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Psychosocial rehabilitation after war trauma with adaptive disclosure: Design and rationale of a comparative efficacy trial

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ABSTRACT

Background: Posttraumatic stress disorder (PTSD) from warzone exposure is associated with chronic and disabling social and occupational problems. However, functional impairment is rarely assessed or targeted directly in PTSD treatments, which instead focus on symptom reduction. Trauma-related contributors to diminished functioning, including guilt, shame, and anger resulting from morally compromising or loss-based war experiences, are also underemphasized. The goal of this clinical trial is to fill a substantial gap in the treatment of military-related PTSD by testing a modified Adaptive Disclosure (AD) therapy for war-related PTSD stemming from moral injury and traumatic loss focused on improving psychosocial functioning AD.

Method and design: This paper describes the rationale and design of a multi-site randomized controlled trial comparing AD to Present-Centered Therapy (PCT). We will recruit 186 veterans with PTSD, who will be assessed at baseline, post-treatment, and 3- and 6-months post-treatment. Primary outcomes are functional changes (i.e., functioning/disability and quality of life). Secondary outcomes are mental health variables (i.e., PTSD, depression, guilt, shame). We hypothesize that veterans treated with AD will experience greater improvements in all outcomes compared to those treated with PCT.

Discussion: This trial will advance knowledge in rehabilitation research by testing the first therapy specifically designed to address psychosocial functioning among veterans with war-related PTSD. The results may improve the quality of mental health care for veterans by offering an ecologically sound treatment for experiences that are uniquely impactful for war veterans.

1. Introduction

Posttraumatic stress disorder (PTSD) is a prevalent and disabling condition among war veterans, posing a significant public health burden. Approximately 20% of the 2.5 million service members who served in Iraq and Afghanistan have or will develop clinically significant PTSD [11,23,26]. PTSD causes private suffering and has a uniquely damaging ripple effect on relationships, productivity, and healthcare costs. Veterans with PTSD suffer from a variety of co-morbid mental and physical health conditions [3,18] and are heavy service-utilizers (e.g., [4]). They also have extensive functional impairments, including occupational problems [12,30], family and relationship difficulties (e.g., [29]), aggressive and risky behaviors (e.g., [24]), and reduced quality of life (e.g., [3]).

Although considerable gains have been made in the VA's dissemination of PTSD treatments that are highly effective with civilian trauma survivors, these therapies have been shown to work less well for veterans [34,35,42]. This may be partly due to a lack of attention to military culture and the unique harms of war trauma in treatments developed for civilians [22]. Veterans who have been deployed to warzones have often experienced numerous, complex traumatic events. These events may involve not just danger and threats to veterans' lives, but also challenges to or violations of their moral or ethical standards (i.e., moral injury [MI]), and traumatic losses (TL) of friends and comrades [36]. In addition, existing PTSD treatments have failed to demonstrate an impact on functioning and quality of life (e.g., [7]), problems that are no less related to the warzone trauma being targeted in treatment. Instead, symptom change is typically the sole metric of success.

The aim of the clinical trial described here is to fill a substantial gap in veterans' PTSD treatment by creating and testing a treatment for war-related PTSD that: (a) attends to the role of military culture and

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warzone exposure in the experience of trauma; (b) provides guidance for targeting MI and TL directly, along with life threat; and (c) emphasizes improving psychosocial functioning. This treatment builds on the existing Adaptive Disclosure (AD; [22]) treatment manual by incorporating skills training in mindfulness and compassion, as well as behavioral contracting to improve functioning in occupational, relationship, and family roles. In this paper, we describe the rationale and design of a multi-site randomized controlled trial in which AD will be compared to another active treatment (Present-Centered Therapy [PCT]). If found to be effective, the modifications to AD will fill a care-gap in the treatment of veterans with PTSD by reducing suffering and helping veterans reclaim or establish positive relationships, work roles, and self-care routines.

