
Benefits of Moral Elevation in Veterans with PTSD and Moral Injury: A Proposed Theoretical Framework and Pilot Study

Adam P. McGuire,^{1,2,3,4} Elizabeth Nosen,⁴ Judith A. Lyons⁴

¹VISN 17 Center of Excellence for Research on Returning War Veterans, Waco, TX

²Department of Psychology and Neuroscience, Baylor University, Waco, TX

³College of Medicine, Texas A&M Health Science Center, Bryan TX

⁴G.V. (Sonny) Montgomery VA Medical Center, Jackson, MS

Given the prevalence of PTSD and moral injury in veterans and limitations to current treatments, novel approaches are needed to target both PTSD and moral injury and directly impact psychosocial growth. One potential way to address this need is through moral elevation—a positive emotional state described as feeling uplifted and inspired by others' virtuous actions. This paper proposes a theoretical framework for understanding how elevation could benefit veterans and presents preliminary findings from a pilot study, which provides the first known indication that elevation could be linked with psychological health and social functioning in veterans with significant trauma-related distress.

PTSD and Moral Injury: Overview and Treatment Gaps

Combat veterans are at an increased risk for posttraumatic stress disorder (PTSD; Hoge et al., 2004) and moral injury (MI; Wisco et al., 2017). PTSD is characterized by exposure to a traumatic event and four core symptoms: re-experiencing or intrusion, avoidance, changes in cognitions and mood, and arousal symptoms (American Psychiatric Association, 2013). MI occurs when someone witnesses or performs an act that violates their deeply held values (i.e., transgressions against one's personal moral principles) and is associated with clinically significant levels of guilt, shame, and anger (Frankfurt & Frazier, 2016; Litz et al., 2009). Generally, PTSD is conceptualized as a disorder following a life-threatening event and MI is characterized as severe distress following transgressions or violations of values. Some researchers have argued that PTSD and MI are distinct constructs (Bryan, Bryan, Roberge, Leifker, & Rozek, 2017; Farnsworth, Drescher, Evans, & Walser, 2017), such that veterans could suffer from the effects of PTSD and MI concurrently, or separately; however, there is not yet a clear consensus on the nature of the relationship between PTSD and MI. Nonetheless, these stress responses appear to be particularly relevant for veterans considering the high rates of PTSD (prevalence ranges from 11-31%; Hoge et al., 2004;

Milliken, Auchterlonie, & Hoge, 2007; Thomas et al., 2010), and emerging prevalence of MI as upwards of 80% of veterans reported experiencing a potentially morally injurious event (e.g., "I saw things that were morally wrong"; Evans et al., 2017) and 38% endorsed significant distress directly related to at least one morally injurious event (Jordan, Eisen, Bolton, Nash, & Litz, 2017).

Treatment for PTSD and MI is a high priority because both are associated with poor mental health outcomes, significant functional impairment, and decreased social engagement (Brockman et al., 2016; Currier, Holland, Drescher, & Foy, 2015; Rodriguez, Holowka, & Marx, 2010). However, novel treatment approaches are needed given two main limitations to current psychotherapies. First, research suggests PTSD treatments may not be effective for MI given that MI distress is a shame- or guilt-based response to perceived transgressions or betrayals, which is distinct from the life threat-based response in PTSD (Farnsworth et al., 2017; Finlay, 2015; Van Vliet, 2010). Accordingly, clinicians report concerns that PTSD treatments do not effectively treat trauma-related shame and guilt when it could be considered a relatively appropriate response to memories of transgressive acts, compared to the more common conceptualization of shame and guilt as maladaptive responses to being victimized (Nash & Litz, 2013). Although there are some

treatments that target shame or guilt following trauma—such as compassion focused therapies (e.g., Lee & James, 2012) that typically treat shame surrounding victim-based traumas (e.g., sexual assault)—few studies have assessed this approach in veterans with shame for acts of perpetration. It should also be noted that Adaptive Disclosure has been developed as a treatment for MI with promising preliminary results (Gray et al., 2012), but additional work is needed to replicate those findings and further support its effectiveness. Overall, this disconnect between traditional PTSD therapies and MI presents a problem when treating a veteran with MI alone or comorbid PTSD and MI. Second, despite a call to facilitate psychosocial growth and utilize positive emotions in trauma treatment (Farnsworth, Drescher, Nieuwsma, Walsler, & Currier, 2014; Sippel & Lyons, 2016), current psychotherapies primarily focus on alleviating symptoms and do not directly target the cultivation of positive resources that help veterans grow and flourish. Therefore, there is a major need to identify novel treatment approaches that (1) target *both PTSD and MI* distress following combat trauma, and (2) directly impact psychosocial growth. Understanding moral elevation—a positive emotion described as feeling uplifted and inspired by the virtuous acts of others (Haidt, 2003b)—may offer a new avenue to address these gaps. In this paper, we propose a theoretical framework for which moral elevation and its benefits may directly target both PTSD and MI in veterans. We also report preliminary findings from a pilot study of the proposed relationships and highlight areas for future research.

