The Relationship between Pre-Deployment Experiences of Interpersonal Violence and Moral Injury: The Moderating Role of Social Support

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Keywords: moral injury, interpersonal violence, social support, military personnel

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ABSTRACT

Initial research on moral injury has shown the construct to be associated with many negative mental health outcomes such as depression, suicidal ideation, reduced sense of belonging, anxiety, anger, and spiritual distress. In addition, moral injury among service members has also been shown to be related to experiences of interpersonal violence occurring pre-deployment. Given that social support has consistently been found to play a key role in moderating the relationship between experiences of interpersonal violence and stress and trauma related symptoms and disorders, this study will be the first to explore the relationship between experiences of interpersonal violence and moral injury, and the moderating role of social support. This study will use stepwise regression analysis to examine secondary data collected from 935 U.S. military personnel primarily from the Army National Guard.

Keywords: moral injury, interpersonal violence, social support, military personnel

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GENERAL AUDIENCE ABSTRACT

Research has found that bearing witness to or engaging in an act that goes against an individual's own moral beliefs can lead to many negative mental health outcomes such as depression, suicidal ideation, reduced sense of belonging, anxiety, anger, and spiritual distress. Researchers and clinicians have developed the term moral injury to describe the moral distress and individual may experience after they are exposed to a morally injurious event. Moral injury among service members has also been shown to be related to traumatic experiences involving intentional harm of one individual by another, also known as interpersonal violence. Given that social support has consistently been found to play a key role in decreasing the relationship between experiences of interpersonal violence and stress and trauma related symptoms and disorders, this study will be the first to explore the relationship between experiences of interpersonal violence and moral injury, and the diminishing role of social support.

Keywords: moral injury, interpersonal violence, social support, military personnel

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Chapter I: Introduction

The Problem and its Setting

Since 2001, over 2.7 million service members have been to the war zones of Afghanistan and Iraq (Hautzinger, Howell, Scandlyn, Wool, and Zogas, 2015). It comes as no surprise that deployment, and combat deployment specifically can be highly stressful, and result in mental health problems in service members and veterans. Soldiers in the Vietnam War, and currently those in Iraq and Afghanistan, are involved in wars characterized by counterinsurgency and guerilla tactics. This type of warfare involves the use of more unconventional tactics such as unmarked enemies, improvised explosive devices, ambushes, and suicide bombings (Asprey, 2016). Experiencing these types of combat situations has primarily been viewed by mental health professionals as eliciting fear-based responses that can develop into Post-traumatic Stress Disorder ([PTSD]; Litz, Stein, Delaney, Lebowitz, Nash, Silva, and Maguen, 2009). However, while soldiers do encounter experiences at war that evoke fear-based responses, guerilla tactics along with other characteristics of war also create conditions where soldiers may find themselves in morally and ethically questionable situations (Litz et al., 2009).

Mental health and religious professionals agree that the current working definition of PTSD does not sufficiently describe the moral anguish service members may experience due to exposure to situations that violate the soldiers own moral code (Drescher et al., 2011). Soldiers may witness death, explosions, extreme wounds, destruction of buildings and homes, and the killing of individuals, while also actively participating in ruination, injuring and killing terrorists, and potentially bringing harm and destruction to civilians (Hoge, 2004). Bearing witness to actions taken by others in war that violate a person's own ethical code, or themselves engaging in activity that goes against their own moral values, has the potential to cause great distress and

tension in soldiers long after their time at war (Litz et al., 2009 & Stein, 2012). More research examining the consequences of inflicting or witnessing war related trauma, the impact of these experiences on a soldier's moral values and ethical code, and what factors may serve to protect a soldier from developing negative symptoms as a result is needed.

The term moral injury was coined to further understand and explain the moral and ethical consequences of war. In 2009, researchers Litz et al. developed a conceptual model for understanding moral injury, in which they defined morally injurious experiences as "Perpetrating, failing to prevent, bearing witness to, or learning about acts that transgress deeply held moral beliefs and expectations." (p. 700, 2009). According to Litz et al., moral injury occurs when an individual experiences a discrepancy between their own moral code and the actions taken by themselves or others that then causes inner conflict and dissonance. This inner conflict and dissonance can result in deep distress and impairment emotionally, spiritually, behaviorally, psychologically, and socially (2009). Moral injury can cause an individual to question their moral identity and their core beliefs about humanity that had previously guided their understanding of the world and what is right and wrong (Brock & Lettini, 2012). This interpersonal conflict has great potential to disrupt normal healthy functioning.

Moral injury has been associated with numerous negative mental health outcomes. Moral injury can result in an increased risk for mental disorders (Wisco et al., 2017); self-loathing, suicidal ideation, self-harm, suicide attempts; anger, anxiety, depression, anhedonia, dysphoria, guilt, shame, spiritual/existential issues, forgiveness problems (Wisco et al., 2017 & Drescher et al., 2011; Maguen et al., 2011; Nash et al., 2013), hopelessness, pessimism (Bryan et al., 2015) substance abuse, social withdrawal, aggression (Maguen & Litz, 2014; Nash et al., 2013), and difficulty trusting social institutions, others, and self (Drescher et al., 2011; Nash et al., 2013).

Given the extent to which moral injury has been associated with negative outcomes, it is important to further evaluate the construct to reduce potentially devastating results. While posttraumatic stress, re-experiencing, avoidance, and numbing symptoms have been found to be associated with experiences where soldiers reported exposure to potentially morally injurious events (Bryan et al., 2015), exposure to situations that transgress deeply held moral beliefs and values can also lead to symptoms beyond the scope of those addressed under the current PTSD diagnosis (Litz et al., 2009). Mental health and religious professionals with a history of treating service members and veterans exposed to combat agree that although PTSD and moral injury share some symptomatology, they must be understood and treated as separate problems (Drescher et al., 2011). Moral conflicts can deeply impact soldiers interpersonally as they try to understand their own or others' actions in the context of war, with what they would have done outside of the context of war.

In considering the negative outcomes that have been associated with moral injury, it is important to think about factors that may contribute to and protect against the development of moral injury. Research examining risk factors to developing trauma and stressor related disorders continually points to experiences of interpersonal violence as a significant predictor of future distress and negative mental health outcomes (Williams et al., 2007; Currier, Holland, Rojas-Flores, Herrera, & Foy, 2015; Qouta, Punamaki, & Sarraj, 2003; Horowitz, Weine, & Jekel, 1995). Experiences of interpersonal trauma have been found to be more distressing and related to higher rates of disorder compared to noninterpersonal trauma (Green et al., 2000; Resnick, Kilpatrick, Dansky, Saunders, & Best, 1993). Given that moral injury is associated with emotional, psychological, and spiritual distress (Litz et al., 2009), those who have prior

experiences involving interpersonal violence may be more vulnerable to developing moral injury.

Witnessing or experiencing trauma involving interpersonal violence such as childhood emotional, sexual, and physical abuse or domestic violence can have a lasting impact on psychological functioning and overall mental health and quality of life (Weaver & Clum, 1995). Victims of interpersonal violence have often been found to blame themselves for their traumatic experience (Feiring, Taska, & Chen, 2002). This can then alter their basic assumptions they hold about themselves and support the development of schemas that hold feelings of shame (Figley, 1985), a key emotion that may increase vulnerability to moral injury (Litz et al., 2009). Therefore, those with a history of interpersonal violence may be much more susceptible to both interpreting an experience as morally injurious and as a result experiencing moral injury due to negative perceptions about themselves and the world that were previously developed.

Studies examining factors that may make military personnel more vulnerable to experiencing moral injury is still underway. However, initial findings have shown an association between experiencing interpersonal violence prior to first deployment, and facets of moral injury. In 2015, a study of 935 U.S. military personnel primarily from the Army National Guard found that pre-deployment stressors such as being sexually, emotionally, or physically abused, and witnessing assault or homicide was positively associated with exposure to different dimensions of moral injury including witnessing actions committed by another person that went against their own moral code, and experiencing being betrayed by either a leader, fellow service members, or other nonmilitary individual (Bryan et al., 2015). These results suggest that individuals who experience interpersonal violence in which they were the recipient of aggression, hostility, or violence prior to military deployment, may be more likely to experience combat related moral

injury (Bryan et al., 2015). This is consistent with the literature on trauma and stress that reports that experiencing potentially traumatic and highly stressful events can be a risk factor for experiencing or developing negative outcomes such as substance abuse, PTSD (Kilpatrick et al., 2000), depression (Weiss, Longhurst, & Mazure, 1999), anxiety (Hovens et al., 2010), shame (Feiring & Taska, 2005), guilt (Kubany et al., 1995), anger (Orth & Wieland, 2006), and interpersonal difficulties (Briere & Elliott, 1994). While the study conducted by Bryan et al. supports that there is a relationship between potentially traumatic events and the different dimensions of moral injury, analyzing the relationship between experiences of interpersonal violence and overall moral injury is yet to be examined. Given that experiences involving interpersonal violence are more pervasive among military personnel compared to the civilian population, and experiences of interpersonal violence are more distressing when compared to noninterpersonal violence experiences, it is important to understand how these types of traumatic experiences relate to overall moral injury so that clinicians can work in a more informed way to alleviate negative outcomes associated with the construct.

