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Moral Injury and Suicidality Among Combat-Wounded Veterans: The Moderating Effects of Social Connectedness and Self-Compassion

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Abstract

Objective—Among combat veterans, moral injury (i.e., the guilt, shame, inability to forgive one's self and others, and social withdrawal associated with one's involvement in events that occurred during war or other missions) is associated with a host of negative mental health symptoms, including suicide. To better inform and tailor prevention and treatment efforts among veterans, the present study examined several potential risk (i.e., overidentification and self-judgment) and protective (i.e., self-kindness, mindfulness, common humanity, and social connectedness) variables that may moderate the association between moral injury and suicidality.

Method—Participants were 189 combat wounded veterans (96.8% male; mean age = 43.14 years) who had experienced one or more deployments (defined as 90 days or more). Nearly all participants reported a service-connected disability (n = 176, 93.1%) and many had received a Purple Heart (n = 163, 86.2%).

Results—Within a series of moderation models, we found 3 statistically significant moderation effects. Specifically, the association between self-directed moral injury and suicidality strengthened at higher levels of overidentification, that is, a tendency to overidentify with one's

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failings and shortcomings. In addition, the association between other-directed moral injury and suicidality weakened at higher levels of mindfulness and social connectedness.

Conclusions—These findings provide insight on risk and protective factors that strengthen (risk factor) or weaken (protective factor) the association between moral injury and suicidality in combat-wounded veterans. Taken together, mindfulness, social connectedness, and overidentification are relevant to understand the increased/ decreased vulnerability of veterans to exhibit suicidality when experiencing moral injury.

Keywords

wounded veterans; social connectedness; moral injury; self-compassion; suicidality

Military members are often forced to make difficult decisions or witness actions in war or other missions that transgress deeply held personal beliefs and values. These events may result in significant inner conflict. Although some military members who experience inner conflict can assimilate their experiences, those who cannot may develop moral injury. Although there is no agreement on the features of moral injury, it is often thought to result in guilt, shame, difficulty in forgiveness, distrust, changes in beliefs about God or a higher power, anger, demoralization, grief, and disgust (Bryan et al., 2016; Currier, Holland, Drescher, & Foy, 2015; Jinkerson, 2016; Litz et al., 2009; Shay, 2014). Moral injury can be self-directed or other-directed (e.g., Schorr et al., 2018) and is associated with suicidality (suicidal thoughts and behaviors, Battles et al., 2018; suicidal ideation and attempts, Bryan, Bryan, Morrow, Etienne, & Ray-Sannerud, 2014). The need to understand variables that increase or reduce suicidality among those who report features of moral injury cannot be overstated. Suicide is the second leading cause of death for military personnel (Smolensky et al., 2014), and suicide rates are high among veterans, with a mortality rate of 27.5 per 100,000 among veterans not enrolled in Veterans Health Administration (VHA) treatment services, 37.5 per 100,000 for veterans using VHA services, and 58.0 per 100,000 among veterans using VHA mental health services (U.S. Department of Veterans Affairs, 2018c). The present study sought to examine potential moderators of the association between self- and other-directed moral injury and suicidality (suicidal thoughts and behaviors) in a sample of combat-wounded veterans.

Model of Moral Injury (Litz et al., 2009)

According to the most popular model of moral injury, events in combat and other missions may violate one's deeply held belief systems and, for some service members, may result in inner conflict. This inner conflict is theorized to stem from cognitive discrepancy between personal schemas concerning beliefs about one's goodness and goodness in the world and events service members have perpetrated or witnessed during war or deployments (Litz et al., 2009).

Recent research has demonstrated the impact that the transgression of moral beliefs has on service members' mental health. Negative moral appraisals, that is, the perceived wrongness of combat situations, predicted posttraumatic stress disorder (PTSD), depression, and negative changes in moral emotions (i.e., guilt and shame) beyond combat exposure alone

(Lancaster & Erbes, 2017). Furthermore, exposure to wartime atrocities has been shown to predict increased suicidal ideation, even after controlling for overall combat exposure (Dennis et al., 2017). Although the effect was small, combat-related guilt was found to mediate the link between wartime atrocities and suicidal ideation (Dennis et al., 2017). Exposure to events that may cause moral injury, coupled with combat-related guilt from these events, has been shown to predict suicidality (assessed as suicidal ideation) in a veteran sample (Frankfurt, Frazier, & Engdahl, 2017).

