

Promising Treatments for Women With Comorbid PTSD and Substance Use Disorders

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Objective: The authors' goal was to compare the efficacy of a manualized cognitive behavior therapy that addresses both posttraumatic stress disorder (PTSD) and substance abuse (seeking safety) with a manualized cognitive behavior therapy that addresses only substance abuse (relapse prevention) and with standard community care for the treatment of comorbid posttraumatic stress disorder (PTSD) and substance use disorder.

Method: One hundred seven women from an urban, low-income population who had comorbid PTSD and substance use disorder were randomly assigned to receive the two kinds of cognitive behavior therapy or received standard community treatment. Participants were recruited from both community and clinical populations and evaluated with structured clinical instruments. Forty-one women re-

ceived seeking safety therapy, 34 received relapse prevention therapy, and 32 received standard community care.

Results: At the end of 3 months of treatment, participants in both cognitive behavior therapy conditions had significant reductions in substance use, PTSD, and psychiatric symptoms, but community care participants worsened over time. Both groups receiving cognitive behavior therapy sustained greater improvement in substance use and PTSD symptoms at 6-month and 9-month follow-ups than subjects in the community care group.

Conclusions: Seeking safety and relapse prevention are efficacious short-term treatments for low-income urban women with PTSD, substance use disorder, and other psychiatric symptoms.

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Substance abuse is a substantial problem among women, who represent up to 30% of the patients in substance abuse treatment (1–3). Gender-specific risk factors, including having experienced interpersonal trauma and violence, underscore the need for tailored interventions for women in addiction treatment programs. Up to 80% of women seeking substance abuse treatment report lifetime histories of sexual and/or physical assault, and many of these women have symptoms of posttraumatic stress disorder (PTSD) (4–7). Women with comorbid PTSD and substance use disorders have poor treatment retention rates and outcomes (7).

An ongoing controversy exists in both the trauma and addictions fields regarding which disorder to treat first. A commonly held belief is that addressing PTSD in early treatment would “open Pandora’s box” and worsen progress in addiction treatment, interfering with achieving and maintaining abstinence. In contrast, proponents of the “self-medication” hypothesis (8) challenge the suggestion that trauma should be left untreated, even in the earliest phases of recovery. As an alternative, an integrated model that addresses PTSD and addictions may be more likely to succeed, more cost-effective, and more sensitive to the unique needs of these patients (9–12). To date, however, few integrated approaches have been empirically tested and demonstrated as efficacious.

One exception is seeking safety (13), a short-term, manualized cognitive behavior treatment that simultaneously addresses trauma and substance abuse. Smaller-scale studies and open trials indicate that seeking safety may significantly decrease substance use, trauma-related symptoms, and depression and may also improve social adjustment and coping (14, 15; unpublished 2000 paper by L. Najavits et al.). These preliminary findings indicate that instead of exacerbating symptoms, treatment that addresses both disorders can benefit women with comorbid PTSD and substance use disorders.

The main objective of the current trial was to further evaluate the impact of seeking safety treatment on substance use and PTSD symptoms by comparing it with a standard manualized substance abuse treatment that does not directly address trauma-related symptoms (relapse prevention treatment, as described by Carroll et al. [16]) and with standard community care. Relapse prevention, often considered the gold-standard addiction treatment, is an empirically validated cognitive behavior therapy focusing on the identification of triggers and coping strategies for managing substance cravings and relapse (16). Demonstrating that seeking safety is superior to community care as well as equivalent or superior to relapse prevention would provide further empirical support

for the efficacy of integrated models that address trauma-related issues in substance-abusing populations.

Method

Design

All subjects were recruited through advertisements requesting participants for a study about trauma and addiction. Eligible patients were randomly assigned to one of two active treatment conditions: seeking safety or relapse prevention. Treatments were conducted in twice-weekly 1-hour individual sessions for 12 consecutive weeks. A nonrandomized community care comparison group served as a nonspecific comparison condition. This design follows the criteria of stage IB behavioral therapies research (17), which allows for a preliminary stage efficacy trial with a nonrandomized, quasi-experimental comparison group. The community care comparison condition strengthened our design by allowing us to examine whether seeking safety and relapse prevention were more effective than other routinely sought out substance abuse treatments.

