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CHAPTER 21

Treatment of PTSD and Comorbid Disorders

Lisa M. Najavits, Donna Ryngala, Sudie E. Back, Elisa Bolton, Kim T. Mueser, and Kathleen T. Brady

Theoretical Context

There is a central paradox in the field of posttraumatic stress disorder (PTSD) comorbidity: Comorbidity with PTSD is the norm, yet treatment outcome studies routinely exclude patients with significant comorbid conditions and fail to assess for them. The past several years have seen some change in these patterns, and there is now a growing body of work on treatments designed either specifically for comorbid conditions or for a particular condition and studied in comorbid samples.

The good news is that many of these studies evidence promising models and positive outcomes. But there are also some surprises that reiterate a basic fact in the area of comorbidity: Not all comorbid conditions are alike; thus, specificity by disorder appears to be a helpful approach at this point. Also, treatments are not necessarily specific, so a treatment designed to treat just one disorder, such as PTSD, may also have positive outcomes for comorbid conditions. Thus, when considering comorbidity and its treatment, it is helpful to explore the myriad possible relationships among the comorbid conditions (e.g., their development over time, course during treatment, and impact on each other), and also how treatment may impact them (e.g., both together or differentially). There are many possible results and, given the newness of this area of work, much that remains to be discovered.

In actual rates, approximately 80% of people with PTSD have a co-occurring psychiatric or substance use disorder (SUD [lifetime rates]; Breslau, Davis, Andreski, & Peterson, 1991; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Moreover, this is not unique to PTSD. For example, about 45% of people with at least one diagnosis have one or more additional ones as well (current rates; Kessler, Chiu, Demler, Merikangas, & Walters, 2005). In terms of treatment, there are a variety of approaches to comorbidity:

- *Integrated* (treat comorbid disorders at the same time, by the same provider, focusing on linkages between them).
- *Sequential* (treat one disorder, then the other).
- *Parallel* (also known as concurrent; i.e., treat each disorder but in separate treatments, often by separate providers, and sometimes in separate systems, such as mental health vs. substance abuse).
- *Single diagnosis* (treat just one disorder).

In general, the current state of the art is believed to be integrated treatment, which allows fluid attention to all disorders and how they are linked. However, at this point there is almost no empirical research on this question. Thus far, most research has addressed the early stages of treatment development—creating new treatments and evaluating them in basic outcome trials.

Finally, it is also worth noting that there are a variety of causal explanations for comorbidity (see Meyer, 1986; Weiss et al., 1998). Examples of such relationships include the following:

- Disorder *x* causes disorder *y*.
- Disorder *y* causes disorder *x*.
- Both *x* and *y* are caused by some other factor.
- Each disorder arises independently, without any relation between them.
- Each disorder may impact the course of the other (improving or worsening), even if not caused by it.

Evidence

In this chapter, we provide a comprehensive summary of the literature on treatment models for PTSD and comorbid disorders. We conducted a literature search for the following disorders:

Axis I: *substance use disorders* (alcohol, amphetamine, cannabis, cocaine, hallucinogen, inhalant, opioid, phencyclidine, sedative, polysubstance); *anxiety disorders* (agoraphobia, panic, phobias, obsessive–compulsive, generalized anxiety); *somatoform disorders* (somatization, conversion, pain, hypochondriasis, body dysmorphic disorders); *fac-*

ticious disorder; *dissociative disorders* (dissociative amnesia, fugue, and identity disorders and depersonalization disorder); *sexual and gender identity disorders*; *eating disorders* (anorexia, bulimia nervosa); *primary sleep disorders*; *impulse disorders* (intermittent explosive disorder, kleptomania, pyromania, pathological gambling, trichotillomania); *mood disorders*, and *schizophrenia and other psychotic disorders*.

Axis II: *personality disorders* (paranoid, schizoid, schizotypal, antisocial, borderline, histrionic, narcissistic, avoidant, dependent, and obsessive–compulsive personality disorders).

Studies were included if they (1) addressed PTSD (or trauma-related symptoms) plus one or more additional disorders; (2) used a specific model of treatment; (3) provided outcome data; and (4) were published or in press.

We have classified each study into Levels A–F based on methodology (per this book's Introduction). However, it should be noted that a study may be one level for PTSD, yet another for the comorbid condition because the level of rigor may not hold across both. For example, some studies are post hoc analyses from PTSD treatment trials, with comorbidity examined only in a subset of patients who had the comorbid disorder. Also, all studies address just one or sometimes a few comorbid conditions, but no studies thus far have comprehensively reported the full array of Axis I and II disorders that may be comorbid. Given the state of the literature in this area, we have departed slightly from the original Levels A–F formulation, as follows:

- Level A means the study meets criteria for that level, yet it may be missing a small element (e.g., not randomizing to therapists as well as treatment conditions; or not reporting interrater reliability on assessments).
- Level B means it is a good study, but it has enough major methodological weaknesses that we cannot classify it as Level A; also, we include here only studies that had some sort of control condition.
- Level C are studies that have a decent or better pilot study (but without a control condition), and/or service or naturalistic studies (per the definition in the Introduction to this book). However, we have not used the criterion that level C studies can be interpreted as "sufficiently compelling to warrant use of the treatment technique" (per page 30 in the Introduction, this volume). In our view, a treatment model for comorbidity can only be formally recommended if there are positive outcomes from Level A empirical work on it.
- Levels D–F: All single-case studies are included here.

For each study, the rationale for the assigned rating is provided. Given the early stage of research, it should be noted that although many models may be helpful to patients, the study methodology still attains a low rating. This is not a reflection on the models themselves; rather it is just the state of

the science in studying them thus far. We hope that the upcoming years will see further evolution in the progression of research on the models. Also, the methodology of Levels A–F itself will likely be refined over time. For example, it does not address areas that are increasingly viewed as essential for strong outcome trials, such as the amount and type of external treatments, power analysis, intention-to-treat (ITT) versus completer analysis, description of therapist training, and therapist effects. See, for example, CONSORT (Consolidated Standards of Reporting Trials, 2004) and Moncrief (in Bisson & Andrew, 2005).

We focus solely on results from pre- to posttreatment because internal validity is strongest for that, especially given the early state of the literature and variable follow-up periods. We report only statistically significant results. Research below is presented in alphabetical order of the co-occurring diagnoses. The review is organized into three main sections: (1) all Axis I and II disorders except mood disorders and serious mental illness; (2) mood disorders and serious mental illness; and (3) pharmacotherapy.

See Table 21.1 for all Level A studies of psychotherapy; see Table 21.2 for all Level A studies of pharmacotherapy.

