



# Feasibility of Multimodal Group Treatment for Veterans With PTSD, Depression, and High-Risk Drinking: A Pilot Study

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U.S. military veterans experience a wide range of postdeployment psychological problems, including disproportionate rates of posttraumatic stress disorder (PTSD), depression, and high-risk drinking. First-line psychological treatments for these conditions (e.g., cognitive-behavioral therapy) are effective but can be lengthy and intensive, leading many veterans to drop out of treatment. A novel brief multimodal group treatment (MMGT) program has been developed as an alternative to these first-line treatments. It was hoped that this brief treatment would exhibit lower dropout compared to lengthier first-line treatments, while still helping veterans learn emotion-regulation and interpersonal skills to reduce symptoms of PTSD, depression, and high-risk drinking. Cohorts of up to 18 group members meet for this 5-day program that integrates cognitive-behavioral instruction, mindfulness practice, and emotion-focused principles into didactic and experiential group activities. For several years pretreatment and posttreatment follow-up data have been collected from group members, including symptoms of moral injury, posttraumatic stress, depression, and high-risk drinking. We report pilot data from 50 veterans who participated in this program and completed a posttreatment follow-up survey and program evaluation. Scores on measures of posttraumatic stress, depression, and high-risk drinking were significantly reduced at post-treatment follow-up. The dropout rate for this program (2.9%) was lower than veterans' average dropout rate across all types of PTSD treatment (36%). Veterans' perceptions of the program are discussed. Based on these findings, we discuss implications for working with veterans in brief MMGTs and conducting research on these interventions.

### **Public Health Significance Statement**

While there are many mental health treatment programs that help veterans, their rates of depression, anxiety, posttraumatic stress disorder (PTSD), alcohol problems, and suicide remain high. We describe a mental health program that includes multiple approaches to helping veterans with these problems. This brief (1-week) program brings veterans together in small groups, where they easily relate to each other and find relief from their symptoms of PTSD, depression, anxiety, and high-risk drinking.

**Keywords:** military veterans, PTSD, cognitive-behavioral therapy, emotion-focused therapy, group therapy

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Military personnel are at high risk for posttraumatic stress disorder (PTSD) due to their exposure to traumatic events such as combat, death, and human suffering (Hall, 2011). Those who go on to develop PTSD after exposure to traumatic events feel unsafe even when they are no longer in dangerous situations. At a neurobiological level, this lack of perceived safety may be due to changes in the amygdala, prefrontal

cortex, hippocampus, and other brain regions, potentially resulting in frequent recall of trauma memories and excessive conditioned fear responses (Abdallah et al., 2019; Harnett et al., 2020; Quinones et al., 2020). PTSD is associated with reduced physical health, lower quality of life, and early mortality (Lehavot et al., 2018). Without treatment, the course of PTSD is likely to be protracted (Lehavot et al., 2018).

Veterans with PTSD exhibit higher rates of aggression, depression, substance use disorders (SUDs), suicidal ideation, and death by suicide (Jakupcak et al., 2007, 2009; McCauley et al., 2012; Pompili et al., 2013). A study of post-9/11 veterans found 22% met the criteria for current major depressive disorder and 6% met the criteria for current alcohol use disorder; lifetime prevalence rates for depression (42%) and alcohol use disorder (37%) were also much higher than the general population (Brancu et al., 2017). Depression and high-risk drinking, in addition to PTSD, contribute to unemployment and cognitive difficulties among veterans (Adams et al., 2017; Amick et al., 2018; Combs et al., 2015). Hence, treating veterans requires not just attending to PTSD but also their depression and high-risk drinking.

High rates of psychological problems among veterans are unsurprising, considering the many challenges they face before, during, and after deployment. It has been proposed that some individuals who possess schemas related to defectiveness, vulnerability, and mistrust/abuse are vulnerable to developing PTSD because these schemas contribute to an avoidant coping style (Clark & Beck, 2011; de Haan et al., 2019). Research by Hall (2011) found that some veterans enlist in the military to avoid emotions associated with these negative schemas. After enlisting, military personnel may be exposed to potentially traumatic events (e.g., grueling training regimens, combat) that increase their risk for psychological problems (Goetter et al., 2020; Kimbrel et al., 2015; Steele et al., 2017). Postdeployment difficulties, including reduced social support and social reintegration problems, have also been associated with psychological distress (Ciarleglio et al., 2018; Goetter et al., 2020; Smith et al., 2017). These difficulties may reinforce defectiveness, vulnerability, and mistrust schemas, creating a cycle of emotion dysregulation and avoidance. Many veterans who find themselves in these cycles may benefit from psychological treatment.

We describe popular treatments for PTSD below, including cognitive-behavioral therapy (CBT), mindfulness-based therapy (MBT), emotion-focused therapy (EFT), and group therapy. We also describe integrative multimodal treatments that combine one or more of these interventions to treat PTSD and co-occurring psychological problems. These treatments typically last between eight and 20 sessions, although some range from as few as a single session to weekly sessions over 6 or more months. Throughout, we note that the most effective treatments exhibit the highest dropout rates and that treatments with the lowest dropout rates are less effective. To address this problem, we introduce a brief multimodal group treatment (MMGT) for veterans that integrates treatments with high effectiveness and those with low dropout rates. The remainder of this article describes this novel treatment and how it was evaluated.

## Common Treatments for PTSD

In 2017, the U.S. Department of Veterans Affairs (VA) and Department of Defense (DoD) updated clinical guidelines for treating PTSD (U.S. Department of Veterans Affairs, U.S. Department of Defense, 2017). Current recommendations include individual cognitive-behavioral psychotherapies such as cognitive processing therapy, prolonged exposure, written exposure therapy (narrative therapy), and eye movement desensitization and reprocessing as first-line treatments for PTSD. Mindfulness-based therapies are recommended as an adjunctive treatment. Group therapy is recommended versus no treatment, but no specific orientation has been found to be more effective than others (U.S. Department of Veterans Affairs, U.S. Department of Defense, 2017). The VA DoD guidelines provide no guidance regarding integrative or emotion-focused PTSD treatments but encourage research to determine their efficacy.

### *CBT-Based Psychotherapies*

First-line treatments for PTSD are based on CBT principles and practices. CBT techniques for PTSD include exposure, cognitive restructuring, relaxation training, and behavioral activation (Clark & Beck, 2011). Three meta-analyses of psychotherapeutic treatments for PTSD find the largest effect sizes for CBTs (Bisson et al., 2007; Cusack et al., 2016; Watts et al., 2013).

