# Treating PTSD Within the Context of Heightened Suicide Risk

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# Treating PTSD Within the Context of Heightened Suicide Risk

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**Abstract** Because posttraumatic stress disorder (PTSD) is one of the few psychological conditions that predict suicidal behavior among those who think about suicide, many patients with PTSD present clinically with elevated suicide risk. Expert consensus and practice guidelines recommend against trauma-focused treatments for patients with elevated suicide risk, however. Research aimed at understanding the common mechanisms that underlie the association of PTSD and suicide risk has led to several advances in the effective care of suicidal patients diagnosed with PTSD. Based on these results, various combinations and sequences of suicide-focused treatments, risk management procedures, and trauma-focused treatments are implicated.

**Keywords** PTSD · Suicide · Trauma · Treatment

## Introduction

Trauma exposure and posttraumatic stress disorder (PTSD) are well-established risk factors for suicidal thoughts and behaviors [1–3], with research indicating that comorbid depression further amplifies this risk [1]. For example, in a sample of military veterans, PTSD and major depressive disorder (MDD) were each associated with a sixfold increase in risk for suicidal ideation, but comorbid PTSD/MDD was associated with a ninefold increase in risk [4]. A population-based study conducted in Denmark found a similar pattern when examining predictors of death by suicide [5]: individuals who had been diagnosed with either depression or PTSD alone were six to 13 times more likely to have died by suicide, whereas those with comorbid depression and PTSD were 29 times more likely to have died by suicide. Gradus et al. [5] further determined that the rate of suicide was higher among those with comorbid PTSD and depression than what would be expected based on the additive effects of either condition alone. The synergistic effects of comorbidity do not appear to be attributable to differences in substance use, childhood abuse, gender, or aggression [6], however, suggesting the mechanisms that underlie increased suicide risk may be central to the experience of PTSD and depression themselves.

Suicidal ideation is most severe among depressed individuals who currently meet criteria for a PTSD diagnosis as compared to depressed individuals who have previously met criteria for PTSD [6]. This converges with studies' findings that current posttraumatic stress and depression symptom severity, regardless of diagnostic classification, are associated with increased risk and intensity of suicidal thoughts and behaviors relative to either symptom cluster alone [7–9]. Taken together, these findings suggest that treating PTSD, especially among individuals with comorbid depression, may reduce suicide risk. This possibility is further supported by meta-analyses findings that PTSD, but not MDD or depression symptom severity, differentiates individuals who think about suicide from individuals who make suicide attempts [10]. Indeed, PTSD is one of the only psychiatric disorders that predict which individuals with suicidal ideation will transition to suicide attempts [2].

The mechanisms that underlie the association of PTSD and suicide risk remain poorly understood, however. Studies

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aimed at understanding these mechanisms have yielded mixed results. For example, reexperiencing [11], emotional numbing [4], and hyperarousal symptoms [12] have each been identified as having the relative strongest correlation with suicidal thoughts and behaviors. Inconsistencies across studies have been attributed to the fact that researchers generally have not used empirically supported conceptual models of suicide to guide their work [1, 13]. When such models are used, however, research findings appear less divergent and clinical strategies for managing high-risk patients become clearer. To this end, a conceptual model of suicide risk will first be presented. Next, the results of clinical trials from two separate but overlapping patient populations—patients with current or recent suicidal thoughts and behaviors and patients diagnosed with PTSD—will be reviewed. Based on these findings, a general approach for treatment planning for suicidal patients diagnosed with PTSD will be presented.

## Conceptualizing Suicidal Behavior

Most leading theories of suicide conceptualize suicidal behavior as an avoidance-based strategy intended to reduce or escape from aversive and/or painful psychological states [14–17]. This perspective has been supported scientifically [18]. The escape motive has been linked to several core deficits that underlie suicidal behaviors: problem solving, emotion regulation, and cognitive reappraisal. In short, suicidal individuals are unable to effectively solve problems or regulate emotional distress, and have a tendency to "get stuck" in negative patterns of thinking about themselves, the world, and others. Many of these deficits are central to PTSD as well. As noted by Steil et al. [19], for instance, many of the dysfunctional behaviors observed in PTSD (e.g., substance abuse, non-suicidal self-injury, and suicidal behavior) function as emotion regulation strategies employed to cope with the full range of trauma-related symptoms: insomnia, physiological arousal, shame, guilt, and self-hatred. Negative self-concept, in particular, appears to be especially key to understanding the emergence of suicidal thoughts and behaviors within the context of PTSD. Guilt, remorse, self-blame, and self-criticism not only increase risk of suicidal thoughts and behaviors [20–24]; accumulating evidence suggests they explain the relationship of PTSD with suicide-related outcomes [22, 25, 26]. Guilt has also been found to be a risk factor for the later development of other trauma-related sequelae such as depression and substance use disorders [27–31], each of which serves as a suicide risk factor in its own right.