Literature Review

All Axis I and II Disorders (Except Mood and Psychotic Disorders)

PTSD and Generalized Anxiety Disorder/Major Depressive Disorder

EMPIRICAL EVIDENCE (LEVEL A)

Cognitive-Behavioral Therapy. Blanchard and colleagues (2003) developed an individual cognitive-behavioral therapy (CBT) for motor vehicle accident (MVA) survivors with PTSD. It includes psychoeducation, relaxation training, *in vivo* exposure, exposure-based homework, behavioral activation, and cognitive restructuring. They conducted a randomized controlled trial (RCT) comparing it with supportive psychotherapy for 78 MVA survivors with full or subsyndromal PTSD. The study is included because it examined generalized anxiety disorder (GAD) and major depressive disorder (MDD), in addition to PTSD. However, neither the study nor treatment targeted GAD or MDD. Only 49% of the sample had MDD and 35% had GAD, and it is unclear how many had both. They excluded current SUD, serious mental illness, and cognitive impairment.

Participants were randomly assigned to CBT, the supportive psychotherapy, or a wait-list control. The supportive psychotherapy included psychoeducation about PTSD and three sessions reviewing life history, trauma, and loss. The supportive therapists were instructed not to encourage driving or to use CBT techniques. Dose of treatment was not constant and ranged from 8 to 12 sessions. There was a therapist × treatment confound (the three study therapists delivered both treatments), and all therapists had a CBT orienta-

TABLE 21.1. Psychosocial Treatments (Level A Studies)

Treatment tested	Population	Comparison treatment	*n*	Duration of treatment	Main PTSD outcome measure	PTSD within-group effect size	PTSD between-group effect size	Results	Main comorbid outcome measure	Comorbid within-group effect size	Comorbid between-group effect size	Results
CBT for PTSD (comorbid GAD and MDD; Blanchard et al., 2003)	Motor vehicle accident survivors[a]	Support[d] or wait list	CBT 27; support 27; wait list 24	8–12 wk	Clinician-Administered PTSD Scale (CAPS)	1.82	Support: 0.63 Wait list: 1.16	$p = .002$ $p = .001$	Categorical results only reported	—	—	—
Seeking Safety (SS) for PTSD and substance abuse (Najavits, 2002)	Low-income women[b]	Relapse prevention (RP) or treatment as usual (TAU)	SS 41; RP 34; TAU 32	12 wk	Composite score[d]	0.2	RP: 0.10; TAU: 0.60	ns $p = .01$	Composite score[e]	0.11	RP: 0.19 TAU: 0.71	ns $p = .001$
	Adolescent girls[c]	TAU	SS 18; Tau 15	12 wk	TSCC PTSD[f]	Not reported	Not reported	ns	PEI loss of control[g]	1.15	3.15	$p = .01$

Notes = Within-group differences are only reported for the treatment of interest (see individual articles for within-group differences of comparison groups). All calculations are Cohen's *d*. ns, not significant.

[a]Blanchard et al. (2003).

[b]Hien et al. (2004).

[c]Najavits et al. (2006).

[d]Composite PTSD score included the CAPS, the Impact of Event Scale, and the Clinical Global Impression.

[e]Composite substance abuse score consisted of the Substance Use Index and Clinician Global Impression.

[f]Trauma Symptom Checklist for Children, PTSD Scale.

[g]Personal Experiences Inventory.

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[e]Composite substance abuse score consisted of the Substance Use Index and Clinician Global Impression.
[f]Trauma Symptom Checklist for Children, PTSD Scale.
[g]Personal Experiences Inventory.

TABLE 21.2. Pharmacotherapy Studies (Level A Only)

Medication tested	Population	Comparison treatment	*n*	Duration of treatment	Main PTSD outcome measure	Within-group effect size	Between-group effect size	Results
Sertraline (Brady & Clary, 2003)	Civilians	Placebo	SER 194 PBO 201	12 weeks	CAPS		0.37	$p = .0003$
Sertraline (Brady et al., 2005)	Civilians	Placebo	SER 49 PBO 45	12 weeks	CAPS		0.29	$p = .08$
Risperidone (Hamner et al., 2003)	Veterans	Placebo	RIS 19 PBO 18	5 weeks	CAPS	0.38 0.81	0.10	ns

Note. SER, sertraline; PBO, placebo; RIS, risperidone; CAPS, Clinician-Administered PTSD Scale; ns, not significant. All within- and between-group effect sizes are Cohen's *d*. Positive between-group effective size means greater drop in measurement outcome for the experimental group versus the placebo group.

tion. Results indicated that CBT was superior to supportive psychotherapy, which was superior to the wait list, on numerous variables including PTSD. CBT patients also showed greater reduction in MDD and GAD than the other two conditions, which did not differ. This study is Level A for the comparison of CBT versus wait-list control only. The supportive psychotherapy does not qualify as Level A due to artificial restriction of content (unable to encourage driving) and therapist assignment (CBT clinicians conducted it). Moreover, Level A refers to PTSD only because comorbid conditions were not present in all patients. The treatment is *single-diagnosis* because it addressed PTSD only.

SUMMARY

One study addressed comorbid MDD and GAD as a post hoc analysis of a PTSD trial. Blanchard and colleagues (2003) compared CBT for PTSD, supportive psychotherapy, and wait-list control for MVA survivors. CBT appears to be a promising treatment for MVA PTSD, and possibly MDD and GAD. However, the CBT was not integrated, nor did it attempt to address the MDD or GAD. Given high comorbidity in this population, future work could target interventions for MDD and/or GAD. More research is needed on the supportive psychotherapy condition, especially testing a more valid version of it.

PTSD and Obsessive–Compulsive Disorder

CLINICAL EVIDENCE (LEVEL C)

Inpatient Treatment for Obsessive–Compulsive Disorder. Gershuny, Baer, Jenike, Minichiello, and Wilhelm (2002) and Gershuny, Baer, Radomesky, Wilson, and Jenike (2003) reported on a residential obsessive–compulsive disorder (OCD) program for patients with OCD and PTSD. The interventions were behavioral, including OCD exposure and response prevention, and therapy groups. There was no modification of the model to treat PTSD. A naturalistic study (Gershuny et al., 2002) addressed 15 patients with treatment-refractory OCD plus multiple comorbidities, eight of whom had PTSD. The authors compared patients with and without PTSD. Results indicated that average lengths of stay were not significantly different, but patients with PTSD had worse outcomes on OCD and depression. Indeed, they showed no improvement in these, whereas the group without PTSD improved on both. Some patients with PTSD demonstrated worsening of symptoms following treatment. This was similar to case studies by the same team (Gershuny et al., 2003). They conclude that "behavioral treatment of OCD . . . may be adversely affected by the presence of comorbid PTSD and indeed may be contra-indicated for some patients" (Gershuny et al., 2002, p. 853). Indeed, a decrease in OCD was related to an increase in PTSD, whereas an increase in OCD symptoms was related to a decrease in PTSD (Gershuny et al., 2003). These studies are Level

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SUMMARY

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PTSD and Panic Disorder

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SUMMARY

The effectiveness of response prevention and exposure for OCD is already established. However, Gershuny and colleagues (2002, 2003) indicated that it appears to be contraindicated for patients with comorbid PTSD. A modification that includes a manualized PTSD model may have better outcomes. This area is virtually unexplored and highlights the importance of understanding comorbid disorder combinations, as well as potential worsening when comorbidity is not adequately addressed.