Moral injury can be self-directed or other-directed. In the case of self-directed moral injury, the service member perpetrated the transgression, whereas in the instance of other-directed moral injury, the service member witnessed or heard about the transgression. A few studies have examined self-directed versus other-directed moral injury. Whereas self-directed moral injury has been associated with guilt, shame, sadness, reexperiencing symptoms, and numbness, other-directed moral injury has been associated with anger, outrage, and frustration (Schorr et al., 2018; Stein et al., 2012). Self- and other-directed moral injury may also differentially predict mental health outcomes. In a sample of predominantly active duty Air Force and Army members, self-directed, but not other-directed, moral injury was associated with current severe suicidal ideation; however, both self-directed and other-directed moral injuries were higher among those who had attempted suicide versus those who had not attempted suicide (Bryan et al., 2014). To better inform and tailor prevention and treatment efforts among veterans, it is important to identify protective and risk factors that may moderate associations between moral injury and suicidality.

Moderators of the Association Between Moral Injury and Suicidality

Few theories have been used to understand variables that may increase risk among those who have experienced moral injury. The interpersonal-psychological theory of suicidal behavior (Joiner, 2005) contends that perceiving oneself as a burden, lack of belongingness, and the capability to kill one’s self combine to instill a desire to die by suicide. Perceived burdensomeness is hypothesized to stem from negative self-directed feelings, including self-hatred and the feeling that one is a liability to others because of personal flaws or failings (Van Orden et al., 2010). Negative self-attributions, particularly viewing oneself as a bad person, is a classic feature of moral injury and is theorized to increase self-punishing and self-harming behaviors (Dennis et al., 2017; Litz et al., 2009). Among service members who have experienced moral injury, viewing themselves as a bad person may lead to fear of social condemnation and fear of rejection from others who learn about their participation in wartime transgressions. Anticipation of social rejection may lead to a lack of belongingness and ultimately reinforce destructive self-beliefs (Litz et al., 2009). Perceived burdensomeness and thwarted belongingness significantly accounted for the association between shame and suicide risk (Rogers, Kelliher-Rabon, Hagan, Hirsch, & Joiner, 2017). Also, feelings of isolation in the 24 hours prior to a suicide attempt were associated with service member suicide attempt (Bryan & Rudd, 2012). Likewise, Houtsma, Khazem, Green, and Anestis (2017) contend that feeling shame after experiencing moral injury may lead to social withdrawal and, in turn, decrease one’s sense of belongingness, which may lead to suicidal desire. These researchers found that other-directed moral injury was associated with decreased feelings of belongingness, especially in instances of low social

support. Furthermore, social support has been shown to be negatively associated with suicidal ideation (Pietrzak et al., 2010) and a history of suicide attempts (Bell et al., 2018).

Although some studies have examined variables that may increase or decrease risk for suicidality among those with moral injury, common humanity, mindfulness, and self-kindness, which Raes, Pommier, Neff, and Van Gucht (2011) posit are three forms of self-compassion, may serve to reduce the association between moral injury and suicidality. Service members with higher common humanity may be expected to experience lower feelings of burdensomeness because they may recognize that suffering and failures are ubiquitous, which may decrease guilt and self-blame (Neff, 2003). Mindfulness-based programs (e.g., mindfulness-based cognitive therapy; mindfulness-based relapse prevention), which include a focus on self-kindness, work to help service members manage difficult thoughts and emotions (Bowen, Chawla, & Marlatt, 2011; Kabat-Zinn, 2003; Segal, Williams, & Teasdale, 2012). Ultimately, individuals learn how to observe difficult experiences without overidentifying with them. Participants are taught several mindfulness exercises that provide the context and skills to aid them in managing difficult experiences, which can often lead to behavior change (e.g., improved mood, decreased substance use; Bowen et al., 2006, 2014; Teasdale et al., 2000). There is evidence that mindfulness-based treatments may be effective for PTSD in veterans (e.g., Bremner et al., 2017; Kearney, McDermott, Malte, Martinez, & Simpson, 2013; Polusny et al., 2015). That said, little research has evaluated the impact of mindfulness on moral injury and suicidality. However, given mindfulness's focus on helping individuals notice difficult thoughts/emotions/sensations with a sense of nonjudgment and acceptance, it is possible that mindfulness might be beneficial for these mental health concerns, similar to what research has demonstrated for PTSD.

