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ADVANCING SCIENCE AND PROMOTING UNDERSTANDING OF TRAUMATIC STRESS

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Moral Injury

Over the past decade, the concept of moral injury has garnered a great deal of attention from Veterans, clinicians, researchers, and the general public. The concept resonates with many because it captures the emotional and spiritual pain that can occur when deeply held values are violated. Yet, there is a great deal of work to do to understand the underpinnings of moral injury and how to best identify, measure, and effectively intervene to improve its core emotional, cognitive, and behavioral symptoms. Below we summarize what we know about moral injury and identify critical areas for further research.

Definition and Model

There is currently no consensus definition or conceptual model of moral injury. The most frequently used definition and model was proposed by Litz and colleagues (2009) who stated that moral injury is “perpetrating, failing to prevent, bearing witness to, or learning about acts that transgress deeply held moral beliefs and expectations” about the rules or codes of conduct. Further, they proposed that for moral injury to occur, individuals must experience a potentially morally injurious event (PMIE) that is perceived as a transgression of deeply held morals or values. PMIEs can involve acts of commission which are doing something that goes against values like killing; acts of omission that are failing to do something in line with values; or witnessing or learning about acts that are immoral. Moral injury is the resulting psychological, behavioral, social and sometimes spiritual distress and associated hallmark symptoms such as guilt, shame, anger, and/or disgust. Moral injury is also characterized by an inability to self-forgive, engagement in self-sabotaging behaviors, and

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elevated suicide risk. Some have argued that betrayal is also part of the moral injury construct, particularly by leadership in a high stakes situation such as combat (Shay, 2014), while others postulate that betrayal should be considered a separate construct or an associated symptom of moral injury.

Assessment

Moral injury measures have thus far been primarily validated with Veterans and ask about PMIEs that may occur in the context of war. The measures generally assess *either* exposure to PMIEs *or* moral injury symptoms (e.g., guilt), sometimes without clearly indexing to specific PMIEs. These measures do not have validated cut scores for either items or the entire scale, and moral injury is measured by creating a sum score. It is unclear if existing measures are valid to measure change over time or treatment, as most measurement studies are cross sectional. There are measures currently under development that will fill some of the gaps in the currently available measures. The most widely used and first measure for moral injury assessment, the Moral Injury Events Scale (MIES; Nash et al., 2013), assesses exposure to PMIEs related to perpetration (omission and commission), witnessing, and betrayal, and asks whether individuals are troubled by these exposures as a proxy for distress.

Prevalence

The few studies that have looked at prevalence rates of moral injury have focused on Veterans and almost all used the MIES. A study of United States (US) combat Veterans using data from the National Health and Resilience in Veterans Study (NHRVS;

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2013 data collection) found that overall 41.8% of Veterans endorsed at least one form of moral injury (Wisco et al., 2017). A total of 10.8% of all-era combat Veterans endorsed transgressions by self, 25.5% transgressions by others, and 25.5% betrayal. A subsequent study of all-era combat Veterans similarly found 36.8% endorsed any moral injury, 11.2% endorsed transgressions by self, 23.1% endorsed transgression by others, and 24.5% endorsed betrayal (Nichter et al., 2021). Maguen and colleagues (2020a) examined PMIEs in a national sample of post-9/11 Veterans and found that 55.4% of Veterans reported any PMIE exposure. Veterans endorsed exposures stemming from perpetration (18.8%), witnessing (27.9%) and betrayal (41.1%). This was the first study to examine gender differences in PMIE exposures. Women more frequently reported witnessing and betrayal PMIEs, but no gender differences were observed for perpetration PMIEs. Finally, a study with the Canadian Armed Forces (CAF) estimated the prevalence of PMIEs among personnel deployed to Afghanistan at 65% (Hansen et al., 2021).

Moral Injury and Mental Health

Exposure to PMIEs is associated with greater severity of mental health problems including posttraumatic stress disorder (PTSD) and depression, increased prevalence of substance use disorders (SUDs), and elevated suicide risk (Bryan et al., 2018; Wisco et al., 2017; Nichter et al., 2021). Specific types of moral injury are often differentially associated with these outcomes. For example, in a nationally representative sample of Veterans, perpetration was associated with higher odds of lifetime alcohol use disorder (AUD) and lifetime SUDs, while witnessing was associated with higher odds of past-year drug use disorder (DUD) and past-year SUD, and betrayal was associated with higher odds of past-year AUD (Maguen et al., 2021).

There is debate about whether moral injury is a unique construct, or whether moral injury is a subtype of PTSD given that the two frequently co-occur (Griffin et al., 2019), have overlap in symptoms and associated features (e.g., shame, guilt), and require exposure to precede symptom development. In a study of 930 National Guard personnel (58% had previously deployed), a PTSD factor included startle, memory loss, and flashbacks; a moral injury factor included sorrow, regret, shame, and alienation; and some shared symptoms included anger and nightmares (Bryan et al., 2018). An functional magnetic resonance imaging (fMRI) study with 26 Veterans found that PTSD symptom severity and MIES scores were associated with different brain responses (Sun et al., 2019). For example, amplitude of low frequency fluctuation (ALFF) in the left inferior parietal lobule (L-IPL) was positively associated with MIES-perpetration and witnessing, negatively associated with MIES-betrayal, and had no relationship with PTSD symptoms. In another study, moral injury by perpetration was associated with worsening relationship, health, and work functioning over an 18-month period while PTSD was not (Maguen et al., 2020b). While there are clearly overlapping features with PTSD, these studies suggest that moral injury also captures unique neurobiological, emotional, and functional experiences.

Promising Treatments

A pressing question is how to effectively treat moral injury. Considerations include whether treatments for common co-occurring diagnoses like PTSD and major depressive disorder (MDD)

can effectively reduce moral injury and whether these treatments are still effective for these diagnoses when moral injury is present. Because validated moral injury change measures are lacking, it is not possible to evaluate the efficacy of existing treatments on moral injury symptoms. The closest proxy are studies examining reductions in trauma-related guilt over the course of PTSD evidence-based psychotherapy (EBP) as guilt is a core feature of moral injury. Two recent randomized controlled trials (RCTs) found that guilt was reduced over the course of Prolonged Exposure (PE) (Allard et al., 2021; Capone et al., 2020). Through case examples, authors have proposed strategies for addressing moral injury in the context of PTSD EBPs, including using imaginal exposure in PE to help contextualize the PMIE and challenging stuck points in Cognitive Processing Therapy (CPT; Held et al., 2018).