The 32 women in the community care group met the same diagnostic criteria and were recruited in the same manner as those in the two cognitive therapy groups but were not offered either of the two manualized therapies. If interested, they were given the same list of treatment referrals as those in the manualized therapy groups. They were followed longitudinally for the same pretest-posttest assessment periods. Over the 3-month active treatment phase, seven (22%) of the subjects in the community care group received outpatient psychological treatment, seven were prescribed psychiatric medication, and two (6%) were hospitalized for psychiatric reasons. Nine (28%) reported receiving any drug or alcohol treatment, and five (16%) reported attending self-help meetings.

The patients in the two manualized study treatments (seeking safety and relapse prevention) received standard care in the community similar to the care received by the community care group. Over the 3-month study period, 22 (29%) received outpatient psychological treatment, 14 (19%) received prescription medications, four (5%) were hospitalized for psychiatric reasons, 15 (20%) received any drug or alcohol treatment, and 18 (24%) reported attending self-help meetings. Neither active treatment group statistically differed from the community care group in this comparison.

Participants

Participants were treatment-seeking women who responded to an advertisement or were referred from substance use treatment programs in a major metropolitan area. Women met screening criteria for the presence of a lifetime traumatic event (defined as positive response to items from the Lifetime Trauma Events Scale adapted from Fullilove et al. [5]).

Screening inclusion criteria were as follows: 1) age 18 through 55 years, 2) female, 3) diagnosis of substance use disorder, 4) a history of at least one DSM-IV-defined trauma event, and 5) English-speaking. Patients who met these initial eligibility criteria received further diagnostic screening.

Exclusion criteria were as follows: 1) advanced-stage medical disease (e.g., AIDS, tuberculosis) as indicated by global physical deterioration and incapacitation, 2) organic mental syndrome (associated with chronic drug abuse), and 3) psychiatric exclusions, defined below.

All women who met screening eligibility criteria (N=207) were asked to participate in a diagnostic interview. Interviewers obtained written informed consent before the interview. Each participant received \$10.

Patients met criteria for final eligibility (and received an additional \$20 voucher for their additional interview time) if they were diagnosed with current or subthreshold PTSD (defined as DSM-IV criteria A, B, and E and the presence of either C or D) and current DSM-IV substance dependence; if they reported using substances at least three times a week on the Substance Use Inventory (18); and if their Mini-Mental State Examination score was greater than 21. Psychiatric exclusion criteria included 1) current active suicidality, 2) current axis I diagnoses other than atypical bipolar, depressive, or anxiety disorders, and 3) history of psychosis.

Of the 128 women who met full study eligibility criteria, 115 (90%) agreed to participate, and 96 of these women were randomly assigned to active treatment. Thirty-two of the 128 women became the community care comparison group. Baseline data were available for 115 of the women entered into the study. Of the 96 women randomly assigned to active treatments, 75 (78%) attended at least one psychotherapy session and were included in the intent-to-treat group. Thus, the total number of subjects was 107 (75 in active treatment and 32 in community care). There were no significant differences in demographics, treatment history, or baseline symptom severity between those who entered treatment and those who did not, suggesting that dropouts were random rather than attributable to any systematic bias.

Ninety-four (88%) of the 107 subjects met full criteria for current PTSD; 13 (12%) met "subthreshold" criteria. Comparative analyses of those with full and subthreshold PTSD yielded no differences in substance use, PTSD, and psychiatric symptom severity. There were no differences in distribution of subthreshold PTSD across the three study groups.

Table 1 presents the subjects' demographic characteristics. The groups differed significantly only in age: the seeking safety group was significantly older than the relapse prevention group (Table 1). Therefore, age was entered as a covariate in all analyses.

Study participants in all three conditions received repeated-measures assessments at baseline, end of treatment (3 months after baseline), 6 months after baseline, and 9 months after baseline. The primary outcomes assessed were substance use and PTSD symptoms. The secondary outcomes were global psychiatric symptoms. Additionally, for patients in the two active treatment groups, feasibility and acceptability were examined through adherence and dropout rates.