Moral Injury and Suicidality Among Veterans With Service-Related Disabilities

We chose to study combat-wounded veterans for several reasons. Combat-wounded veterans are likely to have experienced both self-directed and other-directed moral injury and, by the nature of these events, may be vulnerable to suicidality. In addition to moral injury (Frankfurt et al., 2017), impaired functional ability is a risk factor for suicide among veterans (Kaplan, Huguet, McFarland, & Newsom, 2007). Thus, constructs hypothesized to be key according to the interpersonal-psychological theory of suicide (Joiner, 2005), such as burdensomeness and belongingness, may be especially relevant to the understanding of suicidality among veterans who were wounded in combat and who have high levels of disability.

Furthermore, combat-wounded veterans are a large, but understudied, population. In recent conflicts, more sophisticated body armor and medical care (e.g., forward surgical stations, combat support hospitals, medical evacuation services) in far-forward deployed settings have increased casualty survival rates to greater than 90% (U.S. Department of Veterans Affairs, 2018b). Additionally, 35.9% of post-9/11 veterans have a service-connected disability (U.S. Department of Veterans Affairs, 2018b), and 88.1% of veterans injured in recent conflicts

report more than three service-connected injuries or health problems (Fales et al., 2017). Moreover, of all veterans with a service-connected disability (greater than 4,300,000), nearly half of these disabilities have been reported since 2001. The severity of disabilities has also increased. In fiscal year 2000, 6.9% of veterans with a service-connected disability had a disability rating of 70–100%, whereas in 2016, 27.6% of veterans had a disability ranking of 70–100% (U.S. Department of Veterans Affairs, 2018a).

The purpose of the present study was to examine possible moderators of the association between self- and other-directed moral injury and suicidality in a sample of combat-wounded veterans. We predicted that three forms of self-compassion (Raes et al., 2011), that is, higher levels of self-kindness, mindfulness, and common humanity, would buffer the effects of moral injury on suicidality, such that higher scores of these forms of self-compassion would be associated with a reduction in the strength of the associations between self-directed moral injury and suicidality and other-directed moral injury and suicidality. In addition, we hypothesized that social connectedness would buffer the association of self-directed moral injury and suicidality and other-directed moral injury and suicidality, with higher social connectedness attenuating this relationship. Finally, we hypothesized that higher scores for self-judgment and overidentification would increase the strength of the association between self-directed moral injury and suicidality and other-directed moral injury and suicidality.

Method

Participants and Procedure

Military veterans who were members of the Combat Wounded Coalition (CWC; https://combatwoundedcoalition.org) responded to an announcement from the CWC founder requesting veterans to participate in an online study (for more details, see Bravo, Witkiewitz, Kelley, & Redman, 2019). Prior to becoming a member of the CWC veteran listserv, all potential CWC members provide a DD Form 214 (which is a complete verified record of the service member's time in the military including awards and medals, combat, etc.). The DD Form 214 is verified by a recent-era veteran who serves as the veteran liaison for the CWC. The survey announcement was sent by the CWC founder to all 2,223 veterans on the listserv. Of these, 212 veterans took part in the survey; however, given our focus, the analytic sample was limited to 189 veterans (89.2%) who self-reported experiencing one or more deployments (defined as 90 days or more). Most participants identified as being White (n = 140, 74.1%), male (n = 180, 96.8%), lived (36 states were represented) in either Virginia (n = 23, 12.2%) or Texas (n = 28, 14.9%), and reported a mean age of 43.14 years (median = 40.00 years, SD = 12.23). Nearly all qualified as having a current service-connected disability (n = 176, 93.1%), with participants on average reporting having a 90% total disability VA rating; the majority had received a Purple Heart (n = 163, 86.2%). The Army (n = 86, 45.7%) and Marines (n = 46, 24.5%) were the most represented branches and most participants were deployed as part of Operation Iraqi Freedom, Operation Enduring Freedom, or Operation New Dawn (n = 162, 85.7%). Participants were offered a $10 Amazon gift card for completing the study. All study documents and procedures were approved by an institutional review board committee at the participating university.

Measures

Moral injury—Moral injury was assessed using the 17-item Expression of Moral Injury Scale–Military Version (Currier et al., 2018) measured on a 5-point response scale (1 = *strongly disagree*, 5 = *strongly agree*). Items are divided into two sections: (a) self-directed symptoms (nine items; e.g., "I am ashamed of myself because of things that I did/saw during my military service") and (b) other-directed symptoms (eight items; e.g., "When I look back on my military service, I feel disgusted by things that other people did"). Initial psychometric work among U.S. military veterans (Currier et al., 2018) provided evidence of the validity and reliability of the Expression of Moral Injury Scale–Military Version subscales for measuring self-directed and other-directed moral injury.

