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COPING STYLES AS POTENTIAL MEDIATORS IN THE RELATIONSHIPS BETWEEN MORALLY INJURIOUS EVENTS, MORAL INJURY, AND MEANING-MAKING

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I am submitting herewith a dissertation written by Marjorie A. Perkins entitled "COPING STYLES AS POTENTIAL MEDIATORS IN THE RELATIONSHIPS BETWEEN MORALLY INJURIOUS EVENTS, MORAL INJURY, AND MEANING-MAKING." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Psychology.

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COPING STYLES AS POTENTIAL MEDIATORS IN THE RELATIONSHIPS BETWEEN MORALLY INJURIOUS EVENTS, MORAL INJURY, AND MEANING-MAKING

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DEDICATION

To all military servicemembers and veterans, including my husband, who have made countless sacrifices, including those that remain unseen and unheard

To the clients who have trusted me with their stories; it is the honor of my life to walk with you through struggle and growth

And to my grandmother, who gave me my first puzzle and always encouraged me to find the pieces

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ABSTRACT

Exposure to morally injurious events has consistently been correlated with negative mental health outcomes for military servicemembers and veterans (Bryan et al., 2014; Currier et al., 2015a; Currier et al., 2015b; Currier et al., 2017; Dennis et al., 2017; Jordan et al., 2017; Maguen et al., 2009, 2010; Maguen, Vogt et al., 2011; Nash et al., 2013). However, some servicemembers and veterans may experience a deeper sense of understanding of the event and/or growth after a potentially morally injurious experience through a process called meaning-making (Park, 2013). The present study seeks to examine the relationship between individual coping styles and resulting moral injury and/or meaning made after a morally injurious experience (MIE). Given the relative recency of research on moral injury and its associated negative mental health outcomes, it is important to continue to parse out the factors that influence mental health outcomes such as moral injury or meaning made. The present study posits two mediation models wherein trait mindfulness, psychological flexibility, religious coping, and proneness to moral emotions mediate the relationship between exposure to a potentially morally injurious event and resulting moral injury or meaning made. The findings demonstrated partial support for the hypotheses. Propensity for shame mediated the relationship between potentially morally injurious events and moral injury, such that higher propensity for shame resulted in greater likelihood of moral injury. Psychological flexibility mediated the relationship between potentially MIEs and meaning made, such that higher psychological flexibility resulted in greater meaning made. These findings have implications for both prevention and treatment of moral injury.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE
INTRODUCTION AND LITERATURE REVIEW

Since 2001, 58% of servicemembers who served during Operation Iraqi Freedom and Operation Enduring Freedom report serving in a combat zone, a rate nearly double that of previous eras (Pew Research Center, 2019). The OIF/OEF cohort of veterans is characterized by more diverse demographics, including more women in the combat theater and increased numbers of National Guard members and Reservists who have served overseas in combat (U.S. Department of Veterans Affairs Office of Research & Development, 2020). OIF/OEF veterans tend to report longer and more frequent deployments compared to prior era cohorts (Pew Research Center, 2019; U.S. Department of Veterans Affairs Office of Research & Development, 2020). OIF/OEF veterans also have different patterns of injuries, such as higher rates of physical injuries from explosions, due to modern types of weaponry and warfare as well as improved field medical care and higher survival rates (i.e., veterans in previous wars might not have survived with the same injuries; U.S. Department of Veterans Affairs Office of Research & Development, 2020).

In addition to traditional forms of combat exposure, OIF/OEF veterans also may experience morally injurious events (MIEs) during deployment. An MIE is defined as a traumatic or unusually stressful event where a person may witness, fail to prevent, commit, or be the victim of an act that deeply transgresses upon their morals (Litz et al., 2009). More recently, other researchers (Shay, 2014) have included the betrayal of a leader or trusted other with this definition. Potential MIEs in the military are varied and may include killing a child or civilian while performing combat duties, failing to render aid or prevent the suffering of a fellow servicemember or civilian, betrayal by a trusted leader or comrade, within-rank violence (e.g.,

friendly fire incidents, sexual assault), or other ethical dilemmas/moral conflicts (Drescher et al., 2011; Held et al., 2018). However, not all morally injurious experiences result in a moral injury.

A moral injury occurs when a person experiences psychological, emotional, behavioral, and/or spiritual distress or suffering in the aftermath of a morally injurious event that stems from attempting to avoid, manage, or cope with moral pain (Farnsworth et al., 2017; Harris et al., 2015; Litz et al., 2009; Nash & Litz, 2013). Individuals with a moral injury are likely to engage in maladaptive coping such as substance use, social isolation, self-harm or self-handicapping, and avoidance of reminders of the event (Farnsworth et al., 2017). While these coping mechanisms are similar to symptoms of posttraumatic stress, these specific maladaptive coping mechanisms serve to avoid or control the experience of moral pain following an MIE. As morals are typically socially constructed, when a moral injury occurs, an individual's relationships are threatened (Farnsworth et al., 2017; Haidt, 2008)

Exposure to morally injurious events has consistently been correlated with negative mental health outcomes for military servicemembers and veterans (Bryan et al., 2014; Currier et al., 2015a; Currier et al., 2015b; Currier et al., 2017; Dennis et al., 2017; Jordan et al., 2017; Maguen et al., 2009, 2010; Maguen, Vogt et al., 2011; Nash et al., 2013). These negative mental health outcomes include posttraumatic stress disorder (PTSD; Currier et al., 2015a; Currier et al., 2015b; Nash et al., 2013), suicidality (Wisco et al., 2017), and other mental disorders (Wisco et al., 2017). With regard to PTSD, morally injurious events may be separate from or the same as the index trauma. Morally injurious events do not always directly result in PTSD; however, higher exposure to traumatic events increases the chance of exposure to a MIE, contributing to this association with PTSD (Currier et al., 2015a; Currier et al., 2015b; Nash et al., 2013).

After a traumatic event, including MIEs, veterans may attempt to make sense of what happened to them through a process called meaning making (Park, 2010). Meaning is conceptualized as a "mental representation of possible relationships among things, events, and relationships. (Baumeister, 1991, p. 15). Thus, meaning making is the process of connecting experiences to form one understanding. A variety of unique perspectives exist on the exact mechanisms and function of meaning making, including disruptions in life narratives and themes based on stressful encounters (e.g., Crossley, 2000; Gilbert, 2002); reorganization of autobiographical memory in the aftermath of a traumatic event (e.g., Bluck & Habermas, 2001); and reconfigurations of underlying cognitive structures (e.g., Walker & Winter, 2007).

However, Park's (2010) review outlines several tenets that are common across many models of meaning making. These tenets include: (a) people interpret events through their individualized understanding of global meaning; (b) individuals appraise stressful situations that may be incongruent with their global meaning and assign meaning to them; (c) a discrepancy between appraised meaning and global meaning can lead to distress; (d) distress facilitates the meaning making process; (e) individuals will attempt to reduce their distress by reducing discrepancy between appraised and global meaning, thus supporting a view of the world as meaningful and their own lives as worthwhile; and (f) successful meaning making leads to healthier outcomes after a stressful event. If meaning is not made and distress is maintained, individuals may experience prolonged distress or suffering, a sense of losing their footing in the world, and loss of meaning in their own lives. Lack of meaning made may increase risk for suicide, PTSD symptom severity, and depression (Currier et al., 2015; Holland et al., 2014). Ultimately, meaning making plays a key role in resulting mental health outcomes after a stressful event such as a MIE.

Park's (2013) discrepancy-based meaning making model suggests that there are two aspects of meaning making – global and situational. Global meaning represents the way an individual broadly approaches a variety of situations, whereas situational meaning represents meaning in relation to a specific instance or event. For meaning making to occur, an individual must first ascribe meaning to an event that is discrepant from their view of the world. Meaning making may involve an approach-oriented strategy to make sense of the difference between an outcome and one's view of the world, changing an individual's appraised meaning of a stressful event, or changing one's global beliefs to accommodate a shift in expectations of how the world operates (assimilation vs. accommodation; Park, 2013).

Various disciplines including mental health fields as well as philosophy and religion recognize the importance of exploring and understanding moral injury, particularly in the context of military servicemembers, veterans, and other first responders. Because of the context of the demands of their jobs, military personnel have high risk for being exposed to potentially morally injurious experiences (MIE; Drescher et al., 2011; Held et al., 2018). However, little is known about how individual coping styles, such as psychological flexibility, mindfulness, and religious coping, as well as emotional responses (i.e., moral emotions) may impact moral injury or meaning made after experiencing a morally injurious event.

Psychological Flexibility

One potential mediator of the relationships between MIEs and outcomes of meaning made and moral injury is psychological flexibility, which is defined as various strategies and resources that allow a person to adapt and cope with a range of situational demands. These strategies could include shifting one's mindset to accommodate new information, holding a balanced perspective of various domains of life, and living congruently with one's values

(Kashdan & Rottenberg, 2010). Someone who is psychologically flexible would be able to meet shifting demands, utilize a variety of mental resources, alter or reshape perspective when needed, and hold competing needs across multiple life domains. This person would be able to navigate their daily life in a way that fluidly addresses changes in the present moment (Hayes et al., 2012).

