

MORAL INJURY DEVELOPMENT AND REPAIR IN SERVICE MEMBERS AND  
VETERANS: THE ROLES OF SELF-FORGIVENESS, PERCEIVED  
SOCIAL SUPPORT, AND CAUSAL ATTRIBUTIONS

Steven P. Coomes, M.A., M.S.

Dissertation Prepared for the Degree of  
DOCTOR OF PHILOSOPHY

UNIVERSITY OF NORTH TEXAS

August 2022

APPROVED:

Joshua N. Hook, Major Professor  
Patricia L. Kaminski, Committee Member  
C. Edward Watkins, Committee Member  
Donald Dougherty, Chair of the Department of  
Psychology  
James Meernik, Interim Dean of the College of  
Liberal Arts and Social Sciences  
Victor Prybutok, Dean of the Toulouse Graduate  
School

Coomes, Steven P. *Moral Injury Development and Repair in Service Members and Veterans: The Roles of Self-Forgiveness, Perceived Social Support, and Causal Attributions.*

Doctor of Philosophy (Counseling Psychology), August 2022, 93 pp., 8 tables, 1 figure, references, 53 titles.

Moral injury (MI) among military personnel is a harmful condition caused by perpetrating, failing to prevent, or witnessing atrocities that violate one's deeply held morals or values. The current study built on the existing literature by exploring predictors of MI, specifically trait self-forgiveness (TSF), state self-forgiveness (SSF), perceived social support (PSS), and causal attributions (CA) following potentially morally injurious experiences (PMIEs) in service members and veterans. Participants were 92 U.S. military service members and veterans. The main findings were that TSF and PSS were both significantly negatively associated with MI in bivariate and multivariate analyses. Further, TSF and PSS were examined as potential moderators of the relationship between PMIEs and MI, but these moderation analyses were not significant. Given that some studies provide evidence for different symptom profiles between categories of PMIEs (i.e., PMIE-Self, PMIE-Other, and PMIE-Betrayal), the relationship between the different categories and TSF were explored. Of the three PMIE types, only PMIE-Betrayal was a significant negative predictor of TSF. Finally, CA was explored as a potential mediator of the relationship between TSF and MI outcomes, but this mediation analysis was not significant. Limitations, directions for future research, and implications for clinical practice are included for discussion.

Copyright 2022

By

Steven P. Coomes

## ACKNOWLEDGEMENTS

I owe a debt of gratitude to several people for helping me complete my dissertation. First, thank you to Dr. Joshua Hook, my dissertation committee chair and research advisor, for your guidance throughout this difficult process. Your responsiveness, instruction, patience, and encouragement have meant the world to me. You are the best research advisor and mentor I could have hoped for, and I could not have done this without your help! Thank you as well to my other committee members, Drs. Patricia Kaminski and Ed Watkins. You have been so supportive of me, not just in the process of completing my dissertation, but in my overall Ph.D. journey. I'm so grateful for your thoughtful contributions to my training and to this study. Each of you embody our profession's ideal of genuineness and positive regard as you fully bring yourself into your relationships with students and clients. Further, I would like to thank the rest of the faculty, staff, and my fellow students in the Department of Psychology at the University of North Texas. Go Mean Green!

Thank you to my family and friends for the many ways you have encouraged and supported me. With your help I was able to dedicate myself to this challenging work, and I am eternally grateful for your love and generosity.

I also want to thank God for sustaining and guiding me to completion of this project. I owe my talents and accomplishments to him, and my prayer is that these efforts will glorify God and improve the lives of those suffering from moral injury.

Finally, this work is dedicated to all U.S. service members and veterans who sacrificed for our safety and freedom.

## TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS .....	iii
LIST OF TABLES AND FIGURES.....	vi
CHAPTER 1. INTRODUCTION .....	1
CHAPTER 2. REVIEW OF THE LITERATURE .....	3
Defining and Measuring Moral Injury .....	4
Impact of Moral Injury.....	6
Defining and Measuring Self-Forgiveness .....	7
Self-Forgiveness and Moral Injury .....	10
Purpose of the Current Review .....	11
Method .....	11
Inclusion Criteria .....	11
Literature Search.....	12
Results.....	12
Review of Study Methodology .....	12
Review of Empirical Findings .....	20
Discussion.....	26
Limitations and Directions for Future Research.....	30
Implications for Counseling.....	33
Conclusion .....	36
CHAPTER 3. STATEMENT OF THE PROBLEM.....	38
Moral Injury Development .....	40
Moral Injury Prevention and Repair .....	42
Self-Forgiveness .....	42
Perceived Social Support .....	44
Clinical Interventions for MI .....	44
Purpose of the Present Study .....	45
CHAPTER 4. METHOD .....	48
Participants.....	48

Design .....	48
Measures .....	49
Demographic Questionnaire .....	49
Self-Forgiveness Measures .....	49
Moral Injury Measures.....	50
Perceived Social Support .....	53
Attributions .....	53
Procedure .....	54
Hypotheses and Planned Analyses.....	55
Hypothesis 1.....	55
Hypothesis 2.....	57
Hypothesis 3.....	58
Hypothesis 4.....	59
Hypothesis 5.....	60
CHAPTER 5. RESULTS .....	62
Data Cleaning and Preliminary Analyses .....	62
Relationships Between Trait Self-Forgiveness, Perceived Social Support, Potentially Morally Injurious Experiences, and Moral Injury Outcomes .....	62
Trait Self-Forgiveness as a Moderator between Self-Perpetrated Potentially Morally Injurious Experiences and Self-Directed Moral Injury Outcomes .....	63
Perceived Social Support as a Moderator Between Potentially Morally Injurious Experiences and Moral Injury Outcomes .....	64
Trait Self-Forgiveness and Types of Moral Injury .....	64
Causal Attributions as a Mediator Between State Self-Forgiveness and Moral Injury ....	65
CHAPTER 6. DISCUSSION.....	67
Limitations and Suggestions for Future Research .....	75
Implications for Practice .....	79
Conclusion .....	81
REFERENCES .....	89

LIST OF TABLES AND FIGURES

	Page
Tables	
Table 1. Self-Forgiveness and Moral Injury: Cross-Sectional Results.....	83
Table 2. Self-Forgiveness and Moral Injury: Intervention Studies.....	84
Table 3. Descriptive and Normality Statistics of All Variables.....	85
Table 4. Intercorrelations of All Variables .....	86
Table 5. Multiple Regression Analysis Predicting Moral Injury Outcomes.....	87
Table 6. Hierarchical Regression Analysis Predicting Self-Directed Moral Injury Outcomes ....	87
Table 7. Hierarchical Regression Analysis Predicting Moral Injury Outcomes.....	87
Table 8. Multiple Regression Analysis Predicting Trait Self-Forgiveness.....	88

Figures

Figure 1. Mediator Effects of Causal Attributions on the Relationship between State Self-Forgiveness and Moral Injury Outcomes.....	88
---	----

## CHAPTER 1

### INTRODUCTION

In the line of duty, military service members sometimes perpetrate immoral actions, witness atrocities, or experience betrayal from trusted leaders such that they feel their deeply held values have been violated (Litz et al., 2009; Shay, 2014). These experiences have the potential to cause a type of psychological injury that specifically targets one's sense of moral integrity, and thus have been labeled as *potentially morally injurious experiences* (PMIEs; Litz et al., 2009). Moral injury (MI) in service members and veterans is a condition involving a variety of psychological, social, behavioral, and spiritual symptoms (e.g., guilt, shame, social withdrawal, depression, self-sabotaging, suicidal behavior) following PMIEs (Litz et al., 2009; Griffin et al., 2019). Whereas quite a bit of research has been conducted on traumatic experiences of military personnel, much of this has focused on PTSD (Griffin et al., 2019). Although some studies have examined the nature of MI, additional research is needed to better understand the mechanisms involved in the development and repair of MI (Griffin et al., 2019). Specifically, Litz et al. (2009) implicated self-forgiveness (SF), perceived social support (PSS), and causal attributions (CA) regarding PMIEs to be important factors in MI prevention, development, and repair.

Since Litz et al.'s (2009) groundbreaking publication of the first causal model of MI development, modest but impactful efforts have been devoted to the exploration of MI, including its predictors (e.g., SF; Griffin et al., 2019; Purcell et al., 2018). A handful of measures of PMIEs and MI outcomes in service members and veterans have been published (Currier et al., 2015; Currier et al., 2017; Koenig et al., 2018; Nash et al., 2013). Less than 15 empirical studies have looked specifically at the relationship between SF and MI; these have reported significant



correlational and causal relationships that bode well for future research opportunities (Barnhart, 2020; Gray et al., 2012; Maguen et al., 2017). Even fewer studies have explored the relationship other factors such as PSS and causal attributions might have with MI (Levi-Belz et al., 2020).

The purpose of this dissertation is to fill a gap in the literature by analyzing MI and its relationship with some of its proposed predictors (Litz et al., 2009), with an aim toward better understanding the mechanisms involved in MI development and repair. Chapter 2 contains a quantitative literature review of unpublished and published studies that use a SF instrument or clinical intervention, and which also include a measure of PMIEs or MI outcomes. In Chapters 3, 4, and 5, I outline the rationale, method, and results for a cross-sectional, empirical study I conducted which explored potential correlates, moderators, and mediators of the relationships between PMIEs, trait self-forgiveness (TSF), state self-forgiveness (SSF), PSS, and CA with MI. In Chapter 6, I discuss the findings and conclude with limitations, directions for future research, and clinical implications.

## CHAPTER 2

### REVIEW OF THE LITERATURE

During their military service and combat deployments, service members sometimes experience traumatic stress (e.g., being threatened with or experiencing great bodily harm, witnessing atrocities, losing a battle buddy, or betrayal from fellow service members or superior officers; Gray et al., 2012). Furthermore, the stress and chaos of military service sometimes lead service members to engage in behavior that goes against their strongly held worldviews and values (Litz et al., 2016). The consequences for these service members may include psychological injuries (Griffin et al., 2019).

For the past few decades, measurement and intervention for traumatic psychological wounds in veterans have largely focused on post-traumatic stress disorder (PTSD; Litz et al., 2016). Researchers have (1) created valid measures for assessing military-related traumatic experiences and post-traumatic stress and (2) developed manualized, empirically supported treatments such as Prolonged Exposure, Cognitive Processing Therapy, and Eye-Movement Desensitization and Reprocessing (EMDR) to treat PTSD (Litz et al, 2016). These efforts are sorely needed to help service members and veterans recover from the fear associated with life-threatening experiences and the shock and sadness of experiencing or witnessing the loss of life.

However, some service members and veterans struggle with moral injury (MI), which is another type of psychological trauma that is sometimes mistaken for and treated as PTSD (Gray et al, 2012; Litz et al., 2016). Moral injury involves shame, guilt, rage, lack of self-forgiveness (SF), and anomie (i.e., breakdown of social connection) due to the loss of a strong sense of morality and values, that sometimes results from service members acting against their moral code (Smigelsky et al., 2019). Moral injury has been associated with decreased quality of life,

alcohol misuse, depression, trauma-related guilt, shame, anxiety, avoidance, and suicidal ideation, among other symptoms (Griffin et al., 2019; Smigelsky et al., 2019).

Because of the negative impact of moral injury on psychological well-being, it is important to study psychological processes that may help to alleviate MI in service members. One potential process that is beginning to receive increased attention in recent years is SF (Raney, 2003; Snider, 2015). Cornish and Wade (2015) theorized that implementing a process of SF in therapy could help reduce guilt following transgressions. In a review of the literature on moral injury, Griffin et al. (2019) noted that some researchers have begun to study the effectiveness of SF interventions on reducing the guilt that is often associated with moral injury; however, the literature on the relationship of SF and MI in veterans is in its infancy. More research is needed to better understand how these two concepts are related and how SF might be effective in treating MI.

### Defining and Measuring Moral Injury

In the MI literature, some definitions focus on potentially morally injurious experiences (PMIEs), others focus on one or more of the symptoms and consequences thought to result from PMIEs (Shay, 2014), and others attempt to define MI holistically, incorporating the various PMIEs along with their consequences (Griffin et al., 2019). Definitions of MI vary, but the two common components found across definitions include (1) suffering a PMIE and (2) experiencing the negative psychological or social impact of such an event (Griffin et al., 2019). In 2009, Litz et al. defined PMIEs as “perpetrating, failing to prevent, bearing witness to, or learning about acts that transgress deeply held moral beliefs and expectations” (p. 697). They explained that MI occurs when these events lead to negative consequences such as post-traumatic stress, suicidality, demoralization, and hopelessness. For the purposes of this dissertation, MI is

considered to include both a morally injurious event and the psychological consequences of the event.

One issue contributing to inconsistent definitions of MI is that it can result from very different types of experiences (Griffin et al., 2019). For example, researchers propose that both intentionally and unintentionally committing an atrocity while deployed can lead to MI. Additionally, failing to act with enough speed or effectiveness to accomplish a critical task (e.g., saving someone's life), as well as failing to act to stop others from perceived wrongdoing can also result in MI. Further, experiences of betrayal and abuse by those in authority have also been credited as sources of MI. To better conceptually organize PMIEs, Litz et al. (2016) suggested three categories: (1) transgressions (i.e., acts of commission; e.g., accidentally or intentionally killing a civilian while deployed), (2) failing to stop egregious acts (i.e., acts of omission; e.g., allowing a fellow soldier to commit atrocities unabated, or being unable to save a dying comrade), or (3) betrayal (e.g., being hazed or unsupported by fellow service members or commanding officers).

Researchers have attempted to quantify the experiences of service members and veterans with MI through the creation and use of psychometric scales. One commonly used early measure in this line of research, the Trauma Related Guilt Inventory (TRGI; Kubaney et al., 1996), looks primarily at a specific symptom of traumatic experiences, namely, guilt. Over time, the concept of MI became more widely discussed, and scales were developed that focus primarily on the experience of PMIEs, such as with the Moral Injury Events Scale (MIES; Nash et al., 2013) and the Moral Injury Questionnaire – Military (MIQ-M; Currier et al., 2015). Over time, MI scale development has evolved from focusing primarily on PMIEs to also assessing the symptoms of those PMIEs (e.g., the Expressions of Moral Injury Scale – Military Version; EMIS-M; Currier

et al., 2017). The authors of some of these measures have adapted them to fit military specific language and PMIEs to better capture the experiences of service members and veterans, as evidenced by the military versions of the aforementioned instruments.

### Impact of Moral Injury

Symptoms of MI for service members and veterans can be grave, debilitating, and even fatal. Unfortunately, psychologists have only recently become more aware of the deleterious effects of MI. Whereas much of the literature and clinical trials for treating trauma in service members and veterans were historically focused on PTSD, over the past couple decades clinicians and researchers began to observe that some patients and research participants with morally injurious experiences endorsed a variety of symptoms which are similar to, but also somewhat distinct from PTSD (Griffin et al., 2019).

More specifically, MI symptoms are theorized to have a different etiology than PTSD, which is widely understood to be caused by life-threatening experiences or witnessing or experiencing the death of others (Litz et al., 2016). Whereas PTSD is more typically caused by classical conditioning by association of memories, places, people, or sensations with the fear of a life-threatening event, MI is theorized to result from committing or witnessing acts that transgress one's deeply held beliefs, failing to stop such actions being committed by another, or experiencing betrayal or abuse from a trusted leader (Litz et al., 2009; Shay, 2014). Whereas exposure-based therapies may be effective in treating what is essentially a fear response (i.e., PTSD), the impact of MI is uniquely self-evaluative, values-laden, and relational, and as such must be treated differently in therapy (Litz et al., 2016).

Moral injury is associated with a variety of psychological symptoms and negative social outcomes for service members and veterans (Griffin et al., 2019). Depression and a variety of

negative emotions and cognitions are a common problem for veterans with MI (Smigelsky et al., 2019). Many report feeling hopeless and lacking interest in previously enjoyed activities. Suicidal thoughts and behavior are elevated for these veterans. Their inner worlds are in turmoil as they suffer from chronic guilt, shame, and self-deprecation in response to memories of what they did or what was done to them. Some veterans report having spiritual struggles, including having trouble receiving forgiveness from God, as well as rejecting previously held religious beliefs and identities (Currier et al., 2017; Nelson-Pechota, 2016). Behavioral problems and substance abuse are sometimes part of the symptom profile for MI (Smigelsky et al., 2019). Indeed, Litz et al. (2009) describe alcohol and other substance misuse as an example of self-handicapping behavior in their popular model on MI development in service members and veterans. Further, veterans with MI may feel a diminished sense of social belonging, either because they have violated personal or societal morals and they have not yet found a way to restore their sense of integrity, or because they struggle with distrust of others due to experiences of betrayal (Smigelsky et al., 2019). For example, Vargas et al. (2013) found that experiences of MI were related to increased social isolation for veterans. In terms of physical symptoms, there have been a small number of studies that found a connection between MI and increased levels of pain from co-morbid conditions (Griffin et al., 2019). Overall, the impact of MI on veterans is decidedly negative in several aspects of psychological, social, and perhaps even physical functioning.

### Defining and Measuring Self-Forgiveness

It is important to explore ways to ameliorate the effects of MI on veterans, and one of those ways may be to promote SF (Raney, 2003; Snider, 2015). Self-forgiveness has been defined as “a positive attitudinal shift in the feelings, actions, and beliefs about the self,

following a self-perceived transgression or wrongdoing committed by the self” (Wohl et al., 2008; p. 2). Other definitions emphasize responsibility acceptance and diminishment of negative self-judgment in addition to an increase in positive attitude toward oneself following a perceived wrongdoing (Enright & the Human Development Study Group, 1996). These definitions are generally reflective of state self-forgiveness (SSF), which is how someone thinks and feels toward themselves in response to a particular wrongdoing. One widely used instrument of SSF is the State Self-Forgiveness Scale (SSFS; Wohl et al., 2008). The SSFS is often used in cross-sectional research that views SSF as an end-state. However, trait or dispositional self-forgiveness (TSF) is also widely studied and is a useful concept because it describes a person’s general ability and willingness to forgive themselves. Thompson et al.’s (2005) Heartland Forgiveness Scale (HFS) is an example of a well-known TSF measure that includes subscales for forgiveness of self and others.

There has been some controversy in the study and promotion of SF. Some researchers have warned against pseudo-SF, which is when someone fails to take appropriate responsibility for wrongdoing and instead generates positive feelings towards the self while excusing or minimizing the consequences of the wrongdoing (Wenzel et al., 2012). Instead, genuine SF involves taking responsibility and feeling a healthy level of remorse and guilt, which ideally leads to an attempt to make amends (Woodyatt & Wenzel, 2013). In the event of transgression-related MI, it is not usually the case that a service member or veteran feels guilty for justified killing of an enemy in combat (Litz et al., 2016). If present, this distress can sometimes be resolved with cognitive challenging and restructuring. More typically, veterans with transgression-related MI have violated their moral code to an extent that cannot be justified within the context of war and within the duties of their role as warriors.