Several specific interventions for moral injury are under investigation. Farnsworth and colleagues (2017) are investigating Acceptance and Commitment Therapy (ACT), which they propose reduces moral injury by helping patients develop a nonjudgmental stance toward distressing internal experiences and participate in behaviors that align with important values. Adaptive Disclosure (AD); Gray et al., 2012) focuses on strategies that are consistent with military culture to promote self-forgiveness, compassion and reparative action. Impact of Killing (IOK) is a cognitive behavioral intervention focused on moral injury from killing others in combat (Maguen et al., 2017). Key themes include physiology of killing responses, moral injury, self-forgiveness, spirituality, making amends, and maintaining functional gains. Trauma Informed Guilt Reduction (TriGR) Therapy helps patients accurately appraise their role in PMIEs and reengage in valued activities (Norman et al., 2014). Building Spiritual Strength (BSS; Harris et al., 2011) is designed to address the spiritual strain of moral injury and enhance religious meaning making. Small pre-post or pilot RCT studies of these novel interventions have generally examined change in PTSD symptoms as their primary outcome and found significant reductions from pre to post-treatment. Most have powered RCTs underway examining a broader range of symptoms and functional outcomes, ensuring that more information on the best ways to help improve moral injury will soon be available.

Directions for Future

Further empirical research is needed in specific areas to fill critical gaps. Through this call to action, we encourage research in the following domains to advance our understanding of moral injury:

1. Consensus definition

One critical need is a consensus definition to help crystalize the concept of moral injury and ensure studies are comparable and replicable. At this time, not only is there no consensus definition, but there are similar terms, such as moral distress and moral pain that are sometimes used interchangeably with moral injury. We suggest that these terms also should be clearly defined within a larger context that considers the range of moral emotions. We propose that moral distress is the negative emotional reaction to PMIEs, moral pain is the internal conflict and discomfort in response to the transgression that occurred during the PMIE, and moral injury is the long lasting psychological, behavioral and sometimes spiritual pain and disruption that comes from this exposure.

2. Empirical evaluation of the conceptual model

Many of the conceptualized aspects of moral injury have yet to be evaluated empirically. We suggest evaluating the Litz et al (2009) proposed model as it empirically grounded and testable and offers a comprehensive framework starting from exposure to PMIEs and including a cascade of specific emotional and behavioral responses that follow. An example of a component that needs to be empirically evaluated is self-harming and self-sabotaging behavior. It is proposed that the moral transgression and accompanying shame and guilt have led to beliefs that the person does not deserve to feel better or to do well in life, which in turn contribute to engaging in self-harming and self-sabotaging behaviors. Examples of such behaviors include substance abuse, withdrawing from relationships, dropping out of treatment, and, in the worst case, suicide. While there has been some work on self-harming behaviors, primarily on suicide-related behaviors, a recent study suggests the relationships between different types of moral injury and suicide-related behaviors is quite nuanced (Nichter et al, 2021) and more studies are needed to examine moral injury as a risk-factor for suicide.

Other examples include guilt and shame which are conceptualized as core features of moral injury (Litz et al., 2009; Griffin et al., 2019). Similar to moral injury, trauma-related guilt has positive relationships to PTSD and depression symptoms (Browne et al., 2015), suicidal ideation (SI; Bryan et al., 2013), and functional difficulties (Norman et al, 2018), suggesting the concepts may have significant overlap, but the contribution of guilt to moral injury has not yet been empirically examined, separate from PTSD. Similarly, empirical work is needed to understand the contributions of shame and demoralization to moral injury and the role of self-forgiveness in recovery.

3. Measurement tools developed using a consensus definition

The state of moral injury assessments is the biggest barrier to more robust moral injury research. The ideal measurement of moral injury would include both an assessment of PMIE exposure and of moral emotions, cognitions, and behavioral consequences of these exposures that are grounded in a theoretical model. Establishing this type of a gold-standard outcome measure will ensure that its measurement will be standardized, most ideally across populations. If this type of measure is clinically administered, the clinician can verify that exposure to PMIEs occurred and that all responses are anchored to these events. Assessments validated to measure change are needed so it is possible to evaluate whether existing and novel treatments are effective to reduce moral injury. In the meantime, investigators are left using proxy outcomes such as PTSD symptoms or guilt. Existing validated measures asking primarily about military PMIEs detract from understanding prevalence and correlates of moral injury in other populations. For example, numerous editorials speculated that moral injury would be high among healthcare workers during the pandemic, but lack of appropriate measures limits our ability to support these speculations with data. Measures that better differentiate the PMIE from the response to the PMIE, can measure change, and are applicable across populations are under development.

4. Unique aspects and mechanisms

Because moral injury is not a diagnosis and because questions still exist about whether moral injury is part of or separate from PTSD, more research to understand areas of distinction and overlap with PTSD is needed to better identify and treat moral injury. Data regarding how often PTSD and moral injury are caused by the same event would be informative, as well as data on how often moral injury occurs with and independently of PTSD. Further studies examining differences in neurobiological responses to moral injury and PTSD, studies of mechanisms, and studies of the spiritual aspects of moral injury (Wortman et al., 2017) would help clarify differences between the two as well as elucidate the unique aspects of moral injury.

5. Longitudinal studies of course and associated factors

Most research on moral injury has been cross sectional. A critical need for prevention and intervention efforts is to understand the development and trajectories of moral injury over time as well as factors associated with these trajectories. One potential progression from PMIE to moral injury may be that many experience moral distress in the short-term aftermath of a PMIE, but that for most this distress will resolve on its own. For some however, this distress will continue and evolve into moral injury with the associated negative psychological correlates (e.g., Norman et al., 2021). Regarding risk factors, one study showed that adverse childhood emotional abuse increased risk for endorsing moral injury following military service (Battaglia et al., 2019). While this provides some indication that risk factors across the lifespan are important, further work is needed to understand risk factors for different trajectories, particularly for those with chronic and unresolving moral injury.