Measures

To reduce the possibility of Type I error, standardized composite scores were created for the two primary outcome domains of substance use and PTSD severity, as well as for the secondary outcome domain of global psychiatric symptoms. Intercorrelation matrices of all standardized measure total scores relevant to a specific outcome were created to determine which had reliability coefficients (alpha) of at least 0.85. Composite scores for each construct (substance use, PTSD, and global psychiatric symptoms) were then created by using a mean of all standardized scores meeting reliability criteria. Standardized scores range from -1 to 1. A score approaching -1 can be interpreted as low severity relative to a score approaching 1, whereas a score close to 0 falls at the midpoint. Individual measures that were used to create the respective outcome composites are described below.

Substance use severity composite individual measures. The Substance Use Inventory (18), which consists of self-report questions, was used to determine quantity (i.e., dollars spent per day) and frequency (i.e., days) of substance use over the past week. Substances included opiates, cocaine, alcohol, marijuana, amphetamines, sedatives, phencyclidine, and prescription medications. Outcomes were based on the mean rating of use over the previous 4 weeks.

The Clinical Global Impression (CGI) (19), a series of 7-point, interviewer-rated scales, was used to measure substance abuse.

TABLE 1. Characteristics of 107 Women With Comorbid PTSD and Substance Use Disorder Assigned to Two Types of Cognitive Behavior Therapy or Receiving Standard Community Care

Characteristic	Active Treatment With Cognitive Behavior Therapy					
	Seeking Safety ^a (N=41)		Relapse Prevention (N=34)		Community Care (N=32)	
	Mean	SD	Mean	SD	Mean	SD
Age (years) ^b	38.2	9.1	33.8	8.3	39.7	0.7
Education (years)	13.6	2.5	13.5	3.1	13.5	2.3
	N	%	N	%	N	%
Ethnicity						
African American	20	48.8	12	35.3	13	40.6
Hispanic	10	24.4	5	14.7	6	18.8
Caucasian	10	24.4	17	50.0	13	40.6
Other	1	2.4	0	0.0	0	0.0
Drug of choice						
Alcohol	13	31.7	13	38.2	13	40.6
Crack	6	14.6	6	17.6	3	9.4
Cocaine	8	19.5	6	17.6	8	25.0
Heroin	3	7.3	3	8.8	3	9.4
Cannabis	11	26.8	6	17.6	5	15.6
Affective disorders						
Major depressive disorder						
Lifetime	37	90.2	24	70.6	27	84.4
Current	21	51.2	17	50.0	23	71.9
Dysthymia	14	34.1	11	32.4	10	31.3

^a Addresses both trauma and substance abuse.

^b The seeking safety group was significantly older than the relapse prevention group ($F=5.17$, $df=2$, 104 , $p<0.01$).

The CGI uses interview and clinical data to characterize abuse severity and improvement for cocaine, opiates, other drugs, and alcohol. Outcomes were the mean rating for use of each substance over the previous 4 weeks.

The Structured Clinical Interview for DSM-IV (SCID)—SAC Version (20, 21), a modified version of the SCID, was used to detect the presence of primary, persistent, and drug-use-independent psychiatric disorders in drug abusers. The present study evaluated mood, anxiety, psychotic, alcohol, and psychoactive substance use disorders.

PTSD severity composite individual measures. The Clinician-Administered PTSD Scale (22), a structured clinical interview, was used to assess the frequency, intensity, and global severity of DSM-IV PTSD symptoms. It also measured the impact of symptoms on social and occupational functioning, the degree of improvement since an earlier rating, and the validity of responses.

The revised Impact of Event Scale (23), a 15-item self-report questionnaire, was used to assess symptoms of intrusion and avoidance on a scale of 0 (not at all) to 5 (often). The scale evaluated the most stressful life event(s) the participant had experienced and the frequency of statements that pertain to those events.

The CGI of PTSD (19), a series of 7-point, interviewer-rated scales, used interview and clinical data to characterize global PTSD severity and improvement over the previous 4 weeks.

Global psychiatric severity composite individual measures. The CGI (19) was used to determine global severity of psychiatric symptoms. Depression symptom rating scales were also used. The Global Assessment Scale (24) evaluated average overall psychiatric functioning and impairment over the past 4 weeks; scores range from 1 (lowest) to 100 (highest). The Hamilton Depression Rating Scale (25), a widely used 15-item Likert-type rating scale, was used to assess degree and range of depressive symptoms.

Treatment services. The Treatment Services Review (26), a brief interview, elicited the variety and frequency of services received during the past week. The Demographic and Treatment History Form (D. Hien and S. Zimberg 1991, unpublished), a

structured 62-item social and treatment history interview, provided basic demographic and life history information.