Self-compassion—Self-compassion was assessed with the 12-item Self-Compassion Short Scale (Raes et al., 2011) measured on a 5-point scale (1 = *almost never*, 5 = *almost always*). The Self-Compassion Short Scale measures six aspects of self-compassion: self-kindness (e.g., "When I'm going through a very hard time, I give myself the caring and tenderness I need."; two items); mindfulness (e.g., "When something upsets me, I try to keep my emotions in balance"; two items); common humanity (e.g., "When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people"; two items); isolation (e.g., "When I fail at something that's important to me, I tend to feel alone in my failure", two items); self-judgment (e.g., "I'm intolerant and impatient toward those aspects of my personality I don't like"; two items), and over-identification (e.g., "When I'm feeling down, I tend to feel like most other people are happier than I am"; two items). Item scores were summed to create subscale scores. Given the uniqueness of the various subscale scores and that the subscales have been found to vary in their associations with different mental health outcomes (Muris & Petrocchi, 2017; Van Dam, Sheppard, Forsyth, & Earleywine, 2011), in the present study we examined each subscale score (except isolation[1]) as a possible moderator.

Social connectedness—Social connectedness (or lack of social alienation) was measured with the Friendship Scale (Hawthorne, 2006), which consists of six items that assess social connectedness (e.g., "It has been easy to relate to others"; "I had someone to share my feelings with"). Items are scored on a 6-point scale: (0 = *not at all*, 5 = *almost always*). Item scores are summed; higher scores indicate greater social connectedness. The Friendship Scale has been validated in prior military studies (Bravo, Kelley, & Hollis, 2016; Kelley et al., 2017).

Suicidality—Suicidality was measured using the six-item suicidality subscale of the Inventory of Depression and Anxiety Symptoms Suicide Scale (Watson et al., 2007). Participants used a 5-point scale ranging from 1 (*not at all*) to 5 (*extremely*) to report the degree to which they experienced suicidal thoughts and behaviors (e.g., "I had thoughts of suicide" and "I hurt myself purposefully") over the past month. Items were summed to yield a total score for suicidality. The suicidality subscale of the Inventory of Depression and

[1]Given that the isolation subscale focuses more on the notion that feelings of failure/inadequacy are not shared by others, which does not map onto Joiner's (2005) conceptualization of "thwarted belongingness" (or social connectedness), a different measure (i.e., Friendship Scale; Hawthorne, 2006) was used to assess social connectedness.

Anxiety Symptoms Suicide Scale has demonstrated excellent internal consistency among military populations (α = .83; Bravo, Pearson, & Kelley, 2018).

Data Analysis Plan

To test study aims, a series of moderation models were conducted in M*plus* 7.4 (Muthén & Muthén, 1998–2018) using syntax for estimating moderation models in M*plus* (Stride, Gardner, Catley, & Thomas, 2015) that are based on Hayes's (2017) PROCESS models. Specifically, independent models were conducted predicting suicidality scores from moral injury facets (i.e., self-directed or other-directed), hypothesized moderators (i.e., social connectedness and self-compassion facets), and their interactions (e.g., other-directed moral injury × social connectedness). Years served in the military and number of deployments (in months) were modeled as predictors of all variables in the model (i.e., covariates). Statistical significance was determined by 95% bias-corrected bootstrapped confidence intervals (based on 10,000 bootstrapped samples) that do not contain zero. Significant interaction terms were interpreted by conditional standardized coefficient effects (provided using the Stride et al., 2015 syntax) at levels of the moderator as recommended by Cohen, Cohen, West, and Aiken (2003).

Results

Bivariate correlations, descriptive statistics, and internal consistency of study variables are shown in Table 1. Both self-directed and other-directed moral injury were strongly positively associated with suicidality, moderately negatively associated with positive self-compassion facets (i.e., self-kindness, common humanity, and mindfulness) and social connectedness, and moderately positively associated with negative self-compassion facets (i.e., self-judgment and overidentifications). Self-compassion facets and social connectedness were significantly associated with suicidality in expected directions (e.g., self-judgment was strongly associated with suicidality).

Tables 2 (self-directed moral injury as predictor) and 3 (other-directed moral injury as predictor) present results from the moderation models. Of 14 possible moderation effects, only three were statistically significant. Specifically, overidentification had a significant synergistic effect (β = .22, 95% confidence interval [CI; 0.01, 0.41]) on the relationship between self-directed moral injury and suicidality. Specifically, the association between self-directed moral injury and suicidality strengthened at higher levels of overidentification (differences in coefficients were statistically significant across levels of overidentification): low level (1 *SD* below mean) had a small nonsignificant effect, β = .12, 95% CI [−0.31, 0.35], average level had a medium effect, β = .34, 95% CI [0.19, 0.50], and high level (1 *SD* above mean) had a large effect, β = .56, 99% CI [0.19, 0.60].