The importance of measuring and promoting genuine SF has led to additional scale development. For example, Woodyatt and Wenzel (2013) designed the Differentiated Self-Forgiveness Process Scale (DSFPS) using cluster analysis to distinguish genuine SF from self-punitiveness and pseudo-SF. Another recent measure is the Self-Forgiveness Dual-Process Scale (SFDPS; Griffin et al., 2018), which includes two factors, value reorientation and esteem restoration. According to the Dual-Process Model of Self-Forgiveness (Griffin et al., 2015), which the SFDPS is based on, it is important for “perpetrators [to] engage in moral repair to satisfy enduring needs for belonging and esteem in the aftermath of a perceived transgression” (p. 716; Griffin et al., 2018; Bandura, 2002). These efforts are aimed at helping people re-identify with their own or societal values through self-examination and engaging in reconciliatory behavior, with a goal of rebuilding one’s self-esteem and reconnecting with others. The benefit of these instruments is that they can be used to measure the development of the SF process over time, leading to more effective longitudinal and experimental research.

Research findings have revealed significant relationships between SF and well-being. Davis et al.’s (2015) meta-analysis found a positive relationship between SF and quality of mental health, overall psychological well-being, meaning in life, and life satisfaction, with a medium effect size. This meta-analysis also found SF to be negatively associated with suicidality, anxiety, depression, and substance abuse (Davis et al., 2015). Multiple studies have revealed a positive relationship between SF and physical health, with a medium effect size (Davis et al., 2015). An example of this is an experiment by da Silva et al. (2017) on the impact of self-forgiveness vs. rumination on physiological outcomes among college students reflecting on an interpersonal offense. They found that participants in a SF condition reported decreased heart rate and increased parasympathetic activation compared to those in a rumination condition.



Additionally, this study found the participants in the SF condition reported increases in perceived control, as well as reductions in guilt and other negative emotions.

### Self-Forgiveness and Moral Injury

Self-forgiveness, in addition to being an important factor in overall well-being, may also have a crucial role in the development and treatment of MI. In 2009, Litz and colleagues created a model of MI development that includes a SF component. In this model, transgressions lead to a sense of dissonance with one's values, and in cases where the veteran attributes the cause of their misbehavior to stable and internal factors, it can lead to guilt, anxiety, and shame, as well as social withdrawal. At this point, if the veteran has trouble forgiving themselves, they are likely to continue struggling with their MI. This struggle can play out in a variety of ways, including a demoralized attitude, self-handicapping behaviors (e.g., substance abuse), and intrusive unwanted memories and thoughts, followed by avoidance and numbing of the emotions that arise.

Whereas failure to forgive oneself can play a role in causing MI and unnecessarily suffering negative outcomes, engaging in SF could be a useful process to help service members and veterans address and resolve their MI (Snider, 2015). Cornish and Wade (2015) proposed a therapeutic process of SF that can explain how SF might help with MI. The *Four-R Therapeutic Model of Self-forgiveness* includes responsibility (i.e., acknowledging one's wrongdoing), remorse (i.e., feeling and processing guilt and other negative emotions), restoration (i.e. attempting to make amends such as through apologizing), and renewal (i.e., identifying how one has learned and grown from the experience, as well as how they have re-affirmed the values they had violated).

In the case of a veteran with perpetration-based MI, it would likely be helpful, after

taking responsibility, to identify and process the negative feelings that come up rather than avoid them. Avoidance of negative affect and memories is a common coping strategy among veterans with trauma, and it has been useful to them in the past so they can “carry out the mission” and avoid being overcome by emotion (Litz et al., 2016). However, in order to heal from their injury, they may need to process feelings such as guilt and remorse. The process of SF involves responding productively to feelings of guilt, such as by engaging in a process of reconciliation and amends-making. Although it may be impossible for some veterans to make amends for their transgressions, they can still find ways to symbolically make amends in order to find a sense of restoration (Litz et al., 2016).

### Purpose of the Current Review

This chapter describes my comprehensive review of unpublished and published empirical publications which explored the association between SF and MI among military service members and veterans. After reviewing theory and prior research, I developed these hypotheses:

H1: Self-forgiveness would be inversely associated with MI.

H2: Clinical SF interventions would result in decreased levels of MI.

### Method

#### Inclusion Criteria

There were several inclusion criteria. First, only empirical studies were included; case studies and theoretical articles were excluded. Second, I only selected studies that analyzed the quantitative relationship between SF and MI. Qualitative studies were excluded from review. Third, both unpublished (e.g., dissertations, theses) and published studies were included. Unless otherwise stated, throughout this literature review the term SF broadly includes both *trait* SF, in

terms of an enduring personality characteristic, as well as *state* SF, referring to current attitude or mood toward oneself.

## Literature Search

I began the literature review by searching the following online databases for studies published up until August 20, 2020: PsycINFO, ProQuest Dissertations and Theses Global, and Google Scholar. I used the following search terms: “self-forgiv\*” paired with “moral injury,” “PTSD,” and “trauma-related guilt,” as well as “forgiv\*” paired with “moral injury,” “PTSD,” and “trauma-related guilt.” I then reviewed the references of each study meeting inclusion criteria in order to identify additional potential studies for inclusion. In total, 15 publications and 13 independent samples (hereafter *studies*) met inclusion criteria; I included each of them in the current review (see Tables 1 and 2).

## Results

The first part of the results is a review of methodology used in these studies. The second part is a summary of the empirical results regarding the relationship between SF and MI in military veterans.

### Review of Study Methodology

#### *Research Design*

Each of the 13 studies in this review quantitatively measured the association between SF and MI. Nine studies were cross-sectional and four were experimental. All 4 experimental studies tested the effectiveness of a SF clinical intervention to reduce MI symptoms. Seven studies had a main purpose of examining the associations between SF, MI, and other related variables. Two studies focused on MI scale development. Of the 15 publications, 8 were peer-

reviewed; the remaining 7 were unpublished theses or dissertations.

### *Participants*

There was a total of 2,135 participants across all 13 samples. Nine studies reported mean age, which overall was 44.26. Nearly all participants were adult service members or veterans from the U.S. (91.1%), most of whom had sought treatment from and were recruited through Department of Veterans Affairs Medical Centers (VAMC) from across the United States. One study surveyed Israeli veterans, who comprised 8.9% of the total sample ( $N = 191$ ). Twelve studies reported participants' gender. Most participants were male (87.4%), while 12.5% were female, and 0.1% were transgender or gender fluid. Of the 1,889 participants from 12 studies reporting race and ethnicity, the majority (55.3%) were White. Other races and ethnicities included African American (27.8%), Latinx (7.8%), Asian/Pacific Islander (3.0%), Native American/Native Alaskan (1.3%), multiracial (3.7%), and other or unspecified (1.2%). Of the 964 participants from 4 studies who reported religious identity, most (61.4%) were Christian, Catholic, or Mormon, 12.2% were Jewish, 0.8% were Buddhist, 0.9% were Muslim, 2.7% were Atheist/Agnostic, 1.9% identified as Other, and 20.0% had no religious affiliation. Eight studies reported participants' combat deployment status. Out of 2,071 participants surveyed about combat deployment status, the majority (90.0%) had been deployed to a combat zone, while 10.0% had not. Nine studies reported participants' service era. Of the 1,746 participants who reported service era, about half (50.2%) served in the U.S. military during the post-9/11 conflict or Second Gulf War (i.e., Operation Iraqi Freedom, Operation Enduring Freedom, and Operation New Dawn; OIF/OEF/OND), 33.9% served in the U.S. military during the Vietnam War, 5.0% served in the U.S. military during another service era, and 10.9% served in Israeli defense operations. No studies reported sexual identity.

### *Measures of Self-Forgiveness*

Ten studies measured SF using self-report instruments. Of the SF instruments used, most assessed view toward oneself as a core component in measuring this construct. The Heartland Forgiveness Scale (HFS; Thompson et al., 2005), used by six studies, is one example. This 18-item trait SF (TSF) instrument prompts participants to consider how they typically respond to negative events in their lives. The HFS contains three subscales, including Forgiveness of Self, Other, and Situation. The Forgiveness of Self subscale has demonstrated adequate reliability (HFS-Self;  $\alpha = .72$ ). It is comprised of six items (e.g., “With time I am understanding of myself for mistakes I’ve made”). Items are rated on a seven-point Likert scale from 1 (*almost always false of me*) to 7 (*almost always true of me*). Some items are reverse-scored. Values are summed, with higher values indicating higher TSF.

The HFS is a highly reliable and widely used scale of TSF (Thompson et al., 2005). One limitation is that it assesses one’s general level of SF across time and situations—a state or situational measure of SF might more accurately assess how much one has forgiven oneself for a particular behavior or situation. In the case of MI, dysphoric feelings toward oneself often arise as a result of feeling that one did not act according to one’s values in a particular situation. Thus, the HFS and other TSF scales may lack precision in measuring one’s reported SF when considering a specific transgression.

Although some of the studies in this literature review included single-item questions related to SF of specific transgressions, Snider (2015) is the only study from this literature review to incorporate a reliable and validated state self-forgiveness (SSF) scale. The State Self-Forgiveness Scale (SSFS; Wohl et al., 2008) is an end-state, self-report scale that attempts to measure current positive feelings, thoughts, and attitudes toward oneself while considering a

transgression. It contains two subscales. The Self-Forgiving Feelings and Attitudes (SSFA) subscale has eight items (e.g., “As I consider what I did that was wrong, I show myself compassion”) and exhibits good reliability ( $\alpha = .86$ ; Wohl et al., 2008). The Self-Forgiving Beliefs subscale has nine items (e.g., “As I consider what I did that was wrong, I believe I am acceptable”) and demonstrates excellent reliability (SFB;  $\alpha = .91$ ; Wohl et al., 2008). Participants rate items on Likert scale ranging from 1 (*Not at all*) to 4 (*Completely*). A few questions are reverse coded to reduce response bias. Mean scores are calculated for the SFFA and SFB subscales. Higher scores are interpreted as the participant reporting greater SSF. Although the SSFS is highly reliable and widely used in the SF literature, when used as a cross-sectional instrument it lacks the ability to detect the development of SF and its predictors over time. It also fails to distinguish between genuine and pseudo-SF (Woodyatt & Wenzel, 2013).

### *Measures of Moral Injury*

Each of the 13 studies used one or more MI scales. As mentioned previously, MI measurement has largely been conducted using three types of scales: (1) Measures of potentially morally injurious experiences (PMIEs); (2) scales that are not specific to MI but which are used to measure symptoms thought to result from MI, such as guilt, shame, or self-blaming cognitions; and (3) MI scales that comprehensively focus on MI symptom profiles or clusters of symptoms.

The first category of MI scales, measures of PMIEs, assess for the occurrence and intensity of such events in a person’s life (Currier et al., 2015; Nash et al., 2013). They are helpful in screening for MI and to identify the event that is bothering a veteran in the event they have symptoms of MI. One example is the Moral Injury Questionnaire – Military Version (MIQ-M; Currier et al., 2015). The MIQ-M is a 19-item self-report questionnaire validated with both a

community and a clinical sample of Iraq and Afghanistan U.S. veterans. Domains assessed include: (1) acts of betrayal; (2) acts of excessive violence toward others; (3) witnessing or participating in acts leading to death or harm to civilians; (4) violence between military personnel; (5) failure to prevent suffering or death; and (6) moral/ethical conflicts (Drescher et al., 2011). Example items include, “I saw/was involved in the death(s) of children” and “Things I saw/experienced in the war left me feeling betrayed or let-down by military/political leaders.” Veterans are prompted to indicate the frequency they have experienced each PMIE. Items are scored on a Likert-type scale ranging from 1 (*Never*) to 4 (*Often*) and are summed to create one overall scale score, with higher scores indicating higher frequency of PMIEs. The MIQ-M has demonstrated strong construct validity through significant association with related constructs such as depression, posttraumatic stress symptoms, combat exposure, and occupational and social impairments (Currier et al., 2015). It has also demonstrated excellent internal consistency ( $\alpha = .90$ ; Barnhart, 2020).

The second category of MI scales found in this review were those that, while not having been created specifically to measure MI, were used to measure a specific symptom expected to result from MI. The Trauma Related Guilt Inventory (TRGI; Kubaney et al., 1996) was the most commonly used scale in this category within this review. The TRGI is a 32-item questionnaire normed on university students and battered women. It contains three main scales: The Global Guilt scale with 4 items, the Distress scale with 6 items, and the Guilt Cognitions scale with 22 items. Each of these demonstrated strong internal reliability, with alphas ranging from .89 to .91 (Kubaney et al., 1996). The Guilt Cognitions scale contains three subscales: The Hindsight-Bias/Responsibility subscale with 7 items, the Wrongdoing subscale with 5 items, and the Lack of Justification subscale with 4 items. Sample items include, “I feel sorrow or grief about the

outcome” and “What I did was inconsistent with my beliefs.” Items are rated on a Likert scale from 1 (*Extremely or Always true*) to 5 (*Not true at all or Never true*), with some items being reverse-scored, and higher scores indicating a greater degree of negative thoughts and feelings.

The third type of MI scales described in this review were those created specifically to assess MI among service members and veterans by asking them to report a variety of thoughts and feelings considered to represent one or more profiles of MI symptoms. One such study, the Expressions of Moral Injury Scale – Military Version (EMIS-M; Currier et al., 2017), is a 17-item measure that asks veteran participants to consider their military experience as they respond to prompts. The EMIS-M consists of two subscales, Self-Directed Moral Injury (EMIS-M-SD) and the Other-Directed MI (EMIS-M-OD). The Self-Directed MI subscale includes nine items and assesses negative thoughts and feelings toward oneself regarding behaviors engaged in during or after military service (e.g., “I am an unforgivable person because of things that I did/saw in the military”). It has exhibited strong reliability ( $\alpha = .94$ ). The Other-Directed MI subscale includes eight items and assesses negative thoughts and feelings toward others regarding perceived moral transgressions of other service members, including feelings of betrayal or abuse by peers or superiors (e.g., “When I look back on my military service, I feel disgusted by things that other people did”). This subscale has also demonstrated excellent reliability ( $\alpha = .92$ ). The EMIS-M total scale has also exhibited strong reliability ( $\alpha = .95$ ). Items are rated on a Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*), with higher scores indicating a greater degree of negative thoughts and feelings.

The EMIS-M provides several benefits as a measure of MI (Currier et al., 2017). In contrast to general measures of MI that have only been adapted for use with veterans, the EMIS-M uses military specific content and language designed to accurately describe the experiences of



military service members and veterans. Additionally, the EMIS-M measures the *expression* of MI, and not solely potentially morally injurious experiences (PMIEs; Currier et al., 2015; Nash et al., 2013), which are necessary but not sufficient for demonstrating the experience of MI. The Self- and Other-Directed subscales of the EMIS-S provide the ability to measure the specific impact of the MI, providing a useful clinical tool or research psychometric. One downside to the EMIS-S is that it does not identify the specific transgression causing the veteran's distress.

### *Interventions*

Four experimental and quasi-experimental studies used SF interventions as part of individual or group treatment to reduce MI. The two individual interventions (i.e., Adaptive Disclosure and Impact of Killing; Gray et al., 2012; Litz et al., 2016; Maguen et al., 2017) used an experimental design with control groups. The remaining two interventions used a group therapy format and a quasi-experimental design. In one of the group therapy interventions, there was no random assignment to treatment or control group due to participants being drawn from a milieu treatment setting (Snider, 2015). The other group intervention study lacked a control group (Starnino et al., 2019).

Each intervention has different emphases in treatment. For example, Adaptive Disclosure focuses on using an exposure component wherein the patient discloses the account of a service-related action or experience for which they feel shame, guilt, or disgust in order to reprocess the memory through accessing hot cognitions, and among all the interventions is most similar to the gold-standard, evidence-based, exposure PTSD treatments such as Prolonged Exposure (Foa et al., 2007; Litz et al., 2016). Once the morally injurious experience and associated emotions and cognitions are experienced through the in-session exposure, this is followed by break-out activities in which the patient imagines disclosing to a benevolent other what they did, suffered,

or witnessed, and explains how it has impacted them in terms of their well-being, their view of themselves, or their relationships with and views toward others and the world. This gives the patient the opportunity to receive forgiveness. This is followed by discussion with the therapist and homework assignments designed to help the patient take steps toward SF, such as confession and making amends to the injured parties or to a representative other (in the event the injured party is deceased or inaccessible), as well as cultivating a renewed self by identifying ways one can reclaim the personal values and strengths the veteran identified with before the morally injurious experience.

Whereas Adaptive Disclosure includes eight weekly sessions for 90-minutes in length and is intended to replace other manualized treatments for military related trauma, as well as broadly address presenting concerns of loss and MI, the other interventions in this review are not intended to replace evidence-based PTSD treatments and thus have a different focus of treatment. For example, the Impact of Killing (IOK) intervention is a 6-8 session, 60-90 minute, individualized CBT intervention to help veterans process acts of killing in war, and then work toward SF for such acts (Maguen et al., 2017). IOK authors recommend this treatment be administered subsequent to manualized, evidence-based treatments for veterans with PTSD. This allows IOK therapists the ability to focus on cultivating SF and resolving spiritual or existential concerns not addressed in the gold-standard, manualized therapies for PTSD.

Two studies included in this review detail group therapy efforts at promoting SF among veterans and service members with MI. The Search for Meaning group therapy program was developed by a chaplain and a licensed mental health provider at a VA hospital in the Midwest, and consists of eight, 90-minute sessions to help participants consider and reprocess the impact of trauma on their thoughts, core beliefs, and spiritual well-being (Starnino et al., 2019). The

Search for Meaning Program focuses on forgiveness of others and self for only one session near the end of treatment. Snider (2015) describes the second group therapy intervention included in this literature review. This intervention addresses SF in two of its four sessions, and uses a variety of discussion topics, activities, and homework assignments to promote SF.

## Review of Empirical Findings

I organize the empirical results of this literature review by research methodology, including cross-sectional findings and clinical interventions. Within each section I include a summary of the findings on any analysis pertaining to the association between SF and MI among military service members and veterans. I follow this by identifying and discussing moderating variables which may be present.

### *Cross-Sectional Findings*

- *Overall Findings.* Nine studies included a cross-sectional analysis of the relationship between SF and MI (see Table 1). Of these, seven found a negative relationship, with  $r$ s ranging from  $-.36$  to  $-.65$  (i.e., medium to large effect size). As an example, Currier et al. (2017) surveyed 286 U.S. veterans with at least one warzone deployment and found that the correlation between SF and self-directed MI was  $-.58$ .

Two out of nine cross-sectional studies in this literature review reported a non-significant relationship between SF and MI (Levi-Belz, et al., 2020; Mallot, 2016). For example, Mallot (2016) explored the relationship between morally injurious experiences, spiritual coping, and SF in a sample of 140 community U.S. college student veterans who had deployed in support of Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF), but did not find significance between SF and MI.

- *Self-Forgiveness as a moderator.* Interestingly, two studies in this literature review attempted to discover whether SF moderated the relationship between PMIEs and MI symptoms. Swiger (2020) surveyed a convenience sample of 198 U.S. Gulf War II veterans and found that SF did not significantly moderate the relationship between PMIEs and MI. However, Barnhart (2020) found that, among an online sample of U.S. community veterans from a range of service eras, SF did moderate the relationship between PMIEs and shame, guilt, and shame and guilt combined. At high levels of SF, the strength of the relationship between PMIEs and shame and guilt was weaker, compared to the relationship between these variables at low levels of SF (i.e., buffering effect). Given that shame and guilt have been positively related to higher frequency of self-reported PMIEs in other samples (Drescher et al., 2011; Litz et al., 2009; Schumacher, 2017), this finding indicates some potential that SF moderates the relationship between PMIEs and MI symptoms.

