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A clinical profile of women with PTSD and substance dependence

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## Abstract

To assess the clinical characteristics of women with posttraumatic stress disorder (PTSD) and substance dependence, we compared 28 women with both disorders to 29 women with PTSD-alone on a wide battery of lifetime and current clinical measures. The dual diagnosis women consistently had a more severe clinical profile, including worse life conditions (e.g., physical appearance, opportunities in life), both as children and as adults; greater criminal behavior; a higher number of lifetime suicide attempts; a greater number having a sibling with a drug problem; and fewer outpatient psychiatric treatments. One discrepant finding, however, was their lower rate of major depression. Interestingly, the two groups did not differ in number or type of lifetime traumas, PTSD onset or severity, family history of substance use, coping style, functioning level, psychiatric symptoms, or sociodemographic characteristics. Treatment implications and methodological limitations are discussed.

To date there is only limited understanding of the factors that contribute to the high concordance between posttraumatic stress disorder (PTSD) and substance use disorder (SUD), particularly for women. One finding is that women's trauma profile is associated with substance use disorders. Specifically, women with this dual diagnosis typically have a history of childhood physical and/or sexual abuse, often repetitive and by family members (Brady, Killeen, Saladin, Dansky, & Becker, 1994; Fullilove et al., 1993; Grice, Brady, Dustan, Malcolm, & Kilpatrick, 1995; Miller, Downs, & Testa, 1993; Najavits et al., 1998; Najavits, Weiss, & Shaw, 1997). Also, several investigators have found a correlation between severity of trauma (in number, type, and degree of violence) and greater likelihood of substance use disorders (Brown & Anderson, 1991; Fullilove et al., 1993; Kilpatrick, Resnick, Saunders, & Best, 1996, in press). In terms of non-trauma factors, several studies have found evidence that women with this dual diagnosis show a more severe current clinical profile than women substance abusers without PTSD: lower compliance with aftercare (Brady et al., 1994), co-occurring affective disorder (Brady et al., 1994), dissociation (Ouimette, Wolfe, & Chrestman, 1996), medical problems (Brady et al., 1994) and more addiction-related problems (i.e., total score on the Addiction Severity Index) (Brady et al., 1994). In terms of lifetime factors other than trauma history, women with this dual diagnosis have evidenced a greater number of borderline personality disorder symptoms than women with PTSD-only (Ouimette et al., 1996).

In short, women with this dual diagnosis appear to represent a more impaired sample than single-diagnosis groups (PTSD-alone or substance use disorder alone) to which they have been compared, both in current and lifetime variables. However, existing studies are extremely limited in number and in scope. For example, there has been only very minimal attention to lifetime variables other than trauma history; and a relatively narrow range of current variables as well. Studies also vary in their diagnostic rigor, their use of lifetime versus current diagnoses; and their choice of a comparison group.

Our goal in this study was to try to address, more extensively than in previous studies, the clinical characteristics of this population. To explore this topic, we conducted a cross-sectional evaluation of two groups—a dual diagnosis group with current PTSD and substance dependence, and a single diagnosis group of current PTSD-alone. We know of only one other study that has compared these two groups (Ouimette et al., 1996); and that study evaluated a sample of women war veterans rather than the sample of women civilians with childhood abuse in this study. Given the early state of the literature, we used a wide range of measures to provide a broad profile of clinical characteristics addressing lifetime co-morbid Axis I disorders, family history of substance abuse risk and protective factors, and trauma history; and current psychiatric symptoms, coping skills, functioning, suicidality, substance use, and sociodemographic characteristics.

## Method

### Participants

Participants were recruited on the grounds of McLean Hospital via posted fliers seeking women with “current substance abuse and a history of trauma”, word-of-mouth, and direct recruitment from clinical units. A total of fifty-seven adult women participated. Twenty-eight of the women met current DSM-IV criteria for both PTSD and SD, comprising the dual diagnosis (DD) group. Participants in the DD group also had to report active substance use within the past 30 days, a more stringent criterion than DSM-IV to ensure a sample that was actively using substances. Twenty-nine women who met DSM-IV criteria for current PTSD (but had no lifetime history of any substance use disorder) comprised the single diagnosis (SD) group.