Moral Elevation: Definition and Benefits

Moral elevation (hereafter, *elevation*) is a distinct positive emotional state defined by a specific trigger, response, and action tendency. First, elevation is triggered by witnessing another person perform a virtuous act (e.g., generosity) to which the observer responds by feeling inspired and uplifted, accompanied by positive physical sensations including warmth in the chest, tears, goosebumps (piloerection), and a lump in the throat (Algoe & Haidt, 2009). The resulting action tendency is a strong desire to emulate the witnessed virtuous behavior (e.g., *I want to act generously, too*), become a better person, and engage with others (Aquino, McFerran, & Laven, 2011; Schnall, Roper, & Fessler, 2010).

Previous studies have found elevation is linked with several behaviors and desirable outcomes related to psychological health and social functioning. For example, elevation correlates with extraversion, openness to experience, agreeableness, and spiritual transcendence (Landis et al., 2009), which all predict emotional resilience and well-being (Caska & Renshaw, 2013; Schimmack, Oishi, Furr, & Funder, 2004). While studies that include clinical populations are scarce, daily experiences of elevation were shown to predict lower daily symptoms of anxiety, dysphoria, and hostility in a civilian sample of anxious and depressed patients (Erickson & Abelson, 2012). In a subclinical civilian population exposed to a mass shooting, those who endorsed elevation in the aftermath of the event reported greater compassion toward others, as well as higher posttraumatic growth four months later (Tingey, McGuire, Stebbins, & Erickson, 2017). Further, experimental and observational studies with nonclinical populations have found that elevation is associated with multiple features of social engagement such as increased affiliation urges, greater responsiveness to others' needs, increased compassion, and more prosocial behavior (Cox, 2010; Erickson et al., 2017; Freeman, Aquino, & McFerran, 2009). Thus, elevation is linked to resilience and growth, better psychological health, and it encourages social engagement. To date, the benefits of elevation have not been examined in a veteran population or in the context of clinically-significant PTSD and MI. However, previous findings lend support to a theoretical framework for exploring how elevation could directly impact veterans with PTSD and MI.

Theoretical Framework

While trauma leads to the strong negative effects of PTSD and MI, previous research suggests elevation is antithetical and leads to positive effects on psychological health and social functioning. Therefore, elevation and its defining features could provide a unique opportunity to directly target the negative effects of PTSD and MI through cognitive, emotional, and behavioral experiences linked to trauma recovery. For example, an important aspect of experiencing elevation after observing a virtuous act is the cognitive appraisal that another person's actions were morally exemplary and worthy of praise. This appraisal of recognizing the goodness in humanity is in direct opposition of many strong negative beliefs about others or the world,

frequently endorsed by those with PTSD and MI (Foa, Ehlers, Clark, Tolin, & Orsillo, 1999; Litz et al., 2009). Thus, exposure to stimuli that elicit elevation and foster a veteran’s tendency to be aware of others’ positive behaviors may aid in reducing maladaptive cognitions (see Figure 1).

Veterans with PTSD and MI also report difficulty experiencing positive feelings and emotional numbing (Farnsworth et al., 2014; Kashdan, Elhai, & Frueh, 2006). For a veteran who reports minimal positive affect in their daily life, repeated exposure to virtuous acts may increase the likelihood of experiencing a strong

positive emotion through elevation. Because elevation is also associated with autonomic physical changes—such as piloerection or warmth in the chest, which automatically occur and cannot be voluntarily controlled—exposure to elevating stimuli may accordingly trigger an involuntary response of feeling *touched* or *moved* by others’ actions, which could be interpreted as a positive emotional experience and may act in opposition to the numbing features of trauma-related distress.