PTSD and Panic Disorder

EMPIRICAL EVIDENCE (LEVEL B)

Multiple-Channel Exposure Therapy. Multiple-channel exposure therapy (M-CET; Falsetti, Resnick, David, & Gallagher, 2001) is a treatment for PTSD and panic disorder adapted from existing treatments for each: cognitive processing therapy for PTSD (Resick & Schnicke, 1993) and panic control treatment (Barlow & Craske, 1988). Twelve group sessions address psychoeducation, breathing retraining, cognitive restructuring, and introceptive and *in vivo* exposure. M-CET was compared to a minimal-attention condition of bimonthly telephone consultation. Twenty-two women with PTSD and panic attacks were randomly assigned to treatment (n = 7), control (n = 10), or control then treatment (n = 5). Current substance dependence was excluded. In preliminary results on a completer sample, Falsetti and colleagues (2001) reported greater reduction in PTSD and panic attacks in M-CET compared to the control, and both conditions improved in self-reported depression symptoms. M-CET appears promising for the dual diagnosis of PTSD and panic disorder. Note that this study is Level B because it represents preliminary data, reports results only for a completer sample, and is not fully randomized (i.e., some participants served in both conditions). The treatment is *integrated* because it was designed for PTSD and panic disorder.

Sensation Reprocessing Therapy. Hinton and colleagues (2004, 2005) developed sensation reprocessing therapy (SRT), a 12-session Southeast Asian cultural adaptation of individual CBT for PTSD and panic attacks. Drawing from existing models for each disorder (e.g., Falsetti & Resnick, 2000; Foa & Rothbaum, 1998), the researchers added culturally appropriate psychoeducation, visualization, cognitive restructuring, and mindfulness techniques. A pilot study (Hinton et al., 2004) randomly assigned 12 Vietnamese refugees to immediate treatment or a wait-list control. All refugees had PTSD and panic attacks, and were considered treatment resistant. Medications were not

controlled during the study. Results showed improvement on various measures, including PTSD and anxiety, but due to the study's use of just one clinician, it is impossible to separate treatment from therapist effects. A later study (Hinton et al., 2005) was conducted with survivors of the Cambodian genocide in 1970, who, like the patients in the earlier study, had PTSD and panic attacks, and were treatment resistant. In addition, all patients had GAD, and psychotic patients were excluded. They were randomly assigned to immediate or delayed treatment (20 per condition), conducted by one clinician. Medication and supportive psychotherapy biweekly could occur concurrently. Results indicated superior outcomes for the immediate treatment compared to delayed treatment on numerous variables, including PTSD, anxiety, severity of panic attacks, and GAD. SRT is promising and is noteworthy for its cultural sensitivity. This study is Level B because it was not fully randomized (some patients participated in both conditions), and due to a crossover design, the two conditions did not have identical timing of assessments. There was also no mention of adherence nor assessor training. The treatment is *integrated* because it was designed for PTSD and panic attacks.

CLINICAL EVIDENCE (LEVEL D)

CBT for Panic plus Implosive Therapy. Saper and Brasfield (1998) offered an 18-session individual model: nine sessions of CBT for panic disorder with agoraphobia (adapted from Craske & Barlow, 1990) followed by nine sessions of implosive therapy for PTSD (Levis, 1985). A case study indicated diagnosis-specific impact: reduction of panic but not PTSD after the initial nine sessions (the panic treatment phase), and reduction of both disorders after 18 sessions (the panic plus PTSD treatment phases). This study is Level D because it used long-standing treatments but was a single-case study. The treatment is *sequential* because it sequenced separate treatments for PTSD and panic attacks.

CBT/Exposure. Tsao, Lewin, and Craske (1998) examined two group CBTs for panic disorder (cognitive-behavioral exposure and cognitive *in vivo* exposure) in terms of their impact on comorbid syndromes, although current SUD, psychosis, and suicidality were exclusionary. In a post hoc analysis, they collapsed across the two treatments to evaluate outcomes for those with PTSD. Of 33 treatment completers, seven had full or subclinical PTSD. Outcomes indicated reduction in panic and, for those with PTSD, a reduction in PTSD symptoms. This study addressed comorbid disorders more than most, and the finding that the treatments helped improve disorders that they were not designed to treat is consistent with much of the literature on comorbidity. This study is Level D because it does not provide sufficient evaluation of PTSD effects (only a few patients had PTSD, and the two treatments were combined when evaluating PTSD). The treatments are *single-diagnosis* because they were designed for panic only.

SUMMARY

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PTSD and Substance U

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SUMMARY

Several therapies that have been developed to treat co-occurring PTSD and panic disorder simultaneously show promising preliminary results. However, sample sizes were small and methodologies were limited.

PTSD and Substance Use Disorder

Early attempts to treat this population advocated a sequential approach in which SUD first had to be treated successfully, and only then could treatment for PTSD begin. In fact, this stance remains common. However, research on integrated treatment consistently indicates that it is helpful for this comorbid population. Indeed among comorbidities, there is more evidence for PTSD and SUD than for any other at this point, perhaps because of its prevalence, high-risk nature, and the use of substances to self-medicate PTSD (e.g., Jacobsen, Southwick, & Kosten, 2001).

EMPIRICAL EVIDENCE (LEVEL A)

Seeking Safety. Seeking Safety (SS; Najavits, 2002) is an integrated model for PTSD and SUD. It is the most researched model for any diagnosis co-occurring with PTSD, with 12 published studies that range in levels from A to C. It is a present-focused CBT that provides psychoeducation and coping skills to help patients attain greater safety in their lives. It was designed for group or individual format; men or women; diverse settings (e.g., outpatient, inpatient, residential); and all types of trauma and substances. It offers 25 treatment topics, each representing a safe coping skill relevant to both PTSD and SUD, such as Asking for Help and Healing from Anger. All topics are independent; thus, they can be done in any order, with as few or many sessions as time allows. SS is also used with patients who have just one disorder (PTSD or SUD), or are subthreshold.