Psychological flexibility has been researched recently within the context of Acceptance and Commitment Therapy (ACT; Hayes, 2012), a third-wave cognitive behavioral treatment. Under this model, psychological flexibility has been posited as a unified model of human functioning and is defined as awareness and engagement with the present moment as one is and in congruence with one's values (Hayes, 2012). Psychologically healthy people are aware of their inflexibilities, or rigidities, and work towards improving psychological flexibility (Hayes et al., 2012). Psychological flexibility can be framed in six domains, with each domain balanced by its psychologically inflexible counterpart. The pairings are as follows: flexible attention (contact) to the present moment versus inflexible attention, values versus disruption of values, committed action versus inaction, self-as-context versus attachment to the conceptualized self, defusion versus cognitive fusion, and acceptance versus experiential avoidance (Hayes et al., 2012). The six domains of psychological flexibility can be categorized into either mindfulness and acceptance processes (acceptance, defusion, self-as-context, contact with the present moment) or commitment and behavioral change processes (contact with the present moment, values, committed action, self-as-context), with contact with the present moment and self-as-context domains falling into both categories. Additionally, they can be organized in terms of response styles that promote psychological flexibility – open, centered, and engaged.

In the same way that psychological flexibility underlies a host of adaptive coping mechanisms, psychological inflexibility may underlie maladaptive coping and psychopathology. A study of 972 college students found that those students with depression, anxiety, eating disorders, and chronic substance use reported more rigid psychological inflexibility (Levin et al., 2013). Students with more rigid psychological inflexibility were also more likely to have comorbid diagnoses. Another study connected improvements in depressive symptoms and overall mental health specifically to the defusion and values-based action components of psychological flexibility (Bramwell & Richardson, 2017). It is possible that highly stressful events, such as a morally injurious event, may lead to more rigid thinking and psychological inflexibility. Though traumatic events and morally injurious events do not overlap, people cognitively respond to them in similar ways; further, research demonstrates a connection between traumatic or highly stressful events and psychological inflexibility (Miron et al., 2015).

Because of these direct correlations with mental health symptoms, ACT and other treatments that address psychological flexibility may be beneficial in treating moral injury (Farnsworth et al., 2017; Nieuwsma et al., 2015). Some of the tenets underlying psychological flexibility that relate to moral injury are the understanding that human suffering is normal, expected, and potentially meaningful; exploring personal understandings of values and morality; fostering forgiveness through acceptance oriented towards values; acknowledging MIEs in a way that honors current suffering; and potentially encouraging the client to engage with providers outside of the bounds of traditional mental health practitioners, such as spiritual or community leaders (Nieuwsma et al., 2015). If psychological flexibility is helpful in treating moral injury, it stands to reason that it may also prevent moral injury from occurring. A recent qualitative study of survivors of an earthquake in Haiti found that psychological flexibility, among other factors,

may promote post-disaster resilience, meaning making, and post-traumatic growth (O'Grady et al., 2018). Currently, limited research exists connecting psychological flexibility and meaning making. Bonanno (2013) posits that regulatory flexibility, a related but distinct concept to psychological flexibility that focuses on emotion regulation, may be a mediating factor in the relationship between meaning making and positive mental health outcomes. Likewise, the tenets of psychological flexibility, including acceptance, self-as-context, defusion, contact with the present moment, values, and committed action, may promote meaning making as individuals are able to defuse from negative appraisals and incorporate a more flexible view of the world.

Mindfulness

Another potential mediator of the relationships between MIEs and outcomes of meaning made and moral injury is mindfulness. Mindfulness, or attending to the present moment, originated in Buddhist and Hindu teachings and was secularized and brought into Western psychology by Jon Kabat-Zinn who incorporated mindfulness into a variety of therapeutic treatments for stress, anxiety, and chronic pain (Kabat-Zinn, 1990). This study will focus on trait mindfulness (a consistent ability to enter a mindful perspective and cultivate a state of non-judgement) rather than state mindfulness (a temporary condition that a person intentionally enters) because mindful experiences will not be manipulated or induced. Other treatments incorporate mindfulness as a tool for emotion regulation and distress tolerance (forms of state-mindfulness), such as in Dialectical Behavior Therapy (Linehan, 2014). Some people, whether through intentional practice, natural disposition, or cultural teachings, embody trait mindfulness (Kabat-Zinn, 1990).

Mindfulness may be beneficial for promoting positive mental health outcomes because it allows individuals to improve their own ability to regulate their nervous system and calm the

body's fear response cycle. Some aspects of mindfulness have been positively correlated with resilience in civilian, military, and veteran populations (e.g., Collins et al., 2018; Rice et al., 2013). A study of civilians found that mindfulness protects against suicidal desire in conditions of heightened risk and adversity by enhancing one's orientation towards a life worth living (Collins et al., 2018). Hamrick and colleagues (2020) found that moral injury was associated with higher suicidality, but these effects were weakened when an individual had strong trait mindfulness. Another study of trait mindfulness in military personnel found similar results. Nonjudging and awareness weakened the association between moral injury and drug abuse symptoms, yet observing, nonreactivity, and describing strengthened the association between moral injury and drug abuse symptoms (Davies et al., 2019). Experiencing a morally injurious event may disrupt mindfulness or make it harder to engage with. Some of the core and secondary symptoms of moral injury, much like PTSD, include avoidance, self-harm, and even dissociation (Jinkerson, 2016). These symptoms are the antithesis of mindfulness, given that they are ways to distract oneself from their present experience.

Limited research has been conducted regarding the connection between mindfulness and meaning making. Preliminary evidence with active duty servicemembers has indicated that some aspects of mindfulness may be related to and predictive of resilience, such as conscious action, non-reactivity, non-discrimination, and observation (Rice et al., 2013). While resilience is not the same as meaning making, they are related constructs that rely heavily on awareness and cognitive appraisals of situations. However, one dissertation study (Vick, 2018) found that mindfulness mediated the relationship between meaning making and meaning in life as well as partially mediated the relationship between meaning making and psychological distress in a sample of women with breast cancer. While further research is needed, mindfulness may

promote meaning making in veterans in a similar way that it promotes resilience and other positive mental health outcomes.

Spirituality and Religious Coping

A third potential mediator of the relationships between MIEs and outcomes of meaning made and moral injury is religious coping. For many people, religious and/or spiritual beliefs play a key role in developing morality and beliefs about the self, others, and the world (Nygaard & Heir, 2012). In the most recent report, between 75-90% of active duty servicemembers reported connection with religion (Military Leadership Diversity Commission, 2010). Generally, religiosity has been linked to better mental health and recent work found a bidirectional relationship between religion and mental health (Cook, 2020). Cook (2020) suggests that perhaps the underlying individual factor is an attentiveness to things that presently affect one's life and a willingness to attend to things that one values.

Ties to religion, such as beliefs, values, practices, and ethical principles, can also support individual coping with trauma or other stressful events, such as a moral injury (Bryant-Davis & Wong, 2013). Thus, religion could be important in the reevaluation, restructuring, or replacement of these assumptions after an event occurs that may contradict one's morals or worldview (Shaw, Joseph, & Linley, 2005). Pargament (1994) originally identified 21 methods of religious coping that fall into five overarching goals or functions: meaning, control, comfort, intimacy, or life transformation. These coping methods can fall into either negative or positive coping styles (i.e., coping methods that promote disconnection from oneself and/or religion and further distress or coping methods that reduce distress and promote connection; Pargament et al., 2000). However, a recent study found that nearly all types of coping were positively correlated with both post-

traumatic growth and post-traumatic stress, suggesting that other factors and individual differences may ultimately result in positive or negative coping (Lehman & Steele, 2020).

Investigating the impact of religious coping related to moral injury is important because research has consistently shown that veterans who feel disconnected from or distressed about their religion report significantly greater psychological distress compared to those who are not at odds with their religious beliefs (Berg, 2011; Park et al., 2017). Some veterans who experience a morally injurious event may experience either religious or spiritual distress (Drescher et al., 2011; Vargas et al., 2013) while others may experience a closer connection to their religion or spirituality (Currier et al., 2015; Currier et al., 2017; Yan, 2016). For example, veterans who experience traumatic combat experiences may experience spiritual confusion and a weakening of their faith (Drescher & Foy, 2008). Likewise, committing or experiencing transgressive acts may cause veterans to cut themselves off from others, including their higher power (Currier et al., 2015). In one study, religious strain significantly predicted self-directed and other-directed symptoms of moral injury (Lancaster & Miller, 2019). Religious strain was also partly responsible for how an individual cognitively appraised their moral injury and thus mediated the relationship between appraisals and resulting symptoms. This is consistent with previous research that has demonstrated the impact of religious strain on psychological functioning (Currier et al., 2015; Drescher et al., 2011; Evans et al., 2018; Jinkerson, 2016).

Religion is a system of meaning making (Park, 2005). Because religion is one way that people derive meaning from their experiences, it likely plays a vital role in making meaning from stressful, traumatic, or morally injurious experiences for some individuals. Religion may be a primary meaning system, a form of coping that promotes meaning, and/or an influence on one's cultural values that shape meaning even if a person is not religious themselves (Park, 2005). An

individual's unique religious beliefs may provide context for meaning made. For example, beliefs in a loving, benevolent god are associated with greater well-being and more adaptive responses after a traumatic event, whereas beliefs in a vengeful god may result in anger or disconnection from a higher power (Pargament et al., 1997). Given that belief and practice of religion is a way to make sense of the world, it may have a key role in meaning made after experiencing a MIE.