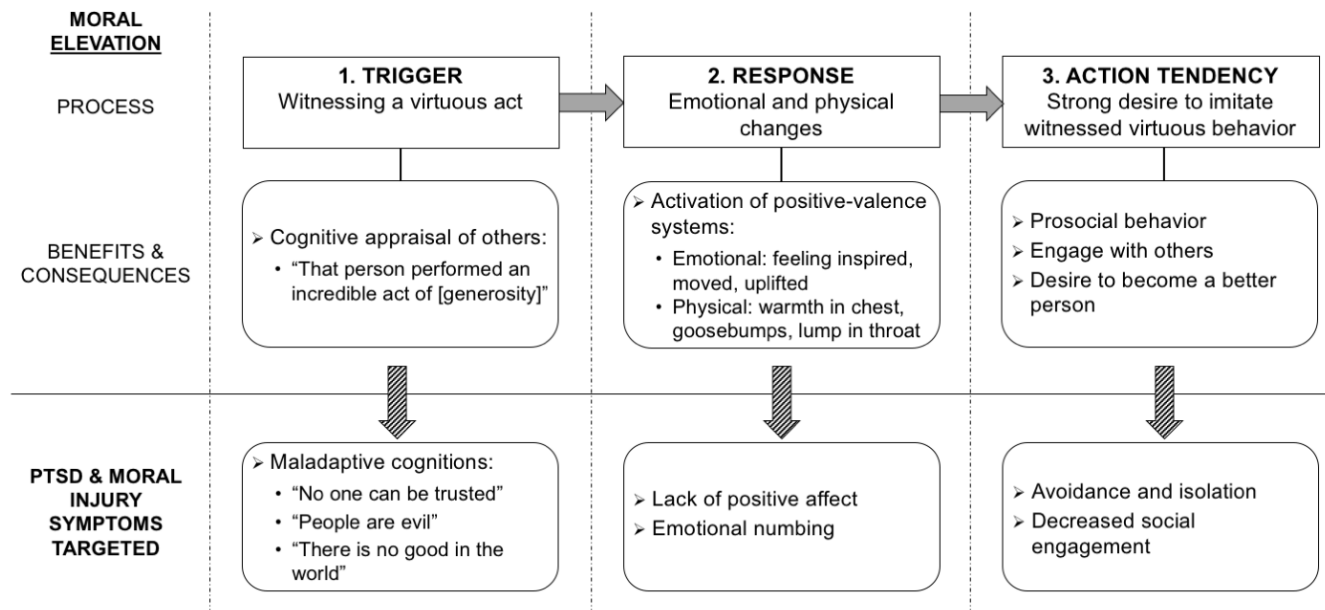


Figure 1. Theoretical framework for understanding the links between elevation, PTSD and moral injury.

Finally, the action tendency of elevation may facilitate behaviors that are particularly relevant and therapeutic for veterans experiencing PTSD and MI. Since elevation leads to a strong desire to imitate the observed virtuous act, experiencing this emotion could motivate someone to engage in behaviors that would require greater social interaction (e.g., acting generously), counteracting isolation and avoidance tendencies. Other known consequences of elevation, such as greater responsiveness to others’ needs and compassionate goals (Erickson et al., 2017; Haidt, 2003a), could increase the likelihood of veterans connecting with others and reintegrating into civilian life. Engaging in prosocial behavior may also play an important role for those suffering from moral injury regarding their own transgressive acts, which sometimes cause veterans to believe they are immoral

or irredeemable because they violated personal values (Litz et al., 2009). If elevation could serve as a catalyst for engaging in prosocial behavior, veterans may benefit by demonstrating and accruing evidence of their capacity for good (i.e., challenging beliefs they are completely evil because of what they did during war). Alternatively, prosocial behavior could serve as a means of reparation—an act of making amends for one’s wrongs that is posited to be a therapeutic experience in some MI treatments (e.g., Litz et al., 2009).

Therapeutic Considerations with Group Treatment and Military Culture

While yet to be empirically tested, this model carries potential treatment implications. In particular, it may be possible to facilitate and utilize elevation among

veterans participating in group-based treatments for PTSD and MI given the structure of trauma treatment and aspects of military culture. First, veterans who participate in trauma treatment may have an opportunity to demonstrate virtuous behavior that could elicit elevation in others, since treatments such as Prolonged Exposure (PE; Foa, Hembree, & Rothbaum, 2007) require the completion of challenging tasks that arguably, can involve virtue considering the context. For example, a veteran could be perceived as demonstrating exceptional courage when he/she completes a challenging in-vivo exercise, such as remaining in a chosen exposure situation (e.g., grocery store, football game, movie theater) despite being visibly distressed, or when disclosing a traumatic or morally injurious event to another person (therapist) for the first time. Out of context, some of these behaviors may seem commonplace or not particularly virtuous for an average person; however, a fellow veteran who similarly experiences debilitating anxiety and avoidance of crowded settings may empathize and acknowledge that completing such a task requires courage. A veteran could also demonstrate other virtuous behavior as he/she progresses through treatment—incredible perseverance by continuing to engage in anxiety-provoking exposure exercises, maintaining a steadfast sense of hope that their life will improve despite chronic impairment, or by forgiving a perpetrator most would not easily forgive. Because elevation occurs when *witnessing* virtuous behaviors, perhaps elevation could be easily facilitated in group treatment settings (e.g., outpatient treatment or intensive residential programs) where fellow group members could observe such acts and feel elevated in response. Group therapy could also provide an opportunity for veterans to demonstrate moral excellence in the way they interact with other group members, such as exemplary love or kindness toward others during treatment, producing another potential source for triggering elevation in others.