In acknowledging that exposure to traumatic events prior to deployment may make a soldier more vulnerable to experiencing combat related moral injury, it is helpful to bring awareness to the pervasiveness of pre-deployment trauma among military members. In 2014, a study was conducted throughout the United States examining the prevalence of adverse childhood experiences (ACEs) among civilian adults and adults with a history of military service (Blosnich, Dichter, Cerulli, Batten, & Bossarte, 2014). The study examined 11 different potentially traumatic childhood experiences such as sexual and physical abuse, household substance use, and witnessing intimate partner violence (Blosnich et al., 2014). Male military members who served in the all-volunteer era reported a higher prevalence of ACEs in all 11

categories compared to men without a history of military service (Blosnich et al., 2014). Strikingly, researchers found that men who served in the military during the all-volunteer era were more than twice as likely as men without a military background to report being forced to have unwanted sex before the age of 18 (Blosnich et al., 2014). Among women from the all-volunteer era, those who had a history of service in the military reported a higher prevalence of exposure to domestic violence, physical abuse, emotional abuse, and being touched sexually compared to civilian women without a history of military service (Blosnich et al., 2014). In addition to the prevalence of childhood trauma among service members of the all-volunteer era, another study looking at mostly Army National Guard soldiers found that out of the 935 participants, 69.7% reported having experienced some type of highly stressful or traumatic event such as being emotionally and physically mistreated, involved in a natural disaster, and having witnessed an assault or killing, before their first deployment (Bryan et al., 2015). Due to the prevalence of traumatic experiences occurring pre-deployment among service members, and acknowledging that these experiences are associated with an increased likelihood of experiencing moral injury, it is important to determine what factors may decrease the likelihood of developing moral injury.

There is extensive research highlighting the benefits of social support. Social support, for the purposes of this study will be defined as: "the extent to which family, friends, coworkers, employers, and community provide emotional sustenance and instrumental assistance" (King, King, & Vogt, 2003). Positive social support has been found to be an important moderating variable between exposure to traumatic events and negative mental health outcomes. In a large study of 777 inner-city women, social support moderated the relationship between the experience of both child abuse and adult rape and PTSD severity (Schumm, Briggs-Phillips, & Hobfoll,

2006). This finding is particularly significant as it speaks to social supports ability to buffer against the development of trauma and stressor related disorders even when multiple traumatic events have been experienced. In addition, social support has also been found to moderate the relationship between childhood sexual abuse and PTSD (Hyman, Gold, & Cott, 2003) and childhood abuse and neglect, and depression (Powers, Ressler, & Bradley, 2010). These findings are consistent with research showing the general benefits of social support in helping protect against the development of traumatic stress symptoms (Cohen & McKay, 1984; Pietrzak et al., 2010 & Evans, Steel, & Dilillo, 2013) as well as social support's ability to contribute to reducing traumatic stress symptoms even when multiple traumas have been experienced (Ferrajao & Oliveira, 2016 & Vinokur, Caplan, & Williams, 1987).

Given that social support often protects against and alleviates traumatic stress symptoms, it is possible that social support may also weaken the positive relationship between potentially traumatic events and experiencing moral injury. One study has already shown social support and moral injury to be negatively related (Nash et al., 2013 & Solomon, Mikulincer, & Avitzur, 1988), suggesting that a lack of social support may place a soldier at higher risk for developing moral injury. Additionally, in the initial proposed framework for moral injury, researchers Litz et al. discussed the role of social support stating that "giving and receiving care and love" are key to a soldier achieving moral repair (p. 701, 2009). This statement further bolsters the belief that social support may play an important role in alleviating negative outcomes associated with moral injury. For these reasons, this study will seek to understand social support as a moderating variable on the interaction between exposure to interpersonal violent traumatic events prior to deployment and moral injury.

Empirical evidence has pointed to gender differences in experiences of social support following a traumatic event. Women have historically been found to engage in more coping strategies than men, including seeking out social support and verbally expressing distress and needs (Tamres, Janicki, & Helgeson, 2002). While women are more likely to seek out social support compared to men, they have also been found to report experiencing higher levels of perceived benefits from social support and greater levels of posttraumatic growth following the traumatic event (Swickert & Hittner, 2009) when compared to men. Among a sample of primarily Army National Guard/Reserve and active duty service members, women reported higher levels of perceived social support from friends and family than men (DiMauro, Renshaw, Smith, & Vogt, 2016).

Additionally, research has shown that there are gender differences in experiences of potentially traumatic events. A large meta-analysis conducted by David Tolin and Edna Foa found that women and girls were more likely than men and boys to "experience sexual assault and child sexual abuse, but less likely to experience accidents, nonsexual assaults, witnessing death or injury, disaster or fire, and combat or war" (p. 959, 2006). Women and girls were also more likely than men and boys to experience internalizing disorders such as anxiety and depression due to exposure to a potentially traumatic event (Tolin & Foa, 2006). Given that woman are more likely to receive and engage in social support seeking behavior, and considering that women tend to experience more traumatic events that result in interpersonal victimization, this study will also explore the association between traumatic experiences involving experiencing and witnessing interpersonal violence prior to deployment and experienced moral injury by gender.

Other factors that may protect soldiers from developing moral injury are still being understood. In terms of protective demographic characteristics, a recent study examining U.S. combat veterans found that white, college-educated, and high-income veterans reported minimal exposure to morally injurious events (Wisco et al,. 2017). This finding is notable in that traumatic and stressful events have been found to be more common among those in lower socioeconomic status and racial/ethnic minority groups (Hatch & Dohrenwend, 2007). So, in thinking about how trauma may impact an individual's development of moral injury, these results may also lend further support to the belief that those who have experienced a traumatic event prior to deployment may be more vulnerable to developing moral injury, compared to those who have no prior traumatic experiences before deployment. Litz et al. posited that factors such as having just world beliefs, self-esteem, and forgiving supports may act as buffers against the development of moral injury (2009). They believed these factors would contribute to an individual being better equipped to seek out corrective experiences (2009). Similarly, mental health professionals with experience working with service members and veterans exposed to combat strongly believed that social support would help alleviate moral injury (Drescher et al., 2011). While these initial findings and suggestions are helpful, future research focusing on protective factors to developing combat related moral injury is still needed.

Although initial research findings support a relationship between exposure to traumatic events prior to deployment and moral injury, researchers are yet to understand this association when examining post-deployment social support as a moderating variable. This study seeks to examine whether social support moderates the association between experiences of interpersonal violence occurring pre-deployment and moral injury in U.S. military personnel. The association of these variables will also be examined by gender. The sample for this study will be drawn

primarily from the Army National Guard because of its diversity in gender, race, and job classification. Additionally, National Guard troops have been found to have a higher risk of developing post-deployment psychiatric distress and report more symptoms of decreased mental health compared to regular active duty troops (US Army Surgeon General, 2005 as cited in Polusny et al., 2011 & Iowa Persian Gulf Study Group, 1997). For these reasons, the Army National Guard is an important population to examine regarding moral injury.

Significance

Potentially traumatic and distressing combat experiences continue to be a reality for the soldiers in our current wars. Hoge and colleagues found that 71% to 86% of Marines and U.S. soldiers deployed to Iraq had been in a firefight, 28% reported being responsible for the death of a noncombatant, 86% knew someone who was either killed or seriously injured, and 60% saw ill or wounded women and children who they could not help (2004). Similar to the Vietnam war, the consequences of exposure to warzones in Iraq and Afghanistan can lead to serious mental health problems. Researchers Grey et al. found that among a sample of active duty marines who had deployed to either Iraq or Afghanistan, 43% reported experiencing a traumatic event that met the Litz et al. definition of moral injury (2012). Given the types of warfare our soldiers are currently exposed to, experiencing morally injurious events and developing moral injury may be common among military personnel.

Researchers Litz et al. and Jonathan Shay suggest that that the symptoms associated with war-related moral distress can be severe and have devastating effects on an individual's psyche (1994 & 2009). The act of killing in war, a response that has high potential to be associated with moral conflict, has been associated with suicidal ideation (Maguen et al., 2011). While researchers Bryan, Morrow, Etienne, and Ray-Sannerud, found among military personnel a

strong relationship between those who endorsed acting or witnessing others acting in ways that violated their own moral code and self-injurious thoughts and behaviors (2014).

Additional studies that have examined mental health outcomes for individuals when they act against their own moral code and values have reported similar negative outcomes. In 1987, Tory Higgins proposed the Self-Discrepancy theory to describe the different emotional responses an individual may have when they engage in an action that goes against either their own beliefs or values, or the perceived beliefs and values that another important person may hold. Those who possess a discrepancy between their actual attributes and their ideal attributes are posited to experience feelings of disappointment and dissatisfaction (Higgins, 1987), and were found to experience feelings of dejection, frustration, and anger (Strauman & Higgins, 1988). This type of discrepancy was strongly associated with depressive symptoms (Strauman & Higgins, 1988). While those who experienced a discrepancy between their actual attributes and attributes they believed they ought to have or others expected them to have were found to experience more feelings of agitation, anger at others, and resentment. Discrepancies of this nature were strongly associated with social anxiety (Strauman & Higgins, 1988) and have been predicted to lead to feelings of shame, embarrassment, and depressed mood (Higgins, 1987). The term moral distress, similar to the self-discrepancy and moral injury construct, has also been found to be associated with feelings of anger, guilt, frustration, powerlessness, anxiety, and a sense of failed responsibility among military nurses (Fry, Harvey, Hurley, & Foley, 2002). Given the negative outcomes associated with experiencing a moral discrepancy, it is important to understand what factors may serve to increase a person's chances of experiencing moral injury, and what factors may serve to buffer against or alleviate negative outcomes associated with moral conflict.