Moral Emotions

Another possible mediator in the relationship between an MIE and moral injury or meaning made is the presence of disproportionate moral emotions, such as shame and guilt. Although consensus has not been reached, some of the common negative moral emotions include guilt, shame, anger, disgust, and contempt. Guilt and shame are self-focused whereas anger, disgust, and contempt are usually other-oriented (Farnsworth et al., 2014; Tangney et al., 2007). Positive moral emotions may include compassion, elevation, gratitude, and pride. Moral emotions are distinct from non-moral emotions in that they function to preserve and maintain social relationships (Haidt, 2003). Someone who experiences a morally injurious event may be more likely to experience high levels of guilt, shame, and self-directed anger (Jinkerson, 2016).

Positive moral emotions may play a role in moral repair, or the "successful integration of moral violation into an intact, although more flexible, functional belief system" (Litz et al., 2009, p. 701). An fMRI study of people living in post-apartheid South Africa found that positive moral emotions such as empathy mediated participants' responses to seeing others in pain. However, guilt and shame seemed to diminish White participants' capacity for empathy when responding to a Black person in pain and pride seemed to bolster righteous indignation in Black people who were shown the same image (Fourie et al., 2017). While not directly related to moral

injury or meaning making, this does suggest that moral emotions may play a role in making sense of events as well as mediating responses to other external stimuli. Very little research has been conducted on positive moral emotions, with the majority or research focused on negative moral emotions of guilt and shame.

Guilt and shame typically prevent moral repair. Litz and Kerig (2019) suggest that the differences between guilt and shame may shed light on what makes a moral injury distinct from moral distress. Zalta and Held (2020) posit that shame-free guilt does not result in moral injury, as the guilt serves a positive, preventative purpose. However, when guilt and shame co-occur, a moral injury is likely due to high levels of self-blame. Guilt is conceptualized by some as taking responsibility for an action whereas shame is more rooted in embarrassment or a negative evaluation of self (Gao et al., 2010; Lindsay-Hartz et al., 1995).

According to Cohen and colleagues (2012, p. 2), guilt proneness is a personality trait related to "a predisposition to experience negative feelings about personal wrongdoing, even when the wrongdoing is private." People who are more guilt-prone may be better equipped to anticipate consequences and predict that they will feel guilty before an action is taken (Torstveit et al., 2016). Thus, Cohen and colleagues (2012) posit that people who are guilt-prone may be more likely to have a strong sense of justice and act more ethically than those who are less guilt prone. Shame-proneness refers to a personality characteristic that also predisposes a person to negative affect related to undesirable behaviors, however people who are more shame-prone are more likely to extend the negative evaluation of the behavior to a negative evaluation of their entire self (Tangney, Burggraf, & Wagner, 1995). Guilt-proneness is more likely to result in reparative action whereas shame-proneness may be more likely to result in a desire to hide one's defective self and harshly critique not just their actions, but who they believe themselves to be.

In a study of veterans, difficulty making meaning mediated the relationship between guilt and shame-proneness and PTSD symptomatology (Slagel et al., 2020). A study of British veterans found no relationship between exposure to morally injurious events and guilt- and shame-proneness, suggesting that the presence of exposure and/or guilt- and shame-proneness does not directly result in the other (Aldridge et al., 2019). Clinical case studies report distinct experiences of guilt and shame in the context of moral injuries that appear to function differently than guilt and shame associated with PTSD, particularly when these incidents are driven by moral decision-making (Vermetten & Jetly, 2018).

Moral emotions such as guilt, shame, and pride may all play a role in the way an individual appraises and makes sense of their experiences. However, as yet, little research has focused on the role of pride in meaning making. However, given that pride is typically a positive appraisal, it is possible that it may promote meaning making through the same appraisal processes.

The Present Study

Given the relative recency of research on moral injury and its associated negative mental health outcomes, it is important for researchers to continue to parse out the factors that influence injury or growth. The above-mentioned coping mechanisms and emotional responses each represent a spectrum of maladaptive to adaptive individual responses to a potentially morally injurious event. The present study posits a mediational model wherein trait mindfulness, psychological flexibility, religious coping, and proneness to moral emotions mediate the relationships between exposure to a potentially morally injurious event and resulting moral injury or meaning made (see Figure 1).

Hypothesis 1: Potentially MIE will have a direct positive relationship with moral injury. Weaker trait mindfulness, greater psychological inflexibility, negative religious coping, and proneness to guilt and/or shame will mediate the relationship between a potentially MIE and moral injury.

Hypothesis 2: Potentially MIE will have a direct negative association with meaning made. Stronger trait mindfulness, greater psychological flexibility, positive religious coping, and proneness to pride will mediate the relationship between a potentially MIE and meaning made.

CHAPTER TWO
MATERIALS AND METHODS

Participants

The present study consisted of a sample of combat veterans who served in Operation Enduring Freedom/Operation Iraqi Freedom or later. Participants were automatically screened out if they identified themselves as a civilian in the pre-screener. While we initially recruited 274 participants, participants were excluded from the final sample if they failed both validity check questions included in the survey (n = 57) or failed to complete one or more entire measures or were missing three or more items on a single measure (n = 66)**.** After applying these exclusion criteria, the final sample consisted of 150 participants. A sample size of at least 148 was needed to detect a small-to-medium effect size with alpha = .05 and power = .80 in a mediational model (Fritz & MacKinnon, 2007).

Of the 150 cases, there was a small amount of item-level missing data (0.81%). Recommendations for missing data indicate that when less than 5% of data are missing, most methods for handling missing data will perform adequately and mean substitution is common practice (Tabachnick & Fidell, 2007). Thus, mean substitution was utilized to replace missing data by calculating the mean for each participant's completed items on the measure and substituting that number, rounded to the closest integer, for the missing item.

In terms of demographics, 72% of the Veteran sample were enlisted and 28% were officers. Veterans served in the following branches of the military: Army (37.7%), Air Force (10.7%), Navy (14%), Marine Corps (14.7%), Coast Guard (6.7%), Army National Guard (12%), Air National Guard (4%), Army Reserves (11.3%), Navy Reserves (2.7%), Marine Corps Reserves (4.7%), Coast Guard Reserves (0.7%), and Air Force Reserves (0.7%). All participants separated from the military between 2001-2022, with the median year of separation being 2009.

With regard to race, 60.7% of participants identified as European-American or White, 32.7% as African American or Black, 6.0% as Asian American or Pacific Islander, 4% as Hispanic American, 1.3% as Latino/a/x, 4% as Native American/First Nations/Alaskan Native, and 2% as multiracial. The participants were 24% women, 75.3% men, and .7% transgender. Most participants reported having a high school degree or greater; 7.3% some high school education, 17.3% high school or GED, 42.7% some college, 26% a college degree, and 6.7% a graduate or professional degree. Regarding sexual orientation, 85.3% were straight/heterosexual, 6.7% were bisexual, 1.3% were gay, 1.3% were lesbian, 0.7% were asexual, 0.7% were pansexual, and 2.4% identified as 'other.' Most participants (73.3%) identified with a religion, including protestant (16.7%), Roman Catholic (8.0%), Christian (34%), Unitarian (6.7%), Mormon (0.7%), Judaism, (2%), Islam (2%), Animism (1.3%), or something else (2%). The rest identified as atheist (12.7%), agnostic (3.3%), or selected "don't know/nothing in particular" (10.7%).

Measures

Participants were asked to complete the following measures in addition to the seven-item Combat Exposure Scale (Keane et al., 1989) determining that they were a combat veteran and a demographics questionnaire. Participants were further excluded from the study if they denied any combat exposure (all who passed the pre-screener reported combat exposure in the CES). The demographics questionnaire included items about the participants' ethnicity, gender, education level, service branch, last military rank, year separated from the military, and religious affiliation, if any. After the pre-screener and demographics questionnaire, the measures were counterbalanced to control for order effects. Two of the measures included an attention check item (e.g., "Please select strongly agree").

Combat Exposure

The Combat Exposure Scale (CES; Keane et al., 1989) assesses the presence, frequency, and severity of combat exposure through seven self-report items (e.g., "Did you ever go on combat patrols or have other dangerous duty?"). Each item has a corresponding 5-point response scale, with 1 corresponding to no exposure and 5 corresponding to extensive exposure. The anchors differ for each question, depending on whether the item assesses presence, frequency, or severity. Total scores are calculated using a weighted sum and range from 0 to 41, with five different exposure descriptors ranging from "light" to "heavy." The scale has good internal consistency with military samples ($\alpha = .85$). Over a one week period, the scale demonstrated excellent test-retest reliability ($r(29) = .97$, $p < .01$), suggesting it is stable over time. The scale also demonstrated good construct and diversity validity based on a positive association between higher scores on the CES and higher scores on a combat-related PTSD scale, and distinct differences between the scales, (Keane et al., 1989). Internal consistency for the present study was $\alpha = .84$.