- *Potential moderators of the self-forgiveness/moral injury relationship.* Potential moderators of the cross-sectional relationship between SF and MI were considered by exploring the differences between studies that found significant negative relationships between SF and MI with the studies that reported non-significance between these two variables. Results for these potential moderators should be viewed with caution, because only two studies reported non-significance between SF and MI. Still, these potential moderators could be interesting to explore further in future research.

The type of SF measure was the first potential moderator. One study showing a non-significant finding between SF and MI used the Brief Multidimensional Measure of Religiousness/Spirituality (BMMRS; Fetzer Institute/NIA, 1999; Idler et al., 2003), which combines forgiveness toward others and from God with SF into a single forgiveness subscale

(Mallot, 2016). When these three types of forgiveness were treated as a single construct and correlated with MI, the result was not statistically significant. In the case of Levi-Belz et al. (2020), which also reported a non-significant association between SF and MI, the HFS-Total, and not the HFS-Self subscale was used. The HFS-Total combines forgiveness toward others and situations with SF, and the use of HFS-Total instead of the HFS-Self subscale makes it impossible to determine whether SF alone would have related with MI in this study. In contrast, all seven studies reporting a significant negative association between SF and MI analyzed SF as an independent construct. It may be that the isolated construct of SF, apart from forgiveness toward others, toward situations, or from God tends to be negatively related with MI. Each type of forgiveness may have a unique statistical relationship with MI, and this requires further attention in the literature.

Second, the type of MI scale may have moderated the cross-sectional association between SF and MI. The two studies in this review that reported a non-significant cross-sectional relationship between SF and MI used a MI scale that focuses on PMIEs rather than on MI symptoms or outcomes (MIQ-M; Currier et al., 2015; Mallot, 2016; Swiger, 2020). Out of the seven studies which found a negative cross-sectional relationship between SF and MI, five used measures of MI symptoms or outcomes, whereas two used measures of PMIEs. Specifically, three used the Trauma Related Guilt Inventory (TRGI; Kubany et al., 1996; Nelson-Pechota, 2016; Raney, 2003; Smigelsky et al., 2019), the fourth used the Moral Injury Symptom Scale – Military Version (MISS-M; Koenig et al., 2018), the fifth used the Expressions of Moral Injury Scale – Military Version (EMIS-M; Currier et al., 2017), and the final two used the MIQ-M (Currier et al., 2015; Mallot, 2016; Swiger, 2020). Whereas the MIQ-M is a self-report of PMIEs for service-members, the TRGI, MISS-M, and EMIS-M focus primarily or entirely on symptoms

of MI. All five cross-sectional studies that used a MI scale which focused on MI outcomes reported a negative relationship with SF, whereas the four studies that used a measure of PMIEs were split evenly, with two reporting a negative relationship and two reporting a non-significant relationship with SF. Just as experiencing trauma does not automatically result in PTSD, research has shown that exposure to PMIEs does not necessarily lead to symptoms of MI (Currier et al., 2015; Nash et al., 2013; Koenig et al., 2018), and these findings support this assertion. Additionally, MI has been theorized to include feelings of low SF (Smigelsky et al., 2019). It follows that MI scales which focus primarily on symptoms are more likely to capture the relationship between SF and MI compared to those that primarily assess for PMIEs.

Third, the use of trait versus state measures is one topic that could be worthy of future exploration as a moderator. In this literature review, the majority ( $n = 6$ ) of the seven studies that reported a negative association between SF and MI measured SF using TSF scales. One study with a significant negative relationship between SF and MI used a SSF scale. In contrast, one of the two studies reporting non-significance between these variables used a TSF scale, whereas the other used a SSF scale. Although not many of these studies examined SSF, the difference between SSF and TSF could be further explored as a moderator of the relationship with MI. In a similar fashion to state versus trait SF scales, MI measures also vary in their emphasis on general versus specific PMIEs. It could be that a significant correlation is more likely to be found when both variables (e.g., SF and MI) are more closely focused on either the trait or state level (McCullough & Worthington, 1999).

A fourth potential moderator variable could be the source of participants. Of the seven studies in this review that reported a significant negative relationship between SF and MI, four of them recruited veterans from Department of Veteran's Affairs Medical Centers (VAMC) or

through a ministry organization to veterans. In other words, the participants were veterans who were, or had been, treatment or support-seeking. In contrast, the two studies that reported a non-significant relationship between these variables recruited an online community sample of veterans who were not asked to indicate their treatment-seeking status. Although lacking consensus among the studies in this review, this finding provides some support for the possibility that treatment or support-seeking veterans generally tend to report a more consistent negative relationship between SF and MI compared to non-treatment seeking veterans. It may be that for treatment or support-seeking veterans, struggles with SF may play a larger role in MI than for non-treatment seeking veterans.

Mean age of participants is a final potential moderator. Six of the studies that revealed a significant negative relationship reported mean age, with an average range of 36.68-56.0 years old. However, the two studies that failed to find a significant relationship between SF and MI reported lower mean participant ages of 25.39 (Levi-Belz et al., 2020) and 28.47 (Mallot, 2016), respectively. This finding may point to areas of relevance for future research. For example, it could be that older people tend to be more self-reflective and aware of their faults, whereas younger people may be less self-aware and more focused on enjoying their lives. Younger veterans may not feel as bad about potential wrongdoing, in which case SF might not seem as relevant or necessary. Cohort and age-related factors could impact the relationship between SF and MI, but more research is needed in this area.

### *Clinical Interventions*

Four studies examined a MI intervention that included a SF component (see Table 2). These studies were experimental or quasi-experimental in design, and included a pre-post analysis of change in MI. Three of the four studies found a statistically significant reduction in

MI symptoms following an intervention that included a SF component. For example, Gray et al. (2012) conducted a randomized controlled trial (RCT) of a MI treatment called Adaptive Disclosure with active duty U.S. Marines and Navy Corpsmen serving with a Marine Corps unit, and found statistically significant reductions in post-traumatic guilt cognitions toward the self, world, and overall.

One clinical intervention study (Snider, 2015) did not find a significant impact of a SF intervention on MI. This quasi-experimental study was conducted at a 28-day in-patient treatment facility for trauma and substance use disorders at a VAMC with a sample of veterans diagnosed with PTSD. This psychoeducational group treatment entailed four sessions split over two weekends, which were scheduled two weeks apart. Thus, treatment occurred over a roughly 14-day period. Forgiveness was discussed in sessions one and four. Cognitive Processing Therapy (CPT), a manualized, evidence-base treatment, was provided in group format concurrently to the treatment in consideration for participants in both the intervention and group. Therefore, further research is needed to determine whether this treatment would have been effective apart from CPT.

It may be useful to examine the differences between the three SF intervention studies that reported statistically significant treatment effects and the lone study that did not find a significant impact of treatment (Snider, 2015). There were a few differences between the Snider (2015) study and the others which provide ideas for possible moderators for these experiments. Similar to the cross-sectional findings, the results for these potential moderators should be viewed with caution, because there was only one study that reported a non-significant relationship between a SF intervention and MI. Still, these potential moderators could be interesting to explore further in future research.



First, this intervention that did not report significant findings took place in an inpatient facility, whereas the other three interventions were delivered in outpatient settings. It could be that inpatients are struggling with greater co-morbidity and severity of symptoms (including those caused by MI) compared to those in outpatient treatment, and a SF intervention is not strong enough to effect significant change in these populations. Also, the participants in the inpatient intervention, by nature of being hospitalized, were unable to apply new knowledge and changes to their everyday lives and personal relationships during treatment. Thus, the post-treatment data collection process may not have been able to capture as full of a potential impact of the treatment compared with the studies which used an outpatient therapy intervention.

Second, the Snider (2015) treatment schedule consisted of only four sessions held on two weekends which were two weeks apart. In contrast, the other three interventions in this review consisted of six or more weekly sessions. Such an abbreviated treatment length may not have given participants enough time to make changes to their lives between sessions. It could be that SF interventions that go for a more typical course of several weeks of treatment are more likely to result in significant reductions in MI due to containing a more potent dose of therapy with enough time for the participant to implement changes.

Third, the Snider (2015) study participants underwent concurrent group Cognitive Processing Therapy (CPT) treatment, whereas the participants from other studies experienced SF-based MI treatment in an isolated intervention. The presence of concurrent therapy for all participants acts as a second treatment effect and confounds the ability to determine which aspect of treatment might have either caused or attenuated the results.

## Discussion

The purpose of this literature review was to provide a comprehensive analysis of all

empirical studies that assessed the relationship between SF and MI. These studies were grouped into two categories: (1) cross-sectional studies and (2) experimental or quasi-experimental clinical interventions. Overall, a negative relationship was consistently found between SF and MI among cross-sectional studies. Seven of the nine cross-sectional studies reported a statistically significant negative relationship between SF and MI, with medium to large effect sizes.

This result supports the theoretical model of MI development proposed by Litz et al. (2009). In this model, MI development is described as a process wherein a veteran or service member has transgressed one or more of their deeply held morals, has witnessed such acts committed by others, or has experienced betrayal from a trusted leader (Shay, 2014). Whereas some service members and veterans manage find a way to cope adaptively with these types of experiences, other veterans and service members experience chronic guilt, shame, and self-condemnation, especially when their MI is related to a transgression of their own doing. Litz et al. (2009) argue that veterans who have difficulty forgiving themselves process such transgressions by engaging in self-criticism. They blame themselves and see their wrongdoing as indicative of their overall worth as people, as well as who they will be going forward. According to Litz et al. (2009), these veterans' global and enduring negative attributions about themselves are made possible, in part, due to their inability to forgive themselves. Thus, when taking a snapshot of the cross-sectional relationship of SF and MI, one is likely to observe a significant negative association. The lower the veteran's SF, the higher their MI symptoms are likely to be.

Certain factors such as type of SF or MI measure could moderate this negative cross-sectional relationship. In this review, SF measures tended to have significant negative associations with MI when they focused solely on SF. The two studies that found a non-significant relationship between SF and MI used SF measures that included questions about

forgiveness toward others and perceived forgiveness from God (Mallot, 2016). A diffused focus of the SF instruments may have prevented these analyses from finding a significant negative relationship. This follows the theoretical model proposed by Litz et al. (2009), which specifically addresses the role of *SF* in either facilitating or preventing adaptive processing of PMIEs. Specifically, *SF* is posited to have a strong negative cross-sectional relationship with *MI*, and these findings support that expectation. This finding is also a reminder that forgiveness toward others and having a sense of forgiveness from God or a higher power may hold promise for further exploration as distinct types of forgiveness that potentially relate in unique ways with *MI*.

The state or trait quality of the measure of *SF* or *MI* could be another potential moderator of the negative relationship between these variables. For example, this review found some evidence that a greater proportion of studies with trait *SF* scales (85.7%) reported statistically significant negative relationships between *SF* and *MI* compared to studies that used state *SF* scales (50%). This fits with the theoretical explanation of how *MI* develops (Litz et al., 2009; Griffin et al., 2019). The ability to forgive oneself for transgression-related PMIEs is a buffering factor in whether *MI* and its associated symptoms develop. Veterans' attempts to process their PMIEs are likely to occur over time, and there very well could be multiple PMIEs to address. An overall trait difficulty with *SF* is more likely to prevent healthy processing and adaptation of PMIEs than situation-specific or time-limited lack of *SF*, as this process will almost certainly occur over a period of time. This could indicate that *MI* is more likely to have a negative outcome for veterans who struggle with low trait *SF* compared to those only struggling with state *SF*. If true, such an interpretation has implications for clinical practice when working with veterans and service members with low trait *SF*. Further research is needed on this issue.

The type of *MI* scale used is a third moderator worth mentioning. Whether the *MI* scale

focused more on PMIEs or on symptoms made a difference in the cross-sectional relationship found in this review. Specifically, studies using MI scales that focused on symptoms were more likely to report a significant negative cross-sectional relationship with SF than those with measures that focused on PMIEs. This matches expectations from researchers and clinicians who have pointed out that exposure to PMIEs does not always lead to MI (Griffin et al., 2019). An implication here is that SF may have a different cross-sectional statistical relationship, and may practically relate differently with MI at different points in the process of MI development. In Litz et al.'s (2009) model, the failure of the veteran to engage in SF takes place near the end of the process. The breakdown of SF as a protective factor allows self-condemnation, which is characteristic of transgression-based MI, to flourish unabated in the veteran's mental and emotional state. In summary, SF tends to have an inverse cross-sectional relationship with MI among veterans when it is accurately measured as a distinct construct from other types of forgiveness, among veterans with low *trait* SF, among older veterans, and when the emphasis is on MI symptoms, such as would be found at the end of the process of MI development.

Four experimental and quasi-experimental studies used clinical interventions to promote SF in an attempt to reduce MI. The majority (three) of these interventions resulted in significantly reduced MI symptoms for the participants. This result aligns with Cornish and Wade's (2015) Four-R Therapeutic Process of Self-forgiveness. In this model, SF is predicted to develop in therapy through taking appropriate responsibility for wrongdoing, feeling and processing remorse and guilt, making attempts at restoration, and engaging in reaffirmation of values and a renewed sense of personal esteem. Consistent with this theory, most of the clinical studies in this review found statistically significant decreases in MI symptoms following clinical interventions which incorporated some or all of these aspects of developing SF. The one study

that did not find significance had some methodological flaws (e.g., the confounding effect of concurrent trauma therapy, the lack of randomization for participants to treatment and control groups, and the low number of sessions compared to the other clinical trials in this review) which may have reduced the ability of the intervention to significantly impact MI. As such, this study appears more likely to be an outlier than a serious antagonist to the trend that SF interventions can have a healing effect on MI symptoms.

These findings are good news for service members and veterans suffering with MI. They show there is an overall negative relationship between SF and MI when studied cross-sectionally. The nature of cross-sectional analysis is such that it does not indicate causation between SF and MI. However, clinical trials and experiments were also reviewed and the majority of studies showed that SF interventions reduced MI symptoms. These cross-sectional and experimental results are consistent with theoretical expectations and provide hope for veterans and service members struggling with MI.

#### Limitations and Directions for Future Research

This literature review contained several limitations. In regard to research methodology, roughly three-quarters ( $n = 9$ ) of the studies were cross-sectional. Results should be interpreted appropriately since cross-sectional design cannot prove causation. Although a majority ( $n = 7$ ) of these nine studies described a negative association between SF and MI, it is unclear if there is a causative relationship between them. For example, when a negative relationship is found between SF and MI among veterans, it may be that practicing SF leads to decreased MI. Alternatively, it could mean that a deleterious outcome of increased MI is an impairment in the ability to forgive oneself. However, of the four intervention studies included in this review, most of them ( $n = 3$ ) found that SF interventions were related to decreases in MI symptoms, and two

of these studies used experimental designs. This suggests that, for veterans, a causative relationship likely exists such that practicing SF leads to improvements in feelings such as guilt and shame. However, given the small number of studies that looked at the potential impact of SF on MI, more randomized clinical trials (RCTs) are needed in order to be more confident of such a relationship.

The psychometrics of MI measures are a current limitation of this area of research. A number of MI measures focus on PMIEs and do not comprehensively measure MI symptoms, such as with the Moral Injury Questionnaire – Military (MIQ-M; Currier et al., 2013). Researchers have clarified in recent years that exposure to PMIEs does not equate with MI outcomes, so when these measures are used in SF and MI research, it is impossible to determine if there is a relationship between SF and MI outcomes (Currier et al., 2015; Griffin et al., 2019; Nash et al., 2013; Koenig et al., 2018). Further, some measures that have been used to represent MI include an emphasis on symptoms, but they are limited in their scope by focusing on only one primary symptom or cluster of symptoms while ignoring other potential MI outcomes. For example, in this review, several studies focused on guilt cognitions and used the Trauma-Related Guilt Inventory (TRGI; Kubaney et al., 1996) to measure MI, rather than a comprehensive measure that encompasses many or all of the various constructs and symptoms posited to embody what it means to experience MI.

As Griffin et al. (2019) has pointed out, there is no validated, gold standard measure of MI currently being widely used in psychological research. The field of MI and SF research would greatly benefit from the development and use of MI scales that take into account the complexity of the ways MI can develop (i.e., various PMIE types) as well as the varied symptom clusters and profiles. There is some evidence that different types of moral injuries (i.e.,

transgression-self, transgression-others, and betrayal-based) have different symptom profile outcomes, which warrant further exploration in the literature (Currier et al., 2015; Griffin et al., 2019; Koenig et al., 2018). In particular, Bryan et al. (2014) found that, among a sample of veterans who reported PMIEs, witnessing atrocities committed by others was most strongly associated with PTSD-related symptoms. In this same study, betrayal-based PMIEs were highly related to post-traumatic stress symptoms, but were also most strongly related to anger. In contrast, a different study found that transgression-related moral injuries predicted high levels of re-experiencing symptoms (e.g., intrusive memories, nightmares) and trauma-related guilt (Stein et al., 2012).

These measures should also account for the fact that MI theory, development, mechanisms, and outcomes are similar in some ways to those of PTSD, but there are significant differences that warrant a separate focus on the construct of MI with its own research base. For example, veterans with MI commonly express “profound disillusionment” that would appear to meet the standard of DSM-5 PTSD criterion D: *negative alterations in cognitions and mood associated with the traumatic event(s)* (Smigelsky et al., 2019; p. 4). However, a major difference between MI and PTSD is that the causal development and mechanism that maintains each condition are distinct. Specifically, there is a difference between the fear-based symptoms of PTSD and the disillusionment and emotional dysphoria of MI (Litz et al., 2016). As it stands currently, MI symptoms are often ignored or misinterpreted as PTSD symptoms. Lumping these two problems together indiscriminately confounds researchers’ ability to measure and study PTSD and MI as separate constructs (Drescher et al., 2011; Griffin et al., 2019; Nash & Litz, 2013).

## Implications for Counseling

A review of the literature on SF and MI reveals important implications for counselors. The paucity of current research on MI in general, and on the relationship between SF and MI, in particular, poses a liability in the assessment and treatment of service members and veterans suffering from MI. Currently, MI is not widely assessed or treated in a formal manner in treatment settings for veterans compared to PTSD, which has a wider research base, more training for clinicians, more gold-standard, empirically supported treatments (ESTs), and more widely used and accepted diagnostic measures. The lack of research and clinical focus on MI poses a barrier to veterans receiving effective treatment (Griffin et al., 2019; Litz et al., 2016).

When assessing service members or veterans, counselors must be aware that a PTSD diagnosis may obscure or dwarf the presence of MI, or MI may be mistaken for PTSD, often leading to neglect of veterans' MI symptoms (Litz et al., 2016). Even when accurately diagnosed PTSD is treated with an empirically supported treatment, co-occurring symptoms of MI are likely to persist due to the emphasis of PTSD treatments on life-threat related symptoms of fear and panic rather than on shame or guilt related to perceived moral transgressions.

Clinicians should learn the various types of moral injuries that service members and veterans experience, as well as their outcomes. They should also seek training and supervision in treatments specifically designed to treat MI. Ideally, such interventions would have some empirical support. An example of this is Adaptive Disclosure, an exposure-based MI therapy with flexible therapeutic interventions that allow counselors to use clinical judgment in addressing the unique type of moral injuries and symptom clusters their patients are suffering from (Litz et al., 2016).

The results of this literature review indicate that there likely is a negative cross-sectional



association between SF and MI, as well as a possible causal relationship between these factors, such that SF interventions can bring about a reduction in MI symptoms. This is good news for counselors as it provides some clues as to how to aid veterans in their attempts to resolve the guilt and other MI symptoms they are experiencing.