Published studies are two multisite controlled trials (Desai, Harpaz-Rotem, Rosenheck, & Najavits, in press; Morrissey et al., 2005), two RCTs (Hien, Cohen, Miele, Litt, & Capstick, 2004; Najavits, Gallop, & Weiss, 2006), a controlled nonrandomized trial (Gatz et al., 2007), and seven uncontrolled pilots (Cook, Walser, Kane, Ruzek, & Woody, 2006; Holdcraft & Comtois, 2002; Mcnelis-Domingos, 2004; Najavits, Schmitz, Gotthardt, & Weiss, 2005; Najavits, Weiss, Shaw, & Muenz, 1998; Weller, 2005; Zlotnick, Najavits, & Rohsenow, 2003). Other completed studies are available (*www.seekingsafety.org*) but are not yet published (including a dissemination study by Rugs, Hills, & Peters, 2004). The published studies were conducted with various populations, including outpatient women in group modality (Najavits et al., 1998), women in prison in group modality (Zlotnick et al., 2003); women in a community mental health setting in group format (Holdcraft & Comtois, 2002); low-income urban women in individual format (Hien et al., 2004), adolescent girls in individual format (Najavits et al., 2006), men and women veterans in

group format (Cook et al., 2006), homeless women veterans in group and/or individual format (Desai et al., in press), women with co-occurring disorders in group format (Morrissey et al., 2005), outpatient men in individual format (Najavits, Schmitz, Gotthardt, & Weiss, 2005), and women veterans in group format (Weller, 2005). One study by Brown and colleagues (2007) is not reviewed here because it evaluated implementation rather than outcome. Two outcome studies are omitted from the summary below because they included SS as one model among several but did not report differences between them (Holdcraft & Comtois, 2002; Morrissey et al., 2005).

All outcome studies evidenced positive results. Eight of the nine studies that reported on substance use found improvements in that domain (Hien et al., 2004; Najavits et al., 1998, 2005, 2006; Weller, 2005; Zlotnick et al., 2003). The ninth study (Cook et al., 2006) did not have quantitative results for substance use but reported that patients maintained abstinence, verified by urinalysis. All nine studies assessed PTSD and/or or trauma-related symptoms and found improvements in one or both areas. Improvements were also found in other domains, such as social adjustment, suicidal thoughts, problem solving, sense of meaning, and quality of life. Treatment satisfaction and attendance were reported to be high in all studies.

In the four controlled trials, SS outperformed treatment as usual (TAU) (Desai et al., in press; Gatz et al., 2007; Hien et al., 2004; Najavits et al., 2006). All allowed patients in SS to obtain unlimited TAU, thus essentially evaluating the impact of SS plus TAU versus TAU alone. This is a challenging test because patients had so much treatment other than SS. Results for the controlled trials were as follows. In Hien and colleagues (2004), with a study sample of 107 women, both SS and relapse prevention (an additional arm of the study that represents a "gold standard" treatment for SUD) had reductions in PTSD, substance abuse, and psychiatric symptoms, whereas the TAU nonrandomized control worsened. In the Najavits and colleagues (2006) study of 33 adolescent girls, SS outperformed TAU on numerous variables, including substance use and trauma symptoms. In the Desai and colleagues (in press) multisite study of 450 homeless women veterans, SS outperformed a nonrandomized TAU comparison condition on several variables, including PTSD, psychiatric symptoms, employment, and social support. This study is notable for having used case managers without prior therapy training to conduct SS. In the Gatz and colleagues (2007) study of 313 women in community treatment, SS outperformed the control in PTSD, coping skills, and treatment retention. It was also the only study to evaluate possible mechanisms of action, with a finding that increased coping skills partially mediated outcomes. Finally, one of the pilot studies (Najavits et al., 2005) combined SS with an adapted version of prolonged exposure (PE; Foa & Rothbaum, 1998) with dosage based on choice. Patients chose an average of 21 SS sessions and nine PE sessions.

Implementation of the model is enhanced by various materials, including the published manual in English, and translations into Spanish, French

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Implementation of the model is enhanced by various materials, including the published manual in English, and translations into Spanish, French,

German, Dutch, and Swedish, video-based training, a website (*www.seekingsafety.org*), and numerous national trainings. The empirical evidence is classified as Level A because, among the studies, two were RCTs with sufficient methodological rigor (Hien et al., 2004, Najavits et al., 2006). The treatment is *integrated* because it was designed for PTSD and SUD.

In summary, SS is the only co-occurring PTSD model that is established as effective at this point based on criteria for empirically supported treatments (e.g., Chambless & Hollon, 1998). It has shown consistent positive outcomes on various measures, superiority to TAU, comparability to a "gold standard" treatment (relapse prevention), positive results in populations considered challenging (e.g., the homeless, prisoners, adolescents, and veterans), and high acceptability.

EMPIRICAL EVIDENCE (LEVEL B)

Collaborative Care. Collaborative care (CC) is a treatment in medical settings for acutely injured trauma survivors who may be at risk for developing PTSD and alcohol use disorder (Zatzick et al., 2004). It is a stepped care program that includes continuous case management and some combination of psychopharmacological therapy, CBT, and/or motivational interviewing (MI), although it is unclear whether the latter two therapies were delivered in group or individual modality). It begins with case management by a trauma support specialist who coordinates medical treatment across settings, and is available either directly or through a covering staff person 24/7. Patients who screen positive for alcohol use on admission or who have evidence of alcohol abuse also receive MI. Three months posttrauma, patients who meet criteria for PTSD are given a choice of CBT, pharmacotherapy, or a combination of both. The CBT includes psychoeducation, relaxation, exposure, cognitive restructuring, relapse prevention, and community integration. Although manualized, the treatment is flexible, with intervention components provided as needed based on patient presentation and preference. An RCT compared CC (n= 59) and TAU (n = 61). TAU was simply providing patients with a list of community resources, with no coordination. The sample was surgical inpatients at a trauma center who were not cognitively impaired and not psychotic. Twenty-five patients met criteria for PTSD and 12 of these were comorbid for substance abuse. At 12-month follow-up, TAU participants had significant increases in both PTSD and alcohol use disorder, whereas CC participants did not. However, the CC participants evidenced a significant decline only in alcohol use disorder, not PTSD, during that 1-year time frame. This study targets an important population at risk for PTSD and SUD, and offers guidelines for implementing a flexible, multimodal treatment package. It shows clinical promise based on this initial study. The study is Level B because it had no adherence ratings, no blind evaluator, not all participants had PTSD, and treatments were neither fully randomized nor uniform within condition (CC patients chose the specific treatment that they received: CBT, pharmacother-

apy, or a combination of the two). The treatment is *integrated* because it was designed for potential PTSD and alcohol use disorder ("potential" because it attempts to prevent the development of the disorders).