Morally Injurious Events

The Moral Injury Events Scale (MIES; Bryan et al., 2016) is a nine-item scale that measures exposure to perceived transgressions committed by the participant, perceived transgressions committed by others, and perceived betrayals by other military and/or nonmilitary individuals. This scale was used to determine the presence of a morally injurious experience. The nine items load onto three factors: transgressions by others, transgressions by self, and betrayal. Sample items include "I violated my own morals by failing to do something that I felt I should have done" and "I feel betrayed by fellow service members who I once trusted." Participants respond on a 6-point scale ranging from 1 (*strongly agree*) to 6 (*strongly disagree*). Responses

are summed, with total scores ranging from 9 to 54, and lower scores indicate greater moral injury. The MIES has good internal consistency with military populations (αs = .82-.89; Bryan et al., 2016). The MIES was positively correlated with but distinct from measures of posttraumatic stress, depression, hopelessness, pessimism, guilt, and shame, demonstrating construct and divergent validity. Internal consistency reliability in the present study was α = .85.

Psychological (In)Flexibility

The Acceptance and Action Questionnaire-II (AAQ-II; Bond et al., 2018) is a seven-item scale of experiential avoidance and psychological inflexibility based on the original AAQ (Hayes et al., 2004). Example items for the AAQ-II include "I am afraid of my feelings" and "It seems like most people are handling their lives better than I am." Participants rate items on a scale of 1 (*never true*) to 7 (*always true*), with a minimum score of 7 and a maximum score of 49. Higher scores indicate greater psychological inflexibility. The scale has good internal consistency (α = .88). This scale has been used with veterans (e.g., Johnson et al., 2019; Meyer et al., 2013) and represents a distinct construct from experiential avoidance related to PTSD (Meyer et al., 2013), demonstrating good construct and divergent validity. Internal consistency reliability in the present study was α = .88.

Mindfulness

The Cognitive and Affective Mindfulness Scale (CAMS-R; Feldman et al., 2007) is a 12-item self-report scale that measures four aspects of trait mindfulness including attention, present-focus, awareness, and acceptance. Sample items include "I can accept things I cannot change" and "It's easy for me to keep track of my thoughts and feelings." Participants respond on a 4-point scale with the following response choices: 1 (*rarely/not at all*), 2 (*sometimes*), 3 (*often*), or 4 (*almost always*). Items 2, 6, and 7 are reverse-scored, then responses are summed for a total

score, ranging between a minimum of 12 and a maximum of 48. Higher totals reflect greater mindfulness. Researchers reported an acceptable level of internal consistency (α =.74-.77) in a sample of college students and good internal consistency in a veteran sample (α =.87; Sylvia et al., 2020). The CAMS-R was strongly correlated with two other published measures of mindfulness and was most strongly correlated with a measure that included aspects of acceptance, demonstrating good construct validity (Feldman et al., 2007). Higher mindfulness scores on the CAMS-R were also positively correlated with measures of well-being, emotional intelligence, and cognitive flexibility, demonstrating good divergent validity. Internal consistency reliability in the present study was α = .85.

Religious Coping

The Brief RCOPE (Pargament, Feuille, & Burdzy, 2011) is a 14-item scale that measures both positive and negative religious coping. Positive religious coping (PRC) refers to a secure relationship with a higher power, a sense of spiritual connectedness with others, and a benevolent world view. Negative religious coping (NRC) refers to spiritual tensions and struggles within oneself, with others, and with the divine. Sample items include "Tried to see how God might be trying to strengthen me in this situation" (positive) and "Wondered what I did for God to punish me" (negative). Participants respond on 4-point Likert scale from 1 (*Not at all*) to 4 (*A great deal*). Scores are averaged for the two subscales, with scores ranging from 7 to 28, and higher scores indicate greater endorsement of coping. Internal consistency for the subscales has been supported, with a median alpha of .92 for positive religious coping subscale and .81 for the negative religious coping subscale across participant groups (Pargament et al., 2011). The Brief RCOPE has been used with many populations, including survivors of 9/11 (e.g., Meisenhelder & Cassem, 2009). The scale demonstrated good construct and divergent validity, with the PRC

subscale consistently related to measures of spiritual wellbeing and positive psychological constructs (e.g., posttraumatic growth), and the NRC subscale positively related to indicators of poor functioning, such as depression, anxiety, PTSD symptoms, negative affect, pain, and negatively correlated with wellbeing (Pargament et al., 2011). Internal consistency reliability for positive religious coping in the present study was $\alpha = .89$ and negative religious coping was $\alpha = .90$.

Proneness to Moral Emotions

The Test of Self Conscious Affect-3 (TOSCA-3; Tangney et al., 2000) is a commonly used measure of guilt and shame proneness. Participants respond to 16 different scenarios by rating the likelihood of engaging in each of three possible response choices. Ratings are summed across scenarios to obtain indices of guilt-proneness, shame-proneness, externalization of blame, detachment/unconcern, alpha pride (i.e., pride in self), and beta pride (i.e., pride in behavior). For example, one scenario involves standing a friend up for lunch. Participants rate their response to the following options as 1 (*not likely*) to 5 (*very likely*): "You would think, 'I'm inconsiderate.'" (shame); "You'd think you should make it up to your friend as soon as possible" (guilt); and "You would think 'My boss distracted me just before lunch.'" (externalization of blame). Total scores for shame, guilt, and externalization range from 16-80; total scores for detachment range from 11-55; and total scores for both pride scales range from 5-25. For all scales, higher scores reflect higher proneness.

The TOSCA-3 has been used with clinical and non-clinical samples. and has adequate internal consistency with reported Cronbach's alphas of .77 for shame (16 items), .78 for guilt (16 items), .75 for externalization (16 items), .72 for detachment (11 items), .48 for alpha pride (5 items), and .51 for beta pride (5 items; Tangney et al., 2000; Tangney & Dearing 2002).

Tangney and Dearing (2002) argue that scenario-based measures are expected to have lower internal consistency relative to other types of measures because of the unique variance associated with individual situations, explaining the lower alphas for the pride subscales. The TOSCA-3 demonstrates good construct and divergent validity with other measures of emotions, such as the Personal Feelings Questionnaire (Averill et al., 2002). Internal consistency reliability in the present study for alpha pride was $\alpha = .61$ and beta pride $\alpha = .68$. However, pride was combined into a single measure and the internal consistency for both scales combined was $\alpha = .81$.

Moral Injury Symptoms

The Expressions of Moral Injury Scale-Military Version (EMIS-M; Currier et al., 2018) is a 17-item scale that assesses the symptoms of MI in veterans across two dimensions: self-directed and other-directed. The self-directed subscale assesses symptoms of guilt, shame, moral concerns, self-condemnation, social withdrawal, and inability to forgive self. The other-directed subscale assesses anger and feelings of betrayal, revenge, and disgust over what others have done. Sample items include "Because of things that I did/saw in the military, I am no longer worthy of being loved" (self-directed) and "Things I saw/did in the military have caused me at times to lose faith in the basic goodness of humanity" (other-directed). Participants respond on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree).* Possible scores from the total scale range from 17 to 85 with the subscales ranging from 9 to 45 (self-directed) and 8 to 40 (other-directed).

Researchers report strong internal reliability ($\alpha = 0.92$ for self-directed, $\alpha = 0.90$ for other-directed) and good test-retest coefficients (Currier et al., 2018). MI was positively correlated with but distinct from other variables tested, including alcohol misuse, PTSD, depression, and meaning made, demonstrating good construct and divergent validity. MI was

inversely related to gratitude, hope, and forgiveness (Currier et al., 2018). Internal consistency reliability in the present study was α = .93.

Meaning Made

The Integration of Stressful Life Experiences Scale (ISLES; Holland et al., 2010) is a 16-item self-report scale that measures meaning made from life stressors. Participants were cued to think about their combat experiences in the instructions with this statement, "As you respond, please keep in mind any stressful combat events you experienced." Items load onto two subscales: footing in the world and comprehensibility. Sample items include "I have made sense of this event" (reverse scored) and "My beliefs and values are less clear since this event." Participants rate their response on a scale of 1 (*strongly agree*) to 5 (*strongly disagree*). Ratings are summed for a total score, with possible total scores ranging from 20-90 and higher scores indicating higher meaning made. The ISLES has high internal consistency (αs = .92 and .94) and good construct and diversity validity have been demonstrated through positive correlations with other measures of sense-making and assumptions about the world as well as expected mental health outcomes (Holland et al., 2010). Internal consistency reliability in the present study was α = .89.

Procedure

Participants were recruited from Reddit, a social media website that allows for free, targeted recruitment of specific populations. Reddit has been used previously to recruit a variety of samples in social science research (e.g., Chan, 2019; Heck et al., 2020; Escobar-Viera et al., 2018; McCord et al., 2019). Reddit is a community-moderated social media forum that allows users to categorize their posts via distinct topics, called subreddits (Shatz, 2017). This study was posted on the subreddit "r/veterans." While Reddit is susceptible to some of the same critiques as

other online platforms such as Amazon's Mechanical Turk, it provides the benefit of more targeted recruitment of specific populations and does not require monetary compensation, making it a superior option for this study (Shatz, 2017). Reddit also allows for fast recruitment (e.g., Shatz, 2015).

Participants accessed the anonymous survey through a hyperlink online that took them to a secure, web-based survey platform. Once participants reached the survey, they were first asked to read an informed consent. If participants consented by clicking an "I agree" button, they advanced to a pre-screener, asking them to confirm that they were a veteran, that they served during or after OIF/OEF, and that they experienced combat. If the participant responded affirmatively to all questions, they advanced to demographics and then to the survey measures, which were counterbalanced. Participants were offered information about the purpose of the study and contact information for the primary investigator as a debrief after completing the survey. Participants were offered the option to click a hyperlink that took them to a separate survey to enter their email address to be entered into a raffle for one of 12 $50 Amazon gift cards.