2. Method

2.1. Participants

This is a multi-site study comprising investigators from VA sites in Minneapolis, MN, San Diego, CA, San Francisco, CA, and Boston, MA. The Boston site serves as the coordinating center for the study and conducts independent assessments of participants' outcomes. The Minneapolis, San Diego, and San Francisco VAs serve as recruitment and treatment sites. Male and female veterans obtaining care at the three treatment sites are eligible for study participation. We will recruit a sample of 186 veterans with PTSD as a result of the Iraq or Afghanistan Wars. Based on the patient demographics at each site, we expect approximately 10% of participants to be women and 16% to be members of diverse racial and ethnic groups.

Inclusionary criteria include (1) age 18 or older, (2) deployed to the Afghanistan and/or Iraq Wars, (3) meet the DSM-5 diagnostic criteria for PTSD (diagnosed by Clinician Administered PTSD Scale for DSM-5 (CAPS-5; Weathers et al. [43,44])), and (4) willing to complete 12 consecutive weekly sessions, lasting up to 90 min in duration, as well as 4 assessment sessions. Participants will be excluded if they have (1) bipolar or psychotic disorders, (2) current moderate to severe substance use disorder (other than caffeine or tobacco use disorders), (3) evidence of traumatic brain injury severe enough to influence the ability to understand and respond to study procedures, (4) suicidal or homicidal ideation severe enough to warrant immediate attention, or (5) concurrent enrollment in any cognitive-behavioral treatment or any other treatment that involves systematic disclosure of troubling deployment-related memories. Participants may participate in martial counseling or any supportive therapy, and may continue current pharmacological treatment if stable on medication for at least 6 weeks.

We initially planned to include only veterans with military-related PTSD whose primary trauma was of the moral injury or traumatic loss type. Prior to the start of the trial we decided to open enrollment to any veteran with military-related PTSD, regardless of the type of traumatic event(s) they experienced. We reasoned that including veterans with life-threat traumas, as well as loss and moral injury-based traumas, would obviate any recruitment difficulties, as life-threat traumas are more common than traumatic loss- and moral injury-based traumas [36]. This change did not alter the original study aims for two reasons. First, in the context of warzone trauma, differences between trauma types are often not clear-cut. Many life-threating events also have elements of loss or moral injury (e.g., a life-threatening rocket attack in which a close comrade was killed; killing a child in self-defense) and vice versa, and can be reliably coded as such (Litz et al. [21], under review; [36]). Consequently, the approach and strategies employed in AD could be meaningfully applied to the sequelae of life-threat trauma. Second, even in the rare event that the event is focally life-threat based, the functional impact of PTSD symptoms from these experiences are no less targetable. For example, PTSD in veterans has been linked with unemployment and income disparities [30], family and relationship difficulties [15,37], and reduced physical health functioning [3]. AD strategies, such as behavioral re-engagement and compassion training, can be helpful for redressing these difficulties.

2.2. Power calculation

Power calculations were based on a two-sided, two-sample *t*-test to compare the differences in mean change. Effect sizes were selected based on a trial comparing Acceptance and Commitment Therapy with PCT in veterans with mental health diagnoses, using the SDS [20], which showed a large effect size for reduction in disability ($d \approx 0.60$), a change of 1.2 points. Lang et al.'s [20] follow-up interval was 3 months. These correspond to 3-month changes of 1.2 points assuming a standard deviation for the change of 2.1 points as per Lang and colleagues. These power calculations inflate the variance to account for clustering of scores (sites by therapists), with an ICC = 0.02. To partially offset possible losses to follow-up, we will follow the Benjamini-Hochberg testing procedure, which is less conservative than the Bonferroni rule [2]. Each hypothesis is powered to compare outcome at 3 months. Analyses up to 6-months post-treatment are exploratory. Testing five hypotheses, each with Type I error of 1% = 5%/5, then with 93 participants per arm, a two-sample *t*-test, comparing the difference between the 3-month changes, has 90% power to detect an absolute difference of 0.50 or larger assuming an effect size of 0.56. To have 80% power with 93 participants per arm requires an effect size of 0.50.