Since 2001, the U.S. has employed over 2.7 million men and women (Hautzinger, Howell, Scandlyn, Wool, and Zogas, 2015) to support the recent conflicts in Iraq and Afghanistan including Operation Enduring Freedom, Operation Freedom's Sentinel, Operation Iraqi Freedom, Operation New Dawn, and Operation Inherent Resolve (Torreon, 2017). Compared to previous military conflicts, members of the National Guard/Reserve troops have been deployed at a more frequent rate to the conflicts in Iraq and Afghanistan, and in much larger numbers than before (Tanielian & Jaycox, 2008). The current operational tempo has led service members to experience minimal down time to rest and recharge which is critical to maintaining positive morale and mental health. Multiple and longer deployments have been associated with an increase in experiencing potentially morally injurious events, as ethical decision-making processes can become jeopardized under continued stress and trauma (MHAT-V, 2008 as cited in Stein et al., 2012). The current operational tempo, along with increased exposure to potentially morally injurious events due to increased stress and the type of warfare tactics being employed, makes the likelihood of soldiers experiencing moral injury high. Given the potential prevalence of experiencing morally injurious situations, especially among members of the National Guard, it is important to further understand moral injury and its etiology so that mental health providers are prepared to best alleviate the negative mental health outcomes associated with the construct.

By researching risk factors to developing moral injury, and the protective function social support may play against developing moral injury, more informed intervention and prevention programs can be disseminated among military members and veterans. While researchers have made headway in operationalizing the term moral injury and understanding the emotional and behavioral responses of service members that are associated with the aftermath of exposure to

morally injurious events, researchers have yet to substantially explore what factors occurring pre-deployment may make a soldier more likely to experience moral injury. There is also little known about factors that may act as buffers to the development of moral injury. While exposure to potentially morally injurious events may be common or unavoidable with current warfare tactics, understanding factors outside of the warzone that may either increase or reduce a soldier's chance of experiencing moral distress can help clinicians and researchers develop a more holistic understanding of moral injury. By understanding risk factors to developing moral injury, as well as protective factors against development, mental health practitioners can design and implement more informed and targeted prevention and intervention strategies.

Rationale

This study uses a quantitative design to understand the moderating role of post-deployment social support on the relationship between pre-deployment exposure to experiences of interpersonal violence and moral injury. By using secondary data collected from a diverse sample of 935 U.S. military personnel primarily from the Army National Guard, findings have a high probability of representing the experiences of other military members who have been exposed to war.

Theoretical Framework

Cognitive theories of stress and stress injury have been used extensively to understand stress and trauma injuries. Researcher Ronnie Janoff-Bulman, in her shattered assumptions theory, explored the impact trauma has on cognition and behavior. She posited that traumatic experiences damage three fundamental assumptions people hold about the world: the world is benevolent, the self is worthy, and the world is meaningful (1989). When these existing self and word schemas are shattered, individuals experience a cognitive dilemma to either integrate their

traumatic or negative experience into their prior assumptions, or revise their old assumptions (1989). This experience of a cognitive dilemma in cognitive theories of stress has been compared to a soldier's experience of moral injury (Figley & Nash, 2007). By either label, experiencing a violation that goes against one's beliefs leads to emotions such as shame, guilt, sadness, and anger (Figley & Nash, 2007), and can cause the individual to attribute false or inaccurate beliefs to the event such as "I am not safe anywhere" or "I'll never be able to relate to people again (Ehlers & Clark, 1999). These false beliefs can impact the way individuals perceive future experiences (Ehlers & Clark, 1999 & Horowitz, 2001), as the lens they now view the world from is colored by insecurity, danger, self-questioning, and threat (Figley, 1985).

According to cognitive theories of stress and stress injury, prior experiences of interpersonal violence can have a significant influence on a new experience of interpersonal violence (Ehlers & Clark, 1999; Horowitz, 2001, & Janoff-Bulman, 1989). Prior experiences can reinforce negative beliefs the victim developed from their first exposure, and the new contact with interpersonal violence may trigger the victim to re-experience the past experience of interpersonal violence, compounding the emotions associated with the new event (Ehlers & Clark, 1999). Particularly in the event that the two experiences of interpersonal violence are similar, such as a child being sexually abused and then as an adult being sexually assaulted, the individual will likely experience an intense emotional response due to the activation of the memory of the earlier experience and the emotions associated with the prior event (Ehlers & Clark, 1999). Research examining the impact of experiences of interpersonal violence on a person's assumptions about themselves and the world showed that individuals who experience interpersonal violence have significantly more negative basic assumptions and were significantly more depressed when compared to non-victims, even years after the experience of interpersonal

violence occurred (Janoff-Bulman, 1989). According to cognitive theories of stress and stress injury, individuals who have experienced a past trauma will be more likely to interpret a second traumatic event as more distressing (Janoff-Bulman, 1989 & Ehlers & Clark, 1999). This supports this studies hypothesis that experiencing interpersonal violence prior to deployment will be associated with moral injury.

Cognitively processing an experience of interpersonal violence and achieving reschematization can be influenced by the individual receiving social support (Horowitz, 2001 & Ehlers & Clark, 2000). Social supports play a key role in revising self and world schemas in the aftermath of an experience of interpersonal violence (Ehlers & Clark, 2000). Individuals may experience negative reactions from others after interpersonal violence occurs, particularly in situations involving sexual abuse. This can then lead to negative appraisals of self, such as "nobody cares about me", or the victim may experience positive social support that allows them to assess the experience of interpersonal violence in a way that is less damaging to their world view, and constructive to making meaning of the event (Ehlers & Clark, 2000). Social support aides in a person's ability to cognitively restructure damaged schemas through providing positive emotional and relational experiences (Horowitz, 2001 & Figley, 1985). Therefore, positive social support reinforces schemas that hold adaptive beliefs about the world and themselves. In noting the impact social support can have in helping an individual cognitively restructure damaged beliefs due to experiences of interpersonal violence, this study sought to examine the role social support plays in moderating the relationship between pre-deployment experiences of interpersonal violence and moral injury.

Purpose of the Study

This study examines whether and the extent to which pre-deployment experiences of interpersonal violence are associated with moral injury, and whether and the extent to which perceived social support moderates that association. To that end, this study examined the following research questions:

1. What is the relationship between pre-deployment experiences of interpersonal violence and moral injury?
2. Does post-deployment social support moderate the relationship between pre-deployment experiences of interpersonal violence and moral injury?
3. Does gender affect the potential moderating role of post-deployment social support on the relationship between pre-deployment experiences of interpersonal violence and moral injury?

Chapter II: Literature Review

This literature review examines the construct moral injury and discusses what experiences at war may be potentially morally injurious. Implications for mental health will also be discussed. Research on interpersonal violence will then be reviewed and examined in connection with moral injury. Finally, social support will be discussed as a promising moderating variable on the relationship between being exposed to interpersonal violence and moral injury

Moral Injury

The moral anguish experienced by warriors has been noted in accounts of war across time. In 1981, Peter Marin wrote about "moral pain" a concept he found to be present for many distressed Vietnam veterans suffering psychological and emotional disturbances due to their involvement in the war (Psychology Today, 1981). Dr. Jonathan Shay, a retired clinical psychiatrist for the U.S. Department of Veterans Affairs, coined the term moral injury, and defined it as a betrayal of what's right by someone who holds legitimate authority (e.g., in the military – a leader) in a high stakes situation (2002). In his book *Achilles in Vietnam: Combat Trauma and the Undoing of Character*, Shay explored the psychological effects of war by examining the experiences of his patients, Vietnam veterans, to Achilles in Homer's *Iliad* (1994). Specifically, he examined the psychological injury that can develop after deeply held moral or ethical beliefs are breached.

In 2012, Stein et. al. proposed a new way for clinicians and researchers to categorize trauma experienced in war. They developed the following categories: Life Threat to Self, Life Threat to Others, Aftermath of Violence, Traumatic Loss, Moral Injury by Self, and Moral Injury by Others (Stein et al., 2012). Their intention in developing these categories was to expand upon

the assumption that war trauma predominantly involves fear-based reactions to life-threatening situations by proposing that service members also experience distress from events that are not necessarily life threatening. In interviews with active duty service members it was found that engaging in acts that go against one's own moral or ethical standards were the best predictor of re-experiencing symptoms and feelings of guilt, while the experience of witnessing or being the victim to an act that the individual perceived to be a violation of ethical or moral standards was significantly associated with state anger (Stein et al., 2012). When testing these different categories, researchers found that perhaps more distressing and haunting than a service member being involved in a life-threatening situation, was experiencing a traumatic loss, witnessing the aftermath of violence, and committing or observing acts that violate moral or ethical standards (Stein et al., 2012). Clearly the wounds and destruction of war do not only stay with soldiers in their minds, but can also deeply impact the soul.

Researchers Litz et al. proposed a conceptual model of moral injury to aid future work regarding the construct. They posited that moral injury begins to manifest once the individual becomes aware of the disparity between their established moral code and the act that violated that code, creating inner conflict and dissonance (2009). Depending upon the act, a person may experience feelings of shame (i.e. I am bad) and anxiety, or guilt (i.e. I did something bad). The individual will then either withdrawal, or they will integrate the moral violation into a functional world view (Litz et al., 2009). If the individual is unable to reconcile their moral conflict and forgive themselves, the service member will likely experience self-condemnation. This can lead to a continuing cycle of intrusive memories of the morally injurious event, aversive emotions, withdraw, and emotional numbing and avoidance (Litz et al., 2009). Litz et al. categorized the behaviors that may manifest in parallel to this process as self-handicapping behaviors, consisting

of behaviors that intentionally get in the way of positive emotions or accomplishments, demoralization, which can include self-loathing and hopelessness, and self-harming behaviors, such as poor health, drug and alcohol abuse, risky behavior and parasuicidal behavior (2009). The model suggests that moral repair and renewal can take place through psychological and emotional processing of the memory associated with the moral transgression, as well as through exposure to corrective life experiences such as receiving positive judgement and love and care from others (Litz et al., 2009). This article, and its comprehensive review and proposed framework for understanding moral injury serves as a foundation for informing research and practice.