Group therapy research has theorized several therapeutic factors that occur in the context of group dynamics (Yalom, 1995), which further support the potential for a veteran to benefit from the actions of fellow group members. For example, the Instillation of Hope subscale in the Therapeutic Factors Inventory (TFI; Lese & MacNair-Semands, 2000) similarly assesses positive responses to participating in group treatment (e.g., “this group inspires me about the future”). Study findings indicate higher Instillation of

Hope scores at week four of treatment are correlated with fewer depressive and anxiety symptoms, less interpersonal distress, and higher quality of life at post-treatment (Joyce et al., 2011; MacNair et al., 2010). While these results suggest veterans can benefit from positive emotional experiences during group treatment, no studies to date have specifically assessed *elevation* in response to fellow group members—an emotion that shares features with TFI subscales, but is distinctly triggered by witnessing virtuous acts and uniquely associated with the desire to emulate that virtue. Therefore, further work is needed to understand if the expected benefits of elevation occur in this population during treatment.

Another important factor to consider is military culture, which involves a collectivist value system that encourages a greater focus on the needs of the group versus the self and leads to a significant emotional investment in one’s group (Christian, Stivers, & Sammons, 2009; McGurk, Cotting, Britt, & Adler, 2006). Accordingly, previous studies have demonstrated that veterans have benefited from group therapy formats (Barrera, Mott, Hofstein, & Teng, 2013; Schnurr et al., 2003) and reported high treatment satisfaction (Mott et al., 2013). Given the tendency to place greater attention on the group, veterans may be susceptible to experience elevation during group treatment because they may be inclined to recognize virtuous acts when performed by members of their unit, in the context of therapy. Furthermore, military training places an emphasis on peer support, a high regard for comrades, and a desire to contribute to the success of the entire group (Adler, Bliese, McGurk, Hoge, & Castro, 2009). Therefore, veterans may be even more likely to engage in the action tendencies of elevation as such behaviors would align with military culture goals and facilitate a high level of social responsiveness, cohesion, and well-being within the group.

Pilot Study

The proposed theoretical framework highlights how elevation could be considered antithetical to trauma distress, and how the cognitive, emotional, and behavioral experiences associated with elevation could potentially benefit those suffering from PTSD and MI. Group-based trauma treatment and aspects of military culture further support the idea that elevation could be experienced and beneficial to veterans during treatment. However, past work has not assessed the

benefits of elevation in veterans or in the context of treatment, and is limited to nonclinical samples (Erickson et al., 2017; Pohling & Diessner, 2016; Schnall et al., 2010) or clinical presentations of anxiety and depressive symptoms alone (Erickson & Abelson, 2012). No studies to date have examined whether veterans experiencing significant PTSD symptoms and MI would endorse elevation during treatment, and if so, whether elevation is linked to desirable treatment outcomes.

The purpose of this pilot study is to assess the feasibility of measuring elevation in a 12-week residential PTSD treatment program. It should be noted the purpose was not to test a priori hypotheses because this study is underpowered given the small sample size. Instead, we proposed two exploratory aims: (1) Examine if elevation in response to fellow group members' virtuous acts impacts social functioning as measured by higher weekly group engagement, and (2) assess whether average levels of elevation experienced over the course of treatment correlate with markers of psychological health at post-treatment as measured by PTSD symptoms and MI distress.

Method

Participants

The final sample consisted of 24 veterans (91.7% Male; $M_{\text{age}} = 47.79$, $SD = 12.17$) who were recruited at the time of enrollment into a 12-week residential PTSD treatment program at a VA medical center in the southern United States. Most participants self-identified as African American (66.7%) or Caucasian (29.2%). Participants primarily served during the Persian Gulf era (66.6%) followed by Vietnam (16.7%) and Post-Vietnam (16.7%). All participants met diagnostic criteria for PTSD (either combat or noncombat-related) and were screened by VA mental health staff prior to admission to the treatment program. Most participants reported their religion as Baptist (66.7%), followed by no preference (16.7%), nondenominational Christian (12.4%), and Roman Catholic (4.2%). All 24 veterans completed the 12-week treatment program.