CBTs reduce comorbid depression and alcohol use disorder among veterans with PTSD (Jakupcak et al., 2010; McCauley et al., 2012; Turner & Jakupcak, 2010). For example, patients can use cognitive restructuring techniques to challenge depressive and addictive beliefs in addition to trauma-related beliefs. Behavioral activation, applied to addiction, depression, and PTSD, facilitates engagement in pleasant, meaningful activities to activate positive thoughts and feelings (Cuijpers et al., 2007; Daughters et al., 2018; Etherton & Farley, 2022). Despite being effective, between 32% and 44% of veterans drop out of CBT, depending on the specific approach (e.g., cognitive processing therapy, prolonged exposure) and whether treatment is delivered in group, individual, or combined group and individual format (Jeffreys et al., 2014; Tuerk et al., 2011). Longer treatment duration, degree of trauma focus, and lack of individual attention during group treatment have been discussed as risk factors for dropout in CBTs and other evidence-based treatments for PTSD (Imel et al., 2013).

### ***Mindfulness-Based Therapies***

Mindfulness-based therapies encourage non-judgmental attention to and acceptance of psychological and physiological experiences (Kabat-Zinn, 2003). In MBTs, participants are taught to concentrate attention on an aspect of their present moment experience (e.g., mantra, breath, physical sensation), which is thought to reduce hyperarousal and anxiety. As such, MBTs are often used to treat PTSD. Polusny et al. (2015) conducted a randomized controlled trial (RCT) of 116 veterans receiving either mindfulness-based stress reduction (MBSR) or present-centered group therapy. MBSR involves instruction in mindfulness techniques to cultivate acceptance and reduce distress (Grossman et al., 2004). Polusny et al. (2015) found veterans in the MBSR condition experienced greater PTSD symptom reduction than those in the control condition. Dropout rates for the MBSR condition in the Polusny et al. (2015) study (13 of 58 participants or 22.4%) were lower than dropout rates reported in CBT studies (ranging between 32% and 44%).

Gallegos et al. (2017) conducted a meta-analysis of 19 RCTs to determine the effects of

mindfulness, meditation, and yoga interventions on PTSD symptoms. Gallegos et al. (2017) defined *mindfulness* as interventions which used open-monitoring techniques (e.g., attending to sensations, emotions, and cognitions as they arise) and *meditation* as interventions which used focused attention techniques (e.g., focusing attention on controlled breathing, a feeling, a mantra, a specific object). *Yoga* was defined as any meditation or mindfulness activity that also incorporated physical movement. Gallegos et al. (2017) observed mindfulness and meditation moderately reduced PTSD symptoms ( $d = -0.33$  and  $-0.37$  respectively) while the effects of yoga were not significant. A more recent meta-analysis by Cramer et al. (2018) concluded that yoga reduces PTSD symptoms. However, the authors noted the quality of studies was low and recommended additional research regarding yoga as a treatment for PTSD.

### ***Emotion-Focused Therapy***

In EFT, PTSD may be understood as the result of anxiety and irritability that interferes with experiencing underlying feelings of fear and sadness associated with traumatic events (Greenberg, 2015; Timulak & McElvaney, 2016). Emotion-focused therapists understand that experiencing fear and sadness, instead of avoiding these feelings, provides relief from PTSD symptoms. Veterans engaged in EFT are encouraged to recognize fear and sadness related to human suffering and death. This fear is processed over the course of therapy, potentially giving way to grief and sadness associated with traumatic loss (Khayat-Abuaita et al., 2019; Mlotek & Paivio, 2017). As veterans grieve, they are guided to acknowledge their losses while simultaneously increasing self-compassion (Paivio & Pascual-Leone, 2010). EFT has been shown to reduce symptoms of depression, generalized anxiety disorder, and PTSD (Fülep et al., 2021; Timulak et al., 2017). However, because EFT is emotionally intense, dropout rates can be high. Paivio et al. (2010) compared two versions of EFT for individuals who experienced childhood maltreatment: empathic exploration and imaginal confrontation. Participants in the imaginal confrontation condition imagined themselves interacting with perpetrators of childhood abuse during an empty chair intervention. In the

empathic exploration condition, participants described interactions with perpetrators to therapists, without engaging with an empty chair. Dropout in the more intensive imaginal confrontation condition was higher (20%) than the empathic exploration condition (7%).

### **Group Psychotherapy**

Group therapeutic factors, including the instillation of hope, group cohesiveness, catharsis, and role-modeling, play an important role in group therapy outcomes (Yalom & Leszcz, 2020). As patients participate in therapy groups, they learn from one another, receive validation, grow to care about each other, and gain substantial benefits from doing so. They also learn and practice social skills, including empathy, active listening, impulse control, and conflict resolution (Liese & Beck, 2022). Participants who apply these skills outside of group are more likely to develop healthy relationships. A meta-analysis by Sloan et al. (2012) reported small effects of group psychotherapies on PTSD symptoms ( $g = 0.24$ ). Types of groups included CBT, interpersonal process groups, and coping skills training groups. When the meta-analysis was restricted to studies with active control conditions, effects were no longer statistically significant. A more recent meta-analysis by Schwartze et al. (2019) reported moderate effects of group psychotherapy on PTSD symptoms ( $g = 0.70$ ). Like Sloan et al. (2012), when Schwartze et al. (2019) compared group psychotherapy to active control conditions, effects were no longer statistically significant. This suggests that therapeutic factors common to all group therapies might account for PTSD symptom reduction—at least more so than specific group interventions.

### **MMGTs for PTSD**

MMGTs; Lazarus (1989); also described in Norcross and Goldfried (2019) target interrelated psychological processes (e.g., attention, behavior, affect, sensation, cognition, social skills) that are negatively affected across psychological disorders. In MMGTs, interventions from various therapeutic orientations are chosen to address problematic psychological processes (e.g., CBT for targeting cognitive processes, EFT for targeting emotional processes). Because MMGTs target processes involved in multiple psychological disorders, they may be

well-suited for treating veterans' co-occurring PTSD, depression, and high-risk drinking. Below, we describe prominent MMGTs for treating these problems.

In Seeking Safety (Najavits et al., 1996, 1998), a CBT-based MMGT for addressing comorbid PTSD and SUDs, group members practice *safety*, defined as “abstinence from all substances, reduction in self-destructive behavior, and establishment of a network of supportive people.” They meet weekly to receive psychoeducation and practice adaptive coping skills. Trauma Adaptive Recovery Group Education and Therapy (TARGET) involves psychoeducation regarding PTSD and SUDs, cognitive restructuring and coping skills training, and artistic expression of “emotionally charged memories” (Ford & Russo, 2006). Addictions and Trauma Recovery Integrated Model (ATRIUM), integrates psychodynamic principles with 12-Step practices and mindfulness skills (Miller, 2002). Group members learn how dynamics of childhood trauma are reenacted in their current relationships and develop a “protective presence” to challenge maladaptive interpersonal behaviors (Miller, 2002). A meta-analysis of nine RCTs of MMGTs for women with PTSD (including Seeking Safety, TARGET, and ATRIUM) observed small but significant improvement in general mental health ( $d = 0.18$ ) and PTSD symptoms ( $d = 0.16$ ) compared to treatment as usual at 12 months (Morrissey et al., 2005). While dropout rates were not reported, the study attrition rate was 24% and attrition did not differ significantly between conditions.