In expanding upon the groundwork that researchers Litz et al. laid in their conceptualization of moral injury, researchers Drescher et al. sought to validate the construct of moral injury by interviewing both health and religious professionals who had experience working with service members and veterans who had been exposed to combat (2011). They developed the following working definition of moral injury for participants to provide feedback on:

> Disruption in an individual's confidence and expectations about one's own or others' motivation or capacity to behave in a just and ethical manner. This injury is brought about by bearing witness to perceived immoral acts, failure to stop such actions, or perpetration of immoral acts (Drescher et al., p. 9, 2011).

All participants concurred that the concept of moral injury is needed and useful in describing the aftermath of combat experiences (Drescher et al., 2011). They agreed that morally injurious events impact service members' and veterans' spiritual, psychological, social, and behavioral wellbeing (Drescher et al., 2011). Signs and symptoms of moral injury that participants had seen

in their work with service members and veterans included themes of trust issues, psychological problems, social problems, spiritual/existential issues, and self-deprecation (Drescher et al., 2011). Panel members suggested the use of socially, individually, and spiritually directed treatments to help soldiers struggling with moral injury (Drescher et al., 2011). Interventions included social reconnection, community involvement, healing feedback from respected people, cognitive restructuring, disclosure, expressive writing, connecting feelings to experiences, writing from the victim's perspective, spiritual rituals, spiritual counseling, forgiveness, coming to amends, and transformation (Drescher et al., 2011). In reviewing respondent's suggestions regarding helpful interventions for healing from moral injury, there is strong support for social support.

Interpersonal Violence

Experiences of interpersonal violence have been found to be significant risk factors for future psychological distress in adulthood (Weaver & Clum, 1995, Molnar, Buka, & Kessler, 2001 & Carr, Martins, Stingel, Lemgruber, & Juruena, 2013). Interpersonal violence according to the World Health Organization (WHO) involves violence between a victim and perpetrator (2018). More specifically, interpersonal violence involves instances of family, intimate partner violence, and community violence where either physical, sexual, and psychological abuse, or neglect has occurred (WHO, 2018). Partner violence, child abuse, and threats to life (Norris & Kaniasty, 1994; Williams et al., 2007), have all been associated with heightened levels of distress. In addition, one or multiple experiences of interpersonal violence has been found to be more distressing than one or multiple traumatic experiences of noninterpersonal violence (Green et al., 2000). In fact, researchers Green et al. proposed that "individuals who have experienced *only* noninterpersonal trauma may not be at higher risk for current or ongoing symptoms at some

later point than those without any exposure" (p. 281, 2000). This provides further support for why this study is examining experiences of interpersonal violence specifically.

When closely examining distress among those who have experienced events of interpersonal violence, shame and neuroticism have been frequently cited as negative outcomes (Negrao, Bonanno, Noll, Putnam, & Trickett, 2005; Schoenleber, Berghoff, Gratz, & Tull, 2018; van der Kolk, 2005; Lee, Anderson, Klimes-Dougan, 2016; Andrews, 1995; Bennett, Sullivan, & Lewis, 2010). Particularly when looking at instances of child physical and sexual abuse and neglect, research has shown a positive relationship with high levels of shame (Andrews, 1995, Holl et al., 2017, & Andrews, Brewin, Rose, Kirk, & Holloway, 2000). Additionally, children who experienced neglect exhibit significantly more negative affect compared to physically abused and nonmaltreated children, displayed in higher levels of anger (Koenig, Cicchetti, Rogosch, 2000). Researchers discussed that anger in maltreated children is often due to deeper feelings of shame and embarrassment (Koenig et al., 2000). In relating these findings to the impact traumatic events may have on moral injury, it is particularly notable to highlight experiences that induce feelings of shame and neuroticism, as Litz et al., in their conceptual model of moral injury, proposed that shame proneness and neuroticism are risk factors that may increase an individual's likelihood of experiencing moral injury (Litz et al., 2009).

Moral injury has also been associated with aspects of PTSD, making the literature on interpersonal violence and PTSD a useful tool to further understand how traumatic and stressful experiences occurring prior to deployment may influence the development of moral injury. Risk factor research for PTSD has shown a significant association between pre-deployment exposure to stressors and traumatic events such as physical assault, sexual abuse (Polusny, Erbes, Murdoch, Arbisi, Thuras, & Rath, 2010), and childhood abuse (Zaidi & Foy, 1994), and the

development of war-related PTSD. To more thoroughly understand the relationship between early traumatic experiences and PTSD, researchers Schumm, Stines, Hobfoll, and Jackson investigated experiences of child sexual abuse among a sample of 176 low-income women (2005). They found that child sexual abuse predicted increases in resource loss, which then predicted posttraumatic stress disorder and depressive mood (Schumm, Stines, Hobfoll, & Jackson, 2005). Researchers Schumm et al. suggest that child abuse results in greater exposure to stressors later in life through loss of resources, making those with a history of abuse more vulnerable to future stressors (2005). Therefore, the experience of traumatic life events in childhood and adolescents may sensitize soldiers to the violence and destruction of war, leading to an increase in vulnerability to developing negative psychological outcomes (Schumm et al., 2005) such as moral injury.

Social Support

Social support has continually been found to be an important factor when examining vulnerability to and recovery from the development of trauma and stressor related disorders (Cohen & Wills, 1985; Xue et al., 2015; Ozer, Best, Lipsey, Weiss, 2003; Polusny et al., 2010, & Wright, Kelsall, Sim, Clarke, & Creamer, 2013). There is strong support for the idea that social support acts as a buffer against the development of trauma or stress related disorder outcomes (Cohen & Wills, 1985 & Evans & DiLillo, 2013). In a large review of studies examining the role of social support on well-being, social support was found to serve as a buffer against adverse effects of traumatic and stressful events (Cohen & Wills, 1985). Even for those who have experienced multiple interpersonal traumas, high social support has been found to buffer the cumulative impact of traumatic events (Schumm, Briggs-Phillips, & Hobfoll, 2006). In a large study examining women who had experienced both abuse as a child and rape as an adult, high

social support predicted low PTSD severity (2006). Additionally, for women who experienced childhood maltreatment, perceived support from friends was associated with lower levels of depression (Powers, Ressler, & Bradley, 2010). Research on OEF/OIF service members and veterans has shown similar results in that the experience of post-deployment social support has been found to be correlated with decreased traumatic stress symptoms (Pietrzak, Johnson, Goldstein, Malley, & Southwick, 2010) as well as a significant protective factor in the etiology of PTSD (Polusny et al., 2011). The benefits of social support, specifically as a buffering factor against soldiers developing war related traumatic stress responses is evident.

The positive relationships developed through experiences of social support are also beneficial to the prevention of or recovery from trauma or stressor related disorders (Charuvastra & Cloitre, 2008). Anthony Charuvastra and Marylene Cloitre developed the term the Social Ecology of PTSD, and designed a framework for understanding how social bonds act as both a risk factor for and recovery factor against the development of PTSD (2008). This framework highlights how social bonds allow for reparative experiences to occur through providing a sense of safety (Charuvastra & Cloitre, 2008). Positive social support also provides experiences that facilitate cognitive restructuring to bolster beliefs such as the world is safe and the individual is good (Charuvastra & Cloitre, 2008 & Horowitz, 1986). By receiving and developing a sense of safety through positive social interactions, individuals are able to exhibit resilience to and recovery from PTSD (Charuvastra & Cloitre, 2008). In the case of moral injury, positive relationships also have the potential to be incredibly healing through providing experiences of love and kindness and reinforcing beliefs of safety and worth.

Researchers and clinicians who have put forth the foundation for understanding the construct of moral injury have continually discussed the reparative nature of social support

(Shay, 1994; Drescher et al., 2011; Drescher & Foy, 2008, & Litz et al., 2009). Jonathan Shay, who first developed the term moral injury, points to the healing nature of communities to help alleviate moral injury among veterans through listening, embracing, and learning from the soldier's narratives (1994). Researchers Litz et al., in their framework for moral injury, proposed that having forgiving supports serves a protective function as they provide corrective and repairing experiences and encourage self-forgiveness (Litz et al., 2009 & Farnsworth, Drescher, Nieuwsma, Walser, & Currier, 2014). In their discussion on how to treat moral injury, they also emphasized the importance of social support in that positive relationships help reinforce beliefs that the soldier is worthy of care and love from others (2009). Similarly, Drescher and Foy stated that "Social support provides both emotional as well as instrumental support needed following traumatic experience." (p. 97, 2008). Clearly there is much support among researchers for the benefits of social support in reducing moral injury.

Research on the benefits of social support preventing and alleviating moral injury is still in its early stages, however initial findings are promising. Among active duty Marines, higher reports of moral injury were related to lower reports of social support (Nash et al., 2013). This finding suggests that effective social support may help alleviate moral injury. Additionally, in 2014, a study of 60 Portuguese war veterans who all reported experiencing morally injurious events while at war was conducted. Researchers analyzed the effects of moral injury, self-integration of moral injury in personal schemas, self-awareness of mental states, and perceived social support on the severity of PTSD and depression symptoms (Ferrajao & Oliveira, 2014). Researchers found a positive relationship between self-integration of moral injury in personal schemas and perceived social support (Ferrajao & Oliveira, 2014). These findings bolster the belief that perceived social support can help individuals reconcile morally incongruent

experiences into self- and relational-schemas, and therefore achieve moral repair. Social support may not only provide soldiers with the opportunity to have a corrective experience in healing from their past trauma, but can also provide an opportunity to process the morally injurious event and receive compassionate and forgiving responses from trusted others.