Study Procedure and Residential Program

The 12-week residential treatment program includes a maximum of 12 veterans at a time. Veterans cohabitate in supervised housing during evenings and weekends. During the weekday, veterans participate in treatment activities that include morning community

meetings, interdisciplinary treatment team rounds, and group therapy sessions focused on sleep, mood, anger, relaxation, and relationships. The core trauma treatment provided is PE, which includes weekly individual sessions with a therapist as well as structured and supervised daily practice of between-session assignments: listening to imaginal exposure recordings and completing in-vivo exposure exercises. Veterans complete multiple assessment measures as a standard part of clinical care during their treatment. Measures analyzed for the purposes of the current study include a weekly group climate check-in (i.e., the same elevation and group climate questionnaires repeated every week), as well as PTSD symptoms and MI distress assessed the week prior to program completion (i.e., one-time measurement at post-treatment). No modifications were made to the existing treatment components. All veterans who enrolled in the treatment program were presented with the opportunity to participate in this study upon enrollment. Participation was entirely voluntary and veterans were not compensated. This study was approved by the local Institutional Review Board; all participants provided informed consent.

Measures

Moral elevation by group. To date, there are no validated questionnaires that assess elevation experienced in response to group participation or treatment settings. The primary measurement tool for elevation is the Elevation Scale (Landis et al., 2009), which captures trait-like or stable tendencies to experience elevation when observing a virtuous act, in general. Although important, that does not identify the impact of witnessing specific virtuous acts during treatment. Thus, a modified, group-specific elevation measure was developed for this pilot study (Elevation by Group Questionnaire; EbGQ) using items from the Elevation Scale and a daily elevation measure used in a clinical population with depression and anxiety (Erickson & Abelson, 2012). Several items were modified to include a specifier that the item was elicited by treatment group members (e.g., "inspired by *the people in the group*"). Veterans were asked to consider the behaviors and actions of all group members over the past week and to rate the extent they experienced 10 items on a scale from 1 (*not at all like me*) to 5 (*extremely like me*) in response to those actions. In total, items reflected the core features that characterize

elevation (Algoe & Haidt, 2009), such as the emotional experience of feeling uplifted in response to others' actions (e.g., "moved or touched by the actions or comments of people in the group"; "in touch with the higher or better parts of myself as a result of interacting with the group"), and distinct motivations (e.g., "energized to take action to improve my life"; "desire to do good things for others"). We did not assess the physical symptoms of elevation given our interest in emotional, cognitive, and social outcomes. The items demonstrated good internal consistency in this sample (average $\alpha = .94$).

Group engagement. The Engagement subscale of the Group Climate Questionnaire-Short Form (GCQ-SF; MacKenzie, 1983), which measures the level of cohesion and trust between group members, assessed a participant's individual perception of group engagement. Veterans rated 5 items on a scale from 1 (*not at all*) to 7 (*extremely*) based on their experiences with the group over the past week. Sample items included "members felt what was happening [in the group] was important and there was a sense of participation" and "members revealed sensitive personal information or feelings." Items were summed to create a total score, with higher scores indicating a veteran perceived greater engagement among the whole group. Previous studies have found internal consistency for the engagement subscale ($\alpha = .91$; Kivlighan, Dennis M. & Lilly, 1997) and there was adequate reliability in this sample (average $\alpha = .80$).

PTSD symptoms. The Clinician-Administered PTSD Scale for DSM-5 (CAPS-5; Weathers et al., 2013) is a clinician-rated structured diagnostic interview, widely considered the gold standard in PTSD assessment. Veterans are asked to identify an index trauma and respond to standardized questions related to PTSD symptoms and impairment. Items are rated on a scale from 0 (*absent*) to 4 (*extreme / incapacitating*). A total symptom severity score is calculated by summing the scores for 20 items related to each PTSD symptom. Four subscales are also calculated for intrusion (criterion B), avoidance (criterion C), change in cognition and mood (criterion D), and arousal symptoms (criterion E). Previous versions of the CAPS have demonstrated good reliability and validity (Weathers, Keane, & Davidson, 2001). CAPS interviews were administered by trained Masters and Doctorate level VA mental health staff members.

Moral injury. The Moral Injury Events Scale (MIES; Nash et al., 2013) is typically used to assess exposure to potentially morally injurious events. For this study, the MIES was used as a brief measure to assess overall distress related to MI given that items assess both exposure and subsequent distress associated with observing, experiencing, or engaging in behavior that are considered morally wrong (e.g., "I am troubled by having acted in ways that violated my own morals or values"; "I am troubled by having witnessed others' immoral acts"). Veterans rated 9 items on a scale from 1 (*strongly disagree*) to 6 (*strongly agree*). Items are summed to create a total score, with higher scores indicating greater distress and severity of moral injury. The MIES has demonstrated adequate internal validity and reliability in previous studies ($\alpha = .90$; Nash et al., 2013).

Data Analysis

Analytic overview. The exploratory aims of the pilot study were to examine the potential link with psychological health and social functioning. First, multilevel modeling was used to assess whether weekly elevation is linked to group engagement within the same week (concurrent analysis) and future weeks (prospective analysis). Multilevel modeling is an optimal method for repeated measures data because it handles unbalanced and missing data, avoids the assumption of independence, and permits random effects (allowing intercepts and slopes to vary across individuals; Nezlek, 2008). Next, correlational analyses were used to explore how average scores of elevation experienced across the 12-week program related to post-treatment outcomes of PTSD symptoms and moral injury.