2.3. Study design

Veterans will be recruited primarily through referrals from mental health clinics. As such, veterans enrolled in this study will be drawn from the broader treatment-seeking population in each VA clinic. Referred veterans will be pre-screened by phone or in person for basic eligibility requirements and, if eligible, scheduled for an appointment in which consenting procedures and a more in-depth eligibility/baseline assessment will take place. The baseline assessment will be completed jointly by local study staff, who conducts the consenting and basic eligibility procedures, and the Boston-based independent evaluator (IE), who conducts the full clinical evaluation by phone.

During the baseline visit, local study staff obtains written informed consent for study participation and recording of assessments and treatment sessions. Participants then complete the PTSD Checklist for DSM-5 (PCL-5; Weathers et al. [43,44]), including writing a one-sentence description of their worst, most distressing traumatic event. If veterans meet the DSM-5 diagnostic criteria for PTSD on the PCL-5, based on the requisite symptoms endorsed at a moderate severity or greater, and do not endorse exclusion criteria, they will continue to the diagnostic assessment by telephone with the Boston IE. Once the IE confirms the presence of PTSD with the Clinician-Administered PTSD Scale for DSM-5 (CAPS-5; Weathers et al. [43,44]), and the absence of any exclusionary criteria (e.g., severe suicidality, active moderate to severe substance use disorder), the participant will be randomized to one of the two therapy arms (i.e., AD or PCT) and scheduled for treatment.

In order to randomly assign veterans to PCT or AD, the Boston site will generate a stratified randomized permuted block scheme to randomly assign veterans to blocks by gender and minority status [39]. Strata size for gender and minority status will be based on the distribution of these variables at each site. Stratifying by gender and minority status will ensure appropriate accrual rates for participants with lower base-rate characteristics, as strata are based on the prevalence of these demographic variables and randomization occurs separately for each stratum.

Follow-up assessments, including full clinical interviews completed by telephone with the Boston IE, will be completed at post-treatment, and 3- and 6-months post-treatment. All evaluators will be blind to treatment condition, and evaluators will remind participants to help maintain their blind by not disclosing details about treatment

Table 1
Active treatment components in adaptive disclosure.

Intervention	Theoretical targets	How implemented	When implemented
Compassion training	Forgiveness of self and others Connection to others	Teaching and practice of loving-kindness meditation	Sessions 1, 4, 9
Mindfulness training	Increasing non-judgmental awareness Connection to others	Brief mindfulness meditations	Sessions 1–12
Exposure to traumatic memories	Understanding the meaning and implications of the event	Single re-telling of the event over 15–30 min Slow pace is encouraged to promote an immersive and emotional experience	Sessions 2–3, 5–8, 10
Experiential processing	Exploring new meanings/interpretations of the event Reducing guilt, self- and other-blame Reclaiming goodness	Hypothetical conversations with others	Sessions 2–3, 5–8, 10, following exposures
Behavioral homework assignments	Reducing guilt, self- and other-blame Reclaiming goodness Improving functioning	Writing assignments (e.g., letters to others) Reparative actions Behavioral activation	Sessions 2–11

procedures. Study staff will also emphasize to veterans that all assessment materials will be kept private and not shared with study therapists.

2.4. Study outcome measures

The primary outcomes of interest in this study are (a) social, educational, and occupational functioning, and (b) quality of life. Functioning will be assessed with the Sheehan Disability Scale (SDS; [33]), the Brief Inventory of Psychosocial Functioning (B-IPF; [6]), and the Post-Deployment Social Support subscale of the Deployment Risk and Resiliency Inventory-2 (DRRI-2; [40]). Quality of life will be assessed with the Quality of Life Inventory (QOLI; [8]). These measures will be administered at all time-points (i.e., baseline, post-treatment, 3-month follow-up, 6-month follow-up). It is hypothesized that veterans randomized to AD will have greater improvements in functioning and quality of life than veterans assigned to PCT.