One of the first steps in the SF process is for counselors to help veterans take their perceived transgressions seriously. As Cornish and Wade (2015) have explained, a process of SF involves taking responsibility and feeling remorse, rather than explaining away wrongdoing. Because of this, it is crucial for counselors to honor service members' and veterans' integrity by validating their feelings of guilt, where appropriate (Litz et al., 2016). At times, veterans suffer unnecessarily by blaming themselves for an outcome while deployed that was completely out of their hands (e.g., the medic that could not save a soldier that suffered a fatal gunshot wound to the head). In other instances, veterans suffer from legitimate remorse, such as after having committed atrocities against civilians in a fit of rage over a lost battle buddy. Although it is the veteran's – and not the counselor's – values which are most relevant in therapy, the counselor must use clinical judgment to understand the nature of the MI and help the veteran take appropriate responsibility and process related feelings of guilt. It is important to keep in mind, however, that shame, which is an enduring negative judgment about oneself, is likely to contraindicate successful treatment of MI if not identified and openly addressed with veterans. Counselors can help veterans distinguish shame from guilt, which is situation-specific and is more likely to lead to pro-social, restorative behavior when acted upon.

After feelings of remorse have been processed, clinicians can guide their veteran patients through a process of restoration and renewal (Cornish & Wade, 2015). This may look very different for each veteran. For example, Adaptive Disclosure treatment involves helping the

veteran access the “hot cognitions” and emotions associated with the MI and, once these are brought to the surface in session, guiding them through exercises designed to help them express their remorse, such as by having an imaginary conversation with a loved one or higher power (Litz et al., 2016). This combination of exposure and cognitive reprocessing of the previously fixed negative beliefs and affect toward oneself can also be described simply as an expression of remorse to, and acceptance of forgiveness or understanding from a loved one or higher power. Veterans may benefit from identifying and acting on ways to make amends. Though their victims may be halfway across the world and inaccessible, or even deceased, veterans with MI can make symbolic gestures of reconciliation. Through these exercises, service members and veterans have reported a sense of being able to forgive themselves, as well as an ability to view themselves positively, invest in themselves, re-integrate into society, and cultivate a sense of hope about their future (Litz et al., 2016).

Self-forgiveness interventions would likely be most relevant when treating transgression-related moral injuries. However, other interventions might be more indicated in the treatment of moral injuries stemming from the loss of a battle buddy, being betrayed, or witnessing atrocities committed by others. For those who have been betrayed, processing feelings of powerlessness, anger, and hurt, and regaining a sense of control and self-mastery may be more useful. Exploring and expressing forgiveness toward the betrayer or perpetrator would likely have more clinical effectiveness in addressing lingering resentment and pain felt toward the offender. Finally, witnessing atrocities committed by others may result in a symptom profile that is more amenable to traditional exposure-based therapies. Although these are merely hypotheses and suggestions, the overall point is that the clinician should use clinical judgment in accurately identifying the

cause and nature of the MI and choose an appropriate clinical intervention tailored to the veteran's needs.

Finally, counselors are recommended to practice good self-care while treating service members and veterans with trauma and MI. Vicarious trauma and burnout can be debilitating and can take counselors "out of the fight," so to speak, making them unable to continue to provide high quality care for veterans. While counselors should be honored to earn the trust of any veteran who would disclose details of their traumas and moral injuries, they should also be aware that empathically listening to such accounts can put them at risk for becoming overwhelmed by the details of horrors sometimes experienced in combat and military service. Counselors would benefit from regularly meeting with their supervisors for professional development as well as for processing adverse feelings which might arise in the course of providing therapy for veterans with MI. Personal counseling with a licensed therapist is a good idea for the personal and professional growth of any mental health professional, but can be especially useful for counselors treating veterans with MI and trauma.

### Conclusion

The relationship between SF and MI in service members and veterans is a promising new area of research that has developed in recent years. This review of the literature has revealed an overall negative cross-sectional relationship between these two factors. Despite the small number of intervention studies that have studied the impact of SF on MI, the majority in this review found that SF interventions resulted in a statistically significant reduction in MI symptoms. These findings are consistent with the theory on both SF and MI, and hold promise for future research and clinical interventions for veterans with MI. The field has several limitations, such as the measurement of MI, distinguishing MI from PTSD and carving out its own place in the

literature, and developing a better understanding of how various moral injuries might lead to different symptom clusters and profiles. Regardless, the clinical implications of these findings are clear: SF is an appealing clinical intervention to explore and use with service members and veterans suffering from MI. Given the novelty and complexity of this new therapeutic focus, the application of such interventions requires a high level of clinical judgment and flexibility, and ideally regular supervision and training. Overall, this review of SF and MI lays out several exciting opportunities for better serving veterans through research and clinical practice.

## CHAPTER 3

### STATEMENT OF THE PROBLEM

In the course of duty, military service members sometimes encounter stressful and disturbing experiences that conflict with their values (Litz et al., 2009). Whereas perceived moral failings and consequent feelings of guilt, regret, and social strain or isolation are common to the human experience and notably occur for police officers, first responders, and healthcare workers, these situations and their aftermath may be especially pronounced and unique for military service members (Griffin et al., 2019; Papazoglou et al., 2020; Williamson et al., 2018). Due to the complex nature of modern war, military personnel increasingly find themselves in chaotic situations with limited and morally ambiguous actions available to them. In urban guerilla warfare, for example, identities of enemies are frequently obscured. Further, some service members report having been unable to help civilians suffering from wounds or resource loss, or even that they themselves have been responsible for the destruction of innocent life and property. These types of stressful experiences may lead to what is known as moral injury (MI). Moral injury has been defined as experiencing the deleterious consequences of potentially morally injurious events (PMIEs) which consist of “perpetrating, failing to prevent, or bearing witness to acts that transgress deeply held moral beliefs and expectations” (p. 695; Litz et al., 2009), as well as experiencing betrayal from a trusted leader (Shay, 2014). Moral injury outcomes include negative impacts on functioning in a variety of domains (e.g., behavioral, psychological, social, spiritual).

Although the literature on MI is still in its infancy (a recent review of epidemiological and clinical studies on MI yielded only 116 results; Griffin et al., 2019), studies have shown a variety of deleterious mental health correlates. For example, Wisco et al. (2017) found a higher

risk of suicidal attempts and ideation, as well as mental health disorders among U.S. veterans of the post-9/11 Afghanistan and Iraq wars. Moral injury has been associated with shame, guilt, hopelessness, loss of meaning, anger, and anhedonia in veterans (Bryan et al., 2017; Currier et al., 2017; Koenig et al., 2018). Harmful behavioral correlates include positive associations between PMIEs and MI with alcohol use and substance abuse (Battles et al., 2018). Substance abuse, as well as a variety of other behaviors (e.g., failing to live up to one's potential), can function as attempts to self-sabotage, which may be a form of self-punishment or simply a reflection of guilt and shame one feels about oneself (Purcell et al., 2018).

Exposure to PMIEs and MI outcomes have also been positively associated with spiritual injury, which is the disruption of personal and corporate religious and spiritual (R/S) practices, as well as a sense of disconnection or lack of forgiveness from a higher power (Drescher et al., 2011; Purcell et al., 2018). It may be difficult for service members to maintain their sense of certainty about their spiritual beliefs or make sense of the world in light of the atrocities they have experienced. Though not all veterans experience MI as a R/S struggle, for some this is a core component of their distress (Griffin et al., 2019).

Social disconnection and alienation may occur as the result of MI as well. Disgust for one's own behavior due to feeling one has violated personal, familial, or societal values has led some service members to withdraw from others (e.g., feeling unwanted or unlovable in light of atrocities committed or witnessed; Purcell et al., 2016). Indeed, perceived social support (PSS) has been negatively associated with PMIEs among Israeli veterans (Levi-Belz et al., 2020). This fits with Litz et al.'s (2009) model of MI, which suggests social support acts as a buffer against the development of MI.

Given that a variety of psychological symptoms, negative emotions, and problematic

behaviors are associated with PMIEs and MI outcomes, it is imperative to devote additional research efforts to MI. This includes assessment of MI and the mechanisms that lead to the development of MI, as well as the study of effective clinical treatments.

### Moral Injury Development

In 2009, Litz et al. published a causal model of MI development for military personnel who have experienced PMIEs. The model begins with a transgression taking place – either committed by oneself, resulting from failure to act, or caused by someone else. Since this model was published, Shay (2014) suggested that betrayal from a trusted leader or moral authority is another distinct category of PMIEs. In Litz et al.'s (2009) model, a PMIE leads to internal conflict and dissonance with one's deeply held values. The intensity of these cognitions is posited to be magnified by higher levels of neuroticism and shame-proneness. The PMIE is then evaluated by the service member to determine causal attributions (i.e., the extent to which an act is judged to be reflective of stable, internal, and global characteristics about the perpetrator). Higher levels of stable, internal, and global attributions lead to the cultivation and intensification of feelings of anxiety, guilt, and shame. Essentially, the more a service member evaluates a transgression to be caused by an enduring, internal characteristic the perpetrator, the worse they feel about that person, and not just regarding the PMIE. This results in social isolation and withdrawal for some, which can be explained by feeling morally out-of-step with one's unit, family, or community, and seeing oneself as unworthy of said group membership and acceptance (Litz et al., 2009). Negative attributions and compulsion to withdraw can be buffered by protective factors of adaptive thinking (e.g., belief in a just world), forgiving supports, and self-esteem. However, without sufficient buffering, MI development may progress further into self-condemnation and the inability to forgive oneself or others. Litz et al. (2009) identified two

categories of symptoms that might result from this highly self-critical state: (1) intrusive memories of PMIEs, avoidance of such memories and situations, objects, and people that bring up reminders of PMIEs, and emotional numbing – symptoms that are typically associated with PTSD intrusion and avoidance symptom clusters; and (2) self-harming, self-handicapping, and demoralization.

Although both MI and PTSD can result from traumatic events, MI is theoretically distinct from PTSD (Litz et al., 2009), and this is one of the reasons it deserves its own body of literature, including an exploration of predictors, causes, and treatments. As outlined above, MI is understood to result from perpetrating, failing to prevent, or witnessing an event that violates strongly held personal morals, as well as from experiencing betrayal by a trusted leader (Litz et al., 2009; Shay, 2014). In contrast, PTSD is more typically caused by experiencing or witnessing life threatening events, which is understood to result in hyperarousal and avoidance of fear-based stimuli and memories (Litz et al., 2016).

Because of these distinctions between MI and PTSD, the symptom clusters tend to differ between the two mental health problems. There are stronger associations between MI outcomes and PTSD than between PMIEs and PTSD (Griffin et al., 2019). This suggests that whereas the end result may look similar between MI and PTSD, the cause and nature of the distress are likely different. As Currier et al. (2017) posit, there are differences in the motivation behind the expression of the same symptom behavior. In the case of avoidance of public places and crowds, a veteran with PTSD might avoid in order to reduce threat-related anxiety, whereas a veteran with MI would be more likely to experience feelings of shame, resulting in social isolation (Currier et al., 2017). Some researchers have found differences in symptom profiles between PTSD and MI as well. For example, one military sample yielded distinct PTSD and MI profiles



such that the PTSD symptom profile was characterized by flashbacks, nightmares, and exaggerated startle response, whereas the MI profile was marked by anger, shame, guilt, anhedonia, and social alienation (Bryan et al., 2017). Research has shown that MI is a distinct construct that shares similarities with, but is distinct from, trauma-related disorders like PTSD. As such, it requires its own focus in the literature and unique interventions tailored to the needs of service members and veterans struggling with the effects of MI.

### Moral Injury Prevention and Repair

Given the tragic impact of MI on service members and veterans, it is encouraging that some have attempted to explain how to protect against the development of MI and how to treat it in clinical settings (Litz et al., 2009; Maguen et al., 2017). Self-forgiveness (SF) and perceived social support (PSS) are two constructs addressed in Litz et al.'s (2009) MI development model, and each have received attention in the empirical literature for their potential roles in MI prevention and repair. This section outlines the theoretical and clinical models for MI prevention and repair as they relate to SF and PSS.

#### Self-Forgiveness

Self-forgiveness is one of the main processes implicated as being helpful in MI repair (Gray et al., 2012; Litz et al., 2009; Litz et al., 2016; Purcell et al., 2018). As Litz et al. (2009) suggested, a lack of SF is the final step in the development of MI following PMIEs. However, SF is not only a protective factor buffering against the development of MI, but could also be a curative force (Maguen et al., 2017; Snider, 2015). One way to understand SF as assisting in the resolution of MI is to view PMIEs as potential stressors that require coping responses. In his *Stress and Coping Model of Self-Forgiveness*, McConnell (2015) explains that unforgiveness toward oneself following an intra- or interpersonal transgression results in stress. If left

unresolved, this stress can build up and lead to negative health outcomes such as anxiety, anger, depression, and hypertension. Although there are a variety of maladaptive ways to cope with stress (e.g., avoidance, numbing, denial), one adaptive way is to practice SF (McConnell, 2015). Whereas SF is seen as a personality trait, it can also be a state, or an attitude toward oneself following personal wrongdoing. In 2015, Cornish and Wade developed a therapeutic model of SF that involves four steps for increasing SF following an interpersonal transgression: (1) responsibility taking; (2) remorse; (3) restoration; and (4) renewal. This model lays out a pathway for the resolution of personal wrongdoing that could be applied to MI.

Other researchers have contributed to the theoretical understanding of how to facilitate genuine SF. In 2018, Griffin et al. described SF as consisting of both value reaffirmation and esteem restoration. This suggests that SF involves processes of: (1) acknowledging how one has violated their own morals and recommitting to acting with integrity; and (2) cultivating self-respect and a positive view of oneself in light of one's objective moral wrongdoing (Griffin et al., 2018).

Empirical findings are limited but offer hope for the impact of SF-based clinical interventions on MI outcomes. First, SF has been significantly negatively associated with MI outcomes in several cross-sectional studies (Barnhart, 2020; Currier et al., 2017; Koenig et al., 2018; Nelson-Pechota, 2016; Raney, 2003; Smigelsky et al., 2019; Swiger, 2020). Although causation cannot be proven from cross-sectional research, these findings help shed light on the nature of the relationship between SF and MI. Clinical studies have taken this research a step further by showing through a small number of experimental (Gray et al., 2012; Maguen et al., 2017) and quasi-experimental (Starnino et al., 2019) studies that clinical interventions with SF components have resulted in reductions of MI outcomes.

## Perceived Social Support

Perceived social support is identified as a protective factor against the development of MI outcomes following PMIEs among military personnel in Litz et al.'s (2009) model of MI development. Given that a common symptom of MI is shame and social withdrawal, perceiving others' support and acceptance could directly challenge and, in some cases, overcome the compulsion to withdraw from others following the perpetration of a PMIE. Levi-Belz et al. (2020) recently studied the mechanism by which PSS might impact the relationship between PMIEs and MI outcomes in a sample of Israeli veterans. These researchers found that PSS moderated the relationship between PMIEs and suicidal ideation and behavior (SIB) such that, at higher levels of PSS, the positive relationship between PMIEs and SIB became weaker. Thus, PSS attenuated the deleterious association between PMIEs and SIB, which is one of the most destructive MI outcomes. The theoretical explanation for this finding is that MI is inherently social in nature, with distress resulting from feeling one has transgressed values and morals of a social group they belong to (e.g., military unit, religion, family, nationality), thus resulting in shame, feelings of unworthiness, and even self-imposed social withdrawal (Litz et al., 2009). If PSS can impact the development, as well as possibly the treatment of MI, it is worth examining further. This is especially true as the mechanisms by which PSS impacts the development and treatment of MI have only been modestly addressed in the literature thus far.

## Clinical Interventions for MI

### *Adaptive Disclosure*

Adaptive Disclosure is an individual, 12-session, exposure-based treatment that uses SF exercises and imaginary conversations with a compassionate moral figure (e.g., grandparent, higher power) to reduce negative feelings toward oneself and increase self-esteem in light of

objective moral wrongdoing (Litz et al., 2016). A randomized clinical trial (RCT) demonstrated the effectiveness of Adaptive Disclosure in significantly reducing MI outcomes in the treatment group when compared with the control group in a sample of active duty U.S. marines who had just returned from a combat deployment (Gray et al., 2012).

### *Impact of Killing*

Impact of Killing is another example of a clinical intervention that emphasizes SF as a primary component of treatment (Maguen et al., 2017). It consists of 10 individual sessions and includes exercises such as making a forgiveness plan, making amends, and considering the impact of withholding forgiveness toward oneself. Impact of Killing was also shown to significantly reduce MI outcomes in the treatment group compared to the control group in an RCT with U.S. veterans (Maguen et al., 2017).

Successful experimental trials of interventions such as Adaptive Disclosure (Gray et al., 2012) and Impact of Killing (Maguen et al., 2017) suggest that SF can be used to effectively treat MI. While this is promising, more research is needed to explore the impact of SF on MI outcomes, as well as the role PSS plays in the development of MI outcomes.

### Purpose of the Present Study

The present study is designed to explore how SF and PSS are associated with and impact the development of MI outcomes among military service members and veterans. The main goals for this study are as follows: (1) explore the relationships among SF, PSS, and MI outcomes; (2) analyze the potential moderating effect of SF and PSS on the relationship between PMIEs and MI outcomes; (3) clarify the predictive nature of three categories of PMIEs (i.e., Transgressions-self, Transgressions-other, and Betrayal) on SF; and (4) explore the relationships among SF, causal attributions for a self-committed PMIE, and MI outcomes.

First, I expect to find a significant, inverse bivariate relationship between trait SF and MI outcomes based on previous findings (Nelson-Pechota, 2016; Raney, 2003). I also expect to find an inverse bivariate relationship between PSS and MI outcomes (Levi-Belz et al., 2020). Taken together, I expect both SF and PSS to account for a significant amount of variance in MI outcomes.

Second, I anticipate finding that both SF and PSS moderate the relationship between PMIEs and MI outcomes whereby, at higher levels of each factor, the positive relationship between PMIEs and MI outcomes is weakened. In other words, SF and PSS are expected to each buffer this relationship, in line with Litz et al.'s (2009) model of MI development.

Third, while MI can theoretically develop as a result of one's own transgressions, witnessing others' acts of wrongdoing, or being betrayed (Litz et al., 2009; Shay, 2014), the relationship of each type of PMIE with trait SF remains unexamined. Previous literature found PMIEs as a whole to be negatively associated with trait SF among veterans (Swiger, 2020), but the question remains as to which of these three is most predictive of trait SF. I anticipate that PMIE-Self, PMIE-Other, and PMIE-Betrayal will each be negatively associated with trait SF. However, due to the self-focused nature of trait SF, I expect PMIE-Self to most strongly predict trait SF when taken together with PMIE-Other and PMIE-Betrayal (Litz et al., 2009).

Finally, the mechanism by which state SF relates with MI outcomes is unclear, and this requires further examination. One potential explanation of this relationship is that state SF leads to more adaptive and positive attributions regarding one's own blameworthiness following personal wrongdoing, which in turn mitigates the development of MI outcomes. I predict that state SF will be inversely related with MI outcomes, as well as negative causal attributions. I also

expect that negative causal attributions will partially mediate the relationship between state SF and MI outcomes.