EMPIRICAL EVIDENCE (LEVEL C)

Concurrent Treatment of PTSD and Cocaine Dependence. Concurrent Treatment of PTSD and Cocaine Dependence (CTPCD; Back, Dansky, Carroll, Foa, & Brady, 2001; Brady, 2001) is a 16-session individual therapy that combines CBT interventions with efficacy for PTSD (Foa & Rothbaum, 1998) or SUD (Carroll, 1998; Monti, Kadden, Rohsenow, Cooney, & Abrams, 2002). Sessions are 90 minutes and include psychoeducation; SUD interventions, such as coping skills and relapse prevention; and PTSD interventions, such as *in vivo* and imaginal exposure. A pilot study was conducted on 39 patients with PTSD and cocaine dependence. Exclusion criteria were psychosis, dissociative identity disorder, dementia, illiteracy, suicidality, and homicidality. Patients were paid for attending therapy sessions. "Treatment completion" was defined as having attended 10 or more sessions; 24 of the 39 patients dropped out before meeting this criterion. Most dropout occurred prior to the introduction of the exposure component. Pre- to posttreatment outcome analyses, conducted on treatment completers only, showed significant decreases in PTSD, depression, and SUD. A baseline comparison of treatment completers and noncompleters indicated that the former had more years of education and were less avoidant. The study offers impressive pilot evidence that some patients with these disorders can tolerate imaginal and *in vivo* exposure treatment and, indeed, benefit from it. However, the study is preliminary and there are concerns about treatment retention. It is defined as Level C because it was a pilot study without a control condition; also, participants were paid for attending treatment sessions, which may have had an impact on outcome. The treatment is *integrated* because it was designed for PTSD and SUD.

Transcend. Transcend is a 12-week, intensive, partial hospitalization program for combat veterans with PTSD and SUD (Donovan, Padin-Rivera, & Kowaliw, 2001). It draws on psychodynamic, CBT, constructivist, and 12-step models, and is conducted in closed cohorts of eight patients. Patients attend 10 hours of group therapy per week and are required to participate in ancillary individual and/or group substance abuse treatment, relaxation training, community service, and physical exercise. Six weeks are devoted to skills development, followed by 6 weeks of trauma processing. An uncontrolled pilot study was conducted on 46 male Vietnam War veterans diagnosed with PTSD and SUD, all of whom had to achieve 30 days of substance abstinence prior to joining. Positive results were found from pre- to posttreatment on PTSD symptoms for the sample that completed all assessments. SUD was not assessed at posttreatment because patients were not allowed to use substances during the program. In summary, Transcend is the only model developed

and tested as a partial hospital program. It addresses a population known to struggle with PTSD and SUD (veterans), and achieved some positive outcomes in a pilot study. Whether its intensity can be replicated in other settings remains an open question. The study is defined as Level C because it had no control; also, it did not evaluate effects for the comorbid condition (SUD) because all participants had to have 30 days of abstinence prior to joining, and there was no assessment of substance use at posttreatment. The treatment is *integrated* because it was designed for PTSD and SUD.

Trauma Empowerment Recovery Model. The trauma empowerment recovery model (TREM; Harris & the Community Connections Trauma Work Group, 1998) is a group model originally designed for women abuse survivors with severe mental disorders. It comprises 33 weekly, 75-minute sessions conducted over 9 months, including psychoeducation, cognitive restructuring, survivor empowerment, skills building, and peer support. A controlled study (Toussaint, VanDeMark, Bornemann, & Graeber, 2007) reports on the use of a modified version of TREM in combination with a psychoeducational trauma workbook (Copeland & Harris, 2000) compared to TAU. TREM was modified to a 24-session version and followed an initial orientation with the trauma workbook. The study evaluated 170 women in residential substance abuse treatment (n = 64 in TREM vs. n = 106 in TAU). Inclusion criteria included substance use disorder and at least one additional Axis I or II disorder (with one disorder current and the other in the past 5 years), plus a history of physical or sexual abuse and at least two prior treatment episodes. Results showed that those receiving the TREM-plus-workbook approach had better outcomes on trauma-related symptoms but not on substance use. Participants in both conditions improved in substance use symptoms, with no difference between them. The study is defined as Level C because it was naturalistic, not all participants had PTSD, and there was no report of the Axis I and/or Axis II disorders that participants had other than SUD. The treatment under study is *integrated* because it was intended for multiple disorders; however, it was not designed specifically for PTSD and/or SUD, but for abuse survivors with a broad range of mental disorders that might include PTSD and/or SUD.

Substance Dependence–PTSD Therapy. Substance Dependence–PTSD Therapy (SDPT; Triffleman, Carroll, & Kellogg, 1999) is a 40-session individual therapy with two phases: Phase I is trauma-informed, addiction-focused; Phase II is trauma-focused, addiction-informed. It adapts existing models for each disorder (PTSD, SUD), including both coping skills training and *in vivo* PTSD exposure (e.g., Carroll, 1998; Foa & Rothbaum, 1998). In one study, the model (Triffleman, 2000) was compared to 12-step facilitation therapy (TSF; Nowinski, Baker, & Carroll, 1995), which uses 12-step principles to facilitate substance abstinence but does not include a PTSD component. Both treatments were conducted individually twice a week with a sample of 19 participants, both men and women, all of whom met criteria for lifetime

substance dependence, lifetime PTSD, and at least current partial PTSD. Exclusion criteria were acute psychosis, severe depression, untreated mania, dissociative identity disorder, acute suicidality or homicidality requiring hospitalization, or continuing involvement in ongoing psychotherapies. Patients were randomly assigned to treatment. Results indicated a higher number of sessions attended in SDPT than in TSF among those who attended at least three sessions. No other differences between the two treatment conditions were found; thus, the researchers combined data from both to report results from the merged data (not separately by treatment). The outcomes essentially represent SDPT *or* TSF, and the effects for either treatment alone cannot be determined. The analysis across SDPT and TSF showed an effect for time, with the combined sample improving on PTSD by the end of treatment. Self-reported substance use improved only at the 1-month follow-up and not on urine screens. In summary, SDPT is a treatment designed as a thoughtfully constructed blend of interventions that have shown efficacy with either PTSD or SUD. At face value, the model has potential. However, it is difficult to draw conclusions based on this one study as SDPT did not outperform the control (TSF) on either PTSD or SUD, nor were results reported separately for SDPT. The study is defined as Level C because of these limitations. The treatment is *integrated* because it was designed for PTSD and SUD.

CLINICAL EVIDENCE (LEVEL F)

Acceptance and Commitment Therapy. Batten and Hayes (2005) published a case study using acceptance and commitment therapy (ACT; Hayes, Strosahl, & Wilson, 1999) for 96 sessions of individual therapy over 17 months. The treatment focuses on "reduction of experiential avoidance, acceptance of private events, and commitment to behavior change" (Batten & Hayes, 2005, p. 253). The patient was stated to have PTSD and SUD, but there was no standardized assessment for these disorders. She was assessed every 3 months on various measures, with improvement occurring mostly at 9 months and thereafter. It is challenging to know what to make of this study given its methodology. Nonetheless, ACT is a well-known treatment, and it would be helpful to understand whether it has potential for PTSD and SUD. This study is Level F because it is a single-case study for a new model. The treatment is not classified because it was not designed for specific disorders.