In our literature search, we only found two outcome studies of MMGTs for veterans. Neither sampled U.S. military veterans nor included control groups. Britvić et al. (2012) observed significant reductions in PTSD and depression posttreatment in a sample of Croatian veterans, but gains were not maintained at follow-up. The dropout rate in this study was 17%. Rademaker et al. (2009) observed significant reductions in PTSD, depression, and anxiety in a sample of United Nations veterans seven weeks after completing a 21-month exposure-based MMGT. The dropout rate in this study was not reported.

### **Summary and Aims of This Study**

Research supports the effectiveness of CBT and EFT for PTSD (Cusack et al., 2016; Fülep et al., 2021), but because these treatments can



be lengthy and emotionally intensive, dropout is common (Jeffreys et al., 2014; Paivio & Pascual-Leone, 2010). In a meta-analysis of RCTs of PTSD psychotherapies, Lewis et al. (2020) found the average dropout rate to be 16%, and not different between military personnel and civilians. These findings contrast with Goetter et al. (2015), who reported a dropout rate of 36% in their meta-analysis of PTSD psychotherapies for Iraq and Afghanistan veterans. A more recent meta-analysis of PTSD psychotherapies sampling active-duty military personnel and veterans from all eras observed a dropout rate of 24.3% (Edwards-Stewart et al., 2021). In these meta-analyses, most studies sampled U.S. military personnel.

Alternative treatments like MBTs, compared to first-line CBTs, exhibit less dropout but lower efficacy (Gallegos et al., 2017; Sloan et al., 2012). The VA DoD encourages research into MMGTs that integrate first-line CBTs and alternative treatments. It is conceivable MMGTs could exhibit lower dropout rates of alternative treatments and the improved efficacy of first-line treatments. Because few studies of MMGTs have sampled U.S. military personnel, the feasibility and acceptability of MMGTs for veterans with PTSD are not well-established. Existing studies of MMGTs have sampled veterans outside of the United States, where programs either fail to demonstrate efficacy or are lengthy.

In this study, we describe and report initial outcomes from a brief (4-night 5-day) MMGT integrating CBT, MBT, and EFT principles and practices to help veterans reduce symptoms of PTSD, depression, and high-risk drinking. Conceivably, veterans may be less likely to drop out of this brief treatment. Dropout from PTSD treatment tends to occur between 6 and 8 weeks (Gutner et al., 2016). Some meta-analytic studies have found longer treatment duration increases the likelihood of dropout (Imel et al., 2013) while others have not (Edwards-Stewart et al., 2021).

We sought to evaluate this brief integrative MMGT to determine (a) the feasibility and acceptability of brief MMGTs among U.S. veterans; (b) whether brief MMGTs exhibit lower dropout rates compared to lengthier MMGTs or stand-alone psychotherapies, and (c) whether veterans experience improvements in psychological functioning following participation in brief MMGTs. In this pretreatment posttreatment follow-up pilot study,

we hypothesized that veterans' symptoms of PTSD, depression, high-risk drinking, and moral injury would decrease following their participation in this brief MMGT.

## Method

### Description of the Program

This MMGT focuses on skills to increase self-awareness, self-regulation, and interpersonal functioning and reduce symptoms of PTSD, depression, and high-risk drinking. Group members include Gulf War, Iraq/Afghanistan, and Vietnam veterans, and active-duty members of all branches of the U.S. military. Between four and 18 veterans participate in each cohort and remain onsite for 5 days and 4 nights. Lodging and meals are provided, and accommodations resemble military conditions (i.e., barracks-style living and mess hall dining) to replicate the camaraderie of group members' military experiences. All activities are delivered in a group setting, where trust and vulnerability are encouraged. Activities are also delivered in a group setting to provide maximal exposure to group therapeutic factors (e.g., universality, cohesiveness, interpersonal modeling), which are important predictors of therapy outcome (Yalom & Leszcz, 2020). In line with VA DoD guidelines and empirical research, didactics for all cohorts include cognitive-behavioral, emotion-focused, and mindfulness content. Group members also participate in emotion-focused experiential activities designed to help them process trauma-related emotions they tended to avoid (e.g., sadness, fear, shame).

Interventions from CBT, EFT, and MBT are used to help group members address psychological vulnerabilities that maintain their depression, PTSD, and risky drinking. It is common for veterans to avoid difficult emotional experiences, or have trouble attending to them (Hall, 2011). Thus, mindfulness-based practices are used to help group members attend to, accept, and tolerate their difficult emotions. As they learn to tolerate more vulnerable emotions, they are more receptive to CBT and EFT interventions. CBT principles and practices are chosen to help group members recognize, understand, and manage the causes and consequences of their emotional distress. Rather than attributing depression and anxiety to external forces, group members are encouraged to understand that thoughts and beliefs influence

their emotions and behaviors. EFT interventions, like mindfulness-based practices, target emotion avoidance. However, EFT interventions additionally target emotional expression and vulnerability. In accordance with EFT theory, it is expected that helping group members express their vulnerable feelings to others, in addition to simply identifying and experiencing them, provides relief from their symptoms.

A manual was developed to standardize treatment across cohorts. This manual includes program structure and guidelines; information regarding the psychobiology of PTSD; cognitive-behavioral models of PTSD, depression, and high-risk drinking; cognitive distortions; daily thought records; guided meditation; and emotion identification and values clarification exercises. Regarding high-risk drinking, group members are taught about stages of change and how their goals and preferences might vary over time and context. They are also encouraged to explore their motives for drinking, such as to avoid difficult emotions, and alternative ways to cope with stressors.

MMGT staff and group facilitators include psychologists, mindfulness and meditation instructors, and peer mentors (program graduates). Facilitators are required to attend three full-day training sessions led by the program developer, a doctoral-level psychologist. These training sessions include instruction regarding psychological processes involved in PTSD, depression, and high-risk drinking. Prior to each cohort, facilitators meet to review essential aspects of the program. Emphasis is placed on addressing psychological processes discussed in the full-day training during mindfulness-based activities and experiential activities. Facilitators are instructed to lead activities according to the program manual.