In moderating the effect of other-directed moral injury and suicidality, both mindfulness and social connectedness had significant buffering effects (mindfulness: β = −.16, 95% CI [−0.34, −0.001]; social connectedness: = β = −.17, 95% CI [−0.36, −0.03]). Specifically, the association between other-directed moral injury and suicidality weakened at higher levels of mindfulness (differences in coefficients were statistically significant across levels of mindfulness): low level had a large effect, β = .56, 95% CI [0.33, 0.83], average level had a

medium effect, β = .40, 95% CI [0.25, 0.59], and high level had a small effect, β = .25, 95% CI [0.02, 0.47]. Similarly, the association between other-directed moral injury and suicidality weakened at higher levels of social connectedness (differences in coefficients were statistically significant across levels of social connectedness): low level had a medium-large effect, β = .44, 95% CI [0.20, 0.75], average level had a small-medium effect, β = .27, 95% CI [0.11, 0.46], and high level had a small nonsignificant effect, β = .10, 95% CI [−0.13, 0.29].

Discussion

The focus of the present study was to extend research on moral injury by examining potential moderators of the association between self- and other-directed moral injury and suicidality in a sample of combat-wounded veterans. Both mindfulness and social connectedness had significant buffering effects in that the association between other-directed moral injury and suicidality weakened at higher levels of mindfulness and social connectedness. In addition, at higher levels of overidentification, the association between self-directed moral injury and suicidality strengthened.

Mindfulness-based approaches work to allow veterans to acknowledge painful thoughts/emotions/physical sensations while sustaining attention to the present. In this way, veterans can learn to manage these difficult experiences such that they are less likely to become overwhelmed by them or use avoidance-based coping strategies (e.g., substance use). Mindfulness-based programs (e.g., mindfulness-based cognitive therapy; mindfulness-based relapse prevention) include a focus on self-kindness and aim to help service members manage difficult thoughts and emotions (Bowen et al., 2011; Kabat-Zinn, 2003; Segal et al., 2012). Ultimately, individuals learn how to observe difficult experiences without overidentifying with them. Participants are taught several mindfulness exercises that provide the context and skills to aid them in managing difficult experiences, which can often lead to behavior change (e.g., improved mood, decreased substance use; Bowen et al., 2006, 2014; Teasdale et al., 2000). In the case of moral injury, these methods may help alleviate feelings of self-recrimination and self-blame (see Kopacz et al., 2016 for a discussion). In a pilot trial comparing veterans with sustained PTSD who took part in a mindfulness-based cognitive therapy group to those in treatment-as-usual, veterans in the mindfulness-based cognitive therapy group showed greater reductions in self-blame and a trend toward decreased perception of the world as a dangerous place (King et al., 2013). Our findings show that higher mindfulness may buffer the association between other-directed moral injury and suicidality for combat-wounded veterans.

We also found that higher levels of social connectedness interacted with other-directed moral injury to reduce the association between other-directed moral injury and suicidality. It is possible that veterans with high social connectedness may feel more comfortable talking about things they witnessed or the anger, disgust, and betrayal they feel toward those who transgressed their belief systems. For instance, if the veteran witnessed behaviors that disgusted them (e.g., members of their unit treating civilians harshly), those with higher social connectedness may feel comfortable talking about these behaviors and their feelings about these behaviors with members of their social network. Over time, being able to discuss

these behaviors and their feelings may allow the veteran to process these behaviors and may even offer some relief from their focus on those who betrayed their values and for whom they have lost trust. In contrast, those with lower social connectedness may lack the opportunity and context in which to discuss these events. In turn, feelings such as anger, thoughts of betrayal, and feeling that no one can be trusted may continue and even strengthen, increasing one's risk of suicidality.

Although we anticipated that higher mindfulness and social connectedness would also reduce the link between self-directed moral injury and suicidality, this was the not the case, and it is important to note that several items that assessed other-directed moral injury addressed revenge, betrayal, mistrust, and anger. In contrast, items that assessed self-directed moral injury focused on shame, guilt, and believing they are not worthy of love or unforgiveable. Bryan et al. (2014) found that, compared with morally injurious transgressions they committed, morally injurious behaviors committed by others showed a larger difference between military personnel who had made a suicide attempt. They argued that psychological distress incurred from witnessing others' immoral acts and the consequences of these acts for oneself may be especially critical to suicide attempts.