The secondary outcomes of interest are (a) PTSD symptoms, (b) depression, and (c) shame and guilt. PTSD symptoms will be assessed with the CAPS-5 and PCL-5. Depression symptoms will be assessed with the Patient Health Questionnaire (PHQ-9; [16]). The Trauma-Related Guilt Inventory (TRGI; [17]) and Trauma-Related Shame Inventory (TRSI; [27]) will be used to measure changes in guilt and shame, respectively. We will also use the “ashamed” and “guilty” items from the Positive and Negative Affectivity Schedule (PANAS; [41]) to assess these constructs. These measures will be administered at all time-points. It is hypothesized that veterans who are treated with AD will have greater reductions in PTSD symptoms, depression, guilt, and shame than veterans assigned to PCT.

We will also use validated self-report measures of anger, aggression, suicidality, and alcohol use at each time-point, for use in exploratory hypotheses. At the end of each participant's study participation, we will assess satisfaction with AD, the components that were most helpful, and the acceptability and tolerability of the treatment. We will incorporate the modal feedback into a final AD manual.

2.5. Safety protocols

If at any time the therapist or supervisors judge that a participant requires a different treatment approach or higher intensity care, the participant will be referred for outpatient or inpatient services, as appropriate. Several questionnaires are used to monitor risk on an ongoing basis. Participants complete the PCL-5 prior to each weekly treatment session and complete the PHQ-9 every two weeks, as well as at each assessment session. This allows for ongoing monitoring of PTSD and depression symptoms, respectively, including suicidal ideation. Participants also complete the Depressive Symptoms Index – Suicidality Subscale (DSI-SS; Metalsky & Joiner [25]) at all assessment sessions. The assessors and therapists will be trained to respond effectively to veterans who experience suicidal or homicidal ideation, plans, or intent during assessments or treatment. On-site supervision for therapists and assessors and emergency oversight of all participants will be provided by the Co-Investigators, who are clinical psychologists and privileged providers in their respective VA sites.

2.6. Study treatments

Participants in both treatment arms will receive 12 weekly 90-minute sessions of individual psychotherapy, with weekly practice assignments to be completed between sessions.

2.6.1. Adaptive disclosure

The AD therapy tested in this trial is a modification of the originally published version of this treatment [22]. AD begins with a thorough assessment of current functioning, changes from pre-deployment functioning, areas of desired change, the principal trauma experienced by the patient, and the impact of the principal trauma on the patient's life (including self-esteem, trust in others and oneself, hopefulness/optimism, and spiritual beliefs or systems of meaning). This assessment is used to inform a working conceptualization of the ideographic themes that will need to be processed during the therapy, including whether the trauma is, broadly speaking, morally injurious, related to a traumatic loss, or fear-based. With fear-based traumas, clinicians are encouraged to consider the degree to which the impact of the trauma reflects themes of shame (e.g., related to one's reaction in a life-threatening situation), existential fear (e.g., chronic feelings of vulnerability as a result of confrontation with mortality), and/or loss (e.g., of prior identities or a sense of humanity). This conceptualization scheme is emphasized in order to encourage thorough consideration of the meanings of fear-based traumas beyond what may typically be addressed in exposure-based therapies. The introductory session of AD is also used to educate patients about reactions to trauma and what to expect from the course of treatment.

In the sessions that follow, three primary intervention approaches are used (see Table 1). These include: (1) mindfulness and compassion training, focused on the Loving-Kindness Meditation (LKM); (2) in-session exposure to trauma memories and related experiential processing; and (3) behavioral homework assignments, including letter-writing exercises and engaging in reparative or prosocial actions. Training in and practice of LKM is designed to help patients to rebuild what was damaged by traumatic and/or morally injurious experiences, including trust, compassion, and forgiveness toward self and others. It is intended to help reduce the distance between the patient and others (including the therapist), and thereby improve relationships and a sense of belonging in society. Depending on the patient's receptivity, the therapist can determine how frequently to incorporate LKM practice