Participants were excluded if they: 1) had a history of schizophrenia or organic mental disorder; 2) were formally mandated for treatment (as mandated patients are known to represent a specific subpopulation of substance abusers who are believed not representative of the typical substance abuse sample); 3) were receiving methadone-maintenance treatment; or 4) could not complete assessments due to factors such as mental retardation, illiteracy, chronic homelessness, life threatening or unstable medical illness, or impending incarceration.

Measures: Participants completed a one-time assessment on the following measures:

#### I. Participant Characteristics:

Sociodemographic characteristics. Sociodemographic information was assessed on the Life Experiences Questionnaire - Revised (LEQ) (Bryer, Nelson, Miller, & Krol, 1987), with items on age, marital status, religion, race, education level, occupation, and whether the patient is currently in any psychiatric and/or substance abuse treatment.

Diagnoses. Participants were assessed on the full Structured Clinical Interview for DSM-IV (SCID) (First, Spitzer, Gibbon, & Williams, 1994). Modules used from the SCID were: affective disorders, anxiety disorders (including PTSD), substance use disorders, eating disorders, and adjustment disorders. All disorders were lifetime, except for the PTSD and SUD diagnoses. For the latter, we only assessed current PTSD and SUD diagnoses because we viewed them as entry criteria into the study (and, in addition, the single-diagnosis group was assessed for lifetime SUD to rule that out). All diagnoses were rated for severity (rated 0-8). The SCID was administered by a trained diagnostician (either doctoral-level psychologist or licensed clinical social worker) both of whom were selected, trained, and supervised by the University of Pennsylvania Assessment Unit of the Center for Psychotherapy Research. Both had conducted at least 10 Axis I and II SCIDs prior to hire, and were supervised bi-weekly during the study.

PTSD Symptoms. The Trauma Symptoms Checklist-40 (TSC-40; Elliott & Briere, 1990), was used to assess current symptoms associated with PTSD (scaled 0 to 4) on five subscales: anxiety, depression, dissociation, sexual abuse trauma, and sexual problems. Psychometric information on the measure is described by Briere (1995).

Substance Use. The Addiction Severity Index-5th edition (ASI, McLellan et al., 1992) is a well-known structured interview designed to assess the severity of drug and alcohol use and five related problem areas (family/social, legal, psychological, employment, and medical). Scores on the ASI include composites (summarizing across the variables in each of the seven major problem areas), severity ratings by the interviewer, and individual items. The measure was administered by a bachelor-level research assistant certified for interrater reliability by the University of Pennsylvania Center for Psychotherapy Research Assessment unit, based on agreement with correct answers on a set of three tapes (with a criterion of .85 or higher). Psychometric properties of the measure are strong, and provided in detail in McLellan, Luborsky, Cacciola, and Griffith (1985).

Additionally, the Drug and Alcohol Use Questionnaire (Weiss, 1989) was used to provide descriptive information about patients' drug of choice and first drug use.

#### II. Current Functioning:

General Symptomatology. The Brief Symptom Inventory (BSI) Derogatis, 1992) is a 53-item self-report measure (scaled 0-4) that assesses a broad range of symptomatology on the following subscales: somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism dimension, general severity index, positive symptom total, positive

symptoms distress index. Psychometric data on the measure are extensive and generally indicate strong psychometric properties, as described in Derogatis (1992).

Suicidality. We assessed suicidality from 10 items on the Suicidal Behaviors Questionnaire (SBQ) (Linehan & Addis, 1990) that obtained data on the frequency and method of self-harm incidents and ideation.

Coping Styles. The Coping Strategies Inventory (CSI) (Tobin, Holroyd, Reynolds, & Weigal, 1989) is a 40-item self-report measure (scaled 1-5) used to examine adaptive methods of coping (subscales: expressing feelings, seeking support, distraction, working hard to solve the problem, and cognitive restructuring), and maladaptive methods of coping (subscales: passivity/fantasy, self-blame, and isolation). Psychometric properties of the measure and a description of the factor analysis used to develop its subscales are described in Tobin et al. (1989).