6. Distinguish between witnessing, perpetration, and betrayal

Studies suggest that the type of moral injury exposure may be an important driver of symptoms and functioning (Maguen et al., 2020b). More studies examining exposure types are needed, including studies taking gender into account, given that women may have poorer outcomes with particular PMIEs. There is also a need to better understand how other identity factors may drive responses to different types of PMIEs, particularly individuals exposed to race-based or other identity-based traumas. Additionally, more research is needed to understand whether betrayal exposures should be considered part of moral injury, part of PTSD, or as a separate construct. One study found that those who reported betrayal reported more posttraumatic symptoms associated with moral injury such as guilt-related cognitions than those who did not endorse betrayal (Zerach et al., 2021). Grouping betrayal with moral injury without strong empirical or conceptual reasons for doing so risks diminishing the study of betrayal trauma as a unique adverse experience with its own psychopathological trajectories.

7. Moral injury in the general population

There is a dearth of moral injury research in high-risk groups outside of the Veteran population. A small number of studies including healthcare professionals (e.g., Hines et al., 2021), first

responders (Lentz et al., 2021), professionals and parents involved in child protective services (CPS; Haight et al., 2017), and refugees (Hoffman et al., 2019) suggest that moral injury is in fact prevalent in these populations. Validated measures that can be used across PMIE types and populations (i.e., not limited to military events or Veterans) will allow us to understand the full scope of prevalence and impacts of moral injury.

Featured Articles

Allard, C. B., Norman, S. B., Straus, E., Kim, H. M., Stein, M. B., Simon, N. M., & Rauch, S. A. M. (2021). **Reductions in guilt cognitions following prolonged exposure and/or sertraline predict subsequent improvements in PTSD and depression.** *Journal of Behavior Therapy and Experimental Psychiatry, 73*, 101666. doi:10.1016/j.jbtep.2021.101666 *Background and objectives:* Reduction of trauma related negative cognitions, such as guilt, is thought to be a mechanism of change within PTSD treatments like PE. Research suggests PE can directly address guilt cognitions. However, whether pharmacotherapies for PTSD can remain unclear. *Methods:* Data from a randomized controlled trial of PE plus placebo (PE + PLB), sertraline plus enhanced medication management (SERT + EMM), and their combination (PE + SERT) in 195 Veterans from recent wars was analyzed. *Results:* The unadjusted means and mixed-effects model showed guilt decreased significantly over the follow-up time as expected; however, contrary to our hypothesis, PE conditions were not associated with greater reductions in guilt than the SERT + EMM condition. As hypothesized, week 12 reduction in guilt predicted post-treatment (weeks 24-52) reduction in PTSD and depression, but not impairments in function. *Limitations:* Generalizability of findings is limited by the sample being comprised of combat Veterans who were predominantly male, not on selective serotonin reuptake inhibitors (SSRI) at study entry, willing to be randomized to therapy or medication, and reporting low levels of guilt. To reduce differences in provider attention, SERT + EMM was administered over 30 min to include psychoeducation and active listening; it is unknown if this contributed to effects on guilt. *Conclusions:* PE + PLB, SERT + EMM, and PE + SERT were equally associated with reduction in trauma related guilt. Reducing trauma related guilt may be a pathway to reducing PTSD and posttraumatic depression symptoms. Further study is needed to determine how best to treat trauma related guilt and to understand the mechanisms by which guilt improves across different treatments for PTSD.

Bryan, C. J., Bryan, A. O., Roberge, E., Leifker, F. R., & Rozek, D. C. (2018). **Moral injury, posttraumatic stress disorder, and suicidal behavior among National Guard personnel.** *Psychological Trauma: Theory, Research, Practice, and Policy, 10*(1), 36–45. doi:10.1037/tra0000290 *Objective:* To empirically examine similarities and differences in the signs and symptoms of PTSD and moral injury and to determine if the combination of these 2 constructs is associated with increased risk for suicidal thoughts and behaviors in a sample of US National Guard personnel. *Method:* 930 National Guard personnel from the states of Utah and Idaho completed an anonymous online survey. Exploratory structural equation modeling (ESEM) was used to test a measurement model of PTSD and moral injury. A structural model was next constructed to test the interactive effects of PTSD and moral injury on history of suicide ideation and attempts. *Results:* Results of the ESEM confirmed that PTSD and moral injury were distinct constructs characterized by unique

symptoms, although depressed mood loaded onto both PTSD and moral injury. The interaction of PTSD and moral injury was associated with significantly increased risk for suicide ideation and attempts. A sensitivity analysis indicated the interaction remained a statistically significant predictor of suicide attempt even among the subgroup of participants with a history of suicide ideation. *Conclusion:* PTSD and moral injury represent separate constructs with unique signs and symptoms. The combination of PTSD and moral injury confers increased risk for suicidal thoughts and behaviors and differentiates between military personnel who have attempted suicide and those who have only thought about suicide.

Farnsworth, J. K., Drescher, K. D., Evans, W., & Walser, R. D. (2017). **A functional approach to understanding and treating military-related moral injury.** *Journal of Contextual Behavioral Science, 6*, 391–397. doi:10.1016/j.jcbs.2017.07.003 The term moral injury has been coined to describe the suffering that may develop following a violation of deeply held moral beliefs and values and subsequent difficulties in functioning. Yet despite an increase in research and intervention approaches for this topic, the relationship between moral injury and mental health diagnoses such as PTSD remains unclear and concern exists that, in some cases, moral injury might be used to unnecessarily pathologize moral processes. With the goal of further refining the construct, we argue that moral injury is a condition distinct from PTSD and other disorders and, using a functional approach, propose enhanced definitions for the terms, morally injurious event, moral pain, moral injury, and moral healing. Consistent with these new definitions, we then argue for ACT as a feasible and promising treatment for moral injury and present initial qualitative data supporting the intervention.

