3.24
Social	6.89	2.43	6.59	2.75	6.60	2.40	6.94	2.56
Family	6.23	2.51	6.57	2.47	5.99	2.72	6.49	2.36
Past Treatment								
All Treatments	3.76	3.24	4.08	3.44	3.61	3.11	3.95	3.37
Pharmacological	1.82	1.89	1.85	2.16	1.90	2.04	1.79	1.91
Psychosocial	1.95	1.87	2.25	1.80	1.73	1.57	2.18	1.98
Number of Lifetime Diagnoses (SCID-IV)	3.03	1.98	3.33	1.75	2.19	2.03	3.20	1.87
Number of Current Diagnoses (SCID-IV)	1.20	1.23	1.33	1.21	1.04	1.08	1.34	1.29
Trait Dissociation (DES)	16.91	13.56	15.54	14.06	15.67	11.42	17.09	14.78

Note. CA = Childhood Abuse (physical or sexual); PSSI = Posttraumatic Symptom Scale-Interview Version; HRSD₂₄ = Hamilton Rating Scale for Depression-24 item version; SDS = Sheehan Disability Scale; SCID-IV = Structured Clinical Interview for DSM-IV; DES = Dissociative Experiences Scale. Means in the same row that do not share subscripts differ at the $p < .05$ level.

Table 4

Multiple Trauma Exposure

	Low Trauma Exposure (<i>n</i> = 51)		High Trauma Exposure (<i>n</i> = 146)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
PTSD Severity (PSS-I)	28.35	5.90	29.93	6.85
Depression Severity (HRSD ₂₄)	21.00 _a	9.04	24.45 _b	10.27
Functioning (SDS)				
Occupational	5.72	3.00	5.79	3.26
Social	6.37	2.44	6.97	2.53
Family	5.96	2.68	6.41	2.44
Past Treatment Received				
All Treatments	3.00 _a	2.77	4.05 _b	3.39
Pharmacological	1.49	1.83	1.91	1.98
Psychosocial	1.51 _a	1.39	2.16 _b	1.94
Number of Lifetime Diagnoses (SCID-IV)	2.27 _a	1.74	3.36 _b	1.91
Number of Current Diagnoses (SCID-IV)	0.78 _a	0.73	1.39 _b	1.32
Trait Dissociation (DES)	14.15	9.00	17.11	14.77

Note. PSSI = Posttraumatic Symptom Scale- Interview Version; HRSD₂₄ = Hamilton Rating Scale for Depression, 24 item version; SDS = Sheehan Disability Scale; SCID-IV = Structured Clinical Interview for DSM-IV; DES = Dissociative Experiences Scale. Means in the same row that do not share subscripts differ at the $p < .05$ level.