### ***Cognitive-Behavioral Instruction***

During this program, group members participate in approximately 10 hr of CBT instruction, including approximately 6 hr of didactics and 4 hr of instruction integrated into other activities. Group members receive psychoeducation in the cognitive model and are helped to understand relationships between their thoughts, feelings, and behaviors. They also learn about various cognitive distortions that maintain their depression, PTSD, and high-risk drinking and the need to shift from automatic (System 1) to deliberate (System 2)

modes of thinking to challenge these distortions (Liese & Beck, 2022). During this training, some group members disclose their trauma history for the first time and begin to understand psychological mechanisms underlying their PTSD, depression, and high-risk drinking. Groups work together to develop adaptive cognitive and behavioral responses to overcome problematic symptoms. For example, group members complete thought records (Liese & Beck, 2022), especially after emotionally demanding group activities that activate distressing thoughts, beliefs, and emotions.

### ***Mindfulness-Based Activities***

Group members engage in approximately 3 hr of mindfulness and meditation training per day. This training includes MBSR, breathing meditation, yoga, and lectures regarding mindfulness concepts. Group members are also given journals and asked at the end of each day to reflect on their insights. During these mindfulness-based activities, veterans are taught to nonjudgmentally attend to their thoughts and emotions.

### ***Emotion-Focused and Experiential Activities***

At the start of each cohort, group members are taught the importance of recognizing, naming, and ultimately accepting their emotions. Facilitators use probing questions and reflections, along with psychoeducation to help group members gain insight into their emotions. For example, group members often admit to road rage involving feelings of extreme irritation and threatening behaviors. Facilitators help group members understand that anger obscures their feelings of fear (e.g., of getting seriously injured), hurt (e.g., by strangers who disrespect them), and shame (e.g., being demeaned by another driver). In addition to integrating EFT principles into group activities, two emotion-focused experiential activities, *Ceremony for the Dead* and *Leap of Faith*, were developed for this MMGT. Both take place on the third day of the program. By this time, most group members describe themselves as feeling increasingly safe during group activities. Some have already begun to acknowledge vulnerable emotions associated with their traumatic experiences.

*Ceremony for the Dead* aims to help group members acknowledge and process the many complex emotions associated with death and dying. During *Ceremony for the Dead*, group members first write notes describing losses associated with

traumatic events (e.g., friends killed in the line of duty, deaths of loved ones). Group members next gather to read these notes aloud and cast them into a fire. By incinerating these notes, group members acknowledge the finality and permanence of their losses. It is common for group members to cry openly during this phase of the activity. This process reliably leads to a level of openness that continues throughout the rest of their participation in the program. From an EFT perspective, it is assumed that providing this opportunity for group members to grieve reduces PTSD symptoms by enabling cognitive and emotional changes, improvements in self-compassion, and forgiveness (Greenberg et al., 2008; Mlotek & Paivio, 2017). Furthermore, group members feel inspired to express verbal and even physical support for others expressing profound pain, which invariably contributes to group cohesiveness.

From an EFT perspective, when people with PTSD allow themselves to experience vulnerable feelings, they are in a better position to acknowledge a core need for safety. This enables them to consider adaptive actions, rather than avoidance or aggression, in the face of anxiety (Timulak & McElvaney, 2016). *Leap of Faith* aims to help group members' experience, acknowledge, and ultimately process feelings of fear and anxiety. During *Leap of Faith*, group members climb a wooden utility pole (approximately 20 feet tall) and spring from the top, secured by a bungee cord, wire, and harness. They are met on the ground and helped to remove their harness by other group members and an onsite climbing expert who supervises the entire process. While climbing, most group members become fearful. They are often surprised but invigorated when other group members encourage them to continue climbing, shouting phrases like, "It's okay to be scared up there!" and "You can do this!" We theorize climbers internalize these words of encouragement, which enable them to normalize their fear, access feelings of vulnerability, and act adaptively in the face of anxiety (i.e., by leaping confidently from the top of the pole).

## Procedure

This study, conducted through a university medical center in the midwestern United States, was approved by their Institutional Review Board. The APA Ethical Principles and Code of Conduct (American Psychological Association, 2017) were

followed in working with participants. MGMT participants were recruited online through the program website (<https://www.warriorsascent.org>). Military veterans of any branch of the U.S. Armed Forces, at least 18 years of age, were eligible to participate in this study. This study included Iraq and Afghanistan veterans, which is notable since these veterans are more likely to experience PTSD than veterans from earlier wars (Cameron et al., 2019). Point prevalence rates of PTSD among post-9/11 veterans range from 23% to 26%, with lifetime rates near 37% (Brancu et al., 2017; Fulton et al., 2015).

Pretreatment data collection began in the spring of 2016 and was completed in the summer of 2019. Participants were recruited at each cohort to achieve an adequate sample size. Veterans were invited to participate in this research upon arriving at the program. Informed consent was provided by all 139 individuals who volunteered for this study. At the beginning of each cohort, group members completed pretreatment survey batteries in Research Electronic Data Capture (REDCap; Harris et al., 2009, 2019) comprised of demographic measures (including military history) and standardized measures of PTSD, depression, and high-risk drinking. In October and November 2019, posttreatment follow-up survey batteries were distributed via email to the 139 group members who completed pretreatment surveys. The posttreatment follow-up survey battery comprised identical standardized measures of PTSD, depression, and high-risk drinking, as well as a program evaluation survey. Posttreatment follow-up consent and data collection also took place via REDCap, which enabled linking pretreatment and posttreatment follow-up data using unique identifier codes (provided to group members in their posttreatment follow-up email). Group members were given an electronic copy of the consent form (attached to the posttreatment follow-up email) and consented by typing their full names into a text box required to access the posttreatment follow-up survey. Data were stored on encrypted institutional servers and deidentified prior to analyses. The 50 group members who completed posttreatment follow-up surveys were compensated with \$15 electronic Amazon gift cards.

## Participants

Throughout this article, we refer to those who completed posttreatment follow-up surveys as

survey completers ( $n = 50$ ) and those who did not complete posttreatment follow-up surveys as survey noncompleters ( $n = 89$ ). The number of survey noncompleters (89 of 139; 64%) is an attrition concern distinct from this study's low program dropout rate (4 of 139; 2.4%), discussed later. To determine whether survey completers and noncompleters differed in age, pretreatment psychological functioning, self-reported gender, race, education, or program completion date we conducted independent  $t$  tests and chi-square tests of independence. No differences were observed between groups. Of 50 survey completers, 12 completed this MMGT in 2016, 22 in 2017, nine in 2018, and seven in 2019. The average posttreatment follow-up duration was 2 years ( $SD = 1.0$ ). Descriptive statistics for survey completers and noncompleters are reported in Table 1.