Data Analysis

The data from the current study was analyzed using the statistical software SPSS version 26. Ranges, means, standard deviations, and intercorrelations between all study variables were conducted. Skewness, kurtosis, and multicollinearity were examined, and variables were determined to be appropriate for multivariate analysis. Internal consistency reliability for all continuous scales was also calculated. Hypotheses 1 and 2 were tested using a multiple mediation model. The PROCESS SPSS macro Model 4 (Hayes, 2013) was used to test the mediation model using bootstrapping analyses with 1000 bootstrapping resamples to produce

95% confidence intervals for the indirect effect. If the confidence interval did not contain zero, we concluded that mediation was significant and meaningful (Preacher and Hayes, 2008). Two multiple mediation models were conducted, one predicting moral injury and the other predicting meaning made.

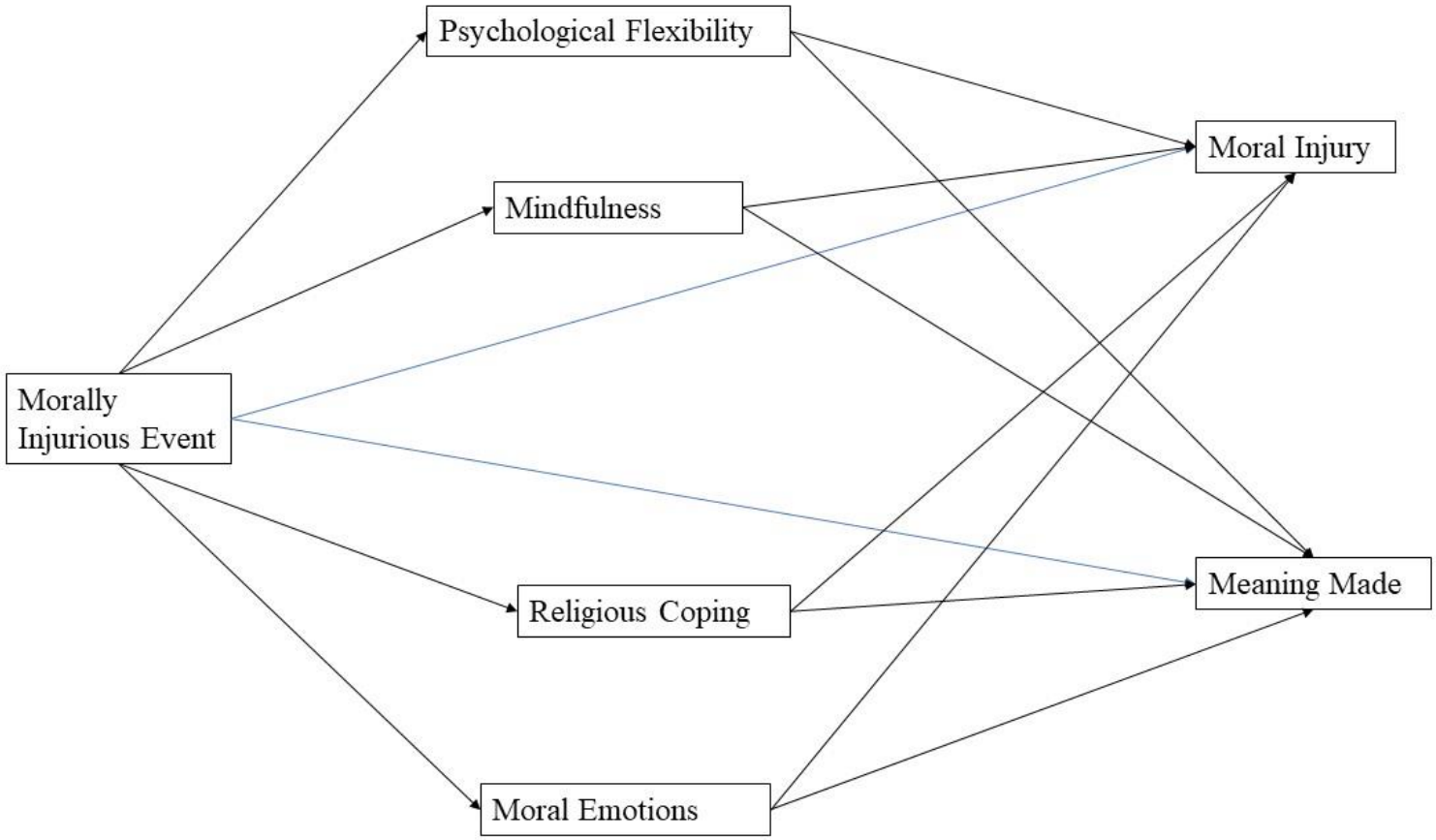

Figure 1. Proposed mediation model

CHAPTER THREE

RESULTS

Results

Ranges, means, standard deviations, and correlations between independent and dependent variables were calculated and are presented in Table 1. The mean for experiencing a potentially morally injurious event was 28.71 (*SD* = 8.78), which is slightly higher than the two veteran samples the measure was normed on (*M* = 22.67 and 22.54, respectively; Nash et al., 2013). The mean for the ISLES (meaning made) was 45.22 (*SD* = 11.08) which is significantly lower than a recent study of civilians (*M*=63.10, *SD*=10.56; Lancaster & Carlson, 2015). The mean for moral injury symptoms was 48.58 (*SD* = 14.13), which was significantly higher than the sample the measure was normed on (*M* = 32.14, *SD* = 14.84; Currier et al., 2017). The mean for psychological flexibility was 28.59 (*SD* = 8.23), which is consistent with a previous military sample (*M* = 24.6, *SD* = 11.3; Meyer et al., 2013). The mean for trait mindfulness was 31.81 (*SD* = 4.74), which is on the lower end of the possible range. This sample also reported lower than average means for positive (*M* = 16.34, *SD* = 5.20) and negative religious coping (*M* = 15.26, *SD* = 5.50). The mean for moral emotions were as follows: shame-proneness, 47.53 (*SD* = 11.29), guilt-proneness, 56.09 (*SD* = 10.53), and pride, 32.11 (*SD* = 6.45). The average score on the Combat Exposure Scale was 18.17 (*SD*=5.04), which is in the moderate range (Fairbank et al., 1989).

To investigate the proposed mediation models with outcomes of moral injury and meaning made, we used the PROCESS SPSS macro (Hayes, 2012; Model 4). In both models, experience of morally injurious events was the predictor variable, and psychological flexibility,

positive religious coping, negative religious coping, and moral emotions (guilt, shame, and pride) were entered as mediators.

In our mediation model predicting moral injury (see Figure 2), experiencing a morally injurious event had a significant direct effect on moral injury symptoms ([unstandardized] = -.529, SE = .105, 95% CI [.321, .737], β = .496) and a significant indirect effect via shame ([unstandardized] = .446, SE = .111, 95% CI [.226, .665], β =.403). No other indirect effects, including trait mindfulness ([unstandardized] = -.639, SE = .200, 95% CI [-1.035, -.243], β = -.250), psychological flexibility ([unstandardized] = .106, SE = .124, 95% CI [-.139, .350], β = .156), positive religious coping ([unstandardized] = -.256, SE = .276, 95% CI [-.802, .290], β = -.121), negative religious coping ([unstandardized] = .368, SE = .298, 95% CI [-.222, .958], β = .155), guilt ([unstandardized] = .149, SE = .129, 95% CI [-.106, .404], β = .126), and pride ([unstandardized] = -.025, SE = .208, 95% CI [-.437, .386], β = .023) were significant. These results provided partial support for hypothesis 1. A greater number of potentially morally injurious events was associated with moral injury directly and indirectly through its association with increased propensity for shame.

In our mediation model predicting meaning made (see Figure 3), there was a significant direct effect of experience of morally injurious events on meaning made ([unstandardized] = -.458, SE = .084, 95% CI [-.624, -.292], β = .365). The indirect effects of experiencing a morally injurious event on meaning made through psychological flexibility ([unstandardized] = .273, SE = .084, 95% CI [.467, .078, β = -.325) was significant. Shame (mean indirect effect [unstandardized] = -.132, SE = .086, 95% CI [-.301, .037], β = -.196), trait mindfulness (mean indirect effect [unstandardized] = .344, SE = .159, 95% CI [.030, .659], β = .197), positive religious coping (mean indirect effect [unstandardized] = -.118, SE = .220, 95% CI [-.552, .316], β = -.028),

negative religious coping (mean indirect effect [unstandardized] = -.115, SE = .235, 95% CI [-.580, .350], β = -.075), guilt (mean indirect effect [unstandardized] = .106, SE = .102, 95% CI [-.096, .308], β = -.087), and pride (mean indirect effect [unstandardized] = -.112, SE = .165, 95% CI [-.439, .214], β = -.110) did not have a significant indirect effect on meaning made. Results partially supported hypothesis 2 that individual coping styles mediate the effect of morally injurious events on meaning made, such that individuals higher in psychological flexibility were more likely to express a higher degree of meaning made.