Social support has been acknowledged to play a moderating role between experiences of interpersonal violence and negative mental health outcomes (Feiring, Taska, & Lewis, 1996; Whiffen, Judd, & Aube, 1999; Punamaki, Komproe, Qouta, El-Masri, & de Jong, 2004; & Von Cheong, Sinnott, Dahly, & Kearney, 2017). In a study examining 585 men and women who had been exposed to military violence as adults, researchers found that experiencing high levels of satisfactory social support moderated the negative effect of exposure to military violence in adulthood on depressive, somatic, and hostility symptoms (Punamaki et al., 2004). Perceived social support has also been found to moderate the relationship between exposure to interpersonal violent childhood experiences and depression later in life (Von Cheong et al., 2017). In addition, among a large sample of African American and Caucasian adolescents, social support moderated the association between experiencing emotional or physical abuse in a relationship and depression and anxiety (Holt & Espelage, 2005). Given that moral injury has been associated with negative mental health outcomes such as depression, anxiety, and anger, and social support has been shown to moderate the relationship between these negative outcomes and interpersonally violent experiences, the potential for social support to moderate the relationship between experiences of interpersonal violence and moral injury is plausible.

There is further evidence that supports the moderating role of social support on the relationship between experiencing war or police related traumatic events and trauma and stressor related disorders (Stephens, Long, & Miller, 1997; Kaspersen, Mattiesen, & Gotestam, 2003;

Stretch, Vail, & Maloney, 1985 & Haden, Scarpa, Jones, & Ollendick, 2006). Among UN soldiers, support from friends and colleagues significantly moderated the relationship between trauma exposure and trauma reactions (Kaspersen, Mattiesen, & Gotestam, 2003). In this same study, similar results were found for relief workers, however support from family and neighbors, in addition to support from friends and colleagues moderated the relationship between trauma exposure and post-trauma reactions (Kaspersen, Mattiesen, & Gotestam, 2003). In a sample of U.S. Army Vietnam veterans, similar results were found in that social support was reported as an important moderating variable in the alleviation of PTSD (1985). In addition, when examining police trauma and PTSD symptoms among police officers, social support was found to significantly moderate the relationship between the two variables (Stephens, Long, & Miller, 1997). Given these results, there is ample evidence that bolsters the claim that social support has an important moderating role when examining the relationship between traumatic events and trauma and stressor related disorders.

To date there have been no studies that have examined the moderating role of social support on the relationship between experiences of interpersonal violence prior to deployment and war related trauma and stressor related disorders. Due to this gap in the literature, this study seeks to examine the moderating role of social support on the association between experiences of interpersonal violence prior to deployment and moral injury. To that end, the following hypothesis will be tested:

Hypothesis 1: Pre-deployment experiences of interpersonal violence will be positively associated with moral injury.

Hypothesis 2: The association between pre-deployment experiences of interpersonal violence and moral injury will be moderated by perceived social support. Specifically, perceived social

support will reduce the strength of the association between pre-deployment experiences of interpersonal violence and moral injury.

Hypothesis 3: The potential attenuating effects of post-deployment social support will be significantly stronger for women than for men on the relationship between pre-deployment experiences of interpersonal violence and moral injury.

Chapter 3: Methods

Design of the Study

This study analyzed existing data collected by Dr. Michael Anestis and Dr. Bradley Green at a Joint Forces Training Center in the southern United States. The data were collected from a sample of military personnel, primarily from the Army National Guard. The data were originally used to evaluate the psychometric properties of the Moral Injury Events Scale (Nash et al., 2013) in a clinical military sample. In addition, potentially morally injurious events were examined in correlation with experiences outside the context of combat. The collection of this data took place prior to the formulation of the current study, thus limiting the measures that were available. Hypotheses were tested using a quantitative methodology.

Participants

Participants from the original study included 935 U.S. military personnel, primarily from the Army National Guard. Convenience sampling was used to recruit participants from a large Joint Forces Training Center in the southern United States. Participants were recruited through a liaison at Camp Shelby who described the study to potential participants. Participants were required to be at least 18 years of age and currently affiliated with the U.S. military to be included in the study.

Procedures

Approval for the original study was received from the Human Research Protection Office of the U.S. Army Medical Research and Materiel Command, as well as from the institutional review board at the University of Southern Mississippi. The original study was organized by Dr. Michael Anestis and Dr. Bradley Green of the University of Southern Mississippi. The study was partially funded by the Military Suicide Research Consortium, which is funded through the

Office of the Assistant Secretary of Defense for Health Affairs. Dr. Anestis and Dr. Green in their original examination sought to evaluate the psychometric properties of the Moral Injury Events Scale (Nash et al., 2013).

The liaison in conjunction with the principal investigator Dr. Michael Anestis would organize assessment sessions for interested participants. Military personnel were not required to participate in this study. Those who were interested participated in groups of up to 25 at a Joint Forces Training Center located in the southern United States. Participants were seated at laptop computers that were connected to a secure, nongovernment wireless network. Laptops were provided by the research team to ensure confidentiality. The procedures of the study were described. Participants were informed that due to the studies funding coming from the Department of Defense (DoD), the DoD has the legal right to review the data at the individual level. Soldiers who were interested in participating signed a consent form. Participants then completed a series of self-report questionnaires assessing demographics, mental health, and pre-deployment, deployment, and post-deployment experiences. Each soldier was compensated with $20, however, due to the regulations in place by the DoD, soldiers who were classified as active duty were not eligible to receive compensation.

Measures

For the purposes of this study, only 3 of the measures from the original study were used. Those measures include assessment of moral injury, witnessing or experiencing interpersonal violence, and post-deployment social support. Participants also completed a questionnaire regarding demographic information that included questions about gender, age, race, job classification, income, marital status, education, and living situation.

Moral Injury Event Scale. The Moral Injury Events Scale (MIES; Nash et al., 2013) is a nine-item self-report scale that measures exposure to potentially morally injurious events. Items address exposure to perceived violations of moral beliefs by the respondent and/or others, and perceived betrayals committed by others. Respondents rate statements on a six-point Likert scale ranging from one (strongly agree) to six (strongly disagree). All scores are then reverse scored, with higher scores indicating experiencing a greater intensity of potentially morally injurious events and greater moral injury (Nash et al., 2013 & Bryan et al., 2015). The nine-item MIES has been found to have excellent internal consistency, with a Cronbach's alpha of 0.90, as well as good temporal stability over a 3-month period (Nash et al., 2013). The original study this data comes from found good internal consistency for all three scales, reporting Cronbach's alphas of .79 for Transgression-Others, .94 for Transgression-Self, and .89 for Betrayal (Bryan et al., 2015).

Prior Stressors Subscale. This study utilized the Prior Stressors subscale of the Deployment Risk and Resilience Inventory (DRRI; King, King, & Vogt, 2003). The Deployment Risk and Resilience Inventory (DRRI) assesses 14 risk and protective factors for military personnel and veterans that may be associated with psychological and physical health outcomes. The Prior Stressors subscale is a 15-item self-report measure that examines a soldier's exposure to traumatic events before deployment such as physical assault, sexual abuse, community or domestic violence, and other highly stressful life events. Questions such as *Before I was deployed, I experienced… a parent who had a problem with drugs or alcohol*, are answered by respondents in a Yes/No format. Items 1-13 are scored such that *Yes* = 1 and *No* = 0, for items 14 and 15, if the respondent answers *No*, the item is scored as 0. A *Yes* answer results in the respondent answering questions 14a or 15a. The respondent then answers, "*in childhood*" and/or

"*in adulthood*". An endorsement of one of the options results in a score of 1, and an endorsement of both options receives a score of 2. The range of scores is 0 to 17. Higher scores indicate more exposure to pre-deployment stressors. The Prior Stressors subscale has demonstrated good internal consistency reliability with a Cronbach's alpha score of .77 (Vogt, Proctor, King, King, & Vasterling, 2008).

For the purposes of this study, only traumatic experiences in which a person experienced or witnessed interpersonal violence was used. It was decided to only use experiences of interpersonal violence from the DRRI Prior Stressors subscale to create consistency in the traumatic experiences being measured. Additionally, experiences of interpersonal violence may place a person at greater risk of developing moral injury compared to experiences of noninterpersonal violence due to both involving harm at the hands of an individual, making these types of experiences particularly important to examine. Experiences of interpersonal violence were determined based on participants' responses to 6 items from the DRRI Prior Stressors scale. The six items are as follows: witnessed assault or killing, emotionally mistreated, witnessed physical fight among parents, physically punished by parent, physically injured by another person, and unwanted sexual activity.

Post-Deployment Social Support Subscale. The Post-Deployment Social Support subscale is a 15 item self-report measure that examines the extent to which family, friends, coworkers, employers, and community provide emotional support and tangible aid to the respondent. Items are answered using a 5-point Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly agree). Items 6 and 8 were reverse scored. Total potential scores range from 15 to 75, with a higher score indicating greater perceived social support for the respondent upon returning home from deployment.

