

A Clinical Profile of Women With Posttraumatic Stress Disorder and Substance Dependence

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To assess the clinical characteristics of women with posttraumatic stress disorder (PTSD) and substance dependence, 28 women with both disorders were compared with 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 2 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, 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 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, 1998). In terms of nontrauma 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. Studies vary also in their diagnostic rigor, their use of

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The study was supported by National Institute on Drug Abuse Grants RO1 DA-08631, K02 DA-00400, and K02 DA-00326; National Institute on Alcohol and Alcoholism Grant R21 AA-12181; and the Dr. Ralph and Marian C. Falk Medical Research Trust.

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lifetime versus current diagnoses, their choice of a comparison group, and their selection of variables to study.

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 comorbid 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, Belmont, MA, by means of posted fliers seeking women with current substance abuse and a history of trauma, by word of mouth, and by direct recruitment from clinical units. A total of 57 adult women participated. Twenty-eight of the women met current *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV*; American Psychiatric Association, 1994) criteria for both PTSD and substance dependence, constituting the dual-diagnosis group. Participants in the dual-diagnosis 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) constituted the single-diagnosis group. Participants were excluded if they (a) had a history of schizophrenia or organic mental disorder; (b) were formally mandated for treatment (because mandated patients are known to represent a specific subpopulation of substance abusers who are believed not representative of the typical substance abuse sample); (c) were receiving methadone-maintenance treatment; or (d) 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.

Participant Characteristics

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

Diagnoses. Participants were assessed on the full Structured Clinical Interview for Axis I *DSM-IV* Disorders (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 assessed as lifetime disorders, except for PTSD and substance use disorder, for which we assessed only current diagnoses because we viewed them as entry criteria into the study (and, in addition, the single-diagnosis group was assessed for lifetime substance use disorder to rule that out). All diagnoses were rated for severity on a scale ranging from 0 (*not at all severe*) to 8 (*extremely severe*). The SCID was administered by one of two trained diagnosticians (one a doctoral level psychologist and the other a licensed clinical social worker), both of whom had been 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 before we hired them. They were supervised biweekly during the study.

PTSD symptoms. The Trauma Symptom Checklist—40 (Elliott & Briere, 1990), to assess current symptoms associated with PTSD on five subscales ranging from 0 (*never*) to 3 (*often*): 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; 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 Addiction Severity Index 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 Assessment Unit of the Center for Psychotherapy Research, 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; they are provided in detail in McLellan, Luborsky, Cacciola, and Griffith (1985). Additionally, we used the Drug and Alcohol Use Questionnaire (Weiss, 1989) to provide descriptive information about patients' drug of choice and first drug use.

Current Functioning

General symptomatology. The Brief Symptom Inventory (Derogatis, 1992) is a 53-item self-report measure 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, and Positive Symptoms Distress Index. The subscales range from 0 (*not at all*) to 4 (*extremely*). Psychometric data on the measure are extensive and generally indicate strong psychometric properties, as described in Derogatis.

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

Coping styles. The Coping Strategies Inventory (Tobin, Holroyd, Reynolds, & Weigal, 1989) is a 40-item self-report measure 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). Subscales range from 1 (*not at all*) to 5 (*very much*). Psychometric properties of the measure and a description of the factor analysis used to develop its subscales are described in Tobin et al.

Life History Factors

Trauma history. We administered two self-report measures to assess lifetime history of trauma: the Trauma History Questionnaire (THQ; Green, 1996) 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 2- to 3-month period; correlations on items range from .47 to 1.00, with a mean of .70 (Green, 1996). The CTQ is a 61-item self-report measure that ranges from 1 (*never true*) to 5 (*very often true*) and 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 2- to 6-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 Module (Janca, Bucholz, & Janca, 1992) is a 48-item interview designed to assess the frequency of drug and alcohol problems in a person's relatives. The scale comprises a list of both biological and nonbiological relatives, to which the participant rates as having had a drug or alcohol problem with "present," "absent," or "uncertain."