Multilevel models: Concurrent and prospective analyses. We used IBM SPSS Version 23 to calculate restricted maximum likelihood estimates given their accuracy in smaller samples and appropriateness when not comparing the fit of nested models. We specified an autoregressive (AR1) covariance structure because of the prospective data collection, which assumes that individuals' scores at one time point often correlate strongly with scores at nearest time points. To test for concurrent effects between elevation and group engagement, individual scores for perceived group engagement were entered as the outcome variable and elevation scores for the same week were entered as the predictor. Elevation was grand-mean-centered so

effects represent between-person differences (Enders & Tofghi, 2007). To test for prospective effects, we repeated the same analysis but lagged engagement scores by one week and added same-week engagement scores as a covariate (e.g., Crocker, Canevello, Breines, & Flynn, 2010). Thus, grand-mean-centered elevation (X) predicted engagement scores for the following week (Y) while controlling for same week scores, which represented the residual change in future engagement scores uniquely predicted by elevation. Unconditional models indicated significant variance at the intercept and models demonstrated a better overall fit with fixed slopes, therefore random intercepts and fixed slopes were applied to both concurrent and prospective models.

Correlational analysis. We computed bivariate correlations between elevation scores and post-treatment outcomes. We averaged weekly scores of elevation to calculate an aggregate score, which represents a stable indicator of the extent a veteran typically experienced elevation during the course of treatment (e.g., Fleeson, 2004). Bivariate correlations were tested with aggregate elevation and outcomes measured once at post-treatment including the total CAPS score, all CAPS subscales (symptom clusters), and the MIES.

Results

Preliminary Analysis

Data collection occurred over 32 weeks, which included a total of 27 veterans with an average group size of 9.4 veterans. Three participants were excluded from all data analyses because they demonstrated nonvalid responses to weekly measures (e.g., unitary responses to GCQ despite reversed items). On average, the remaining 24 veterans completed the EbGQ for 87.8% of available weeks and were included in multilevel model analyses. Eight participants did not complete the MIES and 11 participants were unable to receive a final CAPS-5 assessment prior to discharge. The final sample available for correlational analyses was $n = 13$. Means, standard deviations, and ranges for all measures are presented in Table 1. Notably, the mean score for EbGQ was 36.39 ($SD = 7.17$), which was above the mid-point of the measure's total score (range = 10-50). Because veterans appeared to endorse some degree of elevation as measured by the EbGQ, we proceeded to examine exploratory aims.

There were no significant group differences between veterans who completed post-treatment measures ($n = 13$) and those who did not ($n = 11$) for the following demographic and baseline variables: age [$t(22) = 1.14, p = .266$], race [$\chi^2(2, N = 24) = 1.24, p = .539$], era [$\chi^2(2, N = 24) = 0.84, p = .657$], religion [$\chi^2(2, N = 24) = 6.88, p = .142$], self-reported PTSD symptoms as measured by the PTSD Checklist for DSM-5 [PCL-5; $t(22) = 0.18, p = .986$], and self-reported depressive symptoms measured by the Patient Health Questionnaire-9 [PHQ-9; $t(22) = -1.02, p = .319$].

Table 1. Means, Standard Deviations, and Ranges for all Variables

Variable	<i>M</i>	<i>SD</i>	Range
<u>Weekly Measures</u>			
EbGQ	36.39	7.17	10-50
GCQ:	15.51	5.57	0-30
Engagement			
<u>Post-Treatment</u>			
CAPS-5 Total	39.54	11.46	26-66
B: Intrusion	9.69	2.87	5-14
C: Avoidance	5.08	1.26	2-7
D: Cog/Mood	12.77	5.04	7-24
E: Arousal	11.85	3.53	8-22
MIES	26.85	10.83	11-43

Note. EbGQ = Elevation by Group Questionnaire; GCQ = Group Climate Questionnaire; CAPS-5 = Clinician-Administered PTSD Scale – 5; MIES = Moral Injury Events Scale.

Multilevel Models

First, we computed concurrent effects. When participants reported higher elevation than the average elevation score across the entire sample (i.e., grand-mean-centered), they reported significantly higher levels of engagement among the group for that same week ($b = 0.30, SE = .06, pr = .40, p < .001$). Next, we tested for similar effects with grand-mean-centered elevation predicting prospective week-to-week changes in perceived engagement while controlling for the effects of same-week engagement (i.e., residual change in engagement). When participants reported higher than average elevation than what is typical across the entire sample, they endorsed a significantly greater increase or change in the following week's level of perceived engagement ($b = 0.14, SE = .06, pr = .37, p = .024$).