Table 1: Range, means, standard deviations, and correlations (N=150)

Measure	Range	Mean	SD	1	2	3	4	5	6	7	8	9
1. MIES	9-54	28.71	8.79	--	--	--	--	--	--	--	--	--
2. EMIS	17-85	48.58	14.13	.496**	--	--	--	--	--	--	--	--
3. ISLES	16-78	45.22	11.08	-.542**	-.567**	--	--	--	--	--	--	--
4. AAQ	7-49	28.59	8.23	.344**	.325**	-.417**	--	--	--	--	--	--
5. CAMS	21-44	31.81	4.74	-.048	-.218**	.119	.031	--	--	--	--	--
6. PRCOPE	7-28	16.34	5.20	.184*	.285**	-.290**	.450**	.111	--	--	--	--
7. NRCOPE	7-28	15.26	5.50	.235**	.441**	-.347**	.466**	-.034	.775**	--	--	--
8. Shame	23-80	47.53	11.29	.267**	.560**	-.350**	.306**	.001	.468**	.637**	--	--
9. Guilt	22-80	56.09	10.53	.208*	.294**	-.149	.231**	.299**	.352**	.265**	.452**	--
10. Pride	12-45	32.11	6.45	.203*	.185*	-.170*	.268**	.399**	.342**	.217**	.316**	.740**

Note: PRCOPE = positive religious coping; NRCOPE = negative religious coping
* $p < .05$, ** $p < .01$

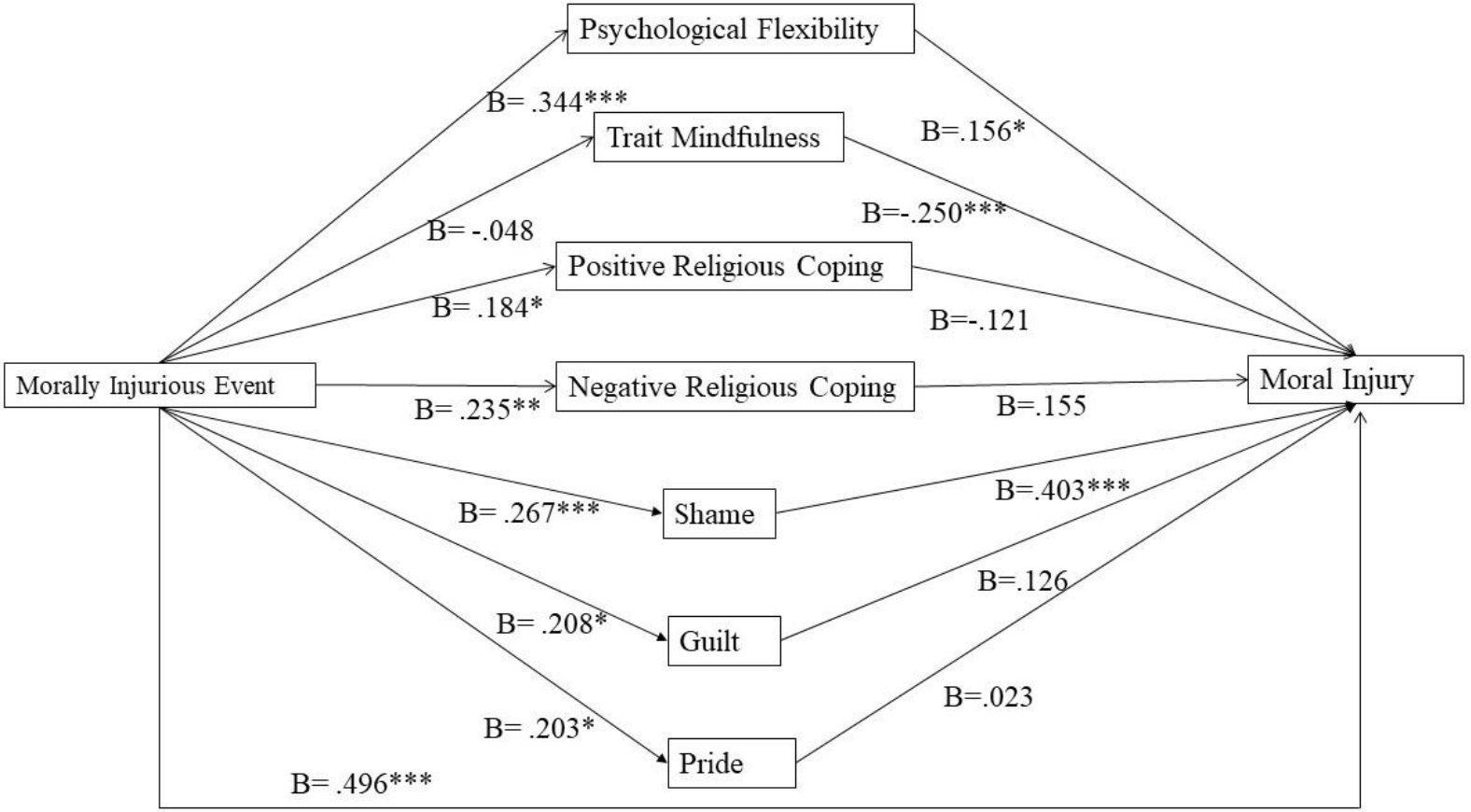

Figure 2. Moral injury mediation model

Note. Values reflect standardized coefficients. *p <.05, **p <.01, *** p<.001

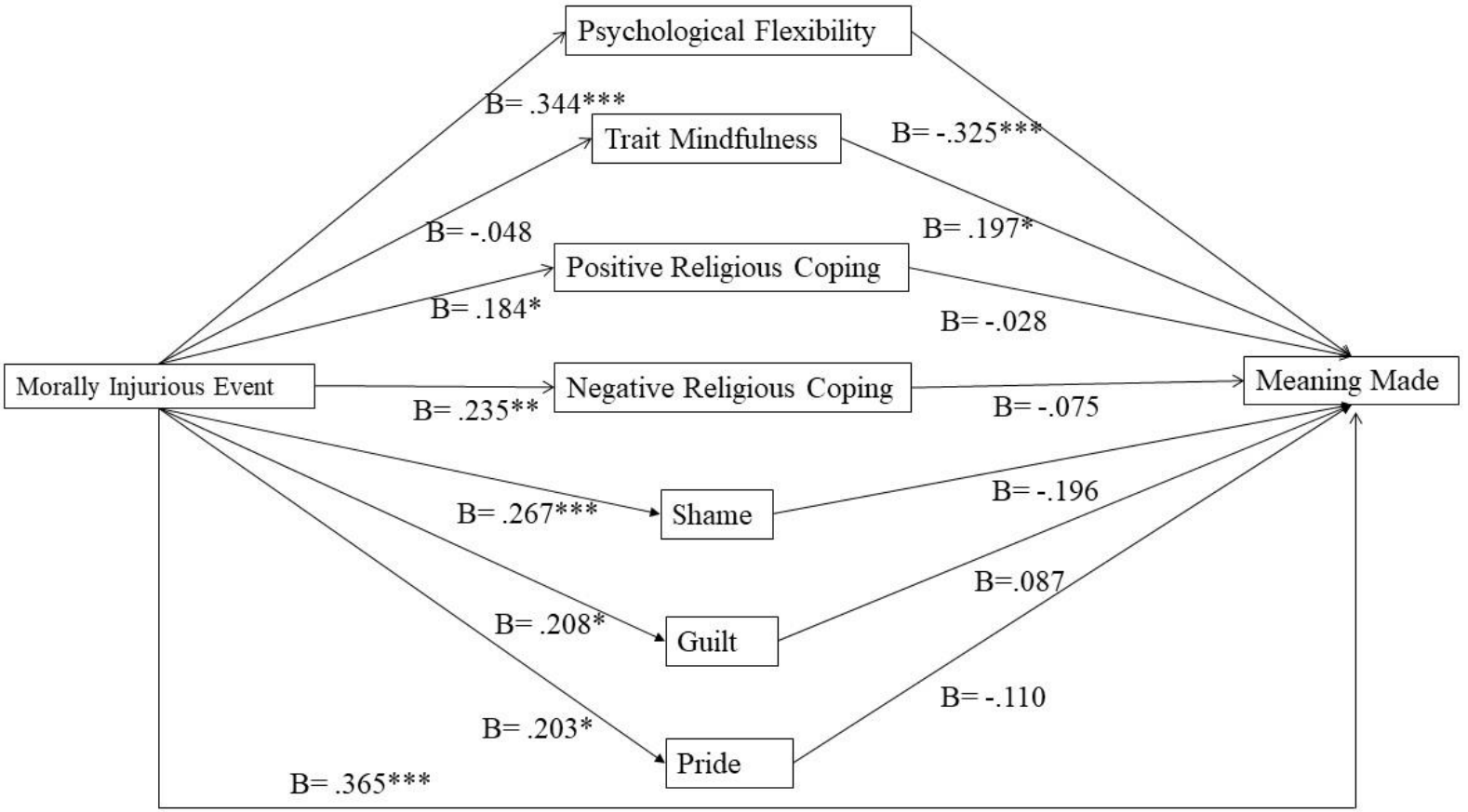

Figure 3. Meaning made mediation model

Note. Values reflect standardized coefficients. *p <.05, **p <.01, *** p<.001

CHAPTER FOUR
DISCUSSION

The present study examined the relationships between morally injurious events and moral injury as well as meaning made through various individual coping styles, including psychological flexibility, trait mindfulness, positive and negative religious coping, and propensity for moral emotions such as guilt, shame, and pride. Our hypotheses were partially supported. Specifically, propensity for shame mediated the relationship between potentially morally injurious events and moral injury, such that higher propensity for shame resulted in greater likelihood of moral injury. Psychological flexibility mediated the relationship between potentially MIEs and meaning made, such that higher psychological flexibility resulted in greater meaning made. These results shed light on some individual coping styles in servicemembers that may be associated with moral injury or meaning making.