Gray, M. J., Schorr, Y., Nash, W., Lebowitz, L., Amidon, A., Lansing, A., Maglione, M., Lang, A. J., & Litz, B. T. (2012). **Adaptive disclosure: An open trial of a novel exposure-based psychological stress injuries.** *Behavior Therapy, 43*, 407–415. doi:10.1016/j.beth.2011.09.001 We evaluated the preliminary effectiveness of a novel intervention that was developed to address combat stress injuries in active-duty military personnel. AD is relatively brief to accommodate the busy schedules of active-duty service members while training for future deployments. Further, AD takes into account unique aspects of the phenomenology of military service in war in order to address difficulties such as moral injury and traumatic loss that may not receive adequate and explicit attention by conventional treatments that primarily address fear-inducing life-threatening experiences and sequelae. In this program development and evaluation open trial, 44 marines received AD while in garrison. It was well tolerated and, despite the brief treatment duration, promoted significant reductions in PTSD, depression, negative posttraumatic appraisals, and was also associated with increases in posttraumatic growth.

Haight, W., Sugrue, E., Calhoun, M., & Black, J. (2017). **Everyday coping with moral injury: The perspectives of professionals and parents involved with child protection services.** *Children and Youth Services Review, 82*, 108–121. doi:10.1016/j.childyouth.2017.09.025 This qualitative moral injury study included CPS involved professional ($N = 38$) and parents ($N = 10$). The majority (35 professionals and 8 parents endorsed moral injury) and were interviewed about their experiences and coping; coping themes included: utilizing psychological resources

(e.g., stress reducing and meaning-making activities; self-reflection; and forgiveness), social support, engagement in advocacy and programs to support others, and spiritual engagement.

Hansen, K. T., Nelson, C. G., & Kirkwood, K. (2021). **Prevalence of potentially morally injurious events in operationally deployed Canadian Armed Forces members.** *Journal of Traumatic Stress, 34*, 764–772. doi:10.1002/jts.22710 As moral injury is a still-emerging concept within the area of military mental health, prevalence estimates for moral injury and its precursor, PMIEs, remain unknown for many of the world's militaries. The present study sought to estimate the prevalence of PMIEs in the CAF, using data collected from CAF personnel deployed to Afghanistan, via logistic regressions controlling for relevant sociodemographic, military, and deployment characteristics. Analyses revealed that over 65% of CAF members reported exposure to at least one event that would be considered a PMIE. The most commonly PMIEs individuals reported included seeing ill or injured women and children they were unable to help (48.4%), being unable to distinguish between combatants and noncombatants (43.6%) and finding themselves in a threatening situation where they were unable to respond due to the rules of engagement under which they were required to operate (35.4%). These findings provide support for both the presence of exposure to PMIEs in CAF members and the need for formal longitudinal data collection regarding PMIE exposure and moral injury development.

Harris, J. I., Erbes, C. R., Engdahl, B. E., Thuras, P., Murray-Swank, N., Grace, D., Ogden, H., Olson, R. H. A., Winskowski, A. M., Bacon, R., Malec, C., Campion, K., & Le, T. (2011). **The effectiveness of a trauma focused spiritually integrated intervention for veterans exposed to trauma.** *Journal of Clinical Psychology, 67*(4), 425–438. doi:10.1002/jclp.20777 BSS is an 8-session, spiritually integrated group intervention designed to address religious strain and enhance religious meaning making for military trauma survivors. It is based upon empirical research on the relationship between spirituality and adjustment to trauma. To assess the intervention's effectiveness, Veterans with histories of trauma who volunteered for the study were randomly assigned to a BSS group ($n = 26$) or a wait-list control group ($n = 28$). BSS participants showed statistically significant reductions in PTSD symptoms based on self-report measures as compared with those in a wait-list control condition. Further research on spiritually integrated interventions for trauma survivors is warranted.

Held, P., Klassen, B. J., Brennan, M. B., & Zalta, A. K. (2018). **Using prolonged exposure and cognitive processing therapy to treat veterans with moral injury-based PTSD: Two case examples.** *Cognitive and Behavioral Practice, 25*, 377–390. doi:10.1016/j.cbpra.2017.09.003 Moral injury refers to acts of commission or omission that violate individuals' moral or ethical standards. Morally injurious events are often synonymous with psychological trauma, especially in combat situations; thus, morally injurious events are often implicated in the development of PTSD for military service members and Veterans. Although PE and CPT have been well-established as effective treatments for Veterans who are struggling with PTSD, it has been suggested that these two evidence-based therapies may not be sufficient for treating Veterans whose PTSD resulted from morally injurious events. The purpose of

this manuscript is to detail how the underlying theories of PE and CPT can account for moral-injury based PTSD and to describe two case examples of Veterans with PTSD stemming from morally injurious events who were successfully treated with PE and CPT. The manuscript concludes with a summary of challenges that clinicians may face when treating Veterans with PTSD resulting from moral injury using either PE or CPT.

Litz, B. T., Stein, N., Delaney, E., Lebowitz, L., Nash, W. P., Silva, C., & Maguen, S. (2009). **Moral injury and moral repair in war veterans: A preliminary model and intervention strategy.** *Clinical Psychology Review, 29*, 695–706. doi:10.1016/j.cpr.2009.07.003 Throughout history, warriors have been confronted with moral and ethical challenges and modern unconventional and guerilla wars amplify these challenges. Potentially morally injurious events, such as perpetrating, failing to prevent, or bearing witness to acts that transgress deeply held moral beliefs and expectations may be deleterious in the long-term, emotionally, psychologically, behaviorally, spiritually, and socially (what we label as moral injury). Although there has been some research on the consequences of unnecessary acts of violence in war zones, the lasting impact of morally injurious experience in war remains chiefly unaddressed. To stimulate a critical examination of moral injury, we review the available literature, define terms, and offer a working conceptual framework and a set of intervention strategies designed to repair moral injury.