Quality assurance. Urine screens were taken to confirm self-reported abstinence and were used only to ensure validity of self-report. We planned to assign a positive finding for substance use if discrepancies were observed between self-report and urine data, but such discrepancies did not occur in this group of subjects.

To test for diagnostic reliability, a random sample of 25% of all diagnostic interviews was audiotaped and a Ph.D.-level assessment supervisor reviewed diagnoses. Therapists were trained and certified by expert trainers in both seeking safety and relapse prevention therapies; therapists were required to meet adherence and competence standards set forth by each respective treatment manual guidelines before initiation of the study. Quality assurance for treatment fidelity was conducted by having 25% of the treatment sessions randomly rated for adherence and competence by expert consultants. Experts' ratings revealed high levels of competence for all participating therapists. Therapists were experienced predoctoral and master's-level clinicians.

General Data Analytic Strategies

To check on the study design's internal validity, baseline data were analyzed for differences among the seeking safety, relapse prevention, and community care conditions. No statistically significant differences were found in baseline symptom severity, indicating that the quasi-experimental design maintained equivalence of groups before intervention. (Table 2 provides baseline means and standard deviations.) Because baseline symptom severity was consistently correlated with severity at follow-up, all analyses included the baseline symptom level corresponding to each outcome domain as one of the factors in the analysis of variance (ANOVA). Six two-by-three (baseline symptom severity corresponding to outcome domain by treatment group) ANOVA analyses examined the two primary outcomes at the end of treatment and at 6-month and 9-month follow-ups. Bivariate analyses were conducted to determine potential covariates for multivariate analyses.

TABLE 2. Severity of PTSD and Substance Use Over Time of 107 Women With Comorbid PTSD and Substance Use Disorder Assigned to Two Types of Cognitive Behavior Therapy or Receiving Standard Community Care^a

Measure and Treatment Group ^b	Standardized Composite Score							
	Baseline		End of Treatment		6-Month Follow-Up		9-Month Follow-Up	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
PTSD severity								
Seeking safety (N=41)	0.03	0.81	-0.11	0.59	-0.10 ^c	0.67	-0.02 ^c	0.63
Relapse prevention (N=34)	-0.14	0.59	-0.17	0.65	-0.24	0.78	-0.25	0.86
Community care (N=32)	0.12	0.73	0.25 ^c	0.61	0.31 ^c	0.79	0.39 ^c	0.86
Substance use severity								
Seeking safety (N=41)	-0.08	0.68	-0.15	0.65	-0.12 ^c	0.61	-0.08 ^c	0.54
Relapse prevention (N=34)	-0.22	0.60	-0.26	0.52	-0.30	0.58	-0.18 ^c	0.76
Community care (N=32)	0.19	1.0	0.36 ^c	0.78	0.19	0.72	0.21 ^c	0.76

^a Negative numbers indicate fewer symptoms, and positive numbers indicate more symptoms, ranging from possible standardized scores of -1.0 (no symptoms) to 1.0 (most severe symptoms).

^b Seeking safety refers to the treatment addressing both trauma and substance abuse.

^c Worsening symptoms from the previous assessment time point.

Data reduction strategies and multivariate testing were used to minimize the number of statistical tests. Post hoc tests were conducted to examine predicted differences between seeking safety and relapse prevention and between relapse prevention and community care only when main effects were found to be significant at $p < 0.05$. Since we were particularly interested in differences between seeking safety and community care, a priori post hoc tests compared differences between these groups regardless of whether the omnibus tests were significant.

Intent-to-Treat Sample

Application of the criterion that participants had to attend at least one session to be considered part of the intent-to-treat group yielded data on treatment efficacy at end of treatment for 41 seeking safety, 34 relapse prevention, and 32 community care subjects (total $N=107$). All analyses were conducted with the intent-to-treat group as well as a "completer" group ($N=81$: 25 seeking safety, 24 relapse prevention, and 32 community care). A sample size of 25–30 per group has been identified as sufficient to detect clinically significant differences between two active treatments (27). The completer group consisted of all community care participants and those in the two active treatment groups who had attended at least 25% of all therapy sessions. This definition is standard in psychotherapy research, particularly with difficult-to-treat populations (14). Given that all findings from the intent-to-treat and the completer groups were consistent, we present only the more conservative intent-to-treat findings. The last-observation-carried-forward strategy, whereby the missing time point was replaced with the last recorded assessment point, was used for patients who could not be located for follow-up assessment. Other missing data procedures (i.e., mean replacement) were also tested, yielding no differences with the last observation carried forward procedure.