There was a significant direct effect between morally injurious events and moral injury symptoms, which is consistent with the previous literature (Farnsworth et al., 2017; Harris et al., 2015; Litz et al., 2009; Nash & Litz, 2013). Propensity for shame mediated the relationship between potentially morally injurious events and moral injury, such that higher propensity for shame were associated with moral injury. Shame-proneness, or the propensity to extend the negative evaluation of a behavior or event to a negative evaluation of their oneself, mediate the relationship between potentially morally injurious experiences and moral injury. Given that shame-proneness does not have the same protective or reparative motivation that guilt-proneness can, it makes sense that there is a positive relationship between someone who is more likely to negatively evaluate themselves based on an undesired behavior and moral injury. Further research is necessary to truly differentiate between guilt and shame and to parse out their unique functions, however, this data adds to the literature that propensity for shame mediates the

relationship between moral injurious experiences and moral injury symptoms. This is consistent with previous literature that identifies shame as both a symptom of moral injury (Jinkerson, 2016) as well as literature that posits that shame (and not guilt) can result in more severe moral injury (Litz & Kerig, 2019; Zalta & Held, 2020). Further research could investigate Zalta and Held's (2020) assertation that shame-free guilt may serve a positive, preventative purpose.

Several of our predicted mediators in the relationship between potentially MIEs and moral injury, including psychological flexibility, trait mindfulness, positive and negative religious coping, and propensity for guilt and pride, were not significant. As noted above, it is likely that guilt and pride may both have protective or preventative functions after a morally injurious event (Litz & Kerig, 2019; Zalta & Held, 2020). The most surprising non-significant finding was religious coping. Given that for many people, religion defines ones' morals and value as well as the research demonstrating a positive correlation between religiosity and mental wellness, we predicted that high negative religious coping would mediate the relationship between MIEs and moral injury (Bryant-Davis & Wong, 2013; Pargament (1994); Shaw et al., 2005). It is also worth noting that a more negative review of religion is often considered a symptom of moral injury. However, religious coping is a distinct concept from religiosity. It is possible that people who identify as more highly religious (and thus have more to either rely on or make sense of after a MIE) may be worth investigating as a potential mediator. Our smaller sample size could have affected significance of results in the current sample.

It is possible that while psychological flexibility did mediate the relationship between MIEs and meaning made (an active process that can occur after an MIE), psychological flexibility is not enough to prevent a moral injury from occurring. Rather, it is a coping style or tool that is more effective when trying to make sense of an experience after the fact. This is

congruent with some of the basic tenets of ACT, such that the goal of psychological flexibility is not to prevent suffering but rather to move through it in a valued direction (Hayes, 2012). Likewise, mindfulness does not prevent suffering but rather increases attention to the present moment (Kabat-Zinn, 1990. Trait mindfulness may not mediate the relationship between MIEs and moral injury as attention to the present alone does not alter the fact that a significant, emotionally charged event has occurred. It may indirectly benefit veterans by increasing resilience and distress tolerance by helping them become more aware of their cognitions and emotions but is likely not enough to prevent a moral injury from occurring (Collins et al., 2018; Rice et al., 2013).

Psychological flexibility mediated the relationship between potentially MIEs and meaning made, such that higher psychological flexibility resulted in greater meaning made. This is consistent with previous literature that has demonstrated the importance of psychological flexibility in resilience and post-traumatic growth, two similar but distinct concepts and alternate responses to stressful events (O'Grady et al., 2018). One could argue that the very tenets of psychological flexibility are some of the processes that foster meaning making. For example, some tenets include understanding that human suffering is normal, expected, and potentially meaningful; exploring personal understandings of values and morality; fostering forgiveness through acceptance oriented towards values (Nieuwsma et al., 2015). All of these processes are processes that can also foster meaning and understanding of an experience.

Although we expected significant relationships, several of our predicted mediators (i.e., trait mindfulness; religious coping; and propensity for guilt, shame, and pride) in the relationship between potentially MIEs and meaning made were not significant. Once again, the lack of significance of religious coping as a mediator was the most surprising. Perhaps this is a bias as

much of the moral injury literature originated from religious studies, however meaning making and religion are also frequently intertwined (e.g., Park, 2013). It is possible that this sample was less religious than previous generations and thus religious coping played less of a role in both models. It was also surprising that the trait mindfulness path was not significant even though it did mediate the relationship between MIEs and meaning made. It is possible that static traits such as trait mindfulness and propensity for moral emotions did not mediate the relationship because meaning making is an active process that can be learned (Park, 2010). Thus, more active coping processes such as psychological flexibility mediated the relationship instead.

Limitations

The current study should be considered in the context of the following limitations. First, the sample size was slightly smaller than ideal for detecting small to medium effect sizes in mediation analyses. Ideally, we would have had at least 200 usable cases. Relatedly, nearly half the sample were excluded due to inattention or non-completion, which is likely a result of using internet-based data collection through Reddit. While using Reddit allowed us to collect a more diverse and representative sample in other ways, it did allow for greater distraction and more opportunity for participants to complete the survey without reading the questions. Appropriate measures were taken to ensure quality of data; however, those measures drastically reduced our sample size. A third limitation of using an online forum such as Reddit is that the sample may be biased towards participants with internet access who regularly browse military-related content. The participants may differ from nonparticipants in their current willingness to engage with topics related to the military or moral injury in some systematic way. Because they have internet access, they may also differ in SES. Precautions were taken to mitigate as many of these limitations as possible, including attention checks, recruiting more participants than necessary in

order to increase usable sample, and including a variety of subreddits to reach a broad range of Veterans.

Some additional limitations of using Reddit and other online platforms as well as steps taken to mitigate them in the current study are discussed here. One limitation is the possibility that participants were not honest about their identities (this was partially mitigated through lowering the incentive by not paying every participant and targeting a specific group such as combat Veterans). Another risk is a low response rate due to people not seeing the post. This was addressed by following the guidelines of the subreddit to ensure fidelity with their rules. Another frequent complaint from uses are technological issues, however, this survey was designed to be as user friendly as possible and there were no challenging manipulations or tasks (Shatz, 2017). It is possible that the veterans who engage with online Veteran forums and communities may be demographically unique from the national demographics of all OIF/OEF veterans. However, this same limitation applies when collecting data from veterans in specific geographic locations, VA hospitals, or other veteran communities that are limited in some other way.

Clinical Implications

There are several clinical and professional implications for these findings. First, this adds information about how individual coping styles may impact the development of moral injury or meaning made after a MIE. Moral injury as a mental health factor is a relatively new area of research in the field of psychology, particularly as it informs clinical practice. With further research on this topic, it may be possible to narrow down individual strengths that may protect against moral injury and foster meaning making, such as psychological flexibility. Likewise, it may be possible to identify coping styles that may be less effective for an individual, such as low trait mindfulness and high propensity for shame.

The ability to identify individual strengths and weaknesses would help us both prevent and treat moral injury. Though many of these coping styles appear as fixed "traits," many of these are flexible and able to be fostered with targeted interventions. Shame can be targeted through a myriad of interventions, including evidence-based therapies such as cognitive behavioral therapy (CBT) or interpersonal psychotherapy (IPT). These findings could also be used to inform the treatment of moral injury, to include evidence-based therapies intended to enhance coping styles.

These findings also support the continued need for clinical distinction of and treatment for guilt and shame. As noted by Torstveit and colleague (2016), guilt may actually have a protective or motivating function and thus may require distinct interventions in therapy. Because shame often includes aspects of hiding or withholding, it may initially be difficult to identify and treat it. It is also important for clinicians to be cognizant of the extension of a negative evaluation of behaviors to a negative evaluation of the self. Shame may result in clients feeling more vulnerable and thus less open to addressing shame in treatment. Additionally, they may be less likely to consider outside circumstances that may have resulted in the undesirable outcome Thompson et al., 2004). This has clinical relevance as they may attribute blame to themselves even when an objective observer would not assign fault to them.

Early detection of people who have a higher propensity for shame could be used to intervene prior to a servicemember experiencing a morally injurious event and thus mitigating some of the relationship between potentially MIEs, shame-proneness, and moral injury. Early interventions could target self-esteem and cognitive distortions that may result in someone generalizing an experience to their worth as a person.

Likewise, early preparation and treatment that involves increasing psychological flexibility may be able to protect against moral injury and foster meaning making after a MIE. Third wave cognitive behavioral therapies such as ACT directly address psychological flexibility through a manualized but flexible protocol. There are a number of self-guided resources with psychological flexibility exercises (i.e., self-help books and website by Russ Harris, self-guided ACT workbooks, etc.) available for lay-people which reduces some of the barriers to care that may be present, particularly for military members, such as scheduling restrictions and stigma.