## CHAPTER 4

### METHOD

#### Participants

My statistical power analysis indicated that a power of .80 with a small to medium effect size required 159 participants. Participants included U.S. service members and veterans over the age of 18. They were recruited from multiple sources, including the University of North Texas student research participant pool (SONA), Amazon's Mechanical Turk (MTURK), advertisements in social media veterans' groups, through partnership with the Hope for the Warriors and Wounded Warrior Project organizations, and via word-of-mouth snowball/convenience sampling. Based on prior research with U.S. military veterans, I anticipated more male than female respondents, as well as heterogeneity among ethnic/racial backgrounds.

There were 92 U.S. adult military service members and veterans who met inclusion criteria as participants. Of the 78 participants who provided their demographic variables, there were 59 males, 18 females, and 1 transgender individual. Participant age ranged from 23 to 80 ( $M = 44.79$ ,  $SD = 13.36$ ). In terms of racial/ethnic background, most participants were White (74.4%, Black/African American 9.0%, Latinx/Hispanic 5.1%, Asian/Pacific Islander 3.8%, Native American/Alaskan Native 2.6%, Multiracial 3.8%, and Other 1.3%). Participants were mostly Protestant Christian (35.9%, Catholic 24.4%, Atheist 9.0%, None 9.0%, Agnostic 7.7%, Other 6.4%, Buddhist 3.8%, Muslim 1.3%, Mormon 1.3%, and Eastern Orthodox 1.3%) and Straight (92.3%, Gay/Lesbian 3.8%, and Bisexual 3.8%).

#### Design

A cross-sectional, correlational methodology was used.

## Measures

### Demographic Questionnaire

Participants were administered a 24-item demographic questionnaire querying the following: age, race, gender identity, sexual identity, marital status, disability status, religious affiliation, nationality, country of birth, countries resided in for over three months, primary language currently, primary language growing up, highest level of education, occupation, and political worldview. Military related questions include service branch, number of years served, war era, type of discharge (if applicable), military status (current/former), duty status (active duty/reserve), number of warzone deployments, and combat exposure. Question format included short answer and multiple choice.

### Self-Forgiveness Measures

#### *Trait Self-Forgiveness*

Participants completed the Heartland Forgiveness Scale, Self-Forgiveness subscale (HFS-Self; Thompson et al., 2005). The HFS-Self prompts participants to consider how they typically respond to their own negative behavior. It contains 6 items (e.g., *Although I feel bad at first when I mess up, over time I can give myself some slack*) rated on a 7-point Likert-type scale from one (*Almost always false of me*) to 7 (*Almost always true of me*). Some items are reverse-coded. Scores are summed, with higher scores indicating greater dispositional SF. The HFS-Self has shown adequate internal consistency ( $\alpha = .72$ ) and test-retest reliability, as well as convergent and divergent validity (Thompson et al., 2005). The Cronbach's alpha for this study was .81.

#### *State Self-Forgiveness*

Participants completed the Self-Forgiveness Dual-Process Scale (SFDPS; Griffin et al.,



2018), a 10-item self-report measure of the extent to which one has recommitted to their transgressed values and restored a sense of self-esteem following perceived interpersonal wrongdoing. The SFDPS consists of two sub-scales: 1) Values Reorientation (VRO; e.g., *I regret that my past actions violate my values*); and 2) Esteem Restoration (ERS; e.g., *Even though I did something wrong, I feel a sense of self-acceptance*), each containing five items. Participants indicate their level of agreement with each item on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Scores are summed for each sub-scale, with higher scores indicating higher levels of values reorientation and esteem restoration. A total scale score is created by summing all 10 items, and represents overall state SF. Both sub-scales have demonstrated good test-retest reliability and internal consistency (alphas = .80 & .82, respectively). Construct validity was established by content experts in the area of psychology of SF during the creation of the instrument. Convergent and divergent validity has also been established for SFDPS-VRO and SFDPS-ERS, respectively (Griffin et al., 2018). For this study, the overall SFDPS Cronbach's alpha was .83, whereas the Cronbach's alpha for SFDPS-VRO was .84 and the Cronbach's alpha for SFDPS-ERS was .89.

## Moral Injury Measures

### *Potentially Morally Injurious Experiences (PMIEs)*

Participants were assessed for PMIEs using the Moral Injury Events Scale (MIES; Nash et al., 2013), a 9-item self-report questionnaire. The MIES has been divided into three subscales: MIES-Self, MIES-Other, and MIES-Betrayal. The MIES-Self subscale contains four items that measure participant's perception of having acted against their deeply held morals or values (e.g., *I violated my own morals by failing to do something that I felt I should have done*). The MIES-Other contains two items that assess for having witnessed others behavior the participant

perceives to be morally wrong (e.g., *I saw things that were morally wrong*). The MIES-Betrayal subscale contains three items that measure perceptions of having been betrayed by fellow service members, military leaders, or trusted civilians (e.g., *I feel betrayed by fellow service members who I once trusted*). Items are rated on a Likert-type scale and range from 1 (*strongly disagree*) to 6 (*strongly agree*). Subscale scores and an overall MIES score are calculated by summing items, with higher scores indicating a perception of having experienced PMIEs to a greater degree. The MIES total scale score has been shown to have excellent internal consistency ( $\alpha = .90$ ; Nash et al., 2013). The MIES-Self, MIES-Other, and MIES-Betrayal subscales have demonstrated good-to-excellent internal consistency (alphas = .90, .85, & .83, respectively; Levi-Belz et al., 2020). Test-retest reliability was also adequate (Nash et al., 2013). Discriminant validity of the MIES was established through expected non-significant associations with combat exposure, which is conceptually distinct from PMIEs. Convergent validity, on the other hand, was established through a significant positive relationship with a PTSD-related traumatic events checklist (Nash et al., 2013). For this study, the overall MIES Cronbach's alpha was .82. Cronbach's alphas for MIES-Self, MIES-Other, and MIES-Betrayal were .91, .71, and .82, respectively.

#### *Index PMIE Question*

A PMIE prompt was developed for this study to elicit a description of the nature and impact of the most troubling PMIE each service member endorsed. Following the administration of the MIES and before administration of the SFDPS, participants were asked to: (1) Identify the troublesome action, inaction, or event that took place; and (2) Describe in a few sentences the impact or consequences this situation had on them.

### *Moral Injury (MI) Outcomes*

Moral injury outcomes were measured using the Expressions of Moral Injury Scale – Military Version (EMIS-M; Currier et al., 2017). The EMIS-M is comprised of 17 items that measure the extent of participants’ self-reported negative thoughts, feelings, and impairments in functioning related to their own or others’ perceived wrongdoing in a military context. The EMIS-M is divided into the Self-Directed (EMIS-M-SD) and Other-Directed (EMIS-M-OD) subscales. The EMIS-M-SD, used for this study, contains 9 items that focus on the negative impact of morally distressing actions they perpetrated or witnessed (e.g., *Because of the things that I did/saw in the military, I sabotage my best efforts to achieve my goals in life*). The EMIS-M-OD consists of 8 items that emphasize the negative impact of others’ perceived moral failings or acts of betrayal toward the participant (e.g., *I sometimes enjoy thinking about having revenge on persons who wronged me in the military*). Items are scored on a 5-point Likert scale (1 = *strongly disagree*; 5 = *strongly agree*). Subscale and total scale scores are calculated by summing items, with higher scores indicating higher degrees of MI. Construct validity was established for the EMIS-M through content expert review during scale development. Concurrent and divergent validity were demonstrated through expected associations between Total EMIS-M, EMIS-M-SD, and EMIS-M-OD with PTSD symptoms ( $r_s = .73, .73, \& .65$ , respectively), depression ( $r_s = .65, .65, \& .58$ , respectively), and social desirability ( $r_s = -.41, -.36, \& -.42$ , respectively; Currier et al., 2017). Cronbach’s alphas for Total EMIS-M (.95), EMIS-M-SD (.94), and EMIS-M-OD (.92) were excellent in the original study (Currier et al., 2017). Further evidence of reliability for the EMIS-M, EMIS-M-SD, and EMIS-M-OD was demonstrated through adequate-to-good test-retest reliability at 6-month follow-up (alphas = .80, .80, & .74, respectively; study 1; Currier et al., 2017). For this study, the overall EMIS-M Cronbach’s alpha was .96. Cronbach’s alphas for

EMIS-M-SD and EMIS-M-OD were both .94.

### Perceived Social Support

Participants were administered the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988). The MSPSS is a 12-item self-report questionnaire that measures the extent of perceived social support. The MSPSS consists of three sub-scales, Significant Other (MSPSS-SO; e.g., *There is a special person around when I am in need*), Family (MSPSS-FA; e.g., *I get the emotional help and support I need from my family*), and Friends (MSPSS-FR; e.g., *I can talk about my problems with my friends*), each containing four questions. Items are rated on a Likert-type scale ranging from 1 (*very strongly disagree*) to 7 (*very strongly agree*). Items are summed to create subscale scores and overall scale score, with higher scores indicating greater levels of perceived social support. The MSPSS-SO, MSPSS-FA, and MSPSS-FR subscales have been shown to have excellent-to-good internal consistency (alphas = .91, .87, and .85, respectively; Zimet et al., 1988). The MSPSS-Total also demonstrated good reliability with a Cronbach's alpha of .88. Test-retest reliability was adequate-to-good for each subscale and the total scale. Divergent validity was established through hypothesized inverse associations between the total scale and each subscale with depression, as well as between MSPSS-FA and anxiety (Zimet et al., 1988). The Cronbach's alpha for the MSPSS-Total in this study was .94.

### Attributions

Attributions about the cause of PMIEs endorsed were measured by using a modified version of the Relational Attribution Measure, Cause subscale (RAM-C; Fincham & Bradbury, 1992). In the original article by Fincham & Bradbury (1992), the RAM-C measured married participants' views about the cause of their partner's behavior related to a marital conflict by using 3 items addressing the locus, stability, and globality of their partner's actions. In this

adapted subscale, service members and veterans will reflect on their own behavior and experiences related to PMIEs. As such, the questions have been adapted to a military context with an emphasis on one's own behavior. Locus has to do with the source of the behavior: *My behavior was due to something about me (e.g., the type of person I am, the mood I was in)*. Stability is the degree to which behavior is perceived as likely to reoccur in the future: *I would be likely to act in the same manner if I found myself in a similar situation in the future*. Globality addresses the extent to which a type of action is present in other areas of one's life: *I have a tendency to act in a similar way, not just in this situation, but in other areas of my life*. Items are rated on a 1-6 Likert-type scale (1 = *Disagree strongly*, 6 = *Agree strongly*). The three items are summed to create a single score, with higher values indicating higher levels of perceived internalized locus, stability, and globality of the participant's PMIE. Although this adapted version of the RAM-C has not been tested for psychometric properties, the original subscale had good internal consistency for wives ( $\alpha = .84$ ) and husbands ( $\alpha = .86$ ; Fincham & Bradbury, 1992). Validity was established through expected positive and negative associations with marital difficulties and marital satisfaction, respectively. The Cronbach's alpha for this study was .68.

### Procedure

Participants were drawn from multiple sources, including the University of North Texas student research participant pool (SONA), Amazon's Mechanical Turk (MTURK), social media and university veterans' groups, partnership with Hope for the Warriors and the Wounded Warrior Project veterans' organizations, and by word-of-mouth snowball/convenience sampling. The informed consent process entailed provision of a written explanation of participant rights and study procedures. Participants were invited to read the above and check a box to indicate

they had read the document and had given their consent to voluntarily participate. After indicating consent, participants were directed to the online survey for this study, hosted on the Qualtrics platform. Following survey completion, participants were provided a debriefing statement and the primary researcher's contact information for any questions or concerns. Participants either received course credit, small monetary compensation, or were informed that a small monetary donation would be anonymously made to a military veterans charity on their behalf.

### Hypotheses and Planned Analyses

#### Hypothesis 1

##### *Statement*

Trait SF will be negatively associated with PMIEs and MI outcomes. Perceived social support (PSS) will also be negatively related to MI outcomes. Further, SF and PSS will significantly predict variance in MI outcomes when analyzed together.

##### *Justification*

The theoretical foundation of this hypothesis is primarily informed by Litz et al.'s (2009) framework for the development of MI in veterans. The ability to forgive oneself is implicated as a protective factor in this model, and failing to engage in SF is the last step before the development of MI symptoms such as demoralization, self-harming, self-handicapping, intrusive memories, numbing, and avoidance (Litz et al., 2009). The expectation is that the more self-forgiving a veteran is in general, the more likely they are to adaptively cope with a PMIE. Further, SF can be healing for service members and veterans with MI (Gray et al., 2012; Litz et al., 2016). Thus, theory suggests that high levels of TSF should be associated with low levels of PMIEs and MI.

Cross-sectional research on SF and MI outcomes has supported the aforementioned theoretical expectations, as evidenced by a moderate to strong negative relationship between MI outcomes and SF (Barnhart, 2020; Currier et al., 2017; Smigelsky et al., 2019; Swiger, 2020). Similarly, a weak to moderately strong association between SF and PMIEs has also been found for about half the studies examining the cross-sectional relationship between these variables (Barnhart, 2020; Swiger, 2020), with the remaining studies reporting a non-significant relationship (Levi-Belz et al., 2020; Mallot, 2016). This can be partially explained by a theoretical perspective of PMIEs leading to guilt and shame (Litz et al., 2009), which have been shown to have a negative relationship with SF (Davis et al., 2015). In accordance with both the theory and research findings, it is hypothesized that negative cross-sectional relationships will be found between SF and PMIEs, as well as between SF and MI outcomes.

Perceived social support has also been theorized to act as a buffer against the development of MI in veterans following a PMIE (Litz et al., 2009), and Levi-Belz et al. (2020) suggested that PSS could be a curative force in healing from it. As such, a negative cross-sectional relationship between PSS and MI outcomes is anticipated within this study. As SF and PSS are considered distinct factors in the potential development of MI (Litz et al., 2009), they are each expected to uniquely account for variance in MI when considered together.

### *Planned Analysis*

I will use the following analyses to test this hypothesis: (a) Pearson product moment correlations between SF and PMIEs, SF and MI outcomes, and PSS and MI outcomes, and (b) a multiple regression with MI outcomes as the dependent variable (DV) and SF and PSS as the independent variables (IVs).

## Hypothesis 2

### *Statement*

Trait self-forgiveness will moderate the expected positive association between PMIE-Self (i.e., self-perpetrated potentially morally injurious experiences) and MI-SD (i.e., self-directed moral injury outcomes). Participants reporting higher TSF will report a weaker positive association between PMIE-Self and MI-SD compared to those low in TSF (i.e., buffering effect).

### *Justification*

Previous research has revealed a large positive cross-sectional relationship between PMIEs and self-directed MI outcomes (Barnhart, 2020). According to Litz et al.'s (2009) causative model of MI, as well as the stress-and-coping model of SF (Davis et al., 2015; McConnell, 2015), SF should attenuate the relationship between PMIE-Self and MI-SD, especially when MI symptoms such as guilt and shame are directed toward oneself. Some have tested this hypothesis and found mixed results. Whereas Barnhart (2020) did not find that SF significantly moderated the relationship between PMIEs and MI, Levi-Belz et al. (2020) and Swiger (2020) discovered that SF significantly moderated the relationship between PMIEs and symptoms of MI such as suicidal ideation and behaviors, as well as guilt and shame. Despite these mixed results, this analysis is expected to show that TSF significantly moderates the relationship between PMIE-Self and MI-SD, such that the significant positive relationship between these variables is weaker when TSF is high, compared to when it is low.

### *Planned Analysis*

To test this hypothesis, I will use the well-known moderation analysis procedure by Baron and Kenny (1986). Self-directed MI outcomes will be the DV, PMIEs will be the IV, and TSF will be the moderator variable. First, I will reduce multicollinearity by centering the IV and



moderator. Next, I will multiply the centered IV and moderator, thus creating a product term. After this, I will conduct a hierarchical regression with the IV and the moderator entered in the first step, and the product term (PMIEs X SF) entered in the second step. If significant, I will graph the interaction and describe it using simple slopes analyses (Aiken & West, 1991).

### Hypothesis 3

#### *Statement*

Perceived social support will moderate the anticipated positive association between PMIEs and MI outcomes. As PSS increases, the positive association between PMIEs and MI will weaken (i.e., buffering effect).

#### *Justification*

Although there is some evidence for a positive cross-sectional association between PMIEs and MI (Barnhart, 2020), the nature of this association needs further exploration. Litz et al. (2009) suggested that forgiving social support acts as a protective factor against the development of MI outcomes when a service member or veteran has suffered a PMIE. Levi-Belz et al. (2020) explored the relationship between PSS and MI outcomes in Israeli veterans and found a small to medium negative cross-sectional relationship, as well as a significant moderation whereby the positive relationship between PMIEs and MI outcomes was weaker at higher levels of PSS. I expect to find a similar result among U.S. service members and veterans.

#### *Planned Analysis*

To test this hypothesis, I will use the well-known moderation analysis procedure by Baron and Kenny (1986). Moral injury outcomes will be the DV, PMIEs will be the IV, and PSS will be the moderator variable. First, I will reduce multicollinearity by centering the IV and

moderator. Next, I will multiply the centered IV and moderator, thus creating a product term. After this, I will conduct a hierarchical regression with the IV and the moderator entered in the first step, and the product term (PMIEs X PSS) entered in the second step. If significant, I will graph the interaction and describe it using simple slopes analyses (Aiken & West, 1991).

#### Hypothesis 4

##### *Statement*

Trait SF will be negatively related with three categories of PMIEs: (a) Transgressions-self (i.e., acts committed by the service member, or, alternately, failing to act); (b) Transgressions-other (i.e., atrocities committed by others and witnessed by the service member); and (c) Acts of betrayal (i.e., acts of betrayal by commanders or trusted leaders). Taken together, the three PMIE types significantly predict variance in SF, with Transgressions-self accounting for the most variance.

##### *Justification*

Previous research has found PMIEs among veterans to be negatively related with SF (Swiger, 2020), but this analysis did not distinguish between PMIE types. Griffin et al. (2020) discovered that PMIE types were associated with distinct symptom profiles in a sample of student veterans. However, this study did not include a measure of SF to compare with PMIE types. It is unclear whether different PMIE types are each uniquely associated with SF, as well as how strongly each type predicts variance in SF when taken together. Given that SF has to do with addressing personal actions, I expect that the Transgressions-self subscale will most strongly predict variance in SF (Litz et al., 2009).

### *Planned Analysis*

I will use the following analyses to test this hypothesis: (a) Pearson product moment correlations between Transgression-self and SF, Transgression-other and SF, and Betrayal and SF; and (b) a multiple regression with TSF as the DV and Transgression-self, Transgression-other, and Betrayal as the IVs

### Hypothesis 5

#### *Statement*

First, SSF will be negatively related with MI outcomes. Second, SSF will be negatively related to negative attributions about oneself regarding a PMIE (i.e., transgression-self). Third, negative attributions will partially mediate the relationship between state SF and MI outcomes.

#### *Justification*

The purpose of this analysis is to clarify an avenue of how SSF works to help MI symptom repair. Litz et al. (2009) suggested in their causative model of MI in service members and veterans that high levels of negative attributions (i.e., internal, stable, and global) about one's own service-related, morally injurious behavior contributes to increased MI symptoms. Part of the process of engaging in SF for personal transgressions involves taking appropriate levels of responsibility, processing difficult feelings such as guilt and shame, and reaffirming violated morals (Cornish & Wade, 2015; Griffin et al., 2018). In other words, the SF process is likely to lead to an appropriate allocation of responsibility or locus of culpability, as well as the ability to frame the behavior and consequences within the context of the situation and generate hope for one's future behavior. In this analysis, a high level of SSF is expected to lead to veterans reporting more positive attributions (i.e., less internal, stable, or global) in relation to a specific transgression, which in turn is expected to lead to lower levels of MI outcomes.