The prominent role of guilt, self-criticism, and other related cognitive-affective states among individuals with PTSD aligns with the fluid vulnerability theory of suicide [32, 33], which posits that suicide risk entails both stable and dynamic properties. Because PTSD tends to persist over time unless adequately treated, it functions as a stable risk factor for suicide; depression, in contrast, tends to ebb and flow to a greater degree over time [34]. Guilt, shame, and negative self-concept therefore serve as long-term vulnerabilities to becoming suicidal and transitioning to suicidal behavior because the individual is seeking to escape from the aversive psychological states that characterize PTSD. Treatments that directly target these aspects of PTSD might therefore reduce suicide risk. However, expert consensus and practice guidelines recommend *against* trauma-focused treatments with patients with acutely elevated suicide risk, which is typically defined as suicidal ideation with moderate or higher intent to die, the presence of a suicide plan, and/or the incidence of a suicide attempt in the past 3 months [35–38]. For patients presenting with these clinical features, suicide-focused treatments are recommended instead. For patients presenting with lower suicide risk (e.g., suicidal ideation with mild intent to die and no plan), however, certain trauma-focused treatments have been found to be both safe and appropriate. This general clinical approach for matching treatment to the patient's risk level is summarized in Table 1 and is discussed in greater detail below.

## Suicide-Focused Psychological Treatments for High-Risk Patients Diagnosed With PTSD

For patients presenting with high risk of suicide, suicide-focused treatments should be provided prior to the initiation of trauma-focused treatments. As noted above, high suicide risk is defined as the presence of suicidal ideation with severe intent to die, suicide planning, and/or a suicide attempt within the past 3 months. This definition aligns with practice recommendations and guidelines for the assessment and management of suicide risk [39, 40] as well as the treatment of PTSD [35–38]. Although there is currently limited evidence supporting the efficacy of pharmacotherapy-only treatment for reducing the incidence of suicidal behavior, there is considerable evidence supporting the efficacy of certain psychological treatments such as dialectical behavior therapy and cognitive behavioral therapy [41–43].

Dialectical behavior therapy (DBT) has garnered the most empirical support to date, with results of numerous clinical trials supporting reductions in suicide attempts as compared to treatment as usual [44–46] and non-behavioral treatment provided by peer-nominated expert clinicians [47]. The next most studied treatment approach is cognitive behavioral therapy (CBT) for suicide prevention, which has been shown in two separate clinical trials to reduce suicide attempts as compared to treatment as usual [48, 49••]. DBT and CBT are similar to each other in the following ways [50]:

1. Both treatments are based on relatively simple and practical conceptual models that emphasize how thoughts,

**Table 1** Recommended treatment approach for patients with PTSD based on severity of suicide risk

| Risk level | Clinical presentation | Treatment approach |
|---|---|---|
| Low | No suicide ideation<br>Suicide ideation (low intent) | Trauma-focused treatment |
| Moderate | Suicide ideation (moderate intent)<br>Suicide plan (nonspecific) | Trauma-focused treatment plus crisis response plan |
| High | Suicide ideation (severe intent)<br>Suicide plan (specific) | Suicide-focused treatment followed by trauma-focused treatment |
| | Suicide preparation or rehearsal | |
| | Suicide attempt within the last 3 months | |

emotions, and behaviors influence each other and lead to suicidal urges and behaviors. These models provide a foundation for understanding why and how the patient became suicidal, how trauma and PTSD contribute to the patient's suicidal thoughts and behaviors, and, critically, what to do about it.