Proposed Analyses

In the original study, 253 of the 935 participants were missing data due to military training requirements that disrupted data collection. Researchers from the original study employed Little's test for missingness and found that data was missing completely at random, $\chi^2(231) = 239.27$, $p = .340$ (Bryan et al., 2015). Due to no significant demographic differences between participants who were missing data and those with complete data, Listwise deletion for missing data was used in the current study.

General demographic information such as age, gender, race, income level, living situation, time since last deployment, level of education, and marital status are reported. Means, and standard deviations are reported for age, time since last deployment, level of education, and income level, and a frequency table is provided to report on race, gender, living situation, and marital status. Means and standard deviations for the variables moral injury, social support, and witnessing or experiencing interpersonal violence are also presented. T-tests were run to examine if there were any significant gender differences for each of the variables of interest: moral injury, social support, and witnessing or experiencing interpersonal violence.

In order to test the hypotheses of interest in this study, a series of hierarchical linear regressions were conducted using the PROCESS macro for IBM SPSS Statistics software (Version 21.0). Three different models were run in which moral injury was the dependent variable. The first model tested Hypothesis 1 by examining the unique contributions of pre-deployment experiences of interpersonal violence on moral injury above and beyond the effects of age, gender, time since last deployment, education level, and income level. This means that in the first model, moral injury was regressed on those five demographic variables and pre-deployment experiences of interpersonal violence. Hypothesis 2 was tested in model 2 in which

the potential moderating role of post-deployment social support was examined by regressing moral injury on the same model 1 predictors (demographic variables and pre-deployment experiences of interpersonal violence), post-deployment social support, and the interaction variable created by multiplying post-deployment social support with pre-deployment experiences of interpersonal violence. The third model examined Hypothesis 3 by using moderated moderation analysis in the PROCESS macro for IBM SPSS (Version 21.0). Moral injury was regressed on the demographic variables, pre-deployment experiences of interpersonal violence, post-deployment social support, and a three-way interaction variable that multiplied post-deployment social support with gender and pre-deployment experiences of interpersonal violence.

CHAPTER IV: MANUSCRIPT

ABSTRACT

Initial research on moral injury has shown the construct to be associated with many negative mental health outcomes such as depression, suicidal ideation, reduced sense of belonging, anxiety, anger, and spiritual distress. In addition, moral injury among service members has also been shown to be related to experiences of interpersonal violence occurring pre-deployment. Given that social support has consistently been found to play a key role in moderating the relationship between experiences of interpersonal violence and stress and trauma related symptoms and disorders, this study will be the first to explore the relationship between experiences of interpersonal violence and moral injury, and the moderating role of social support. This study will examine secondary data collected from 935 U.S. military personnel primarily from the Army National Guard.

Keywords: moral injury, interpersonal violence, social support, military personnel

The Relationship between Pre-Deployment Experiences of Interpersonal Violence and Moral Injury: The Moderating Role of Social Support

Since 2001, over 2.7 million service members have been to the war zones of Afghanistan and Iraq (Hautzinger, Howell, Scandlyn, Wool, and Zogas, 2015). Deployment, and combat deployment specifically can be highly stressful, and result in mental health problems in service members and veterans. Soldiers may witness death, explosions, extreme wounds, destruction of buildings and homes, and the killing of individuals, while also actively participating in ruination, injuring and killing terrorists, and potentially bringing harm and destruction to civilians (Hoge, 2004). Bearing witness to actions taken by others in war that violate a person's own ethical code, or themselves engaging in activity that goes against their own moral values, has the potential to cause great distress and tension in soldiers (Litz et al., 2009 & Stein, 2012).

The term moral injury was coined to explain the moral and ethical consequences of war. In 2009, researchers Litz et al. developed a conceptual model for understanding moral injury. According to Litz et al., moral injury occurs when an individual experiences a discrepancy between their own moral code and the actions taken by themselves or others that then causes inner conflict and dissonance (2009). This can result in deep distress and impairment emotionally, spiritually, behaviorally, psychologically, and socially (Litz et al., 2009). Moral injury can lead to an increased risk for mental disorders (Wisco et al., 2017); self-loathing, suicidal ideation, suicide attempts; anger, anxiety, depression, guilt, shame, spiritual/existential issues, forgiveness problems (Wisco et al., 2017 & Drescher et al., 2011; Maguen et al., 2011; Nash et al., 2013), hopelessness, pessimism (Bryan et al., 2015) substance abuse, and social withdrawal (Maguen & Litz, 2014; Nash et al., 2013). Due to the abundance of negative mental

health outcomes that have been associated with moral injury, it is important to fully understand both risk and protective factors for moral injury among service members and veterans.

Research examining risk factors to developing trauma and stressor related disorders continually points to experiences of interpersonal violence as a significant predictor of future distress and negative mental health outcomes (Williams et al., 2007; Currier, Holland, Rojas-Flores, Herrera, & Foy, 2015; Qouta, Punamaki, & Sarraj, 2003). Consistent with these findings, initial research has shown an association between experiencing interpersonal violence prior to first deployment, and facets of moral injury (Bryan et al., 2015). While acknowledging that exposure to traumatic events prior to deployment may make a soldier more vulnerable to experiencing combat related moral injury, it is equally important to understand what factors may alleviate or prevent the development of moral injury.

Positive social support has been found to be an important moderating variable between exposure to traumatic events and negative mental health outcomes (Hyman, Gold, & Cott, 2003; Powers, Ressler, & Bradley, 2010). Social support, for the purposes of this study will be defined as: “the extent to which family, friends, coworkers, employers, and community provide emotional sustenance and instrumental assistance” (King, King, & Vogt, 2003). Given that social support often protects against and alleviates traumatic stress symptoms, it is possible that social support may also weaken the positive relationship between potentially traumatic events and experiencing moral injury. One study has already shown social support and moral injury to be negatively related (Nash et al., 2013 & Solomon, Mikulincer, & Avitzur, 1988), suggesting that a lack of social support may place a soldier at higher risk for developing moral injury. Additionally, researchers Litz et al. discussed the healing role of social support on moral injury stating that “giving and receiving care and love” are key to a soldier achieving moral repair (p.

701, 2009). This statement further bolsters the belief that social support may play an important role in alleviating negative outcomes associated with moral injury.

Empirical evidence has pointed to gender differences in experiences of social support following a traumatic event. Women have historically been found to engage in more coping strategies than men, including seeking out social support and verbally expressing distress and needs (Tamres, Janicki, & Helgeson, 2002). Additionally, women have also been found to report experiencing higher levels of perceived benefits from social support and greater levels of posttraumatic growth following a traumatic event (Swickert & Hittner, 2009) when compared to men. Among a sample of primarily Army National Guard/Reserve and active duty service members, women reported higher levels of perceived social support from friends and family than men (DiMauro, Renshaw, Smith, & Vogt, 2016).

Given that positive experiences of social support have been found to alleviate the relationship between experiences of interpersonal violence and negative mental health outcomes, this study examined whether post-deployment social support attenuated the relationship between pre-deployment experiences of interpersonal violence and combat-related moral injury among service members. Findings from the present study address a gap in the research regarding social support as a moderating variable on the interaction between exposure to interpersonal violence prior to deployment and moral injury. In addition, given that woman are more likely to receive and engage in social support seeking behavior, this study also explores the association between traumatic experiences involving experiencing and witnessing interpersonal violence prior to deployment and moral injury, and how gender may affect the moderating role of post-deployment social support on this relationship. By conducting this research, more informed

intervention and prevention programs can be disseminated among military members and veterans.

Review of the Literature

Moral Injury. Dr. Jonathan Shay, a retired clinical psychiatrist for the U.S. Department of Veterans Affairs, coined the term moral injury, and defined it as a betrayal of what's right by someone who holds legitimate authority (e.g., in the military – a leader) in a high stakes situation (2002). In his book *Achilles in Vietnam: Combat Trauma and the Undoing of Character*, Shay examined the psychological injury that can develop after deeply held moral or ethical beliefs are breached during times of war (1994). Specifically, he examined the psychological injury that can develop after deeply held moral or ethical beliefs are breached.

Researchers Litz et al. proposed a conceptual model of moral injury to aid future work regarding the construct. They posited that moral injury begins to manifest once the individual becomes aware of the disparity between their established moral code and the act that violated that code, creating inner conflict and dissonance (2009). Depending upon the act, a person may experience feelings of shame (i.e. I am bad) and anxiety, or guilt (i.e. I did something bad). If the individual is unable to reconcile their moral conflict and forgive themselves, the service member will likely experience self-condemnation. This can lead to a continuing cycle of intrusive memories of the morally injurious event, aversive emotions, withdraw, and emotional numbing and avoidance (Litz et al., 2009). Litz et al. categorized the behaviors that may manifest in parallel to this process as self-handicapping behaviors, consisting of behaviors that intentionally get in the way of positive emotions or accomplishments, demoralization, which can include self-loathing and hopelessness, and self-harming behaviors, such as poor health, drug and alcohol abuse, risky behavior and parasuicidal behavior (2009). The model suggests that moral repair

and renewal can take place through psychological and emotional processing of the memory associated with the moral transgression, as well as through exposure to corrective life experiences such as receiving positive judgement and love and care from others (Litz et al., 2009). This article, and its comprehensive review and proposed framework for understanding moral injury serves as a foundation for informing research and practice.