SUMMARY

PTSD and SUD commonly co-occur, and the treatment literature for these disorders is more robust than for any other PTSD comorbidities. All of the studies in this section report promising results and one model, SS, is now established as effective. However, except for SS, the studies investigating these treatments are few and typically have small samples and a single, uncon

trolled pilot study. Verification of self-reported substance use via urinalysis is the exception rather than the norm. Nonetheless, this area has seen major strides in the past decade, showing that patients with PTSD and SUD can be treated successfully for both disorders from the start of treatment. This finding is a striking departure from the earlier received wisdom, which was to delay treatment of PTSD until the SUD was under control.

PTSD and Borderline Personality Disorder

CLINICAL EVIDENCE (LEVEL C)

Prolonged Exposure/Stress Inoculation Training. Feeny, Zoellner, and Foa (2002) reanalyzed data from a prior PTSD trial (Foa et al., 1999) to compare patients with and without borderline personality disorder (BPD) symptoms. The study had four conditions: prolonged exposure (PE), stress inoculation training (SIT), PE plus SIT, and a wait-list control group (see Foa & Rothbaum [1998] and elsewhere in this book for a description of PE and SIT). Treatment comprised nine twice-weekly individual sessions, 90–120 minutes each. The sample was 72 female assault victims, all with current PTSD and 12 with either full ($n = 7$) or partial ($n = 5$) BPD (identified as "borderline personality characteristics," or BPC). Exclusionary criteria included active SUD, severe mental illness, organic mental disorder, high risk for suicide, and/or self-harm within the prior 3 months. Because the BPC sample was small and all treatment conditions were equally effective in the main study (Foa et al., 1999), the treatment data were collapsed. Results were provided only for the completer sample ($n = 58$; i.e., no ITT analysis). Patients with and without BPC improved by the end of treatment on various measures, including PTSD, but those with BPC had significantly lower end-state functioning. The study is Level C because most patients did not have the comorbid condition and treatment conditions were collapsed due to this. The treatments under study are *single diagnosis* because they were designed for PTSD only.

Psychodynamic Imaginative Trauma Therapy and Eye Movement Desensitization and Reprocessing. Sachsse, Vogel, and Leichsenring (2006) conducted a naturalistic study of women attending an inpatient trauma-focused program, most of whom had "complex PTSD" as well as co-occurring MDD, BPD, somatization disorder, and/or a dissociative disorder. Neither the sample nor the results, however, describe the average number of disorders per person, nor a breakdown of results by co-occurring disorder. The treatment was conducted in two phases: an initial generic, inpatient stabilization for 2 weeks, followed by readmittance about 8 months later, during which patients received the trauma-focused treatment program. The latter comprised an average of two eye movement desensitization and reprocessing (EMDR) sessions and three to four individual psychodynamic sessions for "working through and reorien-

tation" per month (typically for 2–4 months). The treatment is manualized in German (Reddemann, 2004). A comparison was conducted between patients who received only Phase 1 (no trauma-focused treatment; $n = 66$) and those who also received Phase 2 (the trauma-focused treatment; $n = 87$). Results indicated that patients who completed the trauma-focused treatment had significantly better outcomes than those who did not, on a range of variables, including trauma-related symptoms and some general psychiatric symptoms. The study is Level C because it is naturalistic and has a time confound (the 8-month delay for the trauma-focused condition). The treatment is defined as *single diagnosis* because it was designed for PTSD only.

SUMMARY

The only comorbid Axis II disorder with any empirical literature at this point is BPD, and the evidence on that is very limited. Two studies were found, both of which used a manualized PTSD treatment (but not treatment for BPD). In both studies, positive effects were found on several variables, including either PTSD or trauma-related symptoms (Feeny et al., 2002; Sachsse et al., 2006). One study compared outcomes for patients with and without borderline symptoms and found positive results for both groups, but lower end-state functioning for those with borderline symptoms (Feeny et al., 2002). The studies are limited, however, in methodology (both are Level C), lack of an integrated model designed for the dual diagnosis, and sampling issues (a small sample with BPD in Feeny et al. and mixed comorbid diagnoses in Sachsse et al. [2006]). Nonetheless, the results of these studies suggest that patients with comorbid BPD symptoms can benefit from PTSD therapy.

Mood and Psychotic Disorders

Mood Disorders

Different study selection criteria are used for mood disorders than are used in the rest of this chapter (see Acknowledgments at the end of the chapter). There are several PTSD treatment studies that report changes in depression levels (e.g., Cloitre, Koenen, Cohen, & Han, 2002; Schnurr et al., 2003, 2007). However, given the high rate of comorbidity of PTSD and depression, all treatment studies for PTSD include people with comorbid depression. Studies that report pre- and posttreatment depression scores for all participants, whether they carry a diagnosis of depression or not, simply indicate the effect of the treatment on depression scores. Because these studies do not address whether individuals with a diagnosed mood disorder respond to the treatment in the same manner as individuals without a mood disorder, we did not include these studies. Furthermore, we decided to focus just on published studies that fit the category of either RCT or naturalistic, uncontrolled stud

ies in which treatment response in concurrent mood disorders was stu diagnostic group and treatment cor met these criteria.

Psychotic Disorders

Trauma and PTSD are highly comor illness (SMI) (Mueser, Rosenberg, C trauma exposure in individuals with 1998), multiple traumatizations are (e.g., dually diagnosed), rates of exp is estimated in 42% of individuals wi their charts (Mueser et al., 1998). In ment, although it is believed to worse with SMI sometimes have delusions w tions about the validity of trauma/P Fortunately, research has established in the context of SMI (Goodman et a

Although there are few publishe with SMI and PTSD, descriptions o tion agree on a number of points (F Wells, 2006; Harris & the Commun 1998; Mueser, Rosenberg, Jankowsk consideration is SMI patients' high s relapse. Another concern is their hig due directly to the effects of mental il brain injury associated with exposur (e.g., physical abuse, car accident); or Further issues include the impact of as schizophrenia, risk of self-injury i ders, and the high rate of comorbid S important that treatment for PTSD be health services, and that models be fl of severe psychopathology and impos

Individuals with SMI have been r PTSD treatment. Hence, there is a ne PTSD in this population. To our kno lines: Mueser, Rosenberg, and colleag and the Community Connections Trai the latter group is covered in the prev study thus far that was conducted with sarily have SMI (although it was origi women with SMI). Also, we do not co

ies in which treatment response in a group or subgroup with and without concurrent mood disorders was studied, or that included an interaction of diagnostic group and treatment condition. We did not find any studies that met these criteria.

Psychotic Disorders

Trauma and PTSD are highly comorbid with psychosis and/or severe mental illness (SMI) (Mueser, Rosenberg, Goodman, & Trumbetta, 2002). Rates of trauma exposure in individuals with SMI range from 51 to 97% (Mueser et al., 1998), multiple traumatizations are common, and, for some SMI subgroups (e.g., dually diagnosed), rates of exposure are even higher. Although PTSD is estimated in 42% of individuals with SMI, only 2% carried the diagnosis in their charts (Mueser et al., 1998). Indeed, PTSD is often overlooked in treatment, although it is believed to worsen SMI (Mueser et al., 2002). Individuals with SMI sometimes have delusions with trauma themes. This has led to questions about the validity of trauma/PTSD assessment in the SMI population. Fortunately, research has established satisfactory validity of PTSD measures in the context of SMI (Goodman et al., 1999; Mueser et al., 2001).