Future Directions

Given the limitations of the Reddit sample, future researchers could consider using a broader sampling technique, to include Veterans without regular internet access or who may be less internet savvy. While this sample was largely representative of the demographics of Veterans in America, there may have been some bias towards those who use military-related internet forums.

Future research should also consider additional coping styles or traits that may impact moral injuring or meaning making. The coping styles examined in this study were chosen for their relevance at the time the study was conducted, however the research in this area is quickly growing. Other coping styles or personal factors may demonstrate strong empirical support for being considered as mediators. While several of our mediators were not significant, this sample was under-powered and these should be further investigated in a larger sample.

Because some of these coping styles can be learned and modified through evidence-based interventions, future research should attempt to examine this from both preventative and treatment perspectives. Research already demonstrates that participating in ACT can increase psychological flexibility, so further research should examine whether ACT can promote meaning

making after a MIE (Hayes et al., 2013). Finally, further research should be done regarding practices for both reducing shame-proneness and treating shame related to moral injury.

Conclusions

Given the prevalence and recent distinction of moral injury from other trauma and stressor related effects, it is important to further understand the connections between an MIE and moral injury, as well as growth-oriented outcomes such as meaning making. The present study examined a variety of individual coping styles in relation to both moral injury and meaning making after experiencing an MIE. The findings demonstrated partial support for the hypotheses. Propensity for shame mediated the relationship between potentially morally injurious events and moral injury, such that higher propensity for shame resulted in greater likelihood of moral injury. Psychological flexibility mediated the relationship between potentially MIEs and meaning made, such that higher psychological flexibility resulted in greater meaning made. These findings have implications for both prevention and treatment of moral injury. Further research is necessary for understanding additional individual factors that may make one more likely to engage in meaning making or experience a moral injury after a morally injurious event.

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APPENDICES

Appendix A

Research Announcement

Are you a combat veteran who served after 9/11/2001? You are invited to participate in an anonymous online research study approved by the University of Tennessee (Marjorie Perkins; mperki16@vols.utk.edu) You will be offered the chance to enter a raffle to win one (1) of twelve (12) $50 Amazon gift cards. Click to learn more!

Appendix B

Consent for Research Participation

Research Study Title: *Coping styles as potential mediators in the relationships between morally injurious experiences, moral injury, and meaning made*

Researcher(s): *Marjorie Perkins, M.A.*, University of Tennessee, Knoxville
Gina Owens, Ph.D., University of Tennessee, Knoxville

Why am I being asked to be in this research study?

We are asking you to be in this research study because you are a veteran with combat experience who has served post 9/11/2001.

What is this research study about?

The purpose of the research study is to investigate how individual coping styles may influence the way a person makes sense of stressful experiences.

Who is conducting this research study?

The research team and/or the University of Tennessee, Knoxville is receiving funding from the University of Tennessee, Knoxville Department of Psychology.

How long will I be in the research study?

If you agree to be in the study, your participation will last for approximately 30 minutes. This study is a one-time occurrence and we ask that you do not participate more than once.

What will happen if I say "Yes, I want to be in this research study"?

If you agree to be in this study, we will ask you to respond to some online survey questions.

- *Some of these questions will be related to your military experiences.*
- *You will be asked to recall events that may have been stressful or upsetting.*

What happens if I say "No, I do not want to be in this research study"?

Being in this study is up to you. You can say no now or leave the study later. Either way, your decision won't affect your relationship with the researchers or the University of Tennessee.

What happens if I say "Yes" but change my mind later?

Even if you decide to be in the study now, you can change your mind and stop at any time. If you decide to stop before the study is completed, simply exit the survey browser.

Are there any possible risks to me?

Your participation in this study will remain anonymous

Possible risks include:

- *Psychological or emotional distress. Crisis hotline resources will be provided on each page of the survey. If you feel overwhelmed, you are encouraged to stop the survey at any time.*

Are there any benefits to being in this research study?

We do not expect you to benefit from being in this study. Your participation may help us to learn more about how veterans cope with stressful experiences. We hope the knowledge gained from this study will benefit others in the future.

Who can see or use the information collected for this research study?

We will protect the confidentiality of your information by not collecting names and storing the data securely.
If information from this study is published or presented at scientific meetings, your name and other personal information will not be used.
We will make every effort to prevent anyone who is not on the research team from knowing that you gave us information or what information came from you. Although it is unlikely, there are times when others may need to see the information we collect about you. These include:

- People at the University of Tennessee, Knoxville who oversee research to make sure it is conducted properly.
- Government agencies (such as the Office for Human Research Protections in the U.S. Department of Health and Human Services), and others responsible for watching over the safety, effectiveness, and conduct of the research.
- If a law or court requires us to share the information, we would have to follow that law or final court ruling.
- The University of Tennessee Department of Psychology who is the study sponsor paying for this research.

What will happen to my information after this study is over?

We will keep your information to use for future. Your name and other information that can directly identify you will be deleted from your research data collected as part of the study.
We will not share your research data with other researchers.

Will I be paid for being in this research study?

You will not be paid for being in this study.
However, upon completion of the study*, you may enter click on a link that takes you to a separate survey to enter your email address for a chance to win one (1) of twelve (12) $50 Amazon gift cards.
**Anyone age 18 and over may enter the drawing even if they do not participate in the research or complete the study. Please send an email to mperki16@vols.utk.edu stating you would like to be entered into the drawing for the gift cards if you would prefer not to participate in the research but would like to be eligible for the gift cards.*

Who can answer my questions about this research study?

If you have questions or concerns about this study, or have experienced a research related problem or injury, contact the researchers, Marjorie Perkins, M.A., *mperki16@vols.utk.edu or* Gina Owens, Ph.D., *gowens4@utk.edu.*
For questions or concerns about your rights or to speak with someone other than the research team about the study, please contact:

Institutional Review Board
The University of Tennessee, Knoxville
1534 White Avenue
Blount Hall, Room 408
Knoxville, TN 37996-1529
Phone: 865-974-7697
Email: utkirb@utk.edu

STATEMENT OF CONSENT

I have read this form and have been given the opportunity to ask questions. If I have further questions, I have been told who to contact. By clicking "I agree", I am agreeing to be in this study. I have the option to print this page or save a copy for my records. If I choose not to be in this study, I can exit my browser.

Appendix C

Demographic Questionnaire

Please answer the following questions about yourself:

What is your Race/Ethnicity (select all that apply)?

_____ European-American or White
_____ African-American or Black
_____ Asian-American/Pacific Islander
_____ Hispanic-American
_____ Latino/a/x
_____ Native American/First Nations/Native Alaskan
_____ Multiracial/Other (please specify) _____

What is your highest level of education?

_____ Some high school
_____ Finished high school
_____ Some college
_____ College degree
_____ Graduate or professional degree

What is your gender?
___ man
___ woman
___ transgender
___ non-binary
___ gender-fluid
___ other: please specify _____

What is your religious affiliation (if any)?
____ Protestant (Baptist, Methodist, Nondenominational, Lutheran, Presbyterian, Pentecostal,
____ Episcopalian, Reformed, Church of Christ, etc.)
____ Roman Catholic (Catholic)
____ Christian
____ Unitarian (Universalist)
____ Mormon (Church of Jesus Christ of Latterday Saints/LDS)
____ Orthodox (Greek, Russian, or some other orthodox church)
____ Jewish (Judaism)
____ Muslim (Islam)
____ Animism (Native American/Indigenous Peoples/American Indian)
____ Buddhist

____ Hindu
____ Atheist (do not believe in God)
____ Agnostic (not sure if there is a God)
____ Something else: _____
____ Nothing in particular
____ Jehovah's Witness
____ Don't Know

Which branch of the military did you serve in (select all that apply)?

____ Army
____ Air Force
____ Navy
____ Marines
____Coast Guard
____ Army National Guard
____Air National Guard
____Army Reserve
____Navy Reserve
____Marine Corps Reserve
____Air Force Reserve
____Coast Guard Reserve

What was your final rank when you separated from the military?

____ E-1
____ E-2
____ E-3
____ E-4
____ E-5
____ E-6
____ E-7
____ O-1
____ O-2
____ O-3
____ O-4
____ O-5
____ O-6
____ O-7
____ O-8

What year did you separate from the military? (retire, discharge, etc.)

____ 2001
____ 2002
____ 2003
____ 2004
____ 2005
____ 2006
____ 2007
____ 2008
____ 2009
____ 2010
____ 2011
____ 2012
____ 2013
____ 2014
____ 2015
____ 2016
____ 2017
____ 2018
____ 2019
____ 2020

Appendix D

Crisis Resources

To connect with a Veterans Crisis Line responder anytime day or night:

- Call 800-273-8255, then select 1.
- Start a confidential chat.
- Text 838255.
- If you have hearing loss, call TTY: 800-799-4889.

VITA

Originally from Kansas City, MO, Marjorie Perkins graduated from the University of Missouri with her B.A. in Psychology. She then completed her M.A. in Psychology – Clinical Science at the University of Northern Iowa. Throughout her academic career, she has maintained research and clinical interests in the treatment of trauma in military servicemembers and veterans. She is completing her doctoral internship at the VAMC in Columbia, SC and upon graduation, will complete a post-doctoral fellowship in the Trauma Recovery Program and Women's Clinic at the Durham, NC VAMC.