In expanding upon the groundwork that researchers Litz et al. laid in their conceptualization of moral injury, researchers Drescher et al. sought to validate the construct of moral injury by interviewing both health and religious professionals who had experience working with service members and veterans who had been exposed to combat (2011). They developed the following working definition of moral injury for participants to provide feedback on:

> Disruption in an individual's confidence and expectations about one's own or others' motivation or capacity to behave in a just and ethical manner. This injury is brought about by bearing witness to perceived immoral acts, failure to stop such actions, or perpetration of immoral acts (Drescher et al., p. 9, 2011).

All participants concurred that the concept of moral injury is needed and useful in describing the aftermath of combat experiences (Drescher et al., 2011). They agreed that morally injurious events impact service members' and veterans' spiritual, psychological, social, and behavioral wellbeing (Drescher et al., 2011). Signs and symptoms of moral injury that participants had seen in their work with service members and veterans included themes of trust issues, psychological problems, social problems, spiritual/existential issues, and self-deprecation (Drescher et al., 2011). Panel members suggested the use of socially, individually, and spiritually directed treatments to help soldiers struggling with moral injury (Drescher et al., 2011). Interventions

included social reconnection, community involvement, healing feedback from respected people, cognitive restructuring, disclosure, expressive writing, connecting feelings to experiences, writing from the victim's perspective, spiritual rituals, spiritual counseling, forgiveness, coming to amends, and transformation (Drescher et al., 2011). In reviewing respondent's suggestions regarding helpful interventions for healing from moral injury, there is strong support for social support.

Interpersonal Violence. Experiences of interpersonal violence have been found to be significant risk factors for future psychological distress in adulthood (Weaver & Clum, 1995, Molnar, Buka, & Kessler, 2001 & Carr, Martins, Stingel, Lemgruber, & Juruena, 2013). Interpersonal violence according to the World Health Organization (WHO) involves violence between a victim and perpetrator (2018). More specifically, interpersonal violence involves instances of family, intimate partner violence, and community violence where either physical, sexual, and psychological abuse, or neglect has occurred (WHO, 2018). Partner violence, child abuse, and threats to life (Norris & Kaniasty, 1994; Williams et al., 2007), have all been associated with heightened levels of distress. In addition, one or multiple experiences of interpersonal violence has been found to be more distressing than one or multiple traumatic experiences of noninterpersonal violence (Green et al., 2000). In fact, researchers Green et al. proposed that "individuals who have experienced *only* noninterpersonal trauma may not be at higher risk for current or ongoing symptoms at some later point than those without any exposure" (p. 281, 2000). This provides further support for why this study is examining experiences of interpersonal violence specifically.

When closely examining distress among those who have experienced events of interpersonal violence, shame and neuroticism have been frequently cited as negative outcomes

(Negrao, Bonanno, Noll, Putnam, & Trickett, 2005; Schoenleber, Berghoff, Gratz, & Tull, 2018; van der Kolk, 2005; Lee, Anderson, Klimes-Dougan, 2016; Andrews, 1995; Bennett, Sullivan, & Lewis, 2010). Particularly when looking at instances of child physical and sexual abuse and neglect, research has shown a positive relationship with high levels of shame (Andrews, 1995, Holl et al., 2017, & Andrews, Brewin, Rose, Kirk, & Holloway, 2000). Additionally, children who experienced neglect exhibit significantly more negative affect compared to physically abused and nonmaltreated children, displayed in higher levels of anger (Koenig, Cicchetti, Rogosch, 2000). Researchers discussed that anger in maltreated children is often due to deeper feelings of shame and embarrassment (Koenig et al., 2000). In relating these findings to the impact traumatic events may have on moral injury, it is particularly notable to highlight experiences that induce feelings of shame and neuroticism, as Litz et al., in their conceptual model of moral injury, proposed that shame proneness and neuroticism are risk factors that may increase an individual's likelihood of experiencing moral injury (Litz et al., 2009).

Social Support. Social support has continually been found to be an important factor when examining vulnerability to and recovery from the development of trauma and stressor related disorders (Cohen & Wills, 1985; Xue et al., 2015; Ozer, Best, Lipsey, Weiss, 2003; Polusny et al., 2010, & Wright, Kelsall, Sim, Clarke, & Creamer, 2013). There is strong support for the idea that social support acts as a buffer against the development of trauma or stress related disorder outcomes (Cohen & Wills, 1985 & Evans & DiLillo, 2013). In a large review of studies examining the role of social support on well-being, social support was found to serve as a buffer against adverse effects of traumatic and stressful events (Cohen & Wills, 1985). Even for those who have experienced multiple interpersonal traumas, high social support has been found to buffer the cumulative impact of traumatic events (Schumm, Briggs-Phillips, & Hobfoll, 2006).

In a large study examining women who had experienced both abuse as a child and rape as an adult, high social support predicted low PTSD severity (2006). Additionally, for women who experienced childhood maltreatment, perceived support from friends was associated with lower levels of depression (Powers, Ressler, & Bradley, 2010). Research on OEF/OIF service members and veterans has shown similar results in that the experience of post-deployment social support has been found to be correlated with decreased traumatic stress symptoms (Pietrzak, Johnson, Goldstein, Malley, & Southwick, 2010) as well as a significant protective factor in the etiology of PTSD (Polusny et al., 2011). The benefits of social support, specifically as a buffering factor against soldiers developing war related traumatic stress responses is evident.

The positive relationships developed through experiences of social support are also beneficial to the prevention of or recovery from trauma or stressor related disorders (Charuvastra & Cloitre, 2008). Anthony Charuvastra and Marylene Cloitre developed the term the Social Ecology of PTSD, and designed a framework for understanding how social bonds act as both a risk factor for and recovery factor against the development of PTSD (2008). This framework highlights how social bonds allow for reparative experiences to occur through providing a sense of safety (Charuvastra & Cloitre, 2008). Positive social support also provides experiences that facilitate cognitive restructuring to bolster beliefs such as the world is safe and the individual is good (Charuvastra & Cloitre, 2008 & Horowitz, 1986). By receiving and developing a sense of safety through positive social interactions, individuals are able to exhibit resilience to and recovery from PTSD (Charuvastra & Cloitre, 2008). In the case of moral injury, positive relationships also have the potential to be incredibly healing through providing experiences of love and kindness and reinforcing beliefs of safety and worth.

Researchers and clinicians who have put forth the foundation for understanding the construct of moral injury have continually discussed the reparative nature of social support (Shay, 1994; Drescher et al., 2011; Drescher & Foy, 2008, & Litz et al., 2009). Jonathan Shay, who first developed the term moral injury, points to the healing nature of communities to help alleviate moral injury among veterans through listening, embracing, and learning from the soldier's narratives (1994). Researchers Litz et al., in their framework for moral injury, proposed that having forgiving supports serves a protective function as they provide corrective and repairing experiences and encourage self-forgiveness (Litz et al., 2009 & Farnsworth, Drescher, Nieuwsma, Walser, & Currier, 2014). In their discussion on how to treat moral injury, they also emphasized the importance of social support in that positive relationships help reinforce beliefs that the soldier is worthy of care and love from others (2009). Similarly, Drescher and Foy stated that "Social support provides both emotional as well as instrumental support needed following traumatic experience." (p. 97, 2008). Clearly there is much support among researchers for the benefits of social support in reducing moral injury.

Research on the benefits of social support preventing and alleviating moral injury is still in its early stages, however initial findings are promising. Among active duty Marines, higher reports of moral injury were related to lower reports of social support (Nash et al., 2013). This finding suggests that positive social support may help alleviate moral injury. In 2014, a study of 60 Portuguese war veterans who all reported experiencing morally injurious events while at war found a positive relationship between self-integration of moral injury into personal schemas and perceived social support (Ferrajao & Oliveira, 2014). These findings bolster the belief that perceived social support can help individuals reconcile morally incongruent experiences into self- and relational-schemas, and therefore achieve moral repair. Social support may not only

provide soldiers with the opportunity to have a corrective experience in healing from their past trauma, but can also provide an opportunity to process the morally injurious event and receive compassionate and forgiving responses from trusted others.

Social support has been acknowledged to play a moderating role between experiences of interpersonal violence and negative mental health outcomes (Feiring, Taska, & Lewis, 1996; Whiffen, Judd, & Aube, 1999; Punamaki, Komproe, Qouta, El-Masri, & de Jong, 2004; & Von Cheong, Sinnott, Dahly, & Kearney, 2017). In a study examining 585 men and women who had been exposed to military violence as adults, researchers found that experiencing high levels of satisfactory social support moderated the negative effect of exposure to military violence in adulthood on depressive, somatic, and hostility symptoms (Punamaki et al., 2004). Perceived social support has also been found to moderate the relationship between exposure to interpersonal violent childhood experiences and depression later in life (Von Cheong et al., 2017). In addition, among a large sample of African American and Caucasian adolescents, social support moderated the association between experiencing emotional or physical abuse in a relationship and depression and anxiety (Holt & Espelage, 2005). Given that moral injury has been associated with negative mental health outcomes such as depression, anxiety, and anger, and social support has been shown to moderate the relationship between these negative outcomes and interpersonal violent experiences, the potential for social support to moderate the relationship between experiences of interpersonal violence and moral injury is plausible.