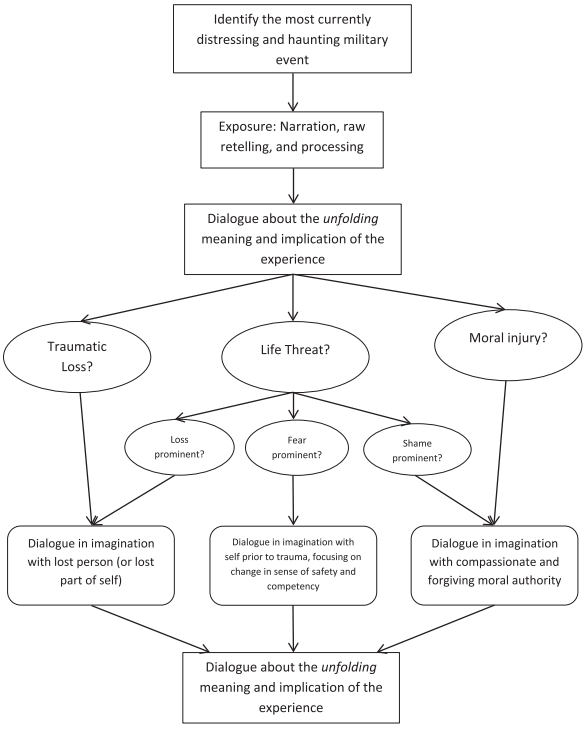

Fig. 1. Flow diagram of exposure and experiential processing procedures in adaptive disclosure.

and homework into treatment. At a minimum, LKM is introduced in session 1 and is the focus of sessions 4 and 9, including homework assignments.

The middle sessions (i.e., sessions 2–3, 5–8, 10) include 15–30 min of raw emotional processing of the trauma memory (exposure), followed by experiential exercises (see Fig. 1). The goal in each session is to engage in a single disclosure of the event slowly enough to permit attention to detail and access to emotion. It is expected that fuller disclosure of the meanings of the experience and associated emotions progresses over the course of treatment. In each session, the exposure is followed by a processing period in which the patient shares their experience of the exposure and discusses the meanings and implications of the trauma. Different "breakout" experiential strategies are used for the different primary trauma types (i.e., moral injury, traumatic loss, or life threat). For patients with moral injury, the focus is on seeking forgiveness (or forgiving others) through dialogues with a compassionate moral authority figure. In the case of traumatic loss, healing from grief and survivor guilt is facilitated through imaginary conversations with the deceased person. The approach to life-threatening traumas depends on the underlying conceptualization; the dialogues may be similar to those for moral injury (i.e., when shame is dominant) or loss (e.g., talking to a former self), or may focus on the challenge of continuing to live fully after direct confrontation with mortality. All patients complete letter-writing assignments between sessions that build on within-session "breakout" exercises, in order to encourage continued processing of the events and their meanings, as well as to help patients move forward from them.

Finally, AD extends these in-session change agents through weekly behavioral homework assignments that aim to improve functioning and challenge trauma-related psychological and behavioral obstacles to engagement in occupational, relationship, and family roles. Homework assignments are generated collaboratively in session and are tailored to the predominant trauma type. For MI, homework activities may entail increased reparative time spent volunteering or with other veterans, family, and friends, or engaging in meaningful activities and/or spiritual practices, to counteract self-or other-condemnation. For TL, homework may entail restoring social attachments and engaging in wellness-promoting behaviors that may have ceased in the wake of loss (e.g., pleasurable activities, hobbies, pursuit of valued life goals). For life-threat traumas, homework may include engaging in valued activities and relationships to counteract fear-driven avoidance and hypervigilance.

AD is designed to be more flexible than other behaviorally-oriented PTSD treatment protocols, as the case conceptualization drives the choice of therapeutic strategies for the different trauma types. As described above, there is often substantial overlap in trauma types, such that a single event may have elements of moral injury, traumatic loss, and/or life threat. The choice of therapeutic strategies thus depends on the therapist's and patient's understanding of what the worst/most disturbing aspect of the event was (e.g., That the veteran could have been killed? That he experienced a significant and traumatic loss?). This conceptualization may change over the course of treatment. Despite this individualized approach, the manual adheres to consensus guidelines for replicable and functionally viable treatment manuals. These include: (a) specific and operationalized procedures for goal-setting, target-selection, and monitoring process and outcome; (b) detailed session-by-session instructions and content with examples and vignettes; and (c) supervisor instructions for bolstering competence and maintaining adherence [5].