Maguen, S., Burkman, K., Madden, E., Dinh, J., Bosch, J., Keyser, J., Schmitz, M., & Neylan, T. C. (2017). **Impact of killing in war: A randomized, controlled pilot trial.** *Journal of Clinical Psychology, 73*(9), 997–1012. doi:10.1002/jclp.22471 *Objective:* The purpose of this pilot study was to test the effectiveness of IOK, a novel, cognitive-behavioral treatment (CBT) aimed at reducing mental health symptoms and functional impairment. *Method:* Participants were 33 combat Veterans with a PTSD diagnosis who had completed trauma-focused psychotherapy and reported distress regarding killing or feeling responsible for the deaths of others in war. Veterans were randomized to either IOK treatment or a 6-week waitlist condition, after which Veterans could receive IOK. IOK is a 6- to 8-session, weekly, individual, CBT, lasting 60-90 minutes, and focused on key themes, including physiology of killing responses, moral injury, self-forgiveness, spirituality, making amends, and improved functioning. *Results:* We found that compared to controls ($N = 16$), the IOK group ($N = 17$) experienced a significant improvement in PTSD symptoms, general psychiatric symptoms, and quality of life functional measures. Veterans who received IOK reported that the treatment was acceptable and feasible. *Conclusion:* These results provide preliminary evidence that Veterans can benefit from a treatment focused on the IOK after initial trauma therapy

Maguen, S., Griffin, B. J., Copeland, L. A., Perkins, D. F., Finley, E. P., & Vogt, D. (2020a). **Gender differences in prevalence and outcomes of exposure to potentially morally injurious events among post-9/11 veterans.** *Journal of Psychiatric Research, 130*, 97–103. doi:10.1016/j.jpsychires.2020.06.020 Our goal was to identify gender differences in the prevalence and outcomes of exposure to PMIEs in a sample of US military Veterans. In a

national sample of post-9/11 Veterans ($n = 7200$) weighted to reflect the larger population of newly separated US Veterans, we conducted gender-stratified analyses of the prevalence of exposure to PMIEs and their associations with psychological and functional problems. Veterans reported exposures stemming from witnessing (27.9%), perpetrating (18.8%), and being betrayed (41.1%). Women more frequently reported witnessing- and betrayal-based PMIEs, but no gender differences were observed for perpetration-based PMIEs. Psychological distress was associated with witnessing and betrayal among women and with witnessing, betrayal, and perpetration among men. Whereas betrayal was most consistently associated with functional impairment across domains for women, perpetration was most consistently associated with functional impairment for men. Moral injury contributes to psychological and functional problems among a significant minority of military Veterans, although effects vary based on PMIE type and gender. Implications for Veterans and other populations who experience moral injury are discussed.

Maguen, S., Griffin, B. J., Copeland, L. A., Perkins, D. F., Richardson, C. B., Finley, E. P., & Vogt, D. (2020b). **Trajectories of functioning in a population-based sample of veterans: Contributions of moral injury, PTSD, and depression.**

Psychological Medicine, 1–10. doi:10.1017/S0033291720004249
Background: Although research has shown that exposure to potentially traumatic and morally injurious events is associated with psychological symptoms among Veterans, knowledge regarding functioning impacts remains limited. *Methods:* A population-based sample of post-9/11 Veterans completed measures of intimate relationship, health, and work functioning at approximately 9, 15, 21, and 27 months after leaving service. Moral injury, posttraumatic stress, and depression were assessed at ~9 months post-separation. We used Latent Growth Mixture Models to identify discrete classes characterized by unique trajectories of change in functioning over time and to examine predictors of class membership. *Results:* Veterans were assigned to one of four functioning trajectories: high and stable, high and decreasing, moderate and increasing, and moderate and stable. Whereas posttraumatic stress, depression, and moral injury associated with perpetration and betrayal predicted worse outcomes at baseline across multiple functioning domains, moral injury associated with perpetration and depression most reliably predicted assignment to trajectories characterized by relatively poor or declining functioning. *Conclusions:* Moral injury contributes to functional problems beyond what is explained by posttraumatic stress and depression, and moral injury due to perpetration and depression most reliably predicted assignment to trajectories characterized by functional impairment over time.

Maguen, S., Nichter, B., Norman, S. B., & Pietrzak, R. H. (2021). **Moral injury and substance use disorders among US combat veterans: Results from the 2019–2020 National Health and Resilience in Veterans Study.** *Psychological Medicine*, 1–7. doi:10.1017/S0033291721002919 *Background:* Exposure to potentially morally injurious events (PMIEs) is associated with increased risk for SUDs, although population-based studies remain limited. The goal of this study was to better understand the relationships between PMIE exposure and lifetime and past-year

AUD, DUD, and SUD. *Methods:* Data were analyzed from the 2019-2020 National Health and Resilience in Veterans Study, which surveyed a nationally representative sample of 1321 combat Veterans. Multivariable analyses examined associations between three types of PMIE exposure (perpetration, witnessing, and betrayal), and lifetime and past-year AUD, DUD, and SUD, adjusting for sociodemographic variables, combat exposure severity, prior trauma, and lifetime PTSD and major depressive disorder. *Results:* Perpetration was associated with increased odds of lifetime AUD (OR 1.15; 95% CI 1.01-1.31) and lifetime SUD (OR 1.18; 95% CI 1.03-1.35). Witnessing was associated with greater odds of past-year DUD (OR 1.20; 95% CI 1.04-1.38) and past-year SUD (OR 1.14; 95% CI 1.02-1.28). Betrayal was associated with past-year AUD (OR 1.20; 95% CI 1.03-1.39). A large proportion of the variance in past-year AUD was accounted for by betrayal (38.7%), while witnessing accounted for 25.8% of the variance in past-year DUD. *Conclusions:* Exposure to PMIEs may be a stronger contributor to SUDs among Veterans than previously known. These findings highlight the importance of targeted assessment and treatment of moral injury among Veterans with SUDs, as well as attending to specific types of morally injurious experiences when conceptualizing and planning care.

Nash, W. P., Marino Carper, T. L., Mills, M. A., Au, T., Goldsmith, A., & Litz, B. T. (2013). **Psychometric evaluation of the Moral Injury Events Scale.** *Military Medicine*, 178(6), 646–652.

doi:10.7205/MILMED-D-13-00017 Literature describing the phenomenology of the stress of combat suggests that war-zone experiences may lead to adverse psychological outcomes such as post-traumatic stress disorder not only because they expose persons to life threat and loss but also because they may contradict deeply held moral and ethical beliefs and expectations. We sought to develop and validate a measure of potentially morally injurious events as a necessary step toward studying moral injury as a possible adverse consequence of combat. We administered an 11-item, self-report MIES to active-duty Marines 1 week and 3 months following war-zone deployment. Two items were eliminated because of low item-total correlations. The remaining 9 items were subjected to an exploratory factor analysis, which revealed two latent factors that we labeled perceived transgressions and perceived betrayals; these were confirmed via confirmatory factor analysis on an independent sample. The overall MIES and its two subscales had favorable internal validity, and comparisons between the 1-week and 3-month data suggested good temporal stability. Initial discriminant and concurrent validity were also established. Future research directions were discussed.