## Instruments

### Moral Injury Questionnaire-Military Version

The Moral Injury Questionnaire-Military Version (MIQ-M; Currier et al., 2013) is a 20-item scale designed to measure veterans' degree of moral injury (i.e., feeling one has egregiously violated their own morals or values). This scale asks about the extent to which military veterans feel betrayed, guilty about harming others, survivors' guilt, or a desire for revenge. It also includes items regarding observing or involvement in the death of innocents or children, the inability to save a life, and the experiencing of chaos and sexual trauma. Items are measured on a 4-point Likert-type scale ranging from 1 (*never*) to 4 (*often*). Higher scores indicate greater levels of moral injury with a maximum possible score of 80. In a study by Currier et al. (2013) the MIQ-M exhibited good psychometric properties and veterans in clinical samples responded with higher levels of moral injury than those from non-clinical samples. In their study, MIQ-M scores were positively correlated with combat exposure ( $r = .63$ ), impaired vocational and social functioning ( $r = .42$ ), PTSD symptoms ( $r = .65$ ), and depressive symptoms ( $r = .39$ ). Controlling for combat exposure, demographic characteristics, military branch, number of deployments, and recency of last deployment, MIQ-M scores significantly predicted suicide risk ( $\beta = 0.22$ ), PTSD symptoms ( $\beta = 0.62$ ) and depressive symptoms

**Table 1**

*Demographics Between Posttreatment Follow-up Survey Completers and Noncompleters*

Variable	Survey noncompleters ( $n = 89$ )	Survey completers ( $n = 50$ )
<b>Age</b>		
<i>M (SD)</i>	42.3 (10.6)	42 (9.8)
Range	24–74	24–68
<b>Gender</b>		
	<i>n (%)</i>	
Male	71 (80)	42 (86)
Female	18 (20)	7 (14)
<b>Race</b>		
White	70 (80)	41 (82)
Black	7 (8)	3 (6)
Asian	2 (2)	—
Hispanic	3 (3)	2 (4)
Native		
American	1 (1)	2 (4)
Other	5 (6)	2 (4)
<b>Education</b>		
Less than high school	2 (2)	—
High school	4 (5)	2 (4)
Trade school	10 (11)	5 (10)
Some college	20 (23)	17 (34)
Associates degree	20 (23)	10 (20)
Bachelor's degree	23 (26)	8 (16)
Master's degree	7 (8)	7 (14)
Doctoral degree	3 (3)	1 (2)

*Note.* Independent samples  $t$  test and chi-square tests revealed no significant differences between survey completers' and noncompleters' age, gender, race, education, PTSD, depression, and high-risk drinking. PTSD = posttraumatic stress disorder.

( $\beta = 0.46$ ; Currier et al., 2013). In the present study, the MIQ-M was administered at pretreatment and posttreatment follow-up, demonstrating good internal consistency ( $\alpha = .89$ ) at pretreatment ( $n = 139$ ).

### PTSD Checklist for DSM-5

The PTSD Checklist for DSM-5 (PCL-5; Blevins et al., 2015) is designed to measure the severity of PTSD. The PCL-5 measures symptoms related to repeated, disturbing, unwanted memories, or dreams; nightmares; avoidance; self-blame; feeling distant, cut off; hyper-alertness; experiencing difficulty concentrating, and; experiencing



sleep problems across 20 items. Items are measured on a 5-point Likert-type scale ranging from 0 (*not at all*) to 4 (*extremely*). Higher scores indicate more severe PTSD symptoms with a maximum possible score of 80. The PCL-5 exhibits strong internal consistency and good convergent and discriminant validity with scales measuring PTSD and other mental health problems in both civilian and military samples (Blevins et al., 2015; Wortmann et al., 2016). The PCL-5 was administered at pretreatment and posttreatment follow-up. The PCL-5 demonstrated excellent internal consistency ( $\alpha = .95$ ) at pretreatment ( $n = 139$ ).

### ***Patient Health Questionnaire***

The Patient Health Questionnaire-9 (PHQ-9; Kroenke et al., 2001) is designed to measure depression severity. The nine items on the PHQ-9 measure decreased interest or pleasure; feeling down, depressed, or hopeless; sleep problems; decreased energy; appetite; difficulty concentrating; lethargy, and suicidal ideation. Items are measured on a 4-point Likert-type scale ranging from 0 (*not at all*) to 3 (*nearly every day*). Higher scores indicate more severe depression symptoms with a maximum possible score of 27. In both civilian and military samples, the PHQ-9 exhibits excellent internal consistency and test-retest reliability, as well as good validity, reflected in moderate to strong associations with poor mental health and physical health functioning (Kroenke et al., 2001; Sudom, 2020). In our study, the PHQ-9 was conducted at pretreatment and posttreatment follow-up, demonstrating excellent internal consistency ( $\alpha = .91$ ) at pretreatment ( $n = 139$ ).

### ***Alcohol Use Disorders Identification Test***

The Alcohol Use Disorders Identification Test (AUDIT; Saunders et al., 1993) is designed to measure alcohol use severity. The 10 items on the AUDIT assess drinking frequency, drinking quantity, difficulty stopping drinking, failing to achieve goals, blackouts, morning consumption, injuries, and others' concern about drinking behavior. Drinks per day (when drinking) is measured on a 5-point Likert-type scale ranging from 0 (*1 or 2 drinks per day*) to 4 (*10 or more*). The occurrence of alcohol-related injuries and others' expressions of concern about one's drinking is measured on a 3-point Likert-type scale with

values of 0 (*no*), 2 (*yes, but not in the past year*), and 4 (*yes, during the past year*). The remaining seven questions are measured on a 5-point Likert-type scale ranging from 0 (*never*) to 4 (*daily or almost daily*). Higher total AUDIT scores indicate greater alcohol use severity, with a maximum score of 40. Scores ranging from 8 to 14 indicate high-risk drinking and scores above 15 indicate moderate-to-severe alcohol use disorder. The AUDIT exhibits excellent internal consistency and high sensitivity and specificity to hazardous drinking, addictive drinking, and alcohol-related problems (Saunders et al., 1993). It has been used to determine the prevalence of alcohol use disorder in U.S. military veterans (Fuehrlein et al., 2016). In our study, the AUDIT was administered at pretreatment and posttreatment follow-up. It demonstrated excellent internal consistency ( $\alpha = .90$ ) at pretreatment ( $n = 139$ ).