More globally, whereas additional research is needed to replicate these findings, it is possible that transgressions that the veteran has perpetrated may be more difficult to discuss with members of their social support system. However, it is also possible that these discussions may not alleviate the emotional distress veterans experience when they were the perpetrators of the transgressive act. For this reason, high levels of social connectedness alone may not be enough to buffer the associations between self-directed moral injury and suicidality. Likewise, high mindfulness relative to other veterans who have self-directed moral injury may not be enough to attenuate the self-directed moral injury-suicidality link.

The finding that, at higher levels of overidentification, the association between moral injury and suicidality strengthened, supports the view that veterans who overidentify with their failings and shortcomings (e.g., "When I'm feeling down I tend to obsess and fixate on everything that's wrong") and even may obsess or ruminate over negative events in their lives, may exacerbate the self-directed moral injury-suicidality link. Previous research (Hamrick, Kelley, & Bravo, 2019) found the indirect effect between Atrocities of War (i.e., seeing the death of a civilian, killing a combatant) to suicidality via moral injury was stronger among community veterans who reported higher levels of rumination. Thus, veterans who are high on overidentification may obsess over negative experiences, some of which may be self-directed moral injury, which may strengthen the relationship between self-directed moral injury and suicidality.

Three of the self-compassion subscales (i.e., common humanity, self-kindness, and self-judgment) did not significantly moderate the self-directed/other-directed moral injury-suicidality link. Although these three self-compassion scales might be expected to moderate the moral injury-suicidality link, it is difficult to know why this assumption was not supported in the present study. It is possible that this study lacked the statistical power to detect these effects (see McClelland & Judd, 1993). Alternatively, it is possible that these variables do not conceptually hinder or amplify the strong link between moral injury and

suicidality among veterans. For example, in the case of common humanity, merely understanding that negative moral emotions or moral injury are shared with others (i.e., common humanity), does not change the underlying transgression or one's beliefs about the event. As such, the veteran may continue to experience self-directed or other-directed moral injury and, in some cases, suicidality. Taken together, future research is needed to better clarify the associations between these three self-compassion scales, moral injury, and suicidality.

Limitations

The results must be interpreted in the context of several limitations. In terms of generalizability, 35.9% of recent-era veterans have one or more service-connected disabilities (U.S. Department of Veterans Affairs, 2018b). In the present study, all veterans had combat injuries, with the average veteran having a 90% total VA disability rating. Furthermore, our sample was comprised mainly of White male veterans, with most having been injured in recent wars. In addition, this was a cross-sectional study, which limits causal inferences. As a result, these findings may not generalize to veterans not injured in combat, women, and veterans from previous eras. Also, we were underpowered to test for sex or race differences. In addition, our findings are dependent on veterans' ability and willingness to remember and report moral injury experiences and suicidality as well as variables that may moderate moral injury-suicidality associations. Also, mental health symptoms (including those prior to military service) and other variables not examined may contribute to suicidality. Clearly, future research should follow up more diverse veterans over the course of a combat deployment to better understand the course of moral injury development and mental health outcomes. Finally, other measures exist that specifically assess thwarted belongingness (i.e., lack of social connectedness; e.g., Interpersonal Needs Questionnaire; Van Orden, Cukrowicz, Witte, & Joiner, 2012) and mindfulness (e.g., Five Facet Mindfulness Questionnaire; Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006), and future research should test the robustness of our associations using different mindfulness and thwarted belongingness measures.

Conclusions

Despite study limitations, results of this investigation extend our understanding of risk and protective factors that may strengthen or weaken the association between moral injury and suicidality. Specifically, the association between self-directed moral injury and suicidality strengthened at higher levels of overidentification, whereas the association between other-directed moral injury and suicidality weakened at higher levels of mindfulness and social connectedness. Our results are preliminary, and additional research is needed both with combat-wounded veterans and other groups that may be expected to have associations between self-directed and other-directed moral injury and suicidality. Given the critical need to understand variables that may buffer or strengthen the moral injury-suicidality association, we encourage investigators to further pinpoint variables that may impact this association.

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Clinical Impact Satatement

Experiences in combat may violate one's deeply held belief systems. For some service members, these violations may result in inner conflict. We examined variables that may increase risk for or reduce risk, that is, buffer the association between moral injury and suicidality. High levels of mindfulness and social connectedness reduced the association between moral injury and suicidality, whereas overidentifying, that is, identifying strongly with one's failures, strengthened the association between moral injury and suicidality. Mindfulness, social connectedness, and overidentification may be variables that mental health professionals should consider when working with veterans who have experienced moral injury and report suicidality.