Nichter, B., Norman, S. B., Maguen, S., & Pietrzak, R. H. (2021). **Moral injury and suicidal behavior among US combat veterans: Results from the 2019-2020 National Health and Resilience in Veterans Study.** *Depression and Anxiety*, 38, 606–614.

doi:10.1002/da.23145 *Background:* Recent research suggests that exposure to potentially morally injurious experiences (PMIEs) may be associated with increased risk for suicidal behavior among US combat Veterans, but population-based data on these associations are scarce. This study examined the association between PMIEs with current SI, lifetime suicide plans (SP), and suicide attempts (SA) in a contemporary, nationally representative sample of combat

Veterans. *Methods*: Data were analyzed from the 2019-2020 National Health and Resilience in Veterans Study, which surveyed a nationally representative sample of US combat Veterans ($n = 1,321$). PMIEs were assessed using the MIES. Multivariable logistic regression analyses were conducted to examine associations between MIES total scores and specific types of PMIEs with suicidal behavior. *Results*: 36.3% of Veterans reported at least one PMIE. Perceived transgressions by self, others, and betrayal were associated with SI, SP, and SA (odds ratios [ORs] = 1.21-1.27, all $ps < .05$), after adjusting for socio-demographic, trauma, and psychiatric characteristics. MIES total scores were significantly, albeit weakly, associated with SP (OR = 1.03, $p < .01$), but not SI/SA. Depression, PTSD, and age emerged as the strongest correlates of SI/SP/SA (14.9%-38.1% of explained variance), while PMIEs accounted for a comparatively modest amount of variance (3.3%-8.9%). *Conclusions*: Reports of potentially morally injurious experiences are prevalent among US combat Veterans, and associated with increased risk for suicidal behavior, above and beyond severity of combat exposure, PTSD, and depression. Implications for clinical practice and future research are discussed, including the need for methodological advancements in the measurement of moral injury.

Norman, S. B., Feingold, J. H., Kaye-Kauderer, H., Kaplan, C. A., Hurtado, A., Kachadourian, L., Feder, A., Murrough, J. W., Charney, D., Southwick, S. M., Ripp, J., Peccoralo, L., & Pietrzak, R. H. (2021). **Moral distress in frontline healthcare workers in the initial epicenter of the COVID-19 pandemic in the United States: Relationship to PTSD symptoms, burnout, and psychosocial functioning.** *Depression and Anxiety, 38*, 1007–1017.

[doi:10.1002/da.23205](https://doi.org/10.1002/da.23205) *Introduction*: Little is known about the relationship between moral distress and mental health problems. We examined moral distress in 2,579 frontline healthcare workers (FHCWs) caring for coronavirus disease 2019 (COVID-19) patients during the height of the spring 2020 pandemic surge in New York City. The goals of the study were to identify common dimensions of COVID-19 moral distress; and to examine the relationship between moral distress, and positive screen for COVID-19-related PTSD symptoms, burnout, and work and interpersonal functional difficulties. *Method*: Data were collected in spring 2020, through an anonymous survey delivered to a purposively selected sample of 6,026 FHCWs at Mount Sinai Hospital; 2,579 endorsed treating COVID-19 patients and provided complete survey responses. Physicians, house staff, nurses, physician assistants, social workers, chaplains, and clinical dietitians comprised the sample. *Results*: The majority of the sample (52.7%-87.8%) endorsed moral distress. Factor analyses revealed three dimensions of COVID-19 moral distress: negative impact on family, fear of infecting others, and work-related concerns. All three factors were significantly associated with severity and positive screen for COVID-19-related PTSD symptoms, burnout, and work and interpersonal difficulties. Relative importance analyses revealed that concerns about work competencies and personal relationships were most strongly related to all outcomes. *Conclusion*: Moral distress is prevalent in FHCWs and includes family-, infection-, and work-related concerns. Prevention and treatment efforts to address moral distress during the acute phase of potentially morally injurious events may help mitigate risk for PTSD, burnout, and functional difficulties.

Norman, S. B., Wilkins, K. C., Myers, U. S., & Allard, C. B. (2014). **Trauma informed guilt reduction therapy with combat veterans.** *Cognitive and Behavioral Practice, 21*, 78–88. [doi:10.1016/j.cbpra.2013.08.001](https://doi.org/10.1016/j.cbpra.2013.08.001) Guilt related to combat trauma is highly prevalent among Veterans returning from Iraq and Afghanistan. Trauma-related guilt has been associated with increased risk for posttraumatic psychopathology and poorer response to treatment. TrIGR therapy is a 4-module cognitive-behavioral psychotherapy designed to reduce guilt related to combat trauma. The goals of this study were to describe the key elements of TrIGR and report results of a pilot study with 10 recently deployed combat Veterans. Ten combat Veterans referred from a VA PTSD or mental health clinic completed TrIGR over 4 to 7 sessions. Nine Veterans completed the posttreatment assessment. This initial pilot suggests that TrIGR may help to reduce trauma-related guilt severity and associated distress. Changes in trauma-related guilt were highly correlated with reductions in PTSD and depression symptoms over the course of treatment, suggesting a possible mechanistic link with severity of posttraumatic psychopathology. TrIGR warrants further evaluation as an intervention for reducing guilt related to traumatic experiences in combat.

Sun, D., Phillips, R. D., Mulready, H. L., Zablonki, S. T., Turner, J. A., Turner, M. D., McClymond, K., Nieuwsma, J. A., & Morey, R. A. (2019). **Resting-state brain fluctuation and functional connectivity dissociate moral injury from posttraumatic stress disorder.** *Depression and Anxiety, 36*, 442–452. [doi:10.1002/da.22883](https://doi.org/10.1002/da.22883) Moral injury is closely associated with PTSD and characterized by disturbances in social and moral cognition. Little is known about the neural underpinnings of moral injury, and whether the neural correlates are different between moral injury and PTSD. A sample of 26 US military Veterans (two females: 28–55 years old) were investigated to determine how subjective appraisals of morally injurious events measured by Moral Injury Event Scale (MIES) and PTSD symptoms are differentially related to spontaneous fluctuations indexed by ALFF as well as functional connectivity during resting-state functional magnetic resonance imaging scanning. ALFF in the L-IPL was positively associated with MIES subscores of transgressions, negatively associated with subscores of betrayals, and not related with PTSD symptoms. Moreover, functional connectivity between the L-IPL and bilateral precuneus was positively related with PTSD symptoms and negatively related with MIES total scores. Our results provide the first evidence that morally injurious events and PTSD symptoms have dissociable neural underpinnings, and behaviorally distinct subcomponents of morally injurious events are different in neural responses. The findings increase our knowledge of the neural distinctions between moral injury and PTSD and may contribute to developing nosology and interventions for military Veterans afflicted by moral injury.