### ***Program Evaluation Survey***

A program evaluation survey was developed for this study and administered at posttreatment follow-up. This program evaluation survey included three subscales measuring survey completers' perceptions of program activities, achievement of program objectives, and perceived helpfulness of group processes. Survey completers reported achievement of program objectives was measured using a 5-point Likert scale ranging from 1 (*completely false*) to 5 (*completely true*). Representative items for this subscale include: "I have better control of my thoughts, feelings, and behaviors," "I know how to use mindfulness to heal myself," "some of my emotional wounds have been healed," and "I am less likely to have conflict with others." The achievement of program objectives subscale exhibited good internal consistency ( $\alpha = .84$ ). MGMT activities (e.g., cognitive-behavioral instruction, *Leap of Faith*, mindfulness) were rated by survey completers using a 5-point Likert Scale ranging from 1 (*not at all helpful*) to 5 (*extremely helpful*). The helpfulness of program activities subscale exhibited good internal consistency ( $\alpha = .82$ ). Survey completers rated the helpfulness of 11 group processes on a 7-point Likert scale ranging from 1 (*extremely harmful*) to 7 (*extremely helpful*). Group processes include altruism, being with others with similar experiences, catharsis, existential factors, cohesiveness, imitative modeling,

imparting of information, instillation of hope, physical nature of activities, program leadership, and universality. The helpfulness of group processes subscale exhibited excellent internal consistency ( $\alpha = .91$ ). During the program evaluation survey, survey completers also provided qualitative responses to the prompt: “please describe how this program has impacted your life over time.”

### Data Analysis

Data were analyzed in IBM SPSS Version 28. Descriptive statistics were used to summarize participant demographics, achievement of program objectives, and helpfulness of program activities and group processes. Paired samples *t* tests were used to test for significant differences in group members’ psychological functioning between pretreatment and posttreatment follow-up; Cohen’s *d* was used to report effect size (Cohen, 2013). As mentioned previously, the posttreatment follow-up duration in this study varied because participants were sampled across cohorts. To test whether time between survey administrations influenced outcomes, different scores for each outcome measure were computed and regressed onto posttreatment follow-up duration (Castro-Schilo & Grimm, 2018). Qualitative responses regarding the impact of the program were assessed via thematic analysis, which involves identifying notable themes or patterns across participants’ responses (e.g., increased emotional vulnerability). Responses were initially coded, and these codes were used to organize responses into overarching themes (Braun & Clarke, 2012). Coding was conducted by the second author and the first and second authors met and reviewed codes to ensure consistency.

## Results

### Changes in Psychological Functioning

As hypothesized, symptoms of PTSD, depression, and high-risk drinking decreased significantly and moderately from pretreatment to posttreatment follow-up. Contrary to expectations, survey completers’ level of moral injury, as measured by the MIQ-M, increased significantly and moderately from pretreatment to posttreatment follow-up. Posttreatment follow-up duration did not predict changes in these

outcomes. Mean differences, significance tests, and effect sizes are reported in Table 2.

### Dropout

As mentioned previously, 139 veterans completed pretreatment surveys. Only four of these 139 individuals left the program while it was in progress (e.g., because of significant psychological problems or using alcohol or other drugs on the premises). Thus, the dropout rate for this MMGT is 2.9%.

### Achievement of Program Objectives

Survey completers reported being most likely to achieve cognitive-behavioral objectives, including “I understand the relationship between my thoughts, feelings, and behaviors” ( $M = 4.4$ ,  $SD = 0.7$ ), “I have better control over my thoughts, feelings, and behaviors” ( $M = 4.3$ ,  $SD = 0.6$ ), and “I have a healthier, more realistic view of life” ( $M = 4.3$ ,  $SD = 0.7$ ). Survey completers also reported being likely to achieve objectives related to emotional vulnerability and interpersonal functioning; they reported less shame ( $M = 3.9$ ,  $SD = 0.9$ ), reduced likelihood of interpersonal conflict ( $M = 3.9$ ,  $SD = 0.9$ ), and healing of emotional wounds ( $M = 3.8$ ,  $SD = 1.0$ ). The overall impact of this MMGT was assessed using a single item: “My experience in this program was instrumental in becoming a healthier person” ( $M = 4.3$ ,  $SD = 0.7$ ). Full results, including 95% confidence intervals for each item, can be seen in Table 1 in the online supplemental materials.

### Helpfulness of Activities

Cognitive-behavioral instruction ( $M = 4.2$ ,  $SD = 0.8$ ), mindfulness ( $M = 4.5$ ,  $SD = 0.7$ ), meditation ( $M = 4.4$ ,  $SD = 0.9$ ), *ceremony for the dead* ( $M = 4.2$ ,  $SD = 1.0$ ), and *leap of faith* ( $M = 4.5$ ,  $SD = 0.8$ ) were rated between *very helpful* and *extremely helpful*. Full results, including 95% confidence intervals for each item, can be seen in Table 2 in the online supplemental materials.

### Helpfulness of Group Processes

Most group processes were considered *very helpful*. “Being with others with similar

**Table 2***Pretreatment Posttreatment Follow-up Differences in Moral Injury, PTSD, Depression, and High-Risk Drinking*

Instrument	Mean score ( <i>SD</i> )		Dif	95% CI Dif	<i>t</i>	<i>df</i>	<i>d</i>
	Pre	Post					
Moral Injury (MIQ-M)	37.9 (11.1)	43.5 (12.9)	5.6	[2.5, 8.7]	3.65*	37	0.59
PTSD (PCL-5)	47.6 (19.2)	39.5 (19.4)	-8.1	[-13.1, -3.1]	-3.25*	43	-0.49
Depression (PHQ-9)	15.2 (7.6)	11.4 (6.8)	-3.8	[-5.5, -2.2]	-4.71*	42	-0.72
Alcohol use (AUDIT)	8.3 (8.0)	5.1 (5.5)	-3.2	[-5.1, -1.2]	-3.36*	33	-0.58

*Note.* PTSD = posttraumatic stress disorder; MIQ-M = Moral Injury Questionnaire-Military Version; PCL-5 = PTSD Checklist for DSM-5; PHQ-9 = Patient Health Questionnaire-9; AUDIT = Alcohol Use Disorders Identification Test.

\* $p < .01$ .

experiences” was considered the most helpful group process ( $M = 6.3$ ,  $SD = 0.8$ ). Similar ratings were expressed for “altruism” ( $M = 6.2$ ,  $SD = 0.9$ ) and “imparting of information” ( $M = 6.2$ ,  $SD = 1.0$ ). Only two group processes, existential factors ( $M = 5.9$ ,  $SD = 1.0$ ) and program leadership ( $M = 5.8$ ,  $SD = 1.1$ ), were ranked just below *very helpful*. Full results, including 95% confidence intervals for each item, can be seen in Table 3 in the online supplemental materials.

### Reactions to Program Activities

The goal of this pilot study was to evaluate the feasibility and potential effectiveness of a brief MMGT for veterans with PTSD, depression, and high-risk drinking. Hence, group members’ behaviors and expressed attitudes were systematically observed as they participated in the program. Qualitative data were also collected regarding the perceived impact of this MMGT on group members’ mental health and well-being. Emergent themes reflected improvements in emotional vulnerability, emotion identification and regulation, self-compassion and self-forgiveness, and valued living. For brevity and readability, some group members’ responses are paraphrased. However, the meaning of participants’ responses was not altered.