Correlational Analyses

Aggregate elevation scores demonstrated a large, statistically significant correlation with clinician-rated CAPS avoidance symptoms ($r = -.64, p = .019, 95\% \text{ CI: } -1.07, -0.12$) and MI distress ($r = -.65, p = .017, 95\% \text{ CI: } -1.38, -0.16$), indicating higher average levels of elevation experienced over the course of treatment was associated with lower clinician-rated avoidance symptom severity and lower moral injury distress at post-treatment. Aggregate elevation scores also demonstrated medium-sized correlations with clinician-rated intrusion and arousal symptoms, as well as a large correlation with total PTSD symptom severity; however, they were not statistically significant (p 's $> .05$) in this pilot sample (see Table 2).

Table 2. *Bivariate Correlations Between Aggregate Moral Elevation and Post-Treatment Variables of Interest*

Variables	2	3	4	5	6	7
1 Aggregate EbGQ	-.36	-.64	-.46	-.15	-.50	-.65
2 CAPS-5 B: Intrusion	--	.40	.85	.71	.91	.47
3 CAPS-5 C: Avoid		--	.49	.15	.51	.55
4 CAPS-5 D: Cog/Mood			--	.83	.98	.47
5 CAPS-5 E: Arousal				--	.86	.37
6 CAPS-5 Total					--	.36
7 MIES Total						--

Note. **Boldface** indicates statistical significance ($p < .05$). *Italics* indicates $p < .10$. EbGQ = Elevation by Group Questionnaire; CAPS-5 = Clinician-Administered PTSD Scale – 5; MIES = Moral Injury Events Scale.

Discussion

To our knowledge, this pilot study is the first to assess elevation in those with a PTSD diagnosis, in a veteran population, and in response to fellow group members during the course of treatment. This is also the first known study to examine the relationship between elevation experienced in treatment and MI, although results should be interpreted with caution given the small sample size. In the following section, we review preliminary findings with consideration of the theoretical framework and highlight future directions for research needed to support the proposed relationships.

Social Functioning

Elevation was linked with social functioning as weekly elevation scores in response to fellow group members' actions were positively associated with greater perceived group engagement for the same week. The effects of weekly elevation also extended beyond the same week and predicted significant increases in engagement for the following week. A potential link between elevation and group engagement is important in its own right because high group engagement has been shown to predict greater session attendance (Kivlighan, Paquin, & Hsu, 2014) and better treatment outcomes (Bonsaksen, Borge, & Hoffart, 2013; Ogrodniczuk & Piper, 2003). Given the antecedent cognitive appraisal of elevation (i.e., viewing others' acts as virtuous), veterans who endorsed weekly elevation likely viewed members of their group in a positive light. In line with the proposed theoretical framework, this positive appraisal of fellow group members might contribute to favorable perceptions regarding the group's cohesion. If veterans who report weekly elevation also experience the subsequent urges to connect with others in the group, it also seems plausible that acting on those urges could positively impact group engagement for that same week and future weeks.

Additional research is needed to understand how elevation can be used to foster psychosocial growth both during and beyond treatment. First, future studies should assess the relation between elevation and other markers of social functioning in veterans including quality and satisfaction with social relationships, as well as prosocial behavior. Studies should also incorporate observer assessments completed by those who interact with the veteran on a frequent basis (e.g., loved ones, co-workers) to measure how a veteran who experiences elevation and engages in the subsequent action tendencies is perceived by those around him/her. Perhaps veterans who are exposed to more elevation-eliciting stimuli are perceived by others as more compassionate, connected, or invested in their relationships. Such findings could have important implications for targeting barriers to reintegration into civilian life. Future studies should also test the social functioning effects of elevation interventions that would focus on training veterans to be more aware of others' virtuous behavior, as well as practicing observing such acts in daily life.

Moral Injury

Significant correlations were found between aggregate elevation and MI distress as measured by the MIES. These preliminary findings suggest veterans who reported higher chronic levels of feeling uplifted by the acts of other group members across 12-weeks reported less distress at post-treatment about perceived immoral acts they committed or witnessed. Although further research is needed to account for MI distress at baseline and with a larger sample size, these pilot study results provide the first known indication that elevation experienced during treatment is negatively correlated with MI. As described in the proposed theoretical framework, perhaps appraising others' acts as virtuous and morally excellent could contribute to less distress associated with strong negative beliefs about others or the world. Additionally, if veterans with higher chronic levels of elevation during treatment enact upon the action tendency of doing something good or engaging in prosocial behavior, they might experience less distress about personal transgressions if prosocial behavior serves as a form of reparation or helps accumulate evidence for one's capacity for good.