Sixty (80%) of the patients randomly assigned to active treatment received at least one session. Our retention rates were generally high: 75% ($N=67$) at completion of treatment and 80% ($N=65$) at 6-month and 9-month follow-ups. There was no differential attrition across the two treatment groups.

Results

Table 2 displays the primary outcome composite scores for the three treatment groups by baseline severity over the study period. Table 3 displays the scores for PTSD individual measures for the treatment groups over the study period.

End-of-Treatment Findings

There were no statistically significant differences between seeking safety and relapse prevention on either of the primary outcome measures; both were superior to community care. Significant main effects for treatment group were found for end-of-treatment substance use severity ($F=8.49$, $df=2$, 100 , $p < 0.001$, $r^2=0.45$); subjects in the seeking safety ($t=-3.3$, $df=71$, $p < 0.001$) and relapse prevention ($t=-3.8$, $df=64$, $p < 0.001$) conditions were significantly more improved than those in community care (Table 2). Main effects were also significant for treatment group on PTSD severity ($F=4.71$, $df=2$, 100 , $p < 0.01$, $r^2=0.42$); subjects in the seeking safety ($t=-2.5$, $df=71$, $p < 0.01$) and relapse prevention ($t=-2.8$, $df=64$, $p < 0.01$) conditions were significantly more improved than those in community care (Table 2).

6-Month and 9-Month Follow-Ups

There were no statistically significant differences between seeking safety and relapse prevention conditions at any time point on the two primary outcomes of substance use and PTSD symptoms. At the 6-month follow-up, there was a main effect for treatment type ($F=4.82$, $df=2$, 100 , $p < 0.01$, $r^2=0.36$) on substance use symptoms; subjects in the seeking safety ($t=-2.0$, $df=71$, $p < 0.05$) and relapse prevention ($t=-3.07$, $df=64$, $p < 0.01$) conditions maintained greater improvements than those in community care (Table 2). There was also a main effect for treatment type on PTSD symptoms ($F=4.94$, $df=2$, 100 , $p < 0.01$, $r^2=0.28$); subjects in the seeking safety ($t=-2.34$, $df=71$, $p < 0.05$) and relapse prevention ($t=-3.0$, $df=64$, $p < 0.01$) conditions sustained greater improvement than those in community care (Table 2).

At the 9-month follow-up there was a nonsignificant main effect of treatment group on substance use symptoms ($F=2.87$, $df=2$, 100 , $p=0.06$, $r^2=0.35$). A priori post hoc tests revealed greater sustained improvements in the relapse prevention condition ($t=-2.28$, $df=64$, $p < 0.05$) and nonsignificantly greater sustained improvement in the seeking safety condition ($t=-1.82$, $df=71$, $p=0.07$) than in

TABLE 3. Raw Scores on Individual PTSD Measures Over Time for 107 Women With Comorbid PTSD and Substance Use Disorder Assigned to Two Types of Cognitive Behavior Therapy or Receiving Standard Community Care

Measure and Treatment Group ^a	Raw Score							
	Baseline		End of Treatment		6-Month Follow-Up		9-Month Follow-Up	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Clinician-Administered PTSD Scale								
Frequency and intensity								
Seeking safety (N=41)	72.17	19.70	57.15	22.33	59.85	21.12	55.34	20.85
Relapse prevention (N=34)	70.38	16.84	51.21	25.21	52.65	24.08	47.82	27.73
Community care (N=32)	73.88	19.16	68.00	24.20	64.79	23.81	66.00	23.99
Global severity								
Seeking safety (N=41)	2.73	0.63	2.14	1.53	1.94	0.66	1.79	0.63
Relapse prevention (N=34)	2.41	0.70	1.75	0.79	1.62	0.65	1.40	1.12
Community care (N=32)	2.82	1.16	2.43	1.09	2.35	0.70	2.14	1.07
Revised Impact of Event Scale								
Seeking safety (N=41)	47.49	14.50	33.57	14.92	39.12	17.23	35.11	16.82
Relapse prevention (N=34)	46.12	10.57	28.90	19.94	36.38	20.16	29.67	18.84
Community care (N=32)	51.52	12.76	40.64	20.43	40.06	17.62	47.57	13.21
CGI of PTSD								
Seeking safety (N=41)	5.17	1.00	4.44	1.29	4.49	1.33	4.24	1.20
Relapse prevention (N=34)	5.06	0.89	3.85	1.44	3.82	1.51	3.67	1.56
Community care (N=32)	5.06	0.90	4.76	1.20	4.82	1.21	4.82	1.21