At the outset of this brief MMGT, most group members admitted to feeling lonely, disconnected, and disaffected from society. As group members interacted with one another, it became clear these feelings could partly be explained by a reluctance to display emotional vulnerability. For example, at the outset of each cohort, when group members experienced difficult emotions (e.g., anxiety, frustration, rejection, shame), they

intellectualized these, became angry, or withdrew. But inevitably, after engaging in several hours of the program, group members began sharing their traumatic experiences and associated feelings. When this occurred, facilitators responded with interest and compassion and other group members intuitively provided support. As a result of facilitator modeling, group members became empathetic toward each other’s emotions and later their own. Eventually, even the most guarded group members expressed vulnerable feelings and insecurities (e.g., “I felt hurt” or “I’m not good enough”). By the end of the program, most cried openly in front of the group. As a result of these dynamics, most group members learned that being emotionally vulnerable, instead of driving others away, provided them the sense of understanding and connection they eventually acknowledged to themselves and other group members. A few group members, in response to program evaluation surveys, indicated that participation in this MMGT enabled them to be more emotionally vulnerable. These increases in emotional vulnerability were often linked with support-seeking behavior. One group member shared how learning to acknowledge trauma-related emotions improved their mental health and relationships and motivated them to connect with community resources: “The program allowed me to soften my heart, break down barriers, talk about my issues and become a gentler, kinder person again. I have started over, gotten a new relationship, and now go to church.” Another group member shared how their participation in the program encouraged them to seek support from friends and begin psychotherapy: “I’ve begun to see the benefits of talking about my trauma. I have told my closest friend about it and start therapy at the VA next week.”

In addition to becoming more comfortable expressing emotions, group members increased their ability to identify, understand, and regulate them. In initial discussions, group members had difficulty articulating and understanding their psychological experiences. Supported by each other, they identified patterns of thoughts, feelings, and behaviors that maintained their psychological problems and learned to disrupt these patterns using cognitive-behavioral and mindfulness skills. Group members learned to accept difficult emotions (e.g., anger, anxiety, sadness) as an inevitable part of life but recognized they could still choose adaptive ways of responding to them. Improvements in group members' emotion regulation were evident in their responses to the program evaluation survey:

The program helped me understand why I was reacting and behaving in certain ways .... The program gave me a reset on life .... I view things much differently now.

Since the program I have engaged in daily mindfulness sessions and feel calmer when faced with stress.

I'm way more aware of my emotions. Understanding how my brain functions helps me break the cycle.

Some group members shared how insight into their own patterns of thinking, feeling, and behaving helped them improve relationships with others:

The program helped me think more positive and appreciate my family more. I found myself being more patient with them.

I am calmer and more aware of how I react to others. I can control my emotions and am happier with myself.

At the conclusion of the program, many group members verbalized greater self-compassion and personal agency. Instead of ridiculing themselves (e.g., "I am unlovable because I've done terrible things") and viewing themselves as helpless (e.g., "I can't do anything right"), they expressed kinder thoughts toward themselves (e.g., "I am worthy of love") and recognized they could improve their lives (e.g., "I will have better relationships if I communicate in healthy ways"). Veterans often attributed these changes to participation in emotion-focused experiential activities. Group members described *ceremony for the dead* as an exercise that gave them permission to grieve and forgive themselves for imagined guilt. One group member shared, "The program

helped me let go of burdens that I was carrying on my shoulders for years. My brother, my wife, and my daughter have all passed away—I thought I was responsible for them being gone. Not anymore." Likewise, *leap of faith*, designed to teach group members that they could experience anxious feelings without avoiding them, was considered by many to be a turning point in the way they viewed themselves and their lives. After this activity, group members expressed a desire to structure their lives around values (rather than around avoiding anxiety). One group member shared: "My life has changed for the better. I exercise, eat right, drink water, meditate, have good relationships with friends and family, have a girlfriend, have gone back to work, and go to concerts again. My life is vibrant and exciting."

## Discussion

This was a pilot study designed to evaluate a novel integrative MMGT for veterans with depression, anxiety, PTSD, and high-risk drinking. This MMGT weaves together cognitive-behavioral, mindfulness-based, and emotion-focused interventions to address veterans' comorbid psychosocial problems. Unlike other programs that may last several weeks (e.g., Ford & Russo, 2006; Najavits et al., 1996), this program is conducted in just 40 hr over 5 days. Veterans receive approximately 10 hr of cognitive-behavioral instruction throughout the program and engage in 2 to 4 hr of mindfulness practice daily. Veterans also participate in emotion-focused activities that encourage them to experience and process emotions associated with their trauma (Greenberg, 2015; Mlotek & Paivio, 2017).

Like other integrative treatments (e.g., Morrissey et al., 2005), participation in this MMGT was associated with reduced psychological problems. Symptoms of PTSD, depression, and high-risk drinking were moderately reduced at posttreatment follow-up ( $d = -0.49, -0.72, \text{ and } -0.58$ , respectively). Additionally, while between 16% and 36% of veterans drop out of PTSD treatment (Edwards-Stewart et al., 2021; Goetter et al., 2015; Lewis et al., 2020), only 2.9% of veterans dropped out of this MMGT. A likely explanation for the low drop-out rate is the brief duration of the program. Veterans' positive perceptions of program activities and group therapeutic factors may have also contributed to their high likelihood of program



completion. Together, the low dropout rate of this pilot study and observed reductions in PTSD, depression, and high-risk drinking suggest MMGTs are promising treatments for U.S. veterans. Now, controlled studies are necessary to determine the efficacy of MMGTs for this population.

An unexpected finding was the increase in symptoms of moral injury ( $d = 0.59$ ). A plausible explanation for increased moral injury scores is that veterans, by participating in this MMGT, became more willing and able to acknowledge their own moral injuries. Activities were designed to heighten awareness of past trauma while enabling group members to effectively address this trauma. As a result of this process, some veterans may have allowed themselves to experience feelings of shame and guilt related to their perceived transgressions for the first time. Moral injury is a risk factor for suicide and mental health problems, above and beyond PTSD and depression (Currier et al., 2013). Given this, future studies of MMGTs should also measure moral injury to determine the replicability of our findings. If indeed veterans' moral injury scores tend to increase following MMGTs, it will be important to provide follow-up care and referrals that allow them to continue addressing shame and guilt related to their traumas.

Group members reported they were likely to achieve program objectives targeted by the different MMGT interventions: for example, "I have better control of my thoughts, feelings, and behaviors" (CBT), "I know how to use mindfulness to heal myself" (MBTs), "some of my emotional wounds have been healed" (EFT), and "I am less likely to have conflict with others" (group format). MMGTs, compared to treatments based on a single orientation, may be more comprehensive and engaging, in that they provide many avenues for veterans to understand and address their multiple psychological problems.