### *Planned Analysis*

I will use Baron and Kenny's (1986) mediation analysis procedure to test this hypothesis. State SF will be the IV, MI outcomes will be the DV, and negative causal attributions will be the mediating variable. First, I will run a bivariate regression attempting to establish a significant negative relationship between the IV and the DV. Second, I will run a bivariate regression attempting to detect a significant negative relationship between the IV and the mediator. Third, I will run a multiple regression with MI outcomes as the DV and SSF and causal attributions as IVs. In this regression, while controlling for SSF, I will test whether causal attributions significantly predict variance in MI outcomes. I will also explore the extent to which SSF accounts for less variance in MI in the multiple regression compared to in the bivariate regression with MI. Finally, I will use PROCESS to test the significance of the mediation.

## CHAPTER 5

### RESULTS

#### Data Cleaning and Preliminary Analyses

Before conducting the primary analyses, I checked for missing data, linearity, outliers, and normality. I removed approximately 95 respondents who missed over 20% of data in the survey or who were not from the U.S., 10 were excluded for not reporting a moral injury, and 3 participants were excluded for having an invalid response style (e.g., yea-saying). There was a small amount of additional missing data: four participants did not complete a particular measure but did not miss over 20% of the overall data on their survey; they were included in the overall dataset but were not included in the specific analyses involving the scales in which they had missing data. There was one low outlier for one scale (SFDPS-Total). I recoded the outlier to three standard deviations below the mean. I computed the kurtosis and skewness of each variable to assess for normality (see Table 3). Prior literature has recommended that a normal univariate distribution of acceptable asymmetric skewness values range -2.00 to 2.00 (George & Mallery, 2010). There was no evidence of non-normality due to the data for all variables falling within this range. As such, data transformation was not required. I provide the mean, standard deviation, normality statistics, and intercorrelations for each variable in Tables 3 and 4.

#### Relationships Between Trait Self-Forgiveness, Perceived Social Support, Potentially Morally Injurious Experiences, and Moral Injury Outcomes

To test my first hypothesis, I examined the Pearson's product moment correlations between moral injury symptoms (MI), potentially morally injurious experiences (PMIEs), perceived social support (PSS) and trait self-forgiveness (TSF). I hypothesized that TSF would be significantly negatively related with PMIEs and MI, and that PSS would also be negatively related to MI. My hypotheses were fully supported. PMIEs ( $r = -.26, p = .012$ ) and MI ( $r = -.49,$

$p < .001$ ) were both negatively correlated with TSF. PSS was also significantly negatively correlated with MI ( $r = -.50, p < .001$ ).

Further, I hypothesized that TSF and PSS would collectively and individually determine significant change in MI when analyzed together. I used a simultaneous multiple regression analysis to test this hypothesis; TSF and PSS were the independent variables and MI was the dependent variable. The overall model was significant, and the hypothesis was supported. TSF and PSS predicted about 35% of the variance in MI ( $R^2 = .35, F(2, 88) = 23.48, p < .001$ ). Both TSF ( $\beta = -.34, p < .001$ ) and PSS ( $\beta = -.36, p < .001$ ) significantly negatively predicted MI (See Table 5).

#### Trait Self-Forgiveness as a Moderator between Self-Perpetrated Potentially Morally Injurious Experiences and Self-Directed Moral Injury Outcomes

The second research question examined the influence TSF may have on the association between PMIE-Self (i.e., self-perpetrated potentially morally injurious experiences) and MI-SD (i.e., self-directed moral injury outcomes). My hypothesis was that individuals with high TSF would have a weaker positive association between PMIE-Self and MI-SD compared to those low in TSF (i.e., buffering effect). I used a hierarchical regression analysis to test this hypothesis, with PMIE-Self as the IV, MI-SD as the DV, and TSF as the moderating variable. I first reduced potential multicollinearity by standardizing the predictor and moderator. Next, I entered the standardized variables PMIE-Self and TSF in Step 1, and the interaction term in Step 2.

This hypothesis was not supported. In Step 1, PMIE-Self and TSF predicted about 30% of variance in MI-SD ( $R^2 = .30, F(2, 88) = 19.26, p < .001$ ). In Step 2, I added the interaction term, but this failed to significantly account for additional variance in MI-SD ( $\Delta R^2 = .01, \Delta F(1, 87) = 1.46, p = .180$ ). In the final model, PMIE-Self significantly positively predicted MI-SD ( $\beta$

= .33,  $p < .001$ ) and TSF significantly negatively predicted MI ( $\beta = -.45, p < .001$ ). However, in this model, the interaction did not significantly predict MI-SD (see Table 6).

#### Perceived Social Support as a Moderator Between Potentially Morally Injurious Experiences and Moral Injury Outcomes

The third research question asked whether, and to what extent, PSS influences the association between PMIEs and MI. I hypothesized that PSS would significantly moderate an expected positive association between PMIEs and MI. Specifically, I anticipated that participants low in PSS would report a moderately strong positive association between PMIEs and MI, whereas participants higher in PSS would report a weak positive association between PMIEs and MI (i.e., buffering effect). I tested this hypothesis using a hierarchical regression analysis with PMIEs as the IV, MI as the DV, and PSS as the moderating variable. I first reduced potential multicollinearity by standardizing the predictor and moderator. Next, I entered the standardized variables PMIEs and TSF in Step 1, and the interaction term entered in Step 2.

This hypothesis was not supported. In Step 1, PMIEs and PSS predicted about 53% of variance in MI ( $R^2 = .53, F(2, 88) = 49.79, p < .001$ ). In Step 2, I added the product term, but this failed to significantly account for additional variance in MI ( $\Delta R^2 = .01, \Delta F(1, 87) = 2.13, p = .148$ ). In the final model, PMIEs ( $\beta = .54, p < .001$ ) significantly positively predicted MI, whereas PSS ( $\beta = -.40, p < .001$ ) significantly negatively predicted MI. However, in this model, the interaction did not significantly predict MI (see Table 7).

#### Trait Self-Forgiveness and Types of Moral Injury

The fourth research question explored the individual and collective relationships between PMIE types (i.e., self, other, and betrayal) and TSF. First, I predicted that each PMIE type would have a significant negative bivariate relationship with TSF. I tested this hypothesis by calculating

the Pearson's product moment correlation between each PMIE type and TSF. My hypothesis was partially supported. Neither PMIE-Self ( $r = -.11, p = .160$ ) nor PMIE-Other ( $r = -.02, p = .436$ ) were significantly correlated with TSF. However, PMIE-Betrayal was significantly negatively correlated with TSF ( $r = -.40, p < .001$ ).

Second, I predicted that, when analyzed together, each PMIE type would be a significant predictor of change in TSF, with PMIE-Self accounting for the most variance. I used a simultaneous multiple regression to test this hypothesis, with TSF as the DV and PMIE-Self, PMIE-Other, and PMIE-Betrayal as the IVs. The results partially supported this hypothesis. First, the overall model demonstrated significance. PMIE-Self, PMIE-Other, and PMIE-Betrayal predicted about 20% of the variance in TSF ( $R^2 = .20, F(3, 87) = 7.01, p < .001$ ). However, when analyzed together, PMIE-Self ( $\beta = -.12, p = .267$ ) and PMIE-Other ( $\beta = .21, p = .068$ ) were not significantly related to TSF, whereas PMIE-Betrayal was significantly negatively associated with TSF ( $\beta = -.46, p < .001$ ; See Table 8).

#### Causal Attributions as a Mediator Between State Self-Forgiveness and Moral Injury

The fifth and final research question explored the potential role of causal attributions (CA) in explaining the relationship between SSF and MI. I hypothesized that CA would mediate the relationship between SSF and MI. To test this hypothesis, I first tested the bivariate relationships between SSF (predictor variable) and MI (criterion variable), as well as between SSF and CA (mediator variable). My hypothesis was not supported. The direct association between the predictor variable (SSF) and the criterion variable (MI) was not significant ( $\beta = -.18, p = .087$ ; See Figure 1). Also, the direct association between the predictor variable (SSF) and the mediator variable (CA) was not significant ( $\beta = -.13, p = .238$ ). Finally, controlling for the predictor variable (SSF), the association between the mediator variable (CA) and the criterion



variable (MI) was not significant ( $\beta = .04, p = .711$ ). To test whether the mediated effect of SSF on MI through CA was significant, I utilized the bootstrapping procedure outlined by Preacher and Hayes (2008). Using a bias-corrected bootstrapping procedure based on 5,000 resamples, I found that the indirect effect of SSF on MI through CA not significant (*est.* =  $-.01$ , *SE* =  $.02$ , 95% *CI* =  $-.07$  to  $.02$ ; See Figure 1).

## CHAPTER 6

### DISCUSSION

Moral injury (MI) poses a considerable threat to the well-being of service members and veterans (Griffin et al., 2019). Because of this, there is a need for more research in this area. However, the empirical study of MI is still in its infancy. One particular gap in the literature involves the relationship between MI and its predictor variables, such as potentially morally injurious experiences (PMIEs), trait self-forgiveness (TSF), state self-forgiveness (SSF), perceived social support (PSS), and causal attributions (CA) about one's own role in a morally injurious experience. This study was conducted to strengthen this area of research by analyzing (1) the bivariate associations between TSF, PMIEs, PSS, and MI, as well as the multivariate relationship between TSF, PSS, and MI; (2) the influence of TSF on the association between PMIEs and MI; (3) the influence of PSS on the association between PMIEs and MI; (4) the bivariate and multivariate relationships between TSF and each PMIE-type (i.e., PMIE-Self, PMIE-Other, and PMIE-Betrayal); and (5) the potential role of CA as a mediator in the relationship between SSF and MI.

I first explored the relationships between TSF, PMIEs, PSS, and MI. In line with my hypothesis, I discovered that both PMIEs and MI had significant negative correlations with TSF, with moderate and large effect sizes, respectively. This result corroborated prior findings in this area, where all six studies measuring the cross-sectional relationship between TSF and MI reported a significant negative correlation between them (Barnhart, 2020; Currier et al., 2017; Nelson-Pechota, 2016; Raney, 2003; Smigelsky et al., 2019; Swiger, 2020). It is interesting to note that TSF had a stronger relationship with symptoms of MI than with PMIEs. This follows the literature in that the lone study which measured the relationship between TSF and PMIEs did

not find a significant relationship between these variables in an Israeli military sample (Levi-Belz et al., 2020). It may be that service members could have different responses to PMIEs, which could have attenuated the correlation with TSF.

These results align with Litz et al.'s (2009) framework for the development of MI in veterans. The model suggests that the ability to forgive oneself (i.e., trait self-forgiveness) could be a protective factor that can be related to lower MI symptoms such as demoralization, self-handicapping, self-harming, intrusive memories, avoidance, and numbing. Also, PMIEs seem to be related to lower levels of TSF, although this relationship was not as strong as the relationship between TSF and MI.

Theoretical support for the negative cross-sectional relationship between TSF and PMIEs also aligns within Litz et al.'s (2009) reasoning that PMIEs may lead to feelings of guilt and shame. Since Davis et al. (2015) found that TSF tends to be negatively associated with guilt and shame, one could expect to find a negative association between TSF and PMIEs, which is what this study discovered.

Also consistent with my hypothesis, PSS was significantly negatively correlated with MI, with a large effect size. No studies in this literature review assessed the cross-sectional relationship between PSS and MI. However, plausible theories have been proposed describing PSS as a potential buffer against the development of MI in veterans following a PMIE (Litz et al., 2009) as well as a potential curative force in healing from it (Levi-Belz et al., 2020). It could be that those high in PSS are likely to experience lower MI symptoms due to having a sense of belonging and connection already established (Litz et al., 2009). On the other hand, it could be that MI is particularly harmful to one's sense of social connection and belonging.

In my next analysis I moved beyond the bivariate relationships between MI, TSF, and

PSS to study the multivariate relationship between them. In particular, I conducted a multiple regression with the independent variables TSF and PSS predicting the criterion variable, MI. Results showed that changes in TSF and PSS collectively explained roughly 35% of variance in MI, and thus supported the model as being significant. Furthermore, both TSF and PSS were significantly negatively associated with MI. This finding is consistent with Litz et al.'s (2009) assertion that TSF and PSS comprise significant but distinct roles in his model for the development of MI among service members and veterans.

When I explored the relationship between self-perpetrated PMIEs (PMIE-Self) and self-directed MI (MI-SD), I expected to find that TSF would impact this relationship such that higher levels of TSF would be associated with a weaker positive relationship between PMIE-Self and MI-SD (i.e., buffering effect). This hypothesis was not supported. In the final model, the main effects were significant—PMIE-Self was a positive predictor of MI-SD and TSF was a negative predictor of MI-SD, but the interaction effect of these variables was not significant. This means that, in this sample, TSF was negatively related to MI-SD (i.e., significant main effect), but did not significantly impact the relationship between PMIE-Self and MI-SD (i.e., no significant interaction effect). Contrary to theory and the majority of similar reported analyses in the literature, having higher levels of self-reported self-forgiving beliefs and feelings did not attenuate the relationship between having perpetrated morally injurious behavior and the intensity of negative feelings toward the self (Barnhart, 202; Levi-Belz et al., 2020; Swiger, 2020).

These results provide some insight into the relationship between PMIE-Self, TSF, and MI-SD among U.S. service members and veterans. Given that PMIE-Self was positively associated with MI-SD, this supports the theoretical expectation that self-perpetrated potentially

morally injurious behavior is related to increases in self-directed negative feelings related to one's moral injury (Litz et al., 2009). Similarly, the finding that TSF negatively predicted MI-SD supports the assertion that TSF might play a role in moral injury development. Bearing in mind that the cross-sectional nature of this analysis precludes any inferences about the presence or direction of potential causation, this significant finding shows promise for further investigation into potential causality between these variables.

It is noteworthy that the interaction in this analysis was not significant. This result could be due to limitations in methodology. For instance, the low sample size and decreased power may have made it difficult to find a significant moderation if one actually exists in this population. Also, given that participants were not required to have a self-directed moral injury in order to participate in the study, it could be that limiting the sample to this inclusion criterion could result in different findings. Finally, it may simply be that TSF does not moderate the relationship between PMIE-Self and MI-SD. In other words, the strength of the association between PMIE-Self and MI-SD might not change based on the degree of one's TSF. Looking forward, it will be important for future studies to explore this analysis using improved research design.

Similarly, when I explored the potential moderating role of PSS on the relationship between PMIEs and MI, I expected to find that PSS would impact this relationship such that higher levels of PSS would be associated with a weaker positive relationship between PMIEs and MI (i.e., buffering effect). This hypothesis was not supported. In the final model the main effects were significant—PMIEs was a positive predictor of MI and PSS was a negative predictor of MI. However, the interaction effect was not significant. This means that, in this sample, similar to the previous hypothesis, PSS was negatively related to MI (i.e., significant main effect), but did not

significantly impact the relationship between PMIEs and MI (i.e., no significant interaction effect). This result does not align with the theory of the development of moral injury among service members and veterans (Litz et al., 2009), which holds that forgiving social support acts as a protective factor against the development of MI outcomes when a service member or veteran has suffered a PMIE. Also, in contrast to this finding, a single study in the literature review attempted a similar moderation analysis – although with an Israeli military sample – and found that PSS did significantly moderate the relationship between PMIEs and suicidal ideations and behaviors, which are considered a component of MI outcomes (Griffin et al., 2019; Levi-Belz et al., 2020).

These results provide some insight into the relationship between PMIEs, PSS, and MI among U.S. service members and veterans. The significant main effect of PMIEs positively predicting change in MI suggests that PMIEs are related to worsened MI symptoms. This makes sense given that PMIEs are expected to lead to MI symptoms (Griffin et al., 2019). The other main effect (i.e., PSS negatively related to MI symptoms) is also noteworthy. Social support may help people deal with the negative symptoms associated with MI. Moral injury is a highly social phenomenon, including a sense of social isolation and unworthiness to belong to one's social group due to the violation of values associated with said group (Litz et al., 2009). Social support might help remind service members and veterans that they are welcome and belong in relationships and communities, thus counteracting one of the negative outcomes of MI. It is important to remember that correlation does not indicate causation, and that these results could be interpreted differently. For instance, it could be that those high in MI symptoms have experienced a severe erosion of their sense of social support. Or perhaps veterans with MI have trouble reaching out to others for help and support.

Regarding PMIE types (i.e., self, other, and betrayal) and their association with TSF, I intended to test each type's bivariate relationship with TSF, as well determine if they collectively accounted for significant change in TSF. The results showed partial support for my hypotheses. Neither PMIE-Self nor PMIE-Other were significantly correlated with TSF, but PMIE-Betrayal was significantly negatively associated with TSF with a moderate-to-large effect size. When analyzed together in a multiple regression, the three PMIE types collectively accounted for about 20% of variance in TSF. In this analysis, the predictors had similar relationships with TSF as found in the bivariate analyses: PMIE-Self and PMIE-Other were not significantly related to TSF, whereas PMIE-Betrayal was negatively associated with TSF.

These results are not entirely what was hypothesized and must be explored to better understand them. The result of the three PMIE types collectively predicting a significant amount of variance in TSF follows what was expected based on prior research (Swiger, 2020). Following Griffin et al.'s (2020) finding that PMIE types were associated with distinct symptom profiles in a sample of student veterans, it was expected that PMIE types might relate distinctly with TSF when taken together. However, since no prior studies have distinguished between PMIE types in predicting TSF, there was no empirical evidence for a specific hypothesis regarding the direction and strength of the relationship between PMIE types and TSF. Instead, theory (Litz et al., 2009) and logic were used to reason that, when analyzed with the other PMIE types, PMIE-Self would account for the most variance in predicting TSF due to PMIE-Self and TSF both relating to one's own behavior as well as feelings and attitudes toward oneself.

In the results of the current analysis, there were differences in which predictors significantly accounted for variance in TSF, but not in the manner expected. Namely, PMIE-Betrayal was the only predictor that had a significant negative relationship with TSF. One way to

understand the significant impact of PMIE-Betrayal on changes in TSF is that, as veterans and service members experience morally injurious betrayal, they are more likely than those reporting self-perpetrating morally injurious experiences and those who witnessed morally injurious acts committed by others to develop negative attitudes and feelings toward the self. Further, it could be that betrayal is such a harmful type of moral injury that it not only results in negative feelings toward perpetrators of abuse but also a lack of forgiveness toward oneself. In this sense, the harm the betraying party causes the victim might not only include the act of betrayal, but also a potential range of negative self-directed affect (e.g., disappointment in oneself, demoralization, self-blame).

The reasons for the lack of significant relationships of PMIE-Self and PMIE-Other with TSF are unclear. Given that the both the bivariate and multivariate relationships of these PMIE types with TSF were not significant, it cannot be reasoned that the influence of PMIE-Betrayal, when analyzed together with PMIE-Self and PMIE-Other, accounts for any potential variance that would have been observed in the aforementioned bivariate relationships between PMIE-Self and PMIE-Other with TSF. However, it could be that there was insufficient power to find a significant relationship given the low sample size. Ultimately, it may be that PMIE-Self and PMIE-Other do not relate with TSF in the hypothesized manner among U.S. service members and veterans.