Table 1

Bivariate Correlations Among Study Variables

Variables	1	2	3	4	5	6	7	8	9	10	11	*M*	*SD*
1. Self-directed MI	.94[a]											21.30	9.37
2. Other-directed MI	**.80**	.92[a]										21.49	8.41
3. Self-kindness	**−.40**	**−.36**	.78[a]									2.67	1.24
4. Self-judgment	**.46**	**.48**	**−.22**	.77[a]								3.37	1.46
5. Common humanity	**−.33**	**−.24**	**.73**	−.05	.74[a]							2.87	1.29
6. Mindfulness	**−.45**	**−.34**	**.65**	−.09	**−.61**	.74[a]						3.58	2.39
7. Overidentification	**.45**	**.48**	**−.33**	**.75**	**−.23**	**−.24**	.87[a]					3.44	1.26
8. Social connectedness	**−.47**	**−.52**	**.44**	**−.44**	**.38**	**.38**	**−.54**	.85[a]				12.15	6.06
9. Suicidality	**.52**	**.42**	**−.22**	**.49**	**−.21**	**−.18**	**.47**	**−.44**	.85[a]			9.02	4.11
10. Years in military	−.10	.00	.08	−.09	.05	.02	−.06	.08	−.05	—		12.78	7.81
11. Number of deployments months	.05	.08	−.09	.08	−.04	−.03	.12	−.18	.08	**.34**	—	20.71	16.21

MI = Moral injury. Significant associations are in bold typeface for emphasis and were determined by a 95% bias-corrected standardized bootstrapped confidence interval (based on 10,000 bootstrapped samples) that does not contain zero.

[a]Cronbach's alphas are shown on the diagonals.

Table 2

Moderation Effects of Self-Directed MI, Self-Compassion Subscales, and Social Connectedness on Suicidality

Predictors	Suicidality		
	β	95% CI	Model R^2
Self-directed MI	**.50**	**[.34, .69]**	**.279**
Self-kindness	−.02	[−.20, .14]	
Self-directed MI × SK	−.07	[−.28, .13]	
Effect of self-directed MI at low (1 *SD* below mean) SK	**.57**	**[.28, .87]**	
Effect of self-directed MI at low (1 *SD* below mean) SK	**.50**	**[.34, .69]**	
Effect of self-directed MI at high (1 *SD* above mean) SK	**.44**	**[.17, .64]**	
Self-directed MI	**.34**	**[.19, .51]**	**.384**
Self-judgment	**.31**	**[.16, .47]**	
Self-directed MI × SJ	.18	[−.02, .37]	
Effect of self-directed MI at low (1 *SD* below mean) SJ	.16	[−.06, .36]	
Effect of self-directed MI at low (1 *SD* below mean) SJ	**.34**	**[.19, .51]**	
Effect of self-directed MI at high (1 *SD* above mean) SJ	**.53**	**[.25, .81]**	
Self-directed MI	**.50**	**[.33, .69]**	**.275**
Common humanity	−.04	[−.20, .10]	
Self-Directed MI × CH	−.03	[−.20, .13]	
Effect of self-directed MI at low (1 *SD* below mean) CH	**.53**	**[.28, .80]**	
Effect of self-directed MI at low (1 *SD* below mean) CH	**.50**	**[.33, .69]**	
Effect of self-directed MI at high (1 *SD* above mean) CH	**.47**	**[.23, .68]**	
Self-directed MI	**.53**	**[.33, .75]**	**.281**
Mindfulness	.04	[.15, .22]	
Self-directed MI × MIFU	−.07	[−.28, .12]	
Effect of self-directed MI at low (1 *SD* below mean) MIFU	**.60**	**[.34, .89]**	
Effect of self-directed MI at low (1 *SD* below mean) MIFU	**.53**	**[.33, .75]**	
Effect of self-directed MI at high (1 *SD* above mean) MIFU	**.46**	**[.16, .75]**	
Self-directed MI	**.34**	**[.19, .50]**	.388
Overidentification	**.33**	**[.17, .50]**	
Self-directed MI × OI	**.22**	**[.01, .41]**	
Effect of self-directed MI at low (1 *SD* below mean) OI	.12	[−.13, .33]	
Effect of Self-directed MI at low (1 *SD* below mean) OI	**.34**	**[.19, .50]**	
Effect of self-directed MI at high (1 *SD* above mean) OI	**.56**	**[.28, .83]**	
Self-directed MI	**.39**	**[.19, .60]**	**.334**
Social connectedness	**−.28**	**[−.47, −.09]**	
Self-directed MI × SC	−.11	[−.31, .08]	
Effect of self-directed MI at low (1 *SD* below mean) SC	**.50**	**[.22, .80]**	
Effect of self-directed MI at low (1 *SD* below mean) SC	**.39**	**[.19, .60]**	
Effect of self-directed MI at high (1 *SD* above mean) SC	.27	[−.02, .54]	