Based on our observations and veterans' responses to the program evaluation survey, veterans were highly satisfied with the group format of this MMGT and considered all group factors helpful in improving their psychological functioning. Among these improvements were increases in veterans' emotional vulnerability and support-seeking. Often, military personnel are socialized to suppress displays of emotion (Hall, 2011). Relational trauma, reported by many veterans in this program, may compound a fear of emotional expression (Paivio & Pascual-Leone, 2010). As

a result of socialization and trauma, veterans often associate having emotions and avoid asking for help with shame (Hall, 2011). Yalom and Leszcz (2020, p. 91) describe how optimal groups help participants overcome their emotional shame: "A cohesive group offers its members a secure base that promotes emotional safety and the willingness to explore and take risks. The members have a safe haven that welcomes them. A cohesive group lowers members' fear of rejection, shame, and rebuke."

### Implications for Psychotherapy Integration

Veterans who participated in this MMGT initially described depression, anxiety, PTSD, emotion-regulation problems, sleep difficulties, high-risk drinking, and more. At the same time, they acknowledged substantial difficulty expressing their emotions, which appeared to exacerbate these problems. It was apparent during the program that these symptoms were due to dysfunction in cognitive, emotional, interpersonal, and somatic domains. Multimodal integration (Lazarus, 1989) was used in this brief group treatment program to address dysfunction across these areas. As implemented in this MMGT, mindfulness interventions targeted emotional avoidance and hyperarousal symptoms; cognitive-behavioral interventions targeted anxious, depressive, and addictive beliefs; emotion-focused interventions targeted emotional avoidance and expression; and group practices targeted shame and withdrawal.

Based on our experiences with this program, we describe some potential advantages of MMGTs for veterans with PTSD. The breadth and scope of multimodal treatments can be beneficial, especially in brief settings or for veterans who have not benefitted from formal psychotherapy. Severe PTSD, depression, and high-risk drinking impact veterans cognitively, emotionally, interpersonally, and somatically. Veterans in this program appeared to benefit from attention to all levels of functioning, which was accomplished by integrating cognitive-behavioral, emotion-focused, group, and mindfulness-based interventions. By providing instruction across multiple theoretical orientations, veterans learned more coping skills than they would have if only one model served in the design of this program. Research indicates people with a larger repertoire of coping strategies are more likely to cope effectively with situations and stressors (Bonanno & Burton,

2013). In addition to teaching a wide range of coping skills, MMGTs may help veterans with PTSD develop a sense of agency. Because people with PTSD often feel helpless, encouraging them to take an active role in their own recovery is an important part of treatment (Clark & Beck, 2011). Corresponding with this assumption, veterans in this MMGT often used the term “empowering” to describe the sense of autonomy they were beginning to experience from participating in program activities.

### Limitations and Suggestions for Further Research

Results of this pilot study suggest that brief MMGTs show promise in treating veterans’ psychological problems. All participants in this study were volunteers seeking help for their symptoms. Groups were composed mostly of white male veterans between the ages of 24 and 68. Given that women and people of color were underrepresented in our sample, the results of our study may not be generalizable to these groups.

This MMGT exhibited a low dropout rate (2.9%), but posttreatment follow-up survey attrition was a concern. Fifty individuals initially agreed to complete posttreatment follow-up surveys. While survey completers and noncompleters did not differ in their pretreatment characteristics, it is possible that they differed in systematic ways at posttreatment follow-up. For example, it is possible some individuals may have chosen not to complete the posttreatment follow-up survey because their functioning deteriorated. Or perhaps they did not appreciate the MMGT format but did not want to speak ill of the program. Factors external to the study, such as lack of internet access, changed email accounts, or even preoccupation with other life demands may have also contributed to posttreatment follow-up survey attrition.

The main limitation of this study is the absence of a control condition, resulting in an inability to determine whether veterans’ participation in this MMGT was directly responsible for reductions in symptoms. In addition to utilizing control groups to determine the effectiveness of brief MMGTs, studies can implement additive designs to determine which components are most impactful. Ideally, future studies will also utilize larger samples and advanced statistical procedures such as multilevel modeling to control for confounds

inherent to pilot studies (e.g., cohort effects, maturation, regression to the mean).

Future research into brief MMGTs for veterans will benefit from assessing additional patient characteristics and potential mechanisms of change. For example, sexual identity was not assessed in this study. Assessing veterans’ sexual identity in future research is important as sexual minority patients may have poorer treatment outcomes (Livingston et al., 2020; Rimes et al., 2019). Eliciting perceptions of MMGTs from sexual and gender minority veterans and veterans belonging to other minoritized groups will identify ways in which these treatments can be adapted to meet the needs of these individuals. While this study assessed veterans’ alcohol use frequency and severity, veterans may also turn to other substances in attempts to cope with PTSD and depression. Thus, in future studies of brief MMGTs, researchers might assess for multiple substance use problems. Although we evaluated the extent to which group members achieved program objectives corresponding to specific program components (e.g., “I know how to use mindfulness to heal myself”), actual mechanisms of change (e.g., increases in trait mindfulness) were not assessed. In future research, personal dynamics such as maladaptive cognitions, emotional vulnerability, mindfulness and acceptance, and interpersonal skills might be measured before, during, and after veterans’ participation in MMGTs.

Lastly, the brief MMGT described in this article was conceptualized as a stand-alone treatment. Alternatively, MMGTs might address veterans’ mental health in other ways. For example, brief MMGTs might be used as a pretreatment, to prepare veterans for more conventional psychotherapy (e.g., by building trust with mental health professionals or learning coping skills that support engagement in trauma-focused therapy). MMGTs might also hold promise as a preventative intervention for veterans at high risk for developing PTSD, following exposure to military trauma. To the best of our knowledge, research has not considered brief MMGT for pretreatment or prevention of mental health problems.

### Conclusion

Veterans’ participation in a 5-day, 4-night group program integrating cognitive-behavioral, mindfulness-based, and emotion-focused

interventions was well-tolerated and associated with moderate reductions in symptoms of PTSD, depression, and high-risk drinking up to 2 years posttreatment. In addition, veterans were less likely to drop out from this MMGT (2.9%) compared to PTSD treatments on average (16%–36%). Veterans benefited when program facilitators delivered psychoeducation using evidence-based models, provided training in a wide variety of coping skills, and maximized group therapeutic factors. Outcomes of this initial program evaluation demonstrate that a brief integrative multimodal group might be a valuable resource for veterans suffering from multiple mental health problems, especially if they are not ready or able to participate in formal psychotherapy.

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