### III. Life History Factors:

Trauma History. Two self-report measures were administered to assess lifetime history of trauma: the Trauma History Questionnaire (THQ) (Greene, 1995) and the Childhood Trauma Questionnaire (CTQ) (Bernstein et al., 1994). The THQ is a 116-item self-report measure that obtains a lifetime self-report history of traumatic incidents, within three categories: crime-related (e.g., robbery), general disaster and trauma (e.g., car accident), and unwanted physical and sexual experiences (e.g., rape). For each of 23 items, patients indicated lifetime occurrence, frequency, age of onset, and type of relationship to the perpetrator. Psychometric data on the THQ show high test-retest reliability of items over a two- to three-month period; correlations on items ranged from .47 to 1.00, with a mean of .70 (Greene, 1995). The CTQ is a 61-item self-report measure (scaled 1 to 5) which provides five factor scores: emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect. The CTQ has demonstrated high internal consistency (.79 to .94 for the factor scores); high test-retest reliability over a two- to six-month interval (intraclass correlation = .88); and strong convergent validity with an interview measure of childhood abuse and neglect.

Family Diagnostic History. The Family History Assessment Revised (FHA) (Janca, Bucholz, & Janca, 1992) is a 48-item interview designed to assess the frequency of drug and alcohol problems in an individual's relatives. The scale comprises a list of both biological and non-biological relatives, to which the participant is asked whether any have had a drug or alcohol problem, scored "present", "absent" or "uncertain".

Risk and Protective Factors. The Risk and Protective Factors Questionnaire (RPFQ) (Najavits, 1994) is a 33-item self-report measure (scaled 1-3) that provides scores on two subscales: childhood risk and protective factors and adult risk and protective factors. This scale was designed to assess factors traditionally associated with resilience. Examples of items on the scale include: "Your grades in school", "Relationship with your parents", "Interest in the arts", and "Athletic ability". Items were designed based on a review of literature on resilience, particularly the literature on trauma survivors (Luthar & Zigler, 1991; Rutter, 1987; Valentine & Feinauer, 1993).

### Data Analysis

We compared the DD and SD groups on each of the above measures using independent t-tests (for measures that had a continuous scale) and chi-square tests (for measures with categorical scaling). Total scores and subscale scores were used for all of the analyses except the Suicidal Behaviors Questionnaire and the Risk and Protective Factors Questionnaire, for which individual items were used because they do not have subscales. We also conducted item-level

analyses on ASI items that were not part of the subscale scores. On the SCID, we analyzed each diagnostic category separately as well as the total number of lifetime disorders (other than the entry criteria of PTSD and SUD). We did not use a Bonferroni correction due to the relatively small sample size (which suggested that the risk of Type II error was more important than Type I error in this exploratory project). A total of 208 comparisons were conducted, of which 17 were significant.

## Results

### Participant Characteristics

Sociodemographic characteristics. Fifty-one participants (89.5%) were Caucasian, 3 (5.3%) were African-American, 1 (1.8%) was Hispanic, 1 (1.8%) was Native American, and 1 (1.8%) did not specify. Their mean age was 36.33 ( $SD = 8.64$ ), ranging from 21 to 55. Thirty two (52.6%) were never married, 16 (28.1%) were divorced/widowed/separated, and 11 (19.3%) were married. Forty five (79%) reported attending at least some college. Most patients were currently in psychiatric and/or substance abuse treatment (89%). A comparison of the two study groups on sociodemographic characteristics revealed no significant differences between them (on race, age, marital status, level of education, religion), nor in per cent currently in treatment.