2. Both treatments are protocol-driven and prioritize suicide risk as the primary clinical issue, not PTSD. Trauma and PTSD are recognized as contributors to or drivers of suicide risk, but are not the chief focus of treatment. In addition, these protocols outline the optimal sequence of interventions and provide a basis for supervising and monitoring clinicians' administration of the treatments, especially with respect to addressing trauma-related cognitions and emotions.
3. Both treatments clearly articulate what is expected of patients and directly target patient non-adherence, which can manifest as homework non-completion, missing scheduled appointments, or early dropout. Consistent with this emphasis, both DBT and CBT have been found to retain patients better than comparison treatments [45, 47, 48, 49••]. This emphasis may be especially key for patients with PTSD, who may be inclined to drop out of treatment early due to avoidance-related symptoms.
4. Both treatments emphasize skills training aimed at addressing core deficits in emotion regulation, problem solving, and cognitive appraisal, all of which are also core features of PTSD. Clinicians show patients how to successfully implement these skills and troubleshoot barriers to effective use. The importance of skills training was recently demonstrated in a component analysis of DBT, which found that versions of DBT that retained skills training groups outperformed versions of DBT without this component [51].
5. Both treatments respect patients' autonomy and seek to share responsibility for treatment outcomes among both clinicians and patients. To this end, self-management of aversive cognitive-affective states (e.g., self-deprecation, guilt, shame, anger) and associated behavioral responses (e.g., substance use, aggression) is prioritized over external sources of management (e.g., hospitalization).
6. Both treatments provide clear guidance for resolving acute crises by enhancing patients' ability to identify when a crisis is emerging and providing clear steps to follow to resolve them. For patients with PTSD, this often entails recognizing how trauma-related symptoms (e.g., nightmares, guilt, agitation) trigger and/or maintain suicidal urges.

Though DBT and CBT have many similarities, the two treatments differ from each other in a number of important ways. First, DBT is a much more intensive and complex treatment package than CBT. DBT is designed as a 12-month treatment program comprising weekly individual therapy sessions, weekly group skills training, weekly phone contact between clinicians and patients, and weekly supervision for clinicians. CBT, by comparison, is designed as a 10- to 12-session individual therapy package that can typically be completed within 3 months (assuming weekly sessions) and can be provided in combination with other existing treatment programs. Second, DBT has primarily been used and evaluated with women. Although men are often enrolled in DBT programs and DBT-informed programs, less is known about the treatment's efficacy for men because most DBT trials have excluded men. CBT, in contrast, has been used and evaluated with both men and women. Finally, efforts to integrate trauma-related clinical issues into DBT and CBT have taken somewhat different approaches that align with the two major approaches to trauma-focused treatment. As will be discussed below, efforts to integrate trauma-focused procedures into DBT have largely focused on exposure-based interventions informed by prolonged exposure whereas efforts to integrated trauma-focused procedures into CBT have largely focused on cognitive-based interventions informed by cognitive processing therapy.

## Dialectical Behavior Therapy

Although DBT is most commonly used to treat borderline personality disorder, the treatment was initially designed to treat any disorder characterized by difficulties with emotion regulation, to include PTSD [19, 52, 53]. Data from DBT clinical trials indicate that approximately half of participants diagnosed with borderline personality disorder also meet the diagnostic criteria for PTSD [45, 47, 54]. Given its focus on emotion dysregulation, combined with its high rate of

comorbidity, DBT may be an effective treatment package for high-risk patients diagnosed with PTSD. In a secondary analysis of Linehan et al. [47], 60 % of patients in DBT and 51 % of patients in the control condition (i.e., expert non-behavioral clinicians) met the full diagnostic criteria for PTSD at baseline. When assessed at posttreatment, 35 % of DBT and 24 % of control patients with PTSD at baseline achieved full remission ($p = 0.44$), suggesting that standard DBT was not superior to non-behavioral treatment for PTSD among high-risk women with borderline personality disorder [55].

Subsequent work has sought to integrate prolonged exposure (PE) into DBT for women with comorbid borderline personality disorder and PTSD, and have yielded promising results. In an uncontrolled pilot study [54] of integrated DBT/PE, significant reductions in PTSD symptoms, NSSI, suicide ideation, and suicide attempts were observed. A follow-up pilot randomized controlled trial of DBT as compared to DBT/PE yielded similar results and suggested that the integrated treatment package may be superior to standard DBT [51]. In both studies, patients reported reduced urges to kill themselves or to self-injure immediately after completing 80 % of the in vivo exposure exercises. High-risk patients were therefore unlikely to experience worsening in suicidal urges as a result of in vivo exposure, a finding that supports the safety of this procedure. Fully powered studies are needed to confirm these promising findings.