2.6.2. Present centered therapy

PCT is a manualized evidenced-based treatment for PTSD [9] used in several large-scale PTSD trials (e.g., [31]). It incorporates the essential therapeutic elements common to different types of psychotherapies, including supportive empathic listening and unconditional positive regard. The therapist plays an active role, but does not impart any systematic skills training. The focus of PCT is on understanding how the symptoms of PTSD are related to day-to-day difficulties. The goal is to help patients develop new, more adaptive responses to these stressors with a problem-focused, problem-solving approach. PCT includes weekly homework assignments. These include reading psychoeducational handouts and self-monitoring problems and stressors in a daily diary, which are then problem-solved in session. In prior trials, PCTs were only slightly less efficacious than active first line therapies at reducing PTSD symptoms, and were equally efficacious as reducing related symptoms (e.g., depression, substance use, anxiety; [38]). The VA offers PCT as an evidence-based therapy for PTSD. As such, this design element represents a conservative test of the superiority of AD.

2.6.3. Therapist training and fidelity monitoring

At each treatment site, one full-time therapist with a Ph.D. in clinical or counseling psychology and VA internship experience treating veterans with PTSD will deliver AD and PCT. We initially planned to have two half-time therapists at each site, one to provide AD and one to provide PCT, in order to minimize the chances of treatment contamination. However, we decided to use a single therapist at each site for several reasons, including (a) to minimize therapist effects, which account for a substantial proportion of the variance in treatment outcomes [19], and (b) to reduce the risk of un-blinding the independent evaluator during follow-up telephone assessments (e.g., if a participant refers to their therapist by name), and (c) in response to concerns from site PIs about the logistical difficulties of attracting qualified candidates for half-time positions.

Training of therapists will involve a review of the respective treatment manuals and supporting materials, intensive supervision of two trial cases, bi-weekly group phone supervision, and weekly one-on-one phone supervision. All sessions will be audiotaped, and supervisors for AD and PCT will review recordings of the first two trial cases for each study therapist to shape fidelity. Two random session recordings from a random 20% of the cases will be rated to ensure fidelity to each treatment approach.

2.7. Participant enrollment and retention strategies

Veterans will be recruited primarily through referrals from mental health clinics at each of the three recruitment sites. The Co-Investigator at each site will facilitate referrals by (a) discussing the trial with clinic leaders and staff; (b) distributing recruitment flyers; and (c) presenting the study in clinical case conferences and grand rounds.

We will use retention strategies from an evidence-based protocol that was designed to retain challenging clinical populations in longitudinal research [32]. The protocol emphasizes proactive methods of maintaining contact with participants including educating and motivating participants about the importance of follow-up, collecting collateral contact information (with permission of participants), regularly verifying and updating contact information, periodically contacting participants to remind them about upcoming appointments, and systematically tracking all attempted and actual contact with participants. Studies using this protocol have achieved follow-up rates over 90% [32].

2.8. Statistical analyses

The longitudinal and clustered nature of the study design produces a multilevel or nested data structure [28]. In this study, veterans and therapists are nested (clustered) within performance sites. The lower level (level-1) data consists of the repeated measures for each individual at each assessment. Level-1 data is nested within upper level (level-2) person-level variables (e.g., treatment arm and study site). We will conduct a mixed model analysis with random slopes/random intercepts within a multilevel regression framework to estimate initial status and changes over time in outcome variables (i.e., a linear contrast, with the level-1 or the within-subjects component of the analyses). These analyses will be used to compare differences in the mean slopes of change in outcomes over time between treatment groups.