My final hypothesis explored the role of causal attributions (CA) related to one's PMIE (i.e., the belief that what took place is one's own fault, is indicative of who they are as a person, and that they are likely to act in similar ways in other situations) as a potential mediator between state self-forgiveness (SSF) and MI outcomes. This hypothesis was not supported. The predictor variable, SSF, was not related to either the mediator variable (CA) or the criterion variable (MI).



Further, the indirect effect of SSF on MI through CA was not found to be significant. These results mean that, in this sample, self-forgiving feelings and reorientation toward one's values following a PMIE was not related to self-blame, nor was it related to moral injury symptoms. Further, self-blame for the PMIE did not indirectly explain a potential relationship between self-forgiveness related to the PMIE and moral injury symptoms.

A closer look at the literature on state self-forgiveness may help explore these results. Research on the Four-R Model of Self-Forgiveness (Cornish & Wade, 2015) has discussed how high levels of responsibility taking are important for successful completion of the self-forgiveness process. However, researchers have found that in cross-sectional samples assessing SSF following perceived wrongdoing, SSF is likely to be negatively associated with the level of responsibility taking (Coomes, 2019). One explanation for this peculiar finding is that responsibility taking is theorized to be the initial task in the process of self-forgiveness, therefore feelings of SSF might remain low at the beginning of this process and not increase until the end, once the person has progressed through the final stage of renewal (Cornish & Wade, 2015). The concept of renewal includes constructs of value reorientation (i.e., recommitting to one's violated values) and esteem restoration (i.e., restoring a positive and accepting view toward oneself), which are the primary constructs measured in the SSF scale used in this study (Griffin et al., 2018). Although CA, as used in this study, is a similar construct to responsibility taking, it is not exactly the same. One could expect SSF to negatively correlate with CA, but there are reasons why this might not be the case (e.g., slightly dissimilar constructs between CA and responsibility taking, small sample size resulting in insufficient power to detect a significant result if one truly exists, or the stage the participant is potentially in regarding a self-forgiveness process).

The finding of SSF not being significantly related to MI was surprising given that a

theoretical model of MI development (Litz et al., 2009) suggests SSF would be related to MI such that higher levels of SSF would be related to lower levels of MI. Further, the non-significant mediation was not in line with Litz et al.'s (2009) model which views CA as a factor in MI development such that the more a service member or veteran views their PMIE as emanating from the core of their person and character (as opposed to an exception to their true character or as a behavior mostly caused by a difficult context), the more they are likely to suffer from MI. Why were these results not significant in the current study? It could be that CA is not a significant factor in the relationship between SSF and MI as theorized. However, it is important to consider other possibilities for this null effect. For example, the small sample size might have limited the power to find a significant result if one exists within this population. The cross-sectional methodology may lack the ability to capture the nuance of the process of MI development and repair, thus resulting in a muddied picture of what is happening with the participants in this sample. Finally, instrumentation selection may be a problem. For example, the scale used to measure MI, the Expressions of Moral Injury Scale – Military Version (EMIS-M; Currier et al., 2017) might not be sophisticated enough to adequately represent the variety of constructs and symptom clusters that are purportedly associated with MI (e.g., suicidal ideation and behaviors, substance abuse, depression; Griffin et al., 2020). This scale may be insensitive to changes in SSF or CA and thus be unable to accurately measure changes in these variables that theoretically would have a significant impact on MI. Furthermore, the measure of CA was adapted for the present study, and thus the specific measure does not have prior evidence supporting its reliability and validity.

#### Limitations and Suggestions for Future Research

In this section I describe a number of potential study limitations, including sample size,

recruitment procedures, methodology and study design, and instrumentation, which should be considered when discussing these findings. First, the recruitment of U.S. military service members and veterans was challenging, and this resulted in a smaller-than-expected sample size. Despite recruitment efforts attempting to convey support for the well-being of this population, as well as offering compensation to the participant or a donation to a veterans' organization for study participation, some people responded negatively and expressed distrust of the researcher's intentions when invited to participate. Further, in spite of efforts to diversify recruitment sources in an attempt to reach as many participants as possible, this study still fell short of its goal for number of participants. An appropriate number of participants would have provided more statistical power for finding significant associations between variables if they actually exist in this population. It may be that some analyses which were non-significant would have been significant if the sample size had been larger. Finally, the recruitment phase of this study lasted approximately seven months, which may have been too short of a window to recruit an adequate number of participants from this population. Future research should devote greater efforts to establishing a more thorough recruitment strategy as well as allot more time for the recruitment phase.

Second, the current study recruited U.S. military service members and veterans from all service eras who are at least 18 years old. Thus, these results can be generalized only to adult military service members and veterans from the U.S., and not to military personnel or veterans from other countries. Follow-up studies would benefit from sampling from an international population to better understand military related MI on a broader, multi-national scale. Further, although MI among military personnel might be related in some ways to MI occurring in other contexts (e.g., first responders), these results cannot confidently be generalized outside of an

active duty or reserve military or veteran population. Further research would be useful in comparing the experiences of MI across different contexts, such as between military personnel and first responders.

Third, the recruitment sources were diverse, but each source had potential limitations which could have impacted the validity of the data. Roughly half the respondents were recruited from Amazon's Mechanical Turk and were paid \$2.00 for their participation in the study. Several validity controls were used to screen for invalid participants (e.g., participants who were not from the U.S., had never served in the U.S. military, were not paying attention, were responding indiscriminately to item content, or were exhibiting a response bias). However, the survey was administered via Qualtrics, and due to the anonymity that is inherent in online survey participation, there is the chance that some respondents were incorrectly included in the sample as valid participants. For example, dozens of participants were removed for taking the survey but not actually being from the U.S., and their participation might have been motivated by the potential for financial compensation.

The other half of the sample was recruited from veterans' organizations such as Hope For The Warriors and The Wounded Warrior Project, as well as through the research team's social media pages and snowball sampling/word-of-mouth recruitment. This form of convenience sampling from organizations and through social connections did not have an equal chance of recruiting a demographically representative sample of service members and veterans from every region of the U.S., and thus the generalizability of these results to the target population is not as strong as would be ideal. In contrast to those who took the survey via Mechanical Turk, participants who were recruited via veterans' organizations and social media were not compensated. Instead, these participants were informed that their participation would result in a

monetary donation to support injured veterans seeking treatment and support from the Hope For The Warriors organization. It could be that the different forms of incentive for participation led to varying levels of effort. Further, those who knew the researcher directly (or indirectly through an acquaintance) may have been less forthcoming or descriptive about their PMIEs, as well as less honest on their questionnaire responses. Follow-up studies could include more comprehensive recruitment methods that reduce the risk of heightening participant defensiveness.

Fourth, I used a cross-sectional methodology for this study. Any significant relationships found between variables (e.g., between TSF and MI) are correlational and cannot be interpreted as one variable causing change in another. Further, I cannot determine whether unaccounted-for variables influenced these relationships. Some of the major variables and concepts explored in this study (i.e., SF and MI) are best understood as a process (Cornish & Wade, 2105; Litz et al., 2009). Prior research measuring the association between SF and predictor variables demonstrated that sometimes different associations were found between variables in cross-sectional compared to experimental or longitudinal studies (Coomes, 2019; Griffin et al., 2015; Moloney, 2014). Future studies should include longitudinal or experimental designs to assess the process component of these variables. For example, a randomized controlled trial (RCT) might reveal the impact of a self-forgiveness intervention on MI symptoms.

Fifth, the instruments used in this survey had limitations worth discussing. The measure used to assess causal attributions (CA) in this study was adapted by this author from the Relational Attribution Measure – Causality subscale (RAM-C; Fincham & Bradbury, 1992), which was normed on married couples as they rated their spouses' negative behavior toward them in the areas of locus, stability, and globality. This measure was adapted in the present study

to function as a self-report rather than an other-report, and this may have weakened the validity of the scale. The Cronbach's alpha was in the marginal range for the current study. Future studies assessing CA in moral injury research should find or develop a more psychometrically sound measure of this construct. Further, all measures used in this scale were self-report and were thus susceptible to a socially desirable response style. Additional research in this area would benefit from including other-report or behavioral measures.

There are additional areas ripe for future research in the area of MI. Defining and categorizing MI has been a difficult and ongoing task that raises questions. For example, who can experience MI? Is this a phenomenon limited to military service members, or does it expand to others such as first responders, healthcare professionals, or those recovering from substance abuse (Griffin et al., 2019)? Further, is MI best understood in terms of three types (i.e., perpetration, witnessing, betrayal; Currier et al., 2017), or more simply as two types (i.e., perpetration, betrayal; Griffin et al., 2019)? Researchers can help clarify these questions by studying MI in non-military populations and continuing to evaluate the types of PMIEs as they relate with MI outcomes. Whereas several studies (e.g., Purcell et al., 2018), including this one, have focused on self-forgiveness in MI development and repair, there is a need to empirically study the potential role of forgiveness of others in MI. This could be especially relevant to addressing betrayal-based MI where anger and unforgiveness toward others might hold victims back from overcoming MI outcomes and moving on with their lives.

### Implications for Practice

These study results are concordant with prior literature displaying a negative association between TSF and MI (Barnhart, 2020; Currier et al., 2017; Smigelsky et al., 2019; Swiger, 2020). In this sample, TSF was negatively associated with both MI-SD and overall MI outcomes.

Clinicians will be wise to assess for difficulty with self-forgiveness when treating service members and veterans with MI, as the presence of one of these factors is likely to indicate a low degree of the other. When doing trauma work with this population, therapists should keep an eye out for difficulties with self-forgiveness in their clients, as this may indicate the presence of MI on top of PTSD or a trauma-related disorder.

Various individual and group psychotherapy treatments for MI have been described in the literature and many of them contain some aspect of a self-forgiveness intervention (Gray et al., 2012; Maguen et al., 2017; Snider, 2015; Starnino et al., 2019). Some of these interventions focus on spiritual injury and seeking forgiveness in response (Starnino et al., 2019), others focus on addressing post-traumatic cognitions (Maguen et al., 2017), and still others resemble exposure-based PTSD treatment with added empty chair techniques for disclosing one's morally injurious behavior to a higher power or imagined benevolent other (Gray et al., 2012). Although not originally developed to treat MI specifically, Cornish and Wade's (2015) Four-R Model of Therapeutic Self-Forgiveness could be helpful for counselors. The authors recommend guiding clients who feel remorse over wrongdoing through a four-step sequence of responsibility taking, processing remorse, taking steps toward restoration, and developing a sense of renewal and growth from reorienting to one's values. Given the effectiveness shown across a variety of approaches in treating MI, counselors would be wise to be flexible in finding an approach that fits best with the client's needs.

Perceived social support was also negatively related with MI in this sample. This suggests the importance of assessing for the quality of actual and perceived social support when treating veterans with MI. Although we cannot know from the present study whether a causal relationship exists between PSS and MI, these results align with the conceptual understanding of

MI outcomes as including the perception of having lost a sense of social belonging due to having violated social norms (Currier et al., 2017). Therapists should consider prioritizing improvement of social support among service members and veterans suffering with MI. This may involve building social skills, using motivational interviewing to resolve ambivalence around goals of building (or reconnecting with) one's community, and cognitive interventions to address negative self-beliefs related to any perceived unworthiness for social acceptance.

Finally, clinicians are advised to approach treatment of betrayal-based moral injury with extra care. It is important to consider that divergent approaches may be needed compared to treatment of perpetrated or witnessed PMIEs (e.g., potential engagement in other-forgiveness versus self-forgiveness). In this sample, PMIE-Betrayal was found to significantly negatively predict TSF, whereas PMIE-Self and PMIE-Other were not significantly related to TSF, even when all three PMIE types were analyzed together. As mentioned previously, the harm caused by betrayal-based moral injury may not just include expected feelings of anger or resentment toward the betraying party, but may also include negative self-directed affect (e.g., disappointment in oneself, demoralization, self-blame). This additional set of negative thoughts and feelings must be carefully explored and worked through.

### Conclusion

Research on MI among U.S. military service members and veterans is at a critical stage in its early development. Many aspects of MI require scientific exploration in order to understand its development and demonstrate more effective treatment. The current study added to this exploration by evaluating the relation between MI outcomes and several predictors (i.e., PMIEs, TSF, SSF, PSS, and CA). Results suggest that cross-sectional relationships of TSF and PSS with MI outcomes tend to be negative, and both account for change in MI outcomes when



analyzed together. There was no moderating effect of TSF on the relationship between PMIE-Self and MI-SD, nor was there a moderating effect of PSS on the relationship between PMIEs and MI outcomes as a whole. However, as hypothesized, PMIEs were positively related to MI symptoms, and both TSF and PSS were negatively related to MI symptoms. In another analysis, CA did not significantly explain a predicted relationship between SSF and MI. Surprisingly, SSF turned out to not be significantly related with MI in the first place. Perhaps the most surprising result of this study was that, when taken together, only one of the three PMIE types (i.e., PMIE-Betrayal) was significantly negatively related to TSF. This finding speaks to something potentially very harmful about the experience of betrayal-based MI. This difference may be one of magnitude, or it may be that the harm caused by betrayal-based MI is qualitatively and conceptually different than that caused by perpetrating or witnessing PMIEs. Either way, this finding could be a clue to an area that is ripe for discovery in better understanding outcomes associated with PMIE types. Of course, it will be important for future studies on MI to use improved measures of these constructs as well as research designs that allow for causal inference (e.g., longitudinal, experimental). I encourage readers to explore these and related areas to promote understanding and treatment for MI among military service members and veterans.

Table 1

*Self-Forgiveness and Moral Injury: Cross-Sectional Results*

Study	Published	Participants	Methodology	Measure of Forgiveness	Measure of Moral Injury (MI)	General Findings
Barnhart (2020)	N	201 U.S. Veterans (CS)	Cross-Sectional	HFS-Self (Thompson et al., 2005)	EMIS-M-SD (Currier et al., 2017); MIQ-M (Currier et al., 2015)	SF negatively related to MIQ-M ( $r = -.23$ ) and EMIS-M-SD ( $r = -.55$ )
Currier et al. (2017)	Y	286 U.S. Student Veterans	Cross-Sectional	Two-item trait SF measure (Currier et al., 2017)	EMIS-M-SD (Currier et al., 2017)	SF negatively related to EMIS-M-SD ( $r = -.58$ )
Koenig et al. (2018)	Y	427 U.S. Service Members and Veterans (VA)	Cross-Sectional	Single-item state SF measure (Koenig et al., 2018)	MISS-M-SF (Koenig et al., 2018)	SF negatively related to MISS-M-SF ( $r = -.65$ )
Levi-Belz et al. (2020)	Y	191 Israeli Veterans (CS)	Cross-Sectional	HFS-Total (Thompson et al., 2005)	MIES (Nash et al., 2013)	SF not significantly related to MIES
Mallot (2016)	N	140 U.S. Gulf War II Student Veterans	Cross-Sectional	Three-item state forgiveness sub-scale (BMMRS; Fetzer Institute, 1999)	MIQ-M (Currier et al., 2015)	SF not significantly related to MIQ-M
Nelson-Pechota (2016)	N	154 U.S. Vietnam Veterans (CS)	Cross-Sectional	HFS-Self (Thompson et al., 2005)	TRGI (Kubany et al., 1996)	SF negatively related to guilt cognitions ( $r = -.48$ )
Raney (2003)	N	185 U.S. Vietnam Veterans (VA)	Cross-Sectional	Forgiveness of Self subscale (Mauger et al., 1992)	TRGI (Kubany et al., 1996)	SF negatively related to guilt cognitions ( $r = -.37$ )
Smigelsky et al. (2019)	Y	212 U.S. Veterans (VA)	Cross-Sectional	HFS-Self (Thompson et al., 2005)	TRGI (Kubany et al., 1996)	SF negatively related to guilt cognitions ( $r = -.33$ )
Swiger (2020)	N	198 U.S. Gulf War II Veterans (CS)	Cross-sectional	HFS-Self (Thompson et al., 2005)	MIQ-M (Currier et al., 2015)	SF negatively related to MIQ-M ( $r = -.26$ )

*Note:* Participant Sources: AD = active duty; CS = community sample; VA = Veterans Affairs patients. Moral Injury Measures: EMIS-M-SD = Expressions of Moral Injury Scale – Military Version – Self-Directed Subscale; MIES = Moral Injury Events Scale; MISS-M-SF = Moral Injury Symptom Scale – Military Version – Short Form; MIQ-M = Moral Injury Questionnaire – Military Version; TRGI = Trauma-Related Guilt Inventory. Self-Forgiveness Measures: HFS = Heartland Forgiveness Scale.