^a Seeking safety refers to the treatment addressing both trauma and substance abuse.

community care (Table 2). There was a main effect for treatment type ($F=5.51$, $df=2$, 100 , $p<0.01$, $r^2=0.22$) on PTSD symptoms; subjects in the seeking safety ($t=-2.2$, $df=71$, $p<0.05$) and relapse prevention ($t=-3.26$, $df=64$, $p<0.01$) conditions maintained greater improvements than those in community care (Table 2). Table 4 provides the results of ANOVAs for end-of-treatment, 6-month posttreatment, and 9-month posttreatment primary outcome composite measures.

Secondary Analyses

The groups differed on the outcome measure of psychiatric symptoms. There were nonsignificant treatment group main effects at the end of treatment ($F=2.91$, $df=2$, 100 , $p<0.06$, $r^2=0.31$); subjects in the seeking safety condition had significantly greater improvement (mean=-0.11 versus mean=0.27) than those in community care ($t=-2.37$, $df=71$, $p<0.01$), but subjects in the relapse prevention condition (mean=-0.00 versus mean=0.27) did not ($t=-1.56$, $df=64$, $p=0.12$). There were no significant findings for any treatment with respect to psychiatric symptoms at the 6-month follow-up. At the 9-month follow-up, there was a nonsignificant main effect for treatment group ($F=1.98$, $df=2$, 100 , $p=0.10$, $r^2=0.19$) on psychiatric symptoms. A priori post hoc tests revealed nonsignificantly greater sustained improvement in the seeking safety condition (mean=-0.02 versus mean=0.32) than in community care ($t=-1.89$, $df=71$, $p=0.06$). There were no significant findings for relapse prevention.

Finally, there was no statistically significant difference in measures of treatment acceptability between seeking safety and relapse prevention groups. Analyses of compliance and retention by treatment group revealed that mean number of sessions did not differ between the seeking safety (mean=12.0, $SD=6.7$) and relapse prevention (mean=12.1, $SD=9.0$) conditions. There were no signifi-

cant differences in demographic or baseline symptom severity between those who dropped out of treatment before receiving at least six sessions and those in the intent-to-treat group. It is important to underscore that poor session-to-session treatment compliance is standard in this difficult-to-treat population, but the data show that those who received at least six sessions (a "minimum dose") stayed in treatment on average 17% longer than those who did not.

Discussion

This stage 1B quasi-experimental, clinical trial directly compared two manualized cognitive behavior therapy treatments—seeking safety and relapse prevention—with standard community care in a group of low-income urban women with comorbid PTSD and substance use disorder. At the end of treatment, participants in both cognitive behavior therapy conditions had significant reductions in substance use and PTSD symptom severity. Community care participants showed no significant changes; in the case of PTSD, their symptoms worsened over time. Participants who received either of the manualized treatments had sustained improvements in substance use and PTSD severity at 6-month and 9-month follow-ups.

Results of the current study are compelling for two main reasons. First, findings illustrate that carefully conducted manualized cognitive behavior therapy interventions can substantially decrease current symptoms of both PTSD and substance use disorders in a relatively brief period in a hard-to-reach population. Most substance abuse treatment trials have stringent exclusion criteria that typically result in unrepresentative samples composed largely of stable, Caucasian patients with little psychiatric comorbidity (28). In contrast, our group of urban women with multiple, chronic disorders is more representative of the major-

TABLE 4. Intent-to-Treat Analyses of Variance of PTSD and Substance Use Severity Over Time for 107 Women With Comorbid PTSD and Substance Use Disorder Assigned to Two Types of Cognitive Behavior Therapy or Receiving Standard Community Care^a