Further research is needed to examine whether elevation predicts changes in MI distress, which would clarify the direction of this relationship. Because new MI measures have emerged since this data collection (Currier et al., 2017; Koenig et al., 2018), studies should also examine the effects on other measures that capture expressions or symptoms of MI. Future studies should test for the proposed mediating factors including prosocial behavior and changes in cognitive appraisals. Although several beliefs regarding MI are not expected to change (e.g., "Killing someone is wrong"), studies could examine whether exposure to elevating stimuli helps reduce the distress or severity of shame-based beliefs (e.g., "I'm an evil person because of what I did") or anger and distrust towards others (e.g., "No one can be trusted"). Related, future research should assess for differences in the effects of elevation for those who endorse MI because of something others did (i.e., betrayal, anger) versus transgressive acts of the self (i.e., personal acts of commission or omission).

PTSD Symptoms

Clinician-rated avoidance symptom severity negatively correlated with aggregate elevation; therefore, veterans who reported higher chronic levels of weekly elevation were rated as having less severe

avoidance symptoms at post-treatment. Aggregate elevation also demonstrated medium-sized correlations (r 's $\geq .30$) with other clinician-rated symptom scores (intrusion, cognition/mood) and a large correlation ($r \geq .50$) with the total CAPS score, but they were not statistically significant in this small pilot sample. These findings highlight the potential for elevation to impact PTSD symptoms. Considering the proposed framework, overcoming external avoidance symptoms could be related to a strong desire to emulate virtuous acts performed by fellow group members during treatment. For example, witnessing another member demonstrate bravery in completing a difficult exposure task may motivate a veteran to challenge themselves and increase treatment engagement with their own exposure exercises, which could ultimately lead to better treatment outcomes. Attempts to emulate other virtues may also encourage approach versus avoidant behaviors (e.g., completing an act of generosity or kindness), which may positively contribute to reductions in avoidance symptoms. Additionally, increased elevation could potentially influence avoidance behaviors through a cognitive shift in how veterans perceive other people. Recognizing the virtuous acts of others and experiencing elevation in response could foster beliefs that some people are good or trustworthy and that the world is not necessarily an evil place. Such a cognitive shift might also increase the likelihood of socialization and decrease avoidance tendencies.

As noted with MI results, further research is needed to assess the effects of elevation on changes in PTSD symptoms from pre- to post-treatment, along with larger sample sizes. To examine mechanisms by which elevation impacts PTSD symptoms, future studies should incorporate behavioral measures to better understand how self-reported elevation may lead to specific therapeutic behaviors and their role in symptom improvement. If elevation predicts increased engagement in therapeutic and approach behaviors, research is also needed to test different intervention strategies to determine the most effective ways to elicit that action tendency.

Limitations

There are several limitations to the preliminary findings that should be noted, most of which are characteristic of a pilot study. First, this pilot study included a small sample size with inadequate power to detect statistical significance of the observed

relationships. Whereas the large correlations are promising and provide the first evidence of a link between elevation, MI, and PTSD outcomes, they should be replicated with a larger sample. Second, due to missing data at intake, we were unable to assess change scores in outcomes from baseline measures of the CAPS and MIES; thus, we could not interpret elevation's unique impact on symptom *improvement*, specifically. Future studies should incorporate baseline assessments to determine the relation between elevation during treatment and changes in treatment outcomes. Third, future research should specify the effects of elevation versus other treatment factors by using control groups. Although acceptable reliability was demonstrated in this study, a fourth limitation is the lack of data regarding overall psychometric properties for the EbGQ—an expected limitation when examining preliminary data for a novel measure. Studies with larger samples should aim to validate this measure. Finally, because this measure only assessed responses indicative of experiencing elevation and not the witnessed behavior itself, future studies should aim to assess what specific virtuous actions of the group elicit elevation to further establish construct validity of the measure and to determine the specific stimuli in treatment that are most likely to elicit this emotion.

Conclusion

To provide the best care for veterans exposed to trauma, novel approaches are needed to target both PTSD and MI distress, and to directly impact psychosocial growth. Past work on elevation and the proposed theoretical framework indicate the potential for elevation to address these needs through associated cognitive, emotional, and behavioral experiences linked to trauma recovery. Furthermore, this pilot study offers the first preliminary findings that indicate higher elevation could be linked with social functioning and psychological health in a veteran population with significant trauma-related distress. Upon further research and empirical support, integrating elevation into trauma treatments for veterans may serve as a novel way to address the gaps with existing psychotherapy and help veterans grow and flourish after service. It is our hope that the proposed framework and preliminary findings spur further investigation to increase our understanding of how elevation can be utilized to increase the

effectiveness of treatment and the well-being of veterans.

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