Although there are few published data to guide the treatment of patients with SMI and PTSD, descriptions of treatment programs for this population agree on a number of points (Frueh, Cusack, Grubaugh, Sauvageot, & Wells, 2006; Harris & the Community Connections Trauma Work Group, 1998; Mueser, Rosenberg, Jankowski, Hamblen, & Descamps, 2004). One consideration is SMI patients' high sensitivity to stress and vulnerability to relapse. Another concern is their high rate of cognitive impairment, either due directly to the effects of mental illness, such as schizophrenia; traumatic brain injury associated with exposure to certain forms of traumatic events (e.g., physical abuse, car accident); or the poor health care of this population. Further issues include the impact of psychotic symptoms in disorders such as schizophrenia, risk of self-injury in disorders such as major mood disorders, and the high rate of comorbid SUD in the SMI population. Finally, it is important that treatment for PTSD be integrated into comprehensive mental health services, and that models be flexible enough to adapt to a wide range of severe psychopathology and impose minimal exclusion criteria.

Individuals with SMI have been ruled out of most controlled research on PTSD treatment. Hence, there is a need to develop or adapt interventions for PTSD in this population. To our knowledge, three groups work along these lines: Mueser, Rosenberg, and colleagues; Frueh and colleagues; and Harris and the Community Connections Trauma Work Group. The TREM model by the latter group is covered in the previous section because it is one empirical study thus far that was conducted with patients with SUD who did not necessarily have SMI (although it was originally designed as a group therapy for women with SMI). Also, we do not cover a new, three-session psychoeduca-

tional program on PTSD for persons with SMI, because it was not intended to treat PTSD per se. A pilot study with 70 inpatients indicated increased knowledge about PTSD and high satisfaction (Pratt et al., 2005).

TRAUMA RECOVERY GROUP (LEVEL C)

Mueser and colleagues (2007) developed a group CBT for patients with PTSD and SMI. It offers eight modules: overview, crisis planning, breathing retraining, psychoeducation on PTSD, cognitive restructuring, coping with symptoms, a personal recovery plan, and termination. An individual version is 12–16 sessions, whereas the group treatment is 21 sessions (Mueser et al., 2007; Rosenberg, Mueser, Jankowski, Salyers, & Acker, 2004). Both treatments were designed to be provided at local community mental health centers by doctoral- or master's-level therapists. Both are Level C pilot studies. The individual program (Rosenberg et al., 2004) evidenced high retention, and improved PTSD and general psychiatric symptoms. The group therapy ($N = 80$) had somewhat lower retention, but completers showed improvement in PTSD, depression, and posttraumatic cognitions. Thus, results are promising, but further research is needed.

LEVEL F

Frueh and colleagues (2004) propose a CBT to target PTSD in patients with SMI in public-sector mental health clinics. The program includes education, anxiety management skills training, exposure therapy, and long-term follow-up care.

Summary and Conclusions

Research on PTSD treatment for patients with SMI is limited. It is promising, however, because treatment models have been developed, with pilot data on one model. Future studies will benefit from more scientific rigor, expanded assessment, and exploration of the optimal number of sessions and treatment components.

Pharmacotherapy of Comorbidity in PTSD

Despite high comorbidity rates with PTSD, most PTSD pharmacological treatment trials have excluded individuals with comorbid conditions to improve internal validity. As such, applicability of findings to patients seen in the average clinicians' office is suspect. Studies that have addressed comorbid PTSD are of two general types: (1) efficacy studies of standard PTSD treatments in individuals with comorbidity; and (2) adjunctive pharmacotherapy studies to treat specific comorbid disorders or symptoms in individuals with PTSD. Both types can provide helpful information for clinical practice.

Empirical Evidence (Level A,

SERTRALINE

Brady and Clary (2003) ex
line compared to placebo a
PTSD and comorbid anxiet
PTSD, comorbid anxiety, an
ary analysis of data from the
Drug Administration (FDA)
co-occurring anxiety and d
al., 2000; Davidson et al., 20
randomized, flexible dose (5
PTSD Scale–2 (CAPS-2) tot
for inclusion. Sertraline treat
symptoms compared to place
comorbid anxiety alone, or
the sertraline group had a lo
score than those who receive
between-group differences in

In another double-blind,
and colleagues (2005) investi
viduals with PTSD and comor
ized to receive a fixed 150 m
analysis revealed medication
with less severe alcohol dep
greater improvement in alcoh
pared to placebo. In contrast,
and later-onset PTSD, the plac
in alcohol outcomes compare
possible subtypes of patients wi
differently to sertraline.

In a post hoc analysis of t
Brady (2004) examined the im
affective disorders on outcom
dence. Participants were divid
sion or anxiety; (2) comorbid d
comorbid depression and anxi
come among the four groups.
and PTSD regardless of anxiety
may not have been sufficiently

RISPERIDONE

Hamner and colleagues (2003
blind, placebo-controlled trial

Empirical Evidence (Level A)

SERTRALINE

Brady and Clary (2003) examined the efficacy and tolerability of sertraline compared to placebo among 395 outpatients with (1) PTSD only; (2) PTSD and comorbid anxiety; (3) PTSD and comorbid depression; and (4) PTSD, comorbid anxiety, and comorbid depression. This study is a secondary analysis of data from the pivotal trials used to support the U.S. Food and Drug Administration (FDA) indication for sertraline; some individuals with co-occurring anxiety and depression were included in that trial (Brady et al., 2000; Davidson et al., 2001). This was a 12-week, multisite, double-blind, randomized, flexible dose (50–200 mg/day) trial. A Clinician-Administered PTSD Scale–2 (CAPS-2) total severity score ≥ 50 at baseline was required for inclusion. Sertraline treatment resulted in greater improvement in PTSD symptoms compared to placebo, particularly for individuals with PTSD and comorbid anxiety alone, or comorbid anxiety and depression. Patients in the sertraline group had a lower endpoint Clinical Global Impressions Scale score than those who received placebo, regardless of comorbidity status. No between-group differences in side effect burden were revealed.

In another double-blind, 12-week, controlled trial (also Level A), Brady and colleagues (2005) investigated sertraline in 94 (51 men, 43 women) individuals with PTSD and comorbid alcohol dependence. Patients were randomized to receive a fixed 150 mg/day dose of sertraline or placebo. A cluster analysis revealed medication group by symptom cluster interactions. Those with less severe alcohol dependence and early-onset PTSD demonstrated greater improvement in alcohol outcomes when treated with sertraline compared to placebo. In contrast, in those with more severe alcohol dependence and later-onset PTSD, the placebo group demonstrated greater improvement in alcohol outcomes compared to the sertraline-treated group. This suggests possible subtypes of patients with PTSD and alcohol dependence who respond differently to sertraline.