Variable	Interaction of Treatment Group and Baseline Symptom Severity								
	End of Treatment			6-Month Follow-Up			9-Month Follow-Up		
	F	df	p	F	df	p	F	df	p
PTSD severity									
Group	4.71	2, 100	<0.01	4.94	2, 100	<0.01	5.51	2, 100	<0.01
Severity	55.40	1, 100	<0.001	23.19	1, 100	<0.001	11.36	1, 100	<0.001
Group by severity	1.55	2, 100	n.s.	1.55	2, 100	n.s.	1.63	2, 100	n.s.
Substance use severity									
Group	8.49	2, 100	<0.001	4.82	2, 100	<0.01	2.87	2, 100	n.s.
Severity	53.98	1, 100	<0.001	39.04	1, 100	<0.001	42.79	1, 100	<0.001
Group by severity	4.29	2, 100	<0.02	3.27	2, 100	<0.05	2.52	2, 100	n.s.

^a The two types of cognitive behavior therapy were seeking safety (addressing both trauma and substance abuse) and relapse prevention. Age was controlled for in all analyses.

ity of women seeking addiction treatment who also have histories of trauma and multiple associated impairments.

Second, this study generated strong preliminary support for the efficacy of seeking safety, an integrated treatment that addresses PTSD symptoms in the context of substance abuse. Seeking safety was as effective as relapse prevention, often considered the gold-standard substance abuse treatment, in reducing PTSD and substance use symptoms. Seeking safety also significantly reduced other psychiatric symptoms at end of treatment and 9-month follow-up. The importance of equivalence of treatments has been underscored by the American Psychological Association's Task Force on Promotion and Dissemination of Psychological Procedures (29). One of the main recommended criteria for identifying treatment efficacy is "equivalence to an already established treatment."

How can we understand the finding that relapse prevention, a standard substance abuse treatment, equally reduced PTSD symptoms? One explanation could be an artifactual reporting bias in the seeking safety condition. Since seeking safety provides substantial psychoeducation about PTSD symptoms, participants who received and benefited from seeking safety might have increased their ability to identify and thereby endorse their own symptoms, resulting in inflated PTSD scores. Poststudy treatment comparisons and discussions with therapists offer further insight into these findings. Although relapse prevention therapists did not address PTSD specifically, they did focus on emotional triggers. Relapse prevention skills could generalize to PTSD-related difficulties (i.e., self-care, safety, depression) with or without direct emphasis on PTSD. Our finding of no differences between two active treatments is consistent with psychotherapy outcome research in general (30) and in drug-abusing populations (16) and not surprising given that both seeking safety and relapse prevention use cognitive behavior therapy techniques with some degree of overlap.

Strengths of the current study include good external validity, use of intent-to-treat analyses to measure improvement, implementation and treatment fidelity measurements, and multiple outcome domains. Limitations

include the use of a nonmanualized community care comparison group in a randomized, controlled trial. Further dismantling and process studies are necessary to examine precisely how and under what conditions the treatment is working. A 6-month period of follow-up is too short to determine unequivocally whether simultaneous treatment of trauma-related disorders would ultimately be beneficial for substance abusers or a sequential model would be more useful. Questions remain as to the utility of adding other components such as exposure interventions (31, 32). Treatment approaches that first enhance coping and then address trauma through a processing therapy (such as exposure) have met with mixed results in substance-abusing populations with comorbid PTSD (31, 32). Although some participants show success with these approaches, others appear unable to tolerate the distress that reliving their trauma experience(s) can cause, thereby putting them at increased risk for relapse.

The optimal treatment length for this population is unknown, and research examining longer-term models is needed. Given the severity of pathology and multiple impediments to recovery (e.g., poverty, lack of resources, community violence, and medical problems), longer-term treatments may result in superior outcomes.

In summary, the current study provides support for both seeking safety and relapse prevention as viable treatments for comorbid PTSD and substance use disorder. Further controlled studies are needed to replicate our findings before integrated psychotherapy can be accepted as a first-line treatment for this population; however, our data suggest that psychotherapy can directly address trauma and PTSD without worsening symptoms. These findings also suggest the importance of continuing to develop a range of appropriate and effective treatments for these patients. A portfolio of alternative effective psychological (and pharmacological) treatments would provide the opportunity for more detailed analysis of patient characteristics as pretreatment predictors of outcome and potential mechanisms of treatment change with the goal of matching patients with the type(s) of treatment most likely to be helpful.

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