Trauma/PTSD. On the THQ, 54 participants (95%) reported a history of physical and/or sexual abuse; 54 (95%) reported general disasters (e.g., car accidents, natural disasters), and 44 (77%) reported crime victimization. The average number of traumas was 10. Virtually all participants (98%) reported their first trauma before the age of 18. The mean age of onset for PTSD in the sample was 17.2 years ( $SD = 9.3$ ,  $n = 55$ ). In current PTSD diagnosis, the DD sample obtained a mean severity rating of 5.78 ( $SD = .7$ ) and the DD a mean of 5.73 ( $SD = 1.1$ ), scaled 0-8. For the majority of DD patients, their PTSD preceded the onset of their substance use disorder (60.7%); for 25% the substance use disorder preceded PTSD; and 7.1% the two disorders began at the same age; and 3.6% could not tell which came first.

Substance Use. Rates of current substance dependence in the DD group based on the SCID were as follows in order of frequency (with multiple diagnoses per patient possible): 18 with alcohol dependence (66.7%); 16 with cocaine dependence (59.3%); 14 with cannabis dependence (51.9%); 8 with opioid dependence (29.6%); 7 with anxiolytic dependence (25.9%); 6 with amphetamine dependence (22.2%); 2 with hallucinogen dependence (7.4%); 2 with sedative dependence (7.4%); 1 with inhalant dependence (3.7%). The mean age of onset for substance use disorder was 19 years ( $SD = 8.6$ ,  $n = 27$ ), and patients obtained a mean of 3.33 ( $SD = 1.6$ ) current substance use disorder diagnoses.

### Comparisons Between the Dual Diagnosis and Single Diagnosis Groups

Significant differences between the two groups were found on three measures: the Addiction Severity Index (one subscale and three individual items), the Risk and Protective Factors Questionnaire (10 individual items, 1 subscale and the overall score), and the SCID (presence of major depressive disorder, recurrent). These results are summarized in Table 1. All other comparisons were nonsignificant.

## Discussion

This study compared women diagnosed with both PTSD and substance dependence (our dual diagnosis group) versus women with PTSD alone (our single diagnosis group). The goal was to provide a more extensive assessment of their lifetime and current clinical profile than has been previously addressed.

As is comparable to previous research, our dual diagnosis sample evidenced a more

severe clinical profile on all variables than our single-diagnosis sample, including worse life conditions (e.g., physical appearance, opportunities in life), both as children and as adults; greater criminal behavior; a higher number of lifetime suicide attempts; a greater number having a sibling with a drug problem; and fewer outpatient psychiatric treatments. The high lifetime rate of suicide attempts (78.6%) is a particularly concerning public health issue.

It was interesting that the only domain that consistently differentiated the two groups was “risk and protective factors”. Such results, if validated by future research, might indicate the need to target high-risk girls with a history of trauma (and with this profile of fewer protective factors) for concerted intervention to prevent the development of substance dependence. The fact that virtually all participants in this study had childhood trauma could underscore the need for such early intervention.

In addition, the dual diagnosis group reported more current legal problems, which may be a function of the well-known association between substance use and criminal charges such as drug possession and sales, and stealing to obtain money for drugs. Finally, they also had a lower incidence of lifetime DSM-IV major depression. While it is unclear how to interpret this latter finding, one hypothesis is that it may represent a form of self-medication (Khantzian, 1985) to relieve negative psychiatric symptoms. The fact that PTSD onset preceded SUD for most (61%) of our dual diagnosis sample also suggests the possible importance of self-medication. Alternatively, it may be the case that disorders or problems other than those assessed in this study could account for observed differences between the two groups. For example, we did not assess Axis II disorders, which may have yielded further understanding of these differences.