Veterans in both treatment arms are expected to be equivalent at baseline (i.e., intercept values of outcome variables will not be significantly different), due to randomization. The primary hypotheses are that veterans treated with AD will have a steeper downward slope in SDS and a steeper upward slope in QOLI, B-IPF, and Post-Deployment Social Support scores, compared to veterans treated with PCT. Different coding schemes will be employed for the time component of the analyses. For example, orthogonal polynomial contrast codes [14] can be used to evaluate linear and quadratic change in outcome scores from pre-treatment to the six-month follow-up assessment point. Similar models will be run to assess secondary hypotheses, including that veterans in AD will have: (a) steeper downward PTSD symptom severity slopes (CAPS-5 and PCL-5) and lower incidence of PTSD cases (tested with Chi-square); (b) steeper downward slopes in depressive symptoms (PHQ-9); and (c) steeper downward slopes in shame and guilt (TRGI, TRSI, PANAS items), compared to veterans in PCT. We will also conduct exploratory analyses to test whether veterans in AD have steeper downward slopes in anger and aggressive behaviors, suicidal ideation, and alcohol abuse as compared to PCT.

Clinical significance of the findings will be calculated by the Jacobson-Truax (1991) method (e.g., Bauer et al. [1]). This method suggests a two-step criterion. First, a reasonable cutoff between the dysfunctional and functional populations is established. Because normative data for veterans on the SDS and QOLI do not yet exist, Jacobson and Truax's [13] suggested cutoff A, defined as the point two standard deviations beyond the range of the pre-therapy mean, will be used. Next, a reliable change index (RC) for each participant will be calculated to ensure that changes are not due to an artifact of measurement error. Based on the two-step criterion, individuals will be classified as recovered (passed both cutoff A and RC criteria), improved (pass RC criterion but not cutoff A), unchanged (passed neither criteria), or deteriorated (passed RC criterion but symptom scores increased) for each follow-up interval. Chi-square analyses will be used to compare proportions per arm at each follow-up.

3. Conclusions

This randomized controlled clinical superiority trial will test strategies that target PTSD-related social reintegration difficulties and obstacles to optimal functioning. Strengths of the trial include its multisite design and the use of an active treatment control group, which allows for an examination of not just whether AD improves treatment outcomes, but also provides insight into possible mechanisms of action. AD aims to support social and occupational rehabilitation by providing veterans with a psychological and behavioral foundation to improve relationships and encourage progress toward meaningful social and work goals. The treatment is designed to restore social and occupational functioning that has been diminished due to PTSD. Functional rehabilitation and reintegration of veterans with PTSD is unlikely to occur with interventions that are chiefly designed to treat PTSD as a fear- and victim-based phenomenon and with treatments that focus solely on PTSD symptom reduction.

This study is consistent with calls to make psychosocial rehabilitation central to PTSD treatment [10]. This trial aims to advance knowledge in rehabilitation research by testing the first therapy specifically designed for veterans targeting war-related MI, TL, and psychosocial functioning. This study may improve the quality of services provided by mental healthcare providers by offering an ecologically sound treatment targeting experiences that are uniquely impactful for war veterans, namely MI and TL. If AD is found to be efficacious, it will fill a void in care-providers' toolkit of strategies to help veterans heal and recover from war-related psychological, behavioral, and social difficulties.

This research also benefits veterans by redressing the unique phenomenology of MI and TL. Addressing issues of compassion and forgiveness (toward self and others) following morally injurious experiences and traumatic losses can arguably assist veterans in reconnecting with family and communities, including spiritual communities that they may be avoiding due to their difficult experiences in war. We hope to show that AD improves functional and psychological outcomes implicated by transgression, betrayal, and loss, which would then allow AD to be disseminated as an individualized, evidence-based, psychosocial rehabilitation strategy to reduce suffering and reestablish veterans' confidence, competence, motivation, and functioning.

Author contributions

Dr. Litz designed the clinical trial and wrote the grant application from which the description presented here is adapted. Dr. Yeterian wrote the first draft of the manuscript. Drs. Berke & Litz provided substantive feedback on drafts of the manuscript.

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