Risk and protective factors. The Risk and Protective Factors Questionnaire (Najavits, 1994) is a 33-item self-report measure, ranging from 1 (*not at all*) to 3 (*a lot*), that provides scores for two age ranges: Childhood (through age 17) Risk and Protective Factors and Adult (age 18 and above) 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 on the basis of 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 dual-diagnosis and single-diagnosis groups on each of the measures by means of 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 Addiction Severity Index 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 substance dependence). We did not use a Bonferroni correction because of 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). We conducted 208 comparisons, 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 years ($SD = 8.64$), ranging from 21 to 55. Thirty-two (52.6%) had never married, 16 (28.1%) were divorced, widowed, or separated, and 11 (19.3%) were married. Forty-five (79%) reported attending at least some college. Most patients were currently in psychiatric or substance abuse treatment (87%). A comparison of the two study groups on sociodemographic characteristics revealed no significant differences between them (on race, age, marital status, level of education, or religion) or in percentage currently in treatment.

Trauma-PTSD

On the THQ, 54 participants (95%) reported a history of physical 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, as measured by the SCID, the single-diagnosis sample obtained a mean diagnostic severity rating of 5.78 ($SD = 0.7$), and the dual-diagnosis group obtained a mean severity rating of 5.73 ($SD = 1.1$). For the majority of dual-diagnosis patients, their PTSD preceded the onset of their substance use disorder (60.7%); for 25%, the substance use disorder preceded PTSD; for 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 dual-diagnosis group, according to 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%), and 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 did 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

Table 1
Dual-Diagnosis (PTSD and Substance Dependence) Versus Single-Diagnosis (PTSD) Participants

Measure	Single diagnosis		Dual diagnosis		<i>t</i> ^a	<i>df</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Addiction Severity Index ^b						
Legal status composite	0.00	0.00	0.60	0.14	2.13	26
Outpatient psychiatric treatments	7.59	5.54	4.59	3.38	2.46	46
Sibling with a drug problem	6	20.7%	14	50.0%	$\chi^2 = 5.37$	1
Lifetime suicide attempts	15	51.7%	22	78.6%	$\chi^2 = 4.51$	1
Risk and Protective Factors Questionnaire ^c						
Childhood						
Physical appearance	2.14	0.76	1.71	0.60	2.35	54
Self-discipline	2.43	0.74	1.81	0.74	3.08	53
Sense of principles	2.46	0.64	2.11	0.68	2.02	54
Stable life situation	-2.14	0.85	1.68	0.77	2.14	54
Opportunities in life	2.32	0.72	1.81	0.68	2.67	53
Adulthood						
Grades in school	2.78	0.51	2.25	0.89	2.72	43
Relationships with adults	2.68	0.48	2.33	0.73	2.06	44
Sense of purpose in life	2.12	0.71	1.54	0.58	3.30	52
Absence of legal problems	2.88	0.33	2.39	0.63	3.64	41
Opportunities in life	2.26	0.53	1.89	0.70	2.20	52
Total protection in adulthood	2.16	0.21	1.96	0.20	3.53	54
Total protection (both child and adult)	2.15	0.22	1.97	0.19	3.10	54
SCID major depressive disorder, recurrent	20	68.9 ^d	8	29.6 ^d	$\chi^2 = 8.65$	1

Note. Only significant results are reported on this table. All results are significant at $p < .05$. PTSD = posttraumatic stress disorder; SCID = Structured Clinical Interview for Axis I *Diagnostic and Statistical Manual for Mental Disorders* (4th ed.; American Psychiatric Association, 1994) disorders.

^aAll analyses were *t* tests except for the chi-square tests, as noted. For all chi-square tests, number and percentage endorsing the item are listed rather than means; $N = 57$. ^bHigher values indicate more impairment. ^cHigher values indicate less impairment. ^dThese values represent the total and percentage of participants meeting diagnostic criteria.

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. Although it is unclear how to interpret this 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 substance use disorder for most (61%) of our dual-diagnosis sample also suggests the possible importance of self-medication. Alternatively, 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 or in current psychiatric symptoms, suicidality, or coping style. The lack of findings in these domains was unexpected and stands in contrast to other studies that 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 for their PTSD-only sample. However, their sample was entirely composed of female war veterans in contrast to our civilian sample, they assessed lifetime but not current PTSD and substance use disorder 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, because 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 because the possibility of Type I error may be high. This study's 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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Received June 1, 1998

Revision received February 26, 1999

Accepted March 9, 1999 ■