Table 2

*Self-Forgiveness and Moral Injury: Intervention Studies*

Study	Published	Participants	Methodology/Treatment	Measure of Forgiveness	Measure of Moral Injury (MI)	General Findings
Gray et al. (2012)	Y	44 U.S. (AD) Marines and Navy following combat deployment	Experimental/Adaptive Disclosure - Individual	SF part of treatment	PTCI (Foa et al., 1999)	Treatment group reported significant pre-post reductions in PTCI compared to control group
Maguen et al. (2017)	Y	33 U.S. Veterans (VA) with previous exposure-based PTSD treatment	Experimental/ Impact of Killing - Individual	SF part of treatment	Killing Cognitions Scale (KCS; Maguen et al., 2017)	Treatment group reported significant pre-post reductions in MI-type questions compared to control group
Snider (2015)	N	40 U.S. (AD) in residential treatment for co-morbid substance use disorders	Quasi-Experimental/Unnamed, novel group SF treatment	State Self-Forgiveness Scale (SSFS; Wohl et al., 2008); SF part of treatment	Experiences of Shame Scale (ESS; Andrews et al., 2002)	No significant treatment effect of SF on MI
Starnino et al. (2019)	Y	24 U.S. Veterans (VA)	Quasi-Experimental/Unnamed, novel group SF treatment	SF part of treatment	Spiritual Injury Scale (SIS; Lawson et al., 1998)	Significant reductions in SIS from pre- to post-treatment

*Note:* Participant Sources: AD = active duty; CS = community sample; VA = Veterans Affairs patients

Table 3

*Descriptive and Normality Statistics of All Variables*

	M	Std. Dev	Range	Skewness Statistic	Skewness Std. Error	Kurtosis Statistic	Kurtosis Std. Error
1. HFS-Self	4.59	1.16	6	-.26	.25	.38	.50
2. MSPSS	5.05	1.36	6	-.93	.25	.79	.50
3. RAM-C	3.37	1.42	5	.26	.25	-.60	.50
4. SFDPS-VRO	4.89	1.62	6	-.56	.25	-.51	.50
5. SFDPS-ERS	4.67	1.53	6	-.39	.25	-.09	.50
6. SFDPS	4.78	1.24	6	-.56	.25	.49	.50
7. MIES-Self	3.85	1.52	5	-.41	.25	-.66	.50
8. MIES-Other	4.34	1.36	5	-.52	.25	-.60	.50
9. MIES- Betrayal.	3.53	1.58	5	-.07	.25	-1.14	.50
10. MIES	3.86	1.10	5	-.24	.25	-.46	.50
11. EMIS-M- SD.	2.24	1.13	4	.55	.25	-.92	.50
12. EMIS-M- OD	2.73	1.29	4	.06	.25	-1.26	.50
13. EMIS-M	2.47	1.11	4	.23	.25	-1.15	.50

*Note.* HFS-Self = Heartland Forgiveness Scale – Self-Forgiveness Subscale; MSPSS = Multidimensional Scale of Perceived Social Support; RAM-C = Relational Attribution Measure – Causal Attribution Subscale – Modified; SFDPS-VRO = Self-Forgiveness Dual Process Scale – Values Reorientation Subscale; SFDPS-ERS = Self-Forgiveness Dual Process Scale – Esteem Restoration Subscale; SFDPS = Self-Forgiveness Dual Process Scale; MIES-Self = Moral Injury Events Scale – Self; MIES-Other = Moral Injury Events Scale – Other; MIES-Betrayal = Moral Injury Events Scale – Betrayal; MIES = Moral Injury Events Scale; EMIS-M-SD = Expressions of Moral Injury Scale – Military Version – Self-Directed; EMIS-M-OD = Expressions of Moral Injury Scale – Military Version – Other-Directed; EMIS-M = Expressions of Moral Injury Scale – Military Version

Table 4

*Intercorrelations of All Variables*

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. HFS-Self	-												
2. MSPSS	.43**	-											
3. RAM-C	-.08	-.14	-										
4. SFDPS-VRO	.12	-.09	-.09	-									
5. SFDPS-ERS	.50**	.38**	-.11	.24*	-								
6. SFDPS	.39**	.18	-.13	.80**	.77*	-							
7. MIES-Self	-.11	-.16	.03	.49**	-.12	.25*	-						
8. MIES-Other	-.02	-.01	.16	.18	-.12	.05	.39**	-					
9. MIES-Betrayal.	-.40**	-.35**	.09	.04	-.27**	-.15	.15	.39**	-				
10. MIES	-.26*	-.27*	.10	.37**	-.24*	.09	.77**	.71**	.68**	-			
11. EMIS-M-SD.	-.44**	-.46**	.01	.14	-.44**	-.18	.38**	.25*	.51**	.54**	-		
12. EMIS-M-OD	-.47**	-.47**	.11	.10	-.37**	-.16	.27**	.44**	.75**	.64**	.69**	-	
13. EMIS-M	-.49**	-.50**	.07	.13	-.43**	-.18	.36**	.38**	.69**	.64**	.92**	.92**	-

*Note.* HFS-Self = Heartland Forgiveness Scale – Self-Forgiveness Subscale; MSPSS = Multidimensional Scale of Perceived Social Support; RAM-C = Relational Attribution Measure – Causal Attribution Subscale – Modified; SFDPS-VRO = Self-Forgiveness Dual Process Scale – Values Reorientation Subscale; SFDPS-ERS = Self-Forgiveness Dual Process Scale – Esteem Restoration Subscale; SFDPS = Self-Forgiveness Dual Process Scale; MIES-Self = Moral Injury Events Scale – Self; MIES-Other = Moral Injury Events Scale – Other; MIES-Betrayal = Moral Injury Events Scale – Betrayal; MIES = Moral Injury Events Scale; EMIS-M-SD = Expressions of Moral Injury Scale – Military Version – Self-Directed; EMIS-M-OD = Expressions of Moral Injury Scale – Military Version – Other-Directed; EMIS-M = Expressions of Moral Injury Scale – Military Version

\*p < .05; \*\*p < .01

Table 5

*Multiple Regression Analysis Predicting Moral Injury Outcomes*

Predictor	R <sup>2</sup>	β	sr <sup>2</sup>
Overall Model	.35*		
Trait Self-Forgiveness		-.34*	.09
Perceived Social Support		-.36*	.11

Note. \*p < .001

Table 6

*Hierarchical Regression Analysis Predicting Self-Directed Moral Injury Outcomes*

Predictor	ΔR <sup>2</sup>	β	sr <sup>2</sup>
Step 1	.30*		
PMIE-Self		.34*	.11
Trait Self-Forgiveness		-.40*	.16
Step 2	.01		
PMIE-Self		.33*	.11
Trait Self-Forgiveness		-.45*	.17
PMIE-Self X TSF		.13	.01

Note. PMIE-Self = Self-Perpetrated Potential Morally Injurious Experiences; TSF = Trait Self-Forgiveness. \*p < .001

Table 7

*Hierarchical Regression Analysis Predicting Moral Injury Outcomes*

Predictor	ΔR <sup>2</sup>	β	sr <sup>2</sup>
Step 1	.53*		
PMIEs		.55*	.28
Perceived Social Support		-.36*	.12
Step 2	.01		
PMIEs		.54*	.27
Perceived Social Support		-.40*	.13
PMIEs X PSS		.11	.01

Note. PMIEs = Potentially Morally Injurious Experiences; PSS = Perceived Social Support. \*p < .001

Table 8

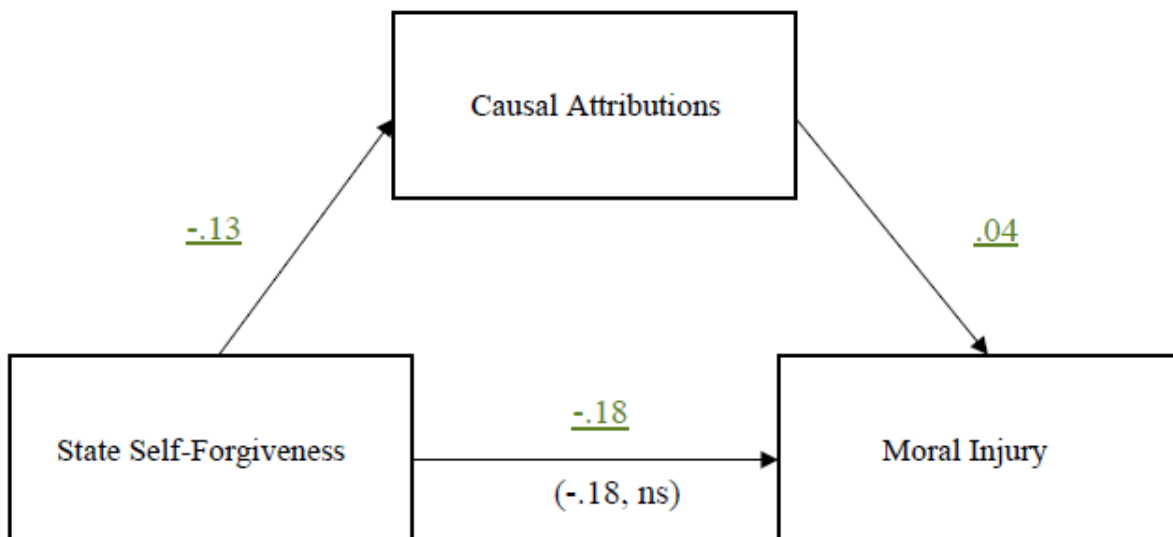
*Multiple Regression Analysis Predicting Trait Self-Forgiveness*

Predictor	R <sup>2</sup>	β	sr <sup>2</sup>
Overall Model	.20*		
PMIE-Self		-.12	.01
PMIE-Other		.21	.03
PMIE-Betrayal		-.46*	.18

Note. \*p < .001

Figure 1

*Mediator Effects of Causal Attributions on the Relationship between State Self-Forgiveness and Moral Injury Outcomes*



The number in parenthesis is the effect of the predictor variable on the criterion variable with the mediator in the model.

## REFERENCES

\* indicates a study in the review of the literature

Aiken, L. S., West, S. G., & Reno, R. R. (1991). *Multiple regression: Testing and interpreting interactions*. Sage Publishing.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5<sup>th</sup> ed.). American Psychiatric Association.

Andrews, B., Qian, M., & Valentine, J. D. (2002). Predicting depressive symptoms with a new measure of shame: The Experience of Shame Scale. *British Journal of Clinical Psychology, 41*(1), 29-42.

Bandura, A. (2002). Selective moral disengagement in the exercise of moral agency. *Journal of Moral Education, 31*, 101-119. <http://dx.doi.org/10.1080/0305724022014322>

Baron, R. M. & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182.

\*Barnhart, D. J. (2020). Moral injury and self-forgiveness in military personnel (Unpublished doctoral dissertation). Wheaton College, Wheaton, Illinois.

Battles, A. R., Bravo, A. J., Kelley, M. L., White, T. D., Braitman, A. L., & Hamrick, H. C. (2018). Moral injury and PTSD as mediators of the association between morally injurious experiences and mental health and substance use. *Traumatology, 24*(4), 246-254. <http://libproxy.library.unt.edu:2126/10.1037/trm0000153>

Bryan, C. J., Bryan, A. O., Roberge, E., Leifker, F. R., & Rozek, D. C. (2017). Moral injury, posttraumatic stress disorder, and suicidal behavior among national guard personnel. *Psychological Trauma: Theory, Research, Practice, and Policy, 10*, 36-45. <https://doi.org/10.1037/tra0000290>

Coomes, S. P. (2019). Exploring predictors of self-forgiveness (Unpublished master's thesis). University of North Texas, Denton, TX.

Cornish, M. A. & Wade, N. G. (2015). A therapeutic model of self-forgiveness with intervention strategies for counselors. *Journal of Counseling and Development, 93*(1), 96-104.

Currier, J. M., Holland, J. M., Drescher, K., Foy, D. (2015). Initial psychometric evaluation of the Moral Injury Questionnaire – Military Version. *Clinical Psychology and Psychotherapy, 22*, 54-63.

\*Currier, J. M., Farnsworth, J. K., Drescher, K. D., McDermott, R. C., Sims, B. M., Albright, D. L. (2017) Development and evaluation of the Expressions of Moral Injury Scale – Military Version. *Clinical Psychology & Psychotherapy, 25*, 474-488.



- da Silva, S. P., Witvliet, C. V. O., & Riek, B. (2017). Self-forgiveness and forgiveness-seeking in response to rumination: Cardiac and emotional responses of transgressors. *The Journal of Positive Psychology, 12*, 362-372. <http://dx.doi.org/10.1080/17439760.2016.1187200>
- Davis, D. E., Yee Ho, M., Griffin, B., Bell, C., Hook, J., Van Tongeren, D., ... Westbrook, C. (2015). Forgiving the self and physical and mental health correlates: A meta-analytic review. *Journal of Counseling Psychology, 62*, 329–335.
- Enright, R. D., & the Human Development Study Group (1996). Counseling within the forgiveness triad: On forgiving, receiving forgiveness, and self-forgiveness. *Counseling and Values, 40*, 107–126.
- Fetzer Institute & National Institute on Aging Working Group. (1999). *Multidimensional measurement of religiousness/spirituality for use in health research*. Kalamazoo, MI: Fetzer Institute.
- Foa, E. B., Ehlers, A., Clark, D. M., Tolin, D. F., & Orsillo, S. M. (1999). The Posttraumatic Cognitions Inventory (PTCI): Development and validation. *Psychological Assessment, 11*(3), 303-314. <https://doi.org/10.1037/1040-3590.11.3.303>
- Foa, E. B., Hembree, E., & Rothbaum, B. O. (2007). *Prolonged exposure therapy for PTSD: Emotional processing of traumatic experiences therapist guide*. New York: Oxford University Press.
- \*Gray, M. J., Schorr, Y., Nash, W., Lebowitz, L., Amidon, A., Lansing, A., ... & Litz, B. T. (2012). Adaptive disclosure: An open trial of a novel exposure-based intervention for service members with combat-related psychological stress injuries. *Behavior Therapy, 43*, 407-415.
- 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.
- Griffin, B. J., Williams, C., Shaler, L., Dees, R. F., Cowden, R. G., Bryan, C. J., ... & Maguen, S. (2020). Profiles of moral distress and associated outcomes among student veterans. Manuscript submitted for publication.
- \*Griffin, B. J., Worthington, E.L., Jr., Lavelock, C. R., Greer, C. L., Lin, Y., Davis, D. E., & Hook, J. N. (2015). Efficacy of a self-forgiveness workbook: A randomized controlled trial with interpersonal offenders. *Journal of Counseling Psychology, 62*, 124-136.
- Griffin, B. J., Worthington Jr., E. L., Davis, D. E., Hook, J. N., Maguen, S. (2018). Development of the Self-Forgiveness Dual-Process Scale. *Journal of Counseling Psychology, 65*(6), 715-726. <http://dx.doi.org/10.1037/cou0000293>
- \*Koenig, H. G., Ames, D., Youssef, N. A., Oliver, J. P., Volk, F., Teng, E. J. ... & Pearce, M. (2018). The Moral Injury Symptom Scale – Military Version. *Journal of Religious Health, 57*, 249-265. <https://doi.org/10.1007/s10943-017-0531-9>

- Kubany, E. S., Haynes, S. N., Abueg, F. R., W. L., Manke, F. P., Brennan, J. M., and Stahura, C. (1996). Development and validation of the trauma-related guilt inventory (TRGI). *Psychological Assessment, 8*(4), 428-444.
- Lawson, R., Drebing, C., Berg, G., Vincelle, A., & Penk, W. (1998). The long-term impact of child abuse on religious behavior and spirituality in men. *Child Abuse & Neglect, 22*(5), 369-380.
- \*Levi-Belz, Y., Dichter, N., & Zerach, G. (2020). Moral injury and suicide ideation among Israeli combat veterans: The contributions of self-forgiveness and perceived social support. *Journal of Interpersonal Violence, 1-27*.  
<https://doi.org/10.1177/0886260520920865>
- 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*, 696-706.
- Litz, B. T., Lebowitz, L., Gray, M. J., and Nash, W. P. (2016). *Adaptive disclosure: A new treatment for military trauma, loss, and moral injury*. The Guilford Press: New York, NY.
- \*Maguen, S., Burkman, K., Madden, E., Dinh, J., Bosch, J., Keyser, J. ... & Neylan, T. C. (2017). Impact of killing in war: A randomized, controlled pilot trial. *Journal of Clinical Psychology, 73*, 997-1012.
- \*Malott, J. D. (2013). Morally injurious experiences, meaning, and spiritual functioning in Iraq and Afghanistan veterans (Unpublished doctoral dissertation). Fuller Theological Seminary, Pasadena, CA.
- Moloney, J. M. (2014). Self-forgiveness in romantic relationships: The impact on the perpetrator and the relationship. (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses Global.
- Massengale, M., Chloe, E., & Davis, D. (2017). Self-forgiveness and personal and relational well-being. In L. Woodyatt, E. L. Worthington, M. Wenzel, & B. Griffin (Eds.), *Handbook of the psychology of self-forgiveness* (p. 101-113). Springer International Publishing. [https://doi.org/10.1007/978-3-319-60573-9\\_8](https://doi.org/10.1007/978-3-319-60573-9_8)
- McConnell, J. M. (2015). A conceptual-theoretical-empirical framework for self-forgiveness: Implications for research and practice. *Basic & Applied Social Psychology, 37*(3), 143-164. <https://doi.org/10.1080/01973533.2015.1016160>
- 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.

- \*Nelson-Pechota, M. (2003) Spirituality in support-seeking Vietnam veterans: Guilt, forgiveness, and other correlates of long-term adjustment to combat-related trauma (Unpublished doctoral dissertation). Illinois Institute of Technology, Chicago, Illinois.
- Papazoglou, K., Blumberg, D. M., Chiongbian, V. B., Tuttle, B. M., Kamkar, K., Chopko, B., Milliard, B., Aukhojee, P., & Koskelainen, M. (2020). The role of moral injury in PTSD among law enforcement officers: A brief report. *Frontiers in Psychology, 11*, 310. <https://doi.org/10.3389/fpsyg.2020.00310>
- Purcell, N., Griffin, B. J., Burkman, K., & Maguen, S. (2018). “Opening a door to new life”: The role of forgiveness in healing from moral injury. *Frontiers in Psychiatry, 9*, 1-7. <https://doi.org/10.3389/fpsyt.2018.00498>
- Purcell, N., Koenig, D. J., Bosch, J., & Maguen, S. (2016). Veterans’ perspectives on the psychosocial impact of killing in war. *The Counseling Psychologist, 44*(7), 1062-1099. <https://doi.org/10.1177/0011000016666156>
- \*Raney, M. L. (2003). Influence of forgiveness on posttraumatic stress disorder, depression, and aggression in Vietnam veterans (Unpublished doctoral dissertation). University of North Carolina at Chapel Hill.
- \*Smigelsky, M. A., Malott, J. D., Morris, K. V., Berlin, K. S. & Neimeyer, R. A. (2019). Latent profile analysis exploring potential moral injury and posttraumatic stress disorder among military veterans. *Journal of Clinical Psychology, 75*(3), 499-515. doi: 10.1002/jclp.22714.
- \*Snider, J. J. (2015). Moral injury: Repair through self-forgiveness (Unpublished doctoral dissertation). George Fox University, Newberg, Oregon.
- \*Starnino, V. R., Angel, C. T., Sullivan, J. E., Lazarick, D. L., Jaimes, L. D., Cocco, J. P. & Davis, L. W. (2019). Preliminary report on a spiritually based PTSD intervention for military veterans. *Community Mental Health Journal, 55*, 1114-1119.
- \*Swiger, T. A. (2020). Morally injurious experiences of combat exposed veterans of Iraq and Afghanistan: Moderating effects of self-forgiveness on feelings of shame and guilt (unpublished doctoral dissertation). West Virginia University, Morgantown, West Virginia.
- Thompson, L. Y., Snyder, C. R., Hoffman, L., Michael, S. T., Rasmussen, H. N. ... and Roberts, D. E. (2005). Dispositional forgiveness of self, others, and situations. *Journal of Personality, 73*(2), 313-360. <https://doi.org/10.1111/j.1467-6494.2005.00311.x>
- Vargas, A. F., Hanson, T., Karus, D., Drescher, K., & Foy, D. (2013). Moral injury themes in combat veterans’ narrative responses from the national Vietnam Veterans’ Readjustment Study. *Traumatology, 19*, 243-250. <https://doi.org/10.1177/1534765613476099>

- Wenzel, M., Woodyatt, L., & Hedrick, K. (2012). No genuine self-forgiveness without accepting responsibility: Value reaffirmation as a key to maintaining positive self-regard. *European Journal of Social Psychology, 42*, 617-627.
- Williamson, V., Stevelink, S. A. M., & Greenberg, N. (2018). Occupational moral injury and mental health: Systemic review and meta-analysis. *The British Journal of Psychiatry, 212*(6), 339-346. <https://doi.org/10.1192/bjp.201855>
- Wohl, M. J. A., DeShea, L., Wahkinney, R. L. (2008). Looking within: Measuring state self forgiveness and its relationship to psychological well-being. *Canadian Journal of Behavioural Science, 40*, 1-10. DOI: 10.1037/0008-400x.40.1.1.1
- Woodyatt, L., & Wenzel, M. (2013). Self-forgiveness and restoration of an offender following an interpersonal transgression. *Journal of Social and Clinical Psychology, 32*(2), 225-259.
- Worthington, E. L., & Langberg, D. (2012). Religious considerations and self-forgiveness in treating complex trauma and moral injury in present and former soldiers. *Journal of Psychology and Theology, 40*(4), 274–288. <https://doi.org/10.1177/009164711204000403>
- Zhao, J., Kong, F., & Wang, Y. (2013) The role of social support and self-esteem in the relationship between shyness and loneliness. *Personality and Individual Differences, 54*(5), 577-581. <https://doi.org/10.1016/j.paid.2012.11.003>
- Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment, 52*(1), 30-41. [https://doi.org/10.1207/s15327752jpa5201\\_2](https://doi.org/10.1207/s15327752jpa5201_2)