### Cognitive Behavioral Therapy for Suicide Prevention

Despite its efficacy for reducing suicide risk and its promise for reducing trauma-related symptoms among high-risk women, DBT's complexity (i.e., individual therapy, group skills training, clinician supervision) and considerable time demand (two to three contacts per patient per week over 52 weeks) make it challenging to implement with high fidelity in many clinical settings. Briefer treatment alternatives are therefore desirable for many clinicians. One such alternative is cognitive behavioral therapy (CBT) for suicide prevention, which entails 10 to 12 outpatient individual treatment sessions. Two separate randomized controlled trials of a 10-session version [48] and a 12-session version [49••] of CBT for suicide prevention resulted in a 50 and 60 % reduction in suicide attempts, respectively, during follow-up as compared to enhanced care as usual. Of note, these two trials were conducted by independent research labs with very different samples (inner city, ethnic minority women in Brown et al. as compared to young military men in Rudd et al.) and led to reductions in suicidal behavior that are comparable in magnitude to that observed in DBT.

With respect to PTSD, approximately 40 % of patients enrolled in CBT [49••] met the full diagnostic criteria at baseline. In this treatment approach, trauma-related thoughts and beliefs were directly targeted if they contributed to the patient's suicidal belief system. For example, self-blame secondary to a traumatic event (e.g., "It's all my fault") that sustained suicidogenic beliefs (e.g., "I deserve to die") and emotional states (e.g., guilt, shame) received explicit attention for cognitive reappraisal using worksheets and strategies that are also used in cognitive processing therapy (e.g., ABC worksheets, challenging beliefs worksheets). Results of this trial indicated that patients who received CBT reported small to moderate reductions in PTSD symptom severity during the first year posttreatment (within-group Hedge's $g$ ranging from 0.3 to 0.5), but patients in TAU did not show any improvement [49••]. Between-group comparisons further suggested an advantage for CBT patients at several time points, but this difference was not statistically significant. CBT may therefore be associated with moderate improvement in trauma-related symptomatology among high-risk patients. Similar to DBT, additional research with larger samples is needed to confirm these promising findings.

## Crisis Response Planning for Moderate-Risk Patients Diagnosed With PTSD

For patients presenting with moderate risk of suicide, trauma-focused treatments may be appropriate when augmented by explicit suicide risk management strategies such as the crisis response plan (CRP). Moderate suicide risk is defined as the presence of suicidal ideation with moderate intent to die and/or the presence of a nonspecific suicide plan. The CRP, also known as a safety plan [56••], is a core intervention used in suicide-focused psychological treatments like DBT and CBT. Originally designed for use within the context of suicide-focused treatments, the CRP has since been extracted as a risk management procedure that can be integrated into a diverse range of treatment packages including trauma-focused therapies.

The CRP is a collaboratively developed plan that a patient can follow during suicidal episodes or periods of acute emotional distress. The crisis response plan typically includes four elements: (1) identifying personal warning signs indicating the possible onset of a suicidal crisis; (2) identifying self-management skills or strategies that can distract the patient from or effectively cope with the situation; (3) identifying supportive friends or family members who can be contacted to obtain social support and/or assistance; and (4) identifying professional sources of support and help such as mental health providers, crisis hotlines, and emergency services (i.e., 911). Among patients with PTSD, personal warning signs often entail trauma-related symptoms or experiences: intrusive thoughts or flashbacks, self-blame, dysphoric mood, or physiological arousal. In addition, self-management strategies can include emotion regulation strategies contained in many trauma-focused treatments, such as relaxation or mindfulness skills training.

In essence, the CRP functions as a problem solving tool that helps patients to identify and use effective emotion regulation skills to prevent or to help "ride out" a suicidal crisis [56••, 57,

58], whether it is due to a trauma-related trigger or not. The CRP is ideally developed during or soon after an intake appointment and is reviewed at each session concurrent with homework review by asking, "Have you used your crisis response plan since the last session?" If patients indicate that they have used the CRP, the circumstances leading up to that event should be reviewed in order to identify potential change in the patient's suicide risk level. In this way, the clinician is able to track fluctuations in suicide risk and monitor treatment safety within the context of trauma-focused treatment.