MI = Moral injury; SK = self-kindness; SJ = self-judgment; CH = common humanity; MIFU = mindfulness;

OI = overidentification; SC = social connectedness. Significant effects are in bold typeface for emphasis and were determined by a 95% bias-corrected bootstrapped confidence interval (based on 10,000 bootstrapped samples) that does not contain zero. Effects of covariates (i.e., number of years in the military and number of months deployed) are not reported for parsimony but are available upon request.

Table 3

Moderation Effects of Other-Directed MI, Self-Compassion Subscales, and Social Connectedness on Suicidality

Predictors	Suicidality		
	β	95% CI	Model R^2
Other-directed MI	**.41**	**[.24, .60]**	**.198**
Self-kindness	−.07	[−.27, .09]	
Other-directed MI × SK	−.09	[−.30, .08]	
Effect of other-directed MI at low (1 *SD* below mean) SK	**.50**	**[.22, .80]**	
Effect of other-directed MI at low (1 *SD* below mean) SK	**.41**	**[.24, .60]**	
Effect of other-directed MI at high (1 *SD* above mean) SK	**.32**	**[.06, .51]**	
Other-directed MI	**.22**	**[.07, .36]**	**.306**
Self-judgment	**.37**	**[.20, .56]**	
Other-directed MI × SJ	.15	[−.02, .32]	
Effect of other-directed MI at low (1 *SD* below mean) SJ	.07	[−.12, .26]	
Effect of other-directed MI at low (1 *SD* below mean) SJ	**.22**	**[.07, .36]**	
Effect of other-directed MI at high (1 *SD* above mean) SJ	**.36**	**[.11, .62]**	
Other-directed MI	**.40**	**[.24, .57]**	**.204**
Common humanity	−.08	[−.26, .03]	
Other-directed MI × CH	−.09	[−.23, .05]	
Effect of other-directed MI at low (1 *SD* below mean) CH	**.48**	**[.26, .74]**	
Effect of other-directed MI at low (1 *SD* below mean) CH	**.40**	**[.24, .57]**	
Effect of other-directed MI at high (1 *SD* above mean) CH	**.31**	**[.12, .51]**	
Other-directed MI	**.40**	**[.25, .59]**	**.209**
Mindfulness	−.06	[−.21, .07]	
Other-directed MI × MIFU	**−.16**	**[−.34, −.001]**	
Effect of other-directed MI at low (1 *SD* below mean) MIFU	**.56**	**[.33, .83]**	
Effect of other-directed MI at low (1 *SD* below mean) MIFU	**.40**	**[.25, .59]**	
Effect of other-directed MI at high (1 *SD* above mean) MIFU	**.25**	**[.02, .47]**	
Other-directed MI	**.23**	**[.08, .38]**	**.296**
Overidentification	**.37**	**[.19, .57]**	
Other-directed MI × OI	.15	[−.02, .33]	
Effect of other-directed MI at low (1 *SD* below mean) OI	.09	[−.12, .27]	
Effect of other-directed MI at low (1 *SD* below mean) OI	**.23**	**[.08, .38]**	
Effect of other-directed MI at high (1 *SD* above mean) OI	**.38**	**[.11, .64]**	
Other-directed MI	**.27**	**[.11, .46]**	**.281**
Social connectedness	**-.32**	**[−.48, −.15]**	
Other-directed MI × SC	**−.17**	**[−.36, −.03]**	
Effect of other-directed MI at low (1 *SD* below mean) SC	**.44**	**[.20, .75]**	
Effect of other-directed MI at low (1 *SD* below mean) SC	**.27**	**[.11, .46]**	
Effect of Other-Directed MI at high (1 *SD* above mean) SC	.10	[−.13, .29]	

MI = Moral injury; SK = self-kindness; SJ = self-judgment; CH = common humanity; MIFU = mindfulness;

OI = overidentification; SC = social connectedness. Significant effects are in bold typeface for emphasis and were determined by a 95% bias-corrected bootstrapped confidence interval (based on 10,000 bootstrapped samples) that does not contain zero. Effects of covariates (i.e., number of years in the military and number of months deployed) are not reported for parsimony but are available upon request.