Wisco, B. E., Marx, B. P., May, C. L., Martini, B., Krystal, J. H., Southwick, S. M., & Pietrzak, R. H. (2017). **Moral injury in U.S. combat veterans: Results from the National Health and Resilience in Veterans Study.** *Depression and Anxiety, 34*, 340–347. [doi:10.1002/da.22614](https://doi.org/10.1002/da.22614) *Background*: Combat exposure is associated with increased risk of mental disorders and suicidality. Moral injury, or persistent effects of perpetrating or witnessing acts

that violate one's moral code, may contribute to mental health problems following military service. The pervasiveness of PMIEs among US combat Veterans, and what factors are associated with PMIEs in this population remains unknown. *Methods:* Data were analyzed from the NHRVS, a contemporary and nationally representative survey of a population-based sample of US Veterans, including 564 combat Veterans, collected September-October 2013. Types of PMIEs (transgressions by self, transgressions by others, and betrayal) were assessed using the MIES. Psychiatric and functional outcomes were assessed using established measures. *Results:* A total of 10.8% of combat Veterans acknowledged transgressions by self, 25.5% endorsed transgressions by others, and 25.5% endorsed betrayal. PMIEs were moderately positively associated with combat severity ($\beta = .23, P < .001$) and negatively associated with white race, college education, and higher income (β s = .11-.16, P s < .05). Transgressions by self were associated with current mental disorders ($OR = 1.65, P < .001$) and SI ($OR = 1.67, P < .001$); betrayal was associated with postdeployment SA ($OR = 1.99, P < .05$), even after conservative adjustment for covariates, including combat severity. *Conclusions:* A significant minority of US combat Veterans report PMIEs related to their military service. PMIEs are associated with risk for mental disorders and suicidality, even after adjustment for sociodemographic variables, trauma and combat exposure histories, and past psychiatric disorders.

Additional Articles:

Battaglia, A. M., Protopopescu, A., Boyd, J. E., Lloyd, C., Jetly, R., O'Connor, C., Hood, H. K., Navarov, A., Rhind, S. G., Lanus, R. A. & McKinnon, M. C. (2019). **The relation between adverse childhood experiences and moral injury in the Canadian Armed Forces.** *European Journal of Psychotraumatology, 10*, 1546084. [doi:10.1080/20008198.2018.1546084](https://doi.org/10.1080/20008198.2018.1546084) The goal of this study was to examine the relationship between adverse childhood experiences and moral injury among a small sample of 33 CAF admitted to an inpatient unit for trauma treatment. Childhood emotional abuse was associated with total moral injury score as well as with perceived transgressions and betrayal components of moral injury (but not with total PTSD symptom score) even after adjusting for age and gender.

Browne, K. C., Trim, R. S., Myers, U. S., & Norman, S. B. (2015). **Trauma-related guilt: Conceptual development and relationship with posttraumatic stress and depressive symptoms.** *Journal of Traumatic Stress, 28*, 134-141. [doi:10.1002/jts.21999](https://doi.org/10.1002/jts.21999) This study evaluated a theoretical model of trauma-related guilt that hypothesizes that emotional and physical distress related to trauma memories partially mediates the relationship between guilt cognitions and posttraumatic guilt using a sample of 149 combat Veterans who had served in Iraq or Afghanistan. Results of path analysis yielded a significant indirect effect from guilt cognitions to posttraumatic guilt via distress. Findings suggested distress may be the strongest correlate of PTSD symptoms and depression symptoms, and that guilt cognitions may serve to intensify the relationship between distress and posttraumatic psychopathology.

Bryan, C. J., Morrow, C. E., Etienne, N., & Ray-Sannerud, B. (2013). **Guilt, shame, and suicidal ideation in a military outpatient clinical sample.** *Depression and Anxiety, 30*, 55-60. [doi:10.1002/da.22002](https://doi.org/10.1002/da.22002) This study examined guilt and shame as potential contributors to SI among 69 military personnel receiving outpatient mental health treatment. Mean levels of guilt and shame were significantly higher among military personnel with a history of SI and were independently associated with severity of current SI above and beyond the effects of depression, PTSD symptoms, and the depression-by-PTSD interaction, and fully mediated the relationships of depression and PTSD symptom severity with suicidal ideation.

Capone, C., Tripp, J. C., Trim, R. S., Davis, B. C., Haller, M., & Norman, S. B. (2020). **Comparing exposure- and coping skills-based treatments on trauma-related guilt in veterans with co-occurring alcohol use and posttraumatic stress disorders.** *Journal of Traumatic Stress, 33*, 603-609. [doi:10.1002/jts.22538](https://doi.org/10.1002/jts.22538) This study examined whether integrated treatment for PTSD and substance use disorder was effective in reducing trauma-related guilt. Data were drawn from a randomized clinical trial comparing the effectiveness of two integrated therapies (integrated PE and integrated coping skills therapy) on treatment outcomes in a sample of US Veterans ($N = 119$). There was a significant treatment by time interaction, such that participants in integrated exposure therapy reported lower global guilt over time compared to those in coping skills. The findings highlight that exposure-based, trauma-focused treatment for comorbid PTSD-SUD can be more effective in decreasing trauma-related guilt.