## Trauma-Focused Treatments for Low-Risk Patients Diagnosed With PTSD

For patients presenting with low risk of suicide, defined as the absence of suicidal ideation or the presence of suicidal ideation with low intent to die, trauma-focused treatments can be safely administered without modification. A number of psychological treatments have been developed for the treatment of PTSD, of which two psychotherapies have garnered especially strong empirical support across numerous clinical trials conducted with a wide range of populations: prolonged exposure (PE) and cognitive processing therapy (CPT). Across 29 clinical trials, anywhere from 25 to 90 % of individuals with PTSD who begin either PE or CPT no longer meet the criteria for the diagnosis after the treatment [59, 60], with effects lasting for up to 10 years posttreatment [61]. Recovery rates are higher for those who complete these treatments in full as compared to those who discontinue early [62, 63]. Results of clinical trials further indicate that these treatments contribute to significant reductions in comorbid depression and guilt [63], two hypothesized mechanisms of increased suicide risk within PTSD. Although the specific procedures used within PE and CPT differ and focus on different mechanisms (e.g., in PE, the focus is on habituation to fearful memories and situations, whereas in CPT, the focus is on identifying and modifying maladaptive thoughts and beliefs), studies indicate that they are equivalent to each other in terms of overall efficacy [61, 63, 64].

Emerging evidence further indicates that these treatments are associated with positive suicide-specific outcomes among patients with non-imminent risk of suicide. Secondary analyses of two separate clinical trials indicate that, contrary to widespread concerns among mental health professionals [65], suicide risk decreases during the course of both PE and CPT [66••, 67••]. Additional analyses have further confirmed that new-onset suicide ideation among trauma survivors who receive CPT was rare, suicide ideation declined even among those who reported suicide ideation prior to the beginning of therapy, and no suicide attempts occurred among any participants during treatment or the 1-year follow-up [66]. Reductions in suicide ideation were mediated by change in depression symptom severity, further supporting the central role of comorbid depression. Accumulating evidence across multiple studies therefore indicates that trauma-focused therapies are associated with decreased suicide risk over time and do not contribute to increased risk as compared to non-trauma-focused treatment.

## Conclusion

A growing body of research suggests that although several features of PTSD are associated with increased risk of suicidal thoughts and behaviors, the mechanisms that best explain this relationship appear to be certain cognitive-affective factors commonly associated with the diagnosis: guilt, shame, and self-deprecation. Among patients with PTSD, suicidal behavior often serves as a coping strategy to avoid or escape from these aversive psychological states. Suicidal patients with PTSD can therefore be most effectively managed and treated by targeting these core drivers of suicide risk, although the severity of the patient's risk will dictate the optimal sequencing and combination of suicide-focused and trauma-focused interventions.

Consistent with treatment guidelines and recommendations, patients diagnosed with PTSD who present with any of the following indicators of high suicide risk should receive suicide-focused treatment as a first step: suicide ideation with severe intent to die, a specific suicide plan, recent preparatory or rehearsal behaviors,[1] or a suicide attempt within the past 3 months. In such cases, DBT or CBT are effective, empirically supported options for managing and even reducing suicide risk among patients with PTSD. The limited evidence that is available suggests that these treatments may also have small to moderate benefits for trauma-related outcomes. For this high-risk subgroup of patients, clinicians should consider a treatment sequence in which a suicide-focused treatment precedes a trauma-focused treatment. Preliminary evidence also supports an integrated DBT/PE treatment package, which may be a more efficient and cost-effective alternative to sequentially delivered DBT and trauma-focused therapy.

For low- to moderate-risk patients (i.e., presence of suicide ideation without severe intent or planning and no recent suicide attempt), accumulating evidence suggests that PE and CPT are safe and effective treatment options for reducing suicide risk and improving trauma-related outcomes concurrently. Early and effective implementation of PE and CPT with individuals diagnosed with PTSD might therefore prevent the later emergence of suicidal behavior, although this possibility warrants further investigation. If a patient's suicide risk increases during the course of either of these therapies, clinicians should consider

[1] Preparatory behaviors refer to steps taken by the individual to prepare for a suicide attempt (e.g., writing a suicide note, visiting the location of the planned attempt, purchasing a weapon, and hoarding or counting pills). Rehearsal behaviors refer to "practicing" or completing a "dry run" of the suicide attempt. Preparatory and rehearsal behaviors are especially high-risk indicators of imminent suicidal behavior.

shifting to a suicide-focused treatment before resuming trauma therapy. These recommendations are summarized in Table 1.

In conclusion, as our knowledge of suicide-focused treatments and our understanding of the mechanisms that underlie the relationship of PTSD with suicidal thoughts and behaviors have expanded, our ability to effectively treat high-risk patients has improved. For clinicians working with high-risk patients diagnosed with PTSD, several options for providing safe and effective care have been developed and are now available.

**Compliance with Ethical Standards**

**Conflict of Interest** Craig J. Bryan has received grants from the Department of Defense and the National Institute of Drug Abuse.

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