Perhaps the most surprising findings were the ways in which the two groups did *not* differ. They did not differ on any of four measures associated with trauma or PTSD, including trauma history (number or type of traumas) and PTSD (severity of diagnosis, age of onset, or number of years with symptoms). They also did not differ in family history of substance abuse; nor in current psychiatric symptoms, suicidality, or coping style. The lack of findings in these domains was unexpected, and stands in contrast to other studies which have found differences, particularly in extent of trauma history. We note, however, that all of those studies except for one (Ouimette et al., 1996) used a substance use disorder sample as the comparison group, rather than a PTSD-only sample. The Ouimette et al. study found a significantly higher rate of sexual trauma, dissociation, borderline personality disorder traits, and PTSD for their dual diagnosis sample than their PTSD-only sample. However, their sample was entirely comprised of female war veterans in contrast to our civilian sample; they assessed lifetime but not current PTSD and SUD diagnoses; and they recruited a community sample rather than the predominantly clinical sample in this study. (The lack of differences between groups is not likely due to a small sample size, as our sample was more than twice as large as that of Ouimette et al., the most relevant comparable study.) We might thus speculate that, at least for women such as those in our sample, the PTSD diagnosis is responsible for the severity of the current clinical profile of both groups; the substance dependence diagnosis added little in terms of clinical profile. This result could have important implications for treatment if verified by future research—for example, by suggesting that simply treating the substance dependence is unlikely to make the PTSD, and its wide variety of associated problems, remit.

Our study is characterized by a number of methodological limitations, including a reliance on retrospective self-report; a large number of statistical comparisons relative to the small sample size (thus limiting power), variables that are intercorrelated, and the cross-sectional design of the study. Thus, all results clearly require highly conservative interpretation, particularly as the possibility of Type 1 error may be high. Its virtues, however, include a wider

battery of measures than any existing study we know of on this dual diagnosis population; the use of rigorous and current DSM-IV diagnoses; the presence of a comparison group that has been previously studied only to a very limited degree (the PTSD-only sample); and a predominantly in-treatment sample (which thus may have relevance for clinical settings). We also note that our dual diagnosis sample appears comparable in trauma history to clinical populations in previous studies on this population (Najavits et al., 1997), suggesting that our results are unlikely to be due to selection bias. Future research might benefit from addressing more directly the causal links between PTSD and substance dependence (such as the time course of each disorder) and more in-depth assessment of the risk and protective factors that emerged as significant in this study.

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Table 1

Dual Diagnosis (PTSD and Substance Dependence) versus Single Diagnosis (PTSD) Subjects

Scale	SD M (SD)	DD M (SD)	t <sup>a</sup>
Addiction Severity Index <sup>b</sup>			
Legal Status Composite	.00 (.00)	.60 (.14)	2.13
Outpatient psychiatric treatments	7.59 (5.54)	4.59 (3.38)	2.46
Sibling with a drug problem	6 (20%)	14 (50%)	$\chi^2 = 5.37$
Lifetime suicide attempts	15 (51.7%)	22 (78.6%)	$\chi^2 = 4.51$
Risk and Protective Factors Questionnaire Items <sup>c</sup>			
Childhood:			
Physical Appearance	2.14 (.76)	1.71 (.60)	2.35
Self Discipline	2.43 (.74)	1.81 (.74)	3.08
Sense of Principles	2.46 (.64)	2.11 (.68)	2.02
Stable Life Situation	-2.14 (.85)	1.68 (.77)	2.14
Opportunities in Life	2.32 (.72)	1.81 (.68)	2.67
Adulthood:			
Grades in School	2.78 (.51)	2.25 (.89)	2.72
Relationships with Adults	2.68 (.48)	2.33 (.73)	2.06
Sense of Purpose in Life	2.12 (.71)	1.54 (.58)	3.30
Absence of Legal Problems	2.88 (.33)	2.39 (.63)	3.64
Opportunities in Life	2.26 (.53)	1.89 (.70)	2.20
Total protection in adulthood	2.16 (.21)	1.96 (.20)	3.53
Total Protection (both child and adult)	2.15 (.22)	1.97 (.19)	3.10
SCID			
Major Depressive Disorder, Recurrent	20 (69%) <sup>d</sup>	8 (29.6%) <sup>d</sup>	$\chi^2 = 8.65$

Note. Only significant results are reported on this table. All results are significant at  $p < .05$ .

<sup>a</sup>All analyses were t-tests except for the chi-square tests, as noted. For all chi-square tests, number (and per cent) endorsing the item are listed rather than means. <sup>b</sup> Higher values indicate more impairment. <sup>c</sup> Higher values indicate less impairment. <sup>d</sup>These values represent the total (and percent) of participants meeting diagnostic criteria.