Currier, J. M., Foster, J. D., & Isaak, S. L. (2019). **Moral injury and spiritual struggles in military veterans: A latent profile analysis.** *Journal of Traumatic Stress, 32*, 393-404. [doi:10.1002/jts.22378](https://doi.org/10.1002/jts.22378) Using two community samples of war zone Veterans, this study examined relationship between moral injury and common ways in which Veterans may struggle with religion or spirituality. Results revealed three distinct classes: (a) no moral injury or spiritual struggles; (b) moral injury and equivalent or lower degrees of spiritual struggles; and (c) moral injury and salient struggles with religious faith or spirituality. When comparing severity of spiritual struggles within moral injury groups, turmoil with God or a higher power emerged as a defining feature of the spiritual moral injury group. Findings highlight the possible utility of differentiating between psychological and spiritual subtypes of moral injury.

Griffin, B. J., Purcell, N., Burkman, K., Litz, B. T., Bryan, C. J., Schmitz, M., Villierme, C., Walsh, J., & Maguen, S. (2019). **Moral injury: An integrative review.** *Journal of Traumatic Stress, 32*, 350-362. [doi:10.1002/jts.22362](https://doi.org/10.1002/jts.22362) This integrative review identified 116 relevant epidemiological and clinical studies focusing on moral injury, including studies highlighting biological, psychological, behavioral, social, and spiritual outcomes associated with exposure to PMIEs. Strengths and limitations of these studies are discussed, including measurement issues, the importance/relevance of moral injury treatment, and filling knowledge gaps that can strengthen future research.

Hines, S. E., Chin, K. H., Glick, D. R., & Wickwire, E. M. (2021). **Trends in moral injury, distress, and resilience factors among**

healthcare workers at the beginning of the COVID-19 pandemic. *International Journal of Environmental Research and Public Health*, 18, 488. doi:10.3390/ijerph18020488 Healthcare workers ($N = 96$ at baseline) completed surveys March and July 2020 assessing occupational factors, resilience, PTSD symptoms, and moral injury at baseline, 1-month, and 3-month time points. While PTSD symptoms declined, moral injury remained stable over time and was associated with a less supportive and more stressful occupational environment.

Hoffman, J., Liddell, B., Bryant, R. A., & Nickerson, A. (2019). **A latent profile analysis of moral injury appraisals in refugees.** *European Journal of Psychotraumatology*, 10, 1686805. doi:10.1080/20008198.2019.1686805 Refugees and asylum seekers ($N = 221$) were assessed for moral injury profiles and associated mental health outcomes. Participants demonstrated three moral injury profiles: moral injury- other (38%), moral injury-other and self (35%) and no moral injury (27%). The moral injury-other and self-profile was associated with the greatest number of adverse mental health outcomes (anger, depression, etc.), and both moral injury profiles were associated with greater mental health symptoms than those without moral injury.

Lentz, L. M., Smith-MacDonald, L., Malloy, D., Carleton, R. N., & Brémault-Phillips, S. (2021). **Compromised conscience: A scoping review of moral injury among firefighters, paramedics, and police officers.** *Frontiers in Psychology*, 12, 639781. doi:10.3389/fpsyg.2021.639781 This article is a scoping review of empirical articles on moral injury in empirical research regarding the construct of moral injury in firefighters, paramedics, and police officers; in total 32 studies were found that mainly included police officers, with a few on paramedics and firefighters. Existing studies were mainly qualitative and focused on values, ethical decision-making, organizational betrayal, and spirituality. More quantitative empirical studies on moral injury are needed in these populations.

Norman, S. B., Haller, M., Kim, H. M., Allard, C. B., Porter, K. E., Stein, M. B., Venners, M. R., Authier, C. C., Rauch, S. A. M., & the Progress Team. (2018). **Trauma related guilt cognitions partially mediate the relationship between PTSD symptom severity and functioning among returning combat veterans.** *Journal of Psychiatric Research*, 100, 56–62. doi:10.1016/j.jpsychires.2018.02.003 This study evaluated whether that trauma related guilt cognitions would partially explain the relationship between PTSD symptom severity and functioning in a sample of 254 combat Veterans or active-duty military personnel who consented to participate in a larger PTSD treatment study. Results revealed a significant relationship between PTSD severity and guilt cognitions, as well as PTSD and overall functioning. Guilt cognitions were significantly associated with nearly all domains of functioning, including overall functioning, and partially explained the relationship between PTSD and functioning.

Shay, J. (2014). **Moral injury.** *Psychoanalytic Psychology*, 31(2), 182–191. doi:10.1037/a0036090 Shay proposed that moral injury can occur when there has been a betrayal of “what’s right” by ones’ self or by a legitimate authority in a high stakes situation. This article argued that betrayal by others is a prevalent, distressing, and impairing component of moral injury.

Wortmann, J. H., Eisen, E., Hundert, C., Jordan, A. H., Smith, M. W., Nash, W. P., & Litz, B. T. (2017). **Spiritual features of war-related moral injury: A primer for clinicians.** *Spirituality in Clinical Practice*, 4(4), 249–261. doi:10.1037/scp0000140 This article is an overview of the spiritual components of moral injury. The authors (a) provide an overview of the source of moral codes associated with various traditions, (b) discuss aspects of warzone events that may violate those moral codes and spiritual reactions to those violations, (c) describe spiritual traditions’ approaches to making amends for transgressions, and (d) provide brief case scenarios that illustrate spiritual features of moral injury and point to circumstances in which collaboration with chaplains or clergy may be helpful for addressing aspects of moral injury.

Zerach, G., Levi-Belz, Y., Griffin, B. J., & Maguen, S. (2021). **Patterns of exposure to potentially morally injurious events among Israeli combat veterans: A latent class analysis approach.** *Journal of Anxiety Disorders*, 79, 102378. doi:10.1016/j.janxdis.2021.102378 This study examined patterns of exposure to PMIEs among 381 Israeli Veterans as well as psychological and functional correlates of exposure. Latent Class Analysis identified 3 subgroups: Moral Injury (12.1 %), Betrayal-Only (20.8 %), and Minimal Exposure (67.1 %). Whereas those in the betrayal-only class reported more traditional posttraumatic symptoms and those in the moral injury class reported more moral injury symptoms (i.e., guilt-related cognitions), some psychological problems were shared by Veterans assigned to the moral injury and betrayal-only classes (e.g., entrapment). Importantly, while both those in the betrayal-only and moral injury classes had lower forgiveness relative to those in the minimal exposure class, those in the betrayal-only class received more familial support than did those in the moral injury class.