In a post hoc analysis of this trial, Labbate, Sonne, Randall, Anton, and Brady (2004) examined the impact of having additional comorbid anxiety or affective disorders on outcomes for patients with PTSD and alcohol dependence. Participants were divided into four groups: (1) no comorbid depression or anxiety; (2) comorbid depression; (3) comorbid anxiety; and (4) both comorbid depression and anxiety. Findings revealed few differences in outcome among the four groups. Patients showed improvement in alcohol use and PTSD regardless of anxiety–affect comorbidity status. However, the study may not have been sufficiently powered for the post hoc analysis.

RISPERIDONE

Hamner and colleagues (2003) conducted a 5-week, randomized, double-blind, placebo-controlled trial of adjunctive risperidone (1–6 mg/day, aver-

age dose of 2.5 mg/day) among 37 outpatient men with combat-related PTSD and comorbid psychotic features. Patients were also receiving antidepressant or other pharmacotherapy, but were required to have been on stable dosages for 1 month prior to the trial. Patients were required to have a Positive and Negative Syndrome Scale (PANSS) score ≥ 60 at baseline. Schizophrenia, schizoaffective disorder, or other primary psychotic disorders were excluded. Findings showed that risperidone, in comparison to placebo, led to greater reduction in global psychotic symptoms associated with chronic PTSD but not overall PTSD symptoms. Several limitations may have affected the findings (e.g., small sample size, possible inadequate dosing, short duration), and further investigation of risperidone for the treatment of psychotic symptoms in PTSD patients is warranted.

Empirical Evidence (Level B)

DISULFIRAM, NALTREXONE, AND THEIR COMBINATION

Among 254 outpatients with alcohol dependence and various comorbid disorders, Petrakis and colleagues (2005) investigated the efficacy of disulfiram and naltrexone, or their combination. The 12-week, controlled, randomized trial with partial blinding (open-label disulfiram) was conducted at three Veterans Administration clinics. Almost half of the sample met criteria for PTSD. Patients were also treated with various psychotropic medications but had to be on stable dosages 2 weeks prior to the trial. Patients treated with naltrexone or disulfiram, compared to placebo, had better alcohol outcomes. Disulfiram patients reported less craving from pre- to posttreatment than did naltrexone patients. No clear advantage of combining disulfiram and naltrexone was observed; in fact, participants who received the combination of medications evidenced higher depression and distress over time.

In a secondary analysis of the same data, Petrakis and colleagues (2000) examined these two medications (naltrexone vs. disulfiram) in patients with (37%) and without (63%) comorbid PTSD. Those with PTSD receiving either active medication compared to placebo demonstrated better alcohol outcomes. Those with PTSD who received disulfiram showed improvement in alcohol craving, and in total PTSD and hyperarousal symptoms. PTSD reexperiencing symptoms improved among patients taking either active medication compared to their combination. The combination was also associated with more side effects among patients with PTSD.

ANTIDEPRESSANT (PAROXETINE OR BUPROPION) VERSUS CBT VERSUS COMMUNITY MENTAL HEALTH REFERRAL

Green and colleagues (2006) examined the effect of PTSD comorbidity on treatment outcome in an uncontrolled trial of 267 low-income women with MDD. Patients were randomized to (1) CBT; (2) antidepressant medication

(paroxetine or bupropion); or
third of the women had PTSI
groups (i.e., paroxetine vs. b
however, women with PTSD ev
depression than those without

Summary

Despite the high comorbidity
orders, there have been few
patient population. The studie
that patients with PTSD and co
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concerning adjunctive pharm
More research is needed.

Summary

Virtually all of the literature or
has arisen in the past few years
of comorbidity and to the large
the development and evaluatic
PTSD field and more broadly).
the often vulnerable nature of
a burst of energy in this area of
erally quite limited, as might b
will likely see scientific advance
ical work on dissemination an
comorbidities themselves (e.g.,

Treatment models for PTS
including the types of trauma
versus individual modality, and
els are designed from the start f
tion of existing approaches tha
separate disorder.

At this point, summary poi

- It is important to assess
  Axis II disorders.
- Single-diagnosis treatm
  ments) may have impact
  designed for them.
- Nonetheless, treatments

(paroxetine or bupropion); or (3) a community mental health referral. One-third of the women had PTSD. Depression improved at similar rates in both groups (i.e., paroxetine vs. bupropion) over time. Over a 1-year follow-up, however, women with PTSD evidenced poorer physical functioning and more depression than those without PTSD.

Summary

Despite the high comorbidity of PTSD with SUD and other psychiatric disorders, there have been few pharmacotherapy studies in this complicated patient population. The studies that exist are promising, with most indicating that patients with PTSD and comorbidity respond as well to standard pharmacotherapies as those without comorbidity. Several studies provide useful data concerning adjunctive pharmacotherapies in specific comorbid conditions. More research is needed.

Summary and Recommendations

Virtually all of the literature on treatment for PTSD and comorbid conditions has arisen in the past few years. This speaks both to the emerging awareness of comorbidity and to the larger zeitgeist, in which there is strong interest in the development and evaluation of new psychotherapy models (both in the PTSD field and more broadly). Given the high rates of PTSD comorbidity and the often vulnerable nature of such populations, it is encouraging to see such a burst of energy in this area of work. Nonetheless, study methodology is generally quite limited, as might be expected at this early stage. The next decade will likely see scientific advances in types of studies (more RCTs), more empirical work on dissemination and training, and greater understanding of the comorbidities themselves (e.g., rates, causal relationships, and prognosis).

Treatment models for PTSD comorbidity offer a wide range of features, including the types of trauma for which they are designed, the use of group versus individual modality, and the variety of techniques offered. Some models are designed from the start for comorbidity, whereas others are a combination of existing approaches that have already been found effective for each separate disorder.

At this point, summary points are as follows:

- It is important to assess for comorbidity of both DSM-IV Axis I and Axis II disorders.
- Single-diagnosis treatments (currently the majority of PTSD treatments) may have impact on comorbid conditions, even if not originally designed for them.
- Nonetheless, treatments that directly address comorbidities are gener-

ally suggested as an important area of work that is likely to be beneficial.

- Only one psychosocial model thus far has been established as effective for PTSD and a comorbid disorder (Seeking Safety for PTSD/substance use disorder), using established criteria for empirically supported treatments (e.g., Chambless & Hollon, 1998).
- Two medications have had Level A RCTs with comorbid PTSD populations (sertraline, risperidone).
- Patients with PTSD and comorbid conditions can benefit from manualized interventions and also from pharmacotherapy.
- More research is needed.

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