There is further evidence that supports the moderating role of social support on the relationship between experiencing war or police related traumatic events and trauma and stressor related disorders (Stephens, Long, & Miller, 1997; Kaspersen, Mattiesen, & Gotestam, 2003; Stretch, Vail, & Maloney, 1985 & Haden, Scarpa, Jones, & Ollendick, 2006). Among UN

soldiers, support from friends and colleagues significantly moderated the relationship between trauma exposure and trauma reactions (Kaspersen, Mattiesen, & Gotestam, 2003). In this same study, similar results were found for relief workers, however support from family and neighbors, in addition to support from friends and colleagues moderated the relationship between trauma exposure and post-trauma reactions (Kaspersen, Mattiesen, & Gotestam, 2003). In a sample of U.S. Army Vietnam veterans, similar results were found in that social support was reported as an important moderating variable in the alleviation of PTSD (1985). In addition, when examining police trauma and PTSD symptoms among police officers, social support was found to significantly moderate the relationship between the two variables (Stephens, Long, & Miller, 1997). Given these results, there is ample evidence that bolsters the claim that social support has an important moderating role when examining the relationship between traumatic events and trauma and stressor related disorders.

The Present Study

The present study explored the moderating effect of post-deployment social support on the relationship between pre-deployment experiences of interpersonal violence and moral injury among military personnel. A quantitative approach was used to understand this relationship, and capture participants experiences of interpersonal violence, moral injury, and perceived social support. Given that this is the first study of its kind to examine these specific risk and protective factors to developing moral injury, the implications of this research may shed important insight on the construct moral injury, allowing for my intentional intervention and prevention programs to be created to help soldiers heal from the invisible wounds of war.

Study Hypotheses

Based on the literature, the current study examines the following hypothesis:

Hypothesis 1: Pre-deployment experiences of interpersonal violence will be positively associated with moral injury.

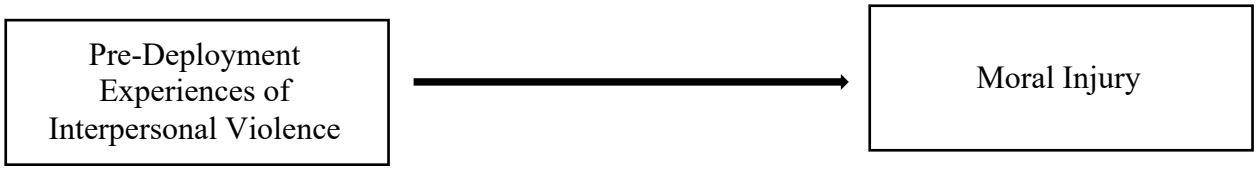

Figure 1. Conceptual Model

Hypothesis 2: The association between pre-deployment experiences of interpersonal violence and moral injury will be moderated by perceived social support. Specifically, perceived social support will reduce the strength of the association between pre-deployment experiences of interpersonal violence and moral injury.

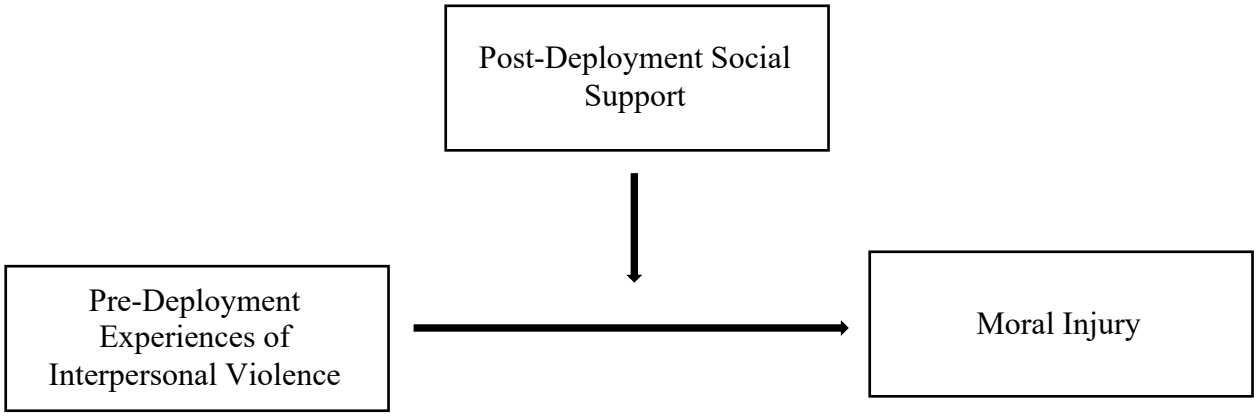

Figure 2. Conceptual Model

Hypothesis 3: The potential attenuating effects of post-deployment social support will be significantly stronger for women than for men on the relationship between pre-deployment experiences of interpersonal violence and moral injury.

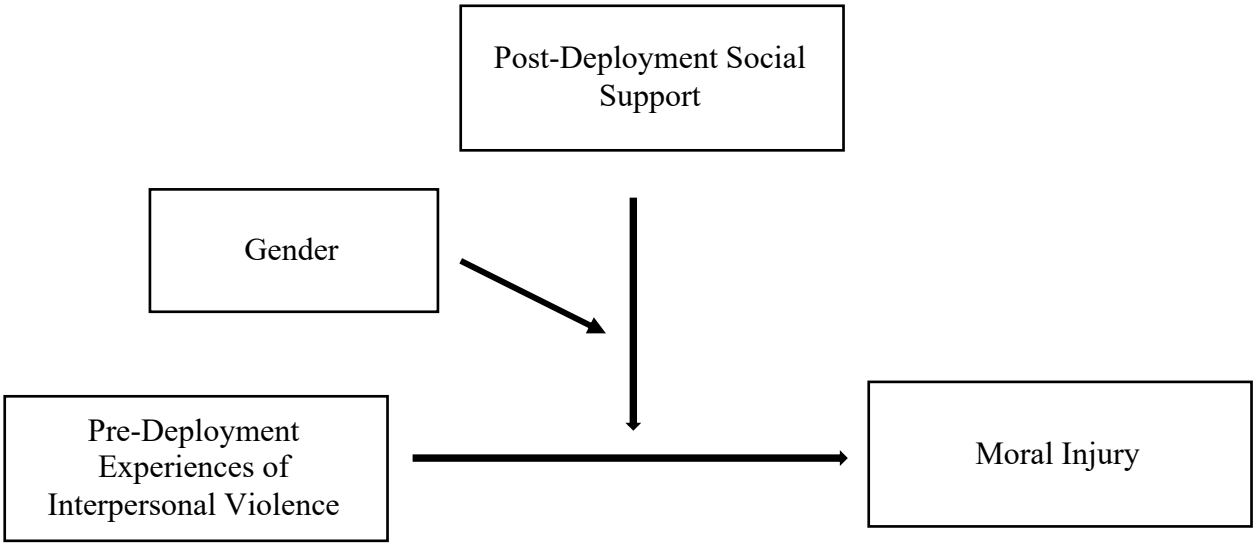

Figure 3. Conceptual Model

Methods

Participants

Participants from the original study included 935 U.S. military personnel, primarily from the Army National Guard. Convenience sampling was used to recruit participants from a large Joint Forces Training Center in the southern United States. Participants were recruited through a liaison at Camp Shelby who would describe the study to potential participants. Participants were required to be at least 18 years of age and currently affiliated with the U.S. military to be included in the study.

The sample consisted of both men (82.3%) and women (17.7%), with the average age for men being 27 (*SD* = 7.93) and the average age for women being 28 (*SD* = 8.79). Participants were predominantly from the Army National Guard (91.8%). Over two thirds (65.7%) of military participants had deployed at least one time to Afghanistan or Iraq, and for 37.6% less than one month had passed since their last deployment. Only a small percentage (8.6%) of participants had job duties that were classified as “noncombatant”. Participants on average had a family annual income between $25,001 - $50,000 (37.5%), with 25.5% reporting an income of $25,000

or less, 20.9% having between $50,001 - $75,000, and 14.6% with an income above $75,001. Almost half of all participants completed some college (48.6%), with 31% having received a high school diploma or GED, and 20.2% receiving a college degree or graduate level education. Additional demographic information can be found in Table 1.

Table 1: Demographic Variables	% Endorsed
Race	
White	62.1
African American	26.2
Hispanic/Latino(a)	4.4
Asian/Pacific Islander	2.0
Native American	1.0
Other	3.9
Gender	
Male	82.3
Female	17.7
Living Situation	
Currently living alone	18.3
Currently living with one or more other people	81.7
Marital Status	
Never Married	58.6
Currently married and consider marriage active	30.1
Currently married but do not consider marriage active	4.0
Divorced	7.0
Widowed and not remarried	0.4

Procedures

Approval for the original study was received from the Human Research Protection Office of the U.S. Army Medical Research and Materiel Command, as well as from the institutional review board at the University of Southern Mississippi. Approval for the current study was received by the Virginia Tech Institution Review Board. The original study was organized by Dr.

Michael Anestis and Dr. Bradley Green of the University of Southern Mississippi. The study was partially funded by the Military Suicide Research Consortium, which is funded through the Office of the Assistant Secretary of Defense for Health Affairs. Dr. Anestis and Dr. Green in their original examination sought to evaluate the psychometric properties of the Moral Injury Events Scale (Nash et al., 2013).

The liaison at Camp Shelby in conjunction with the principal investigator Dr. Michael Anestis organized assessment sessions for interested participants. Military personnel were not required to participate in this study. Those who were interested participated in groups of up to 25 at a Joint Forces Training Center located in the southern United States. Participants were seated at laptop computers that were connected to a secure, nongovernment wireless network. Laptops were provided by the research team to ensure confidentiality. The procedures of the study were described. Participants were informed that due to the studies funding from the Department of Defense (DoD), the DoD has the legal right to review the data at the individual level. Soldiers who were interested in participating signed a consent form. Participants then completed a series of self-report questionnaires assessing demographics, mental health, and pre-deployment, deployment, and post-deployment experiences. Each soldier was compensated with $20, however, due to the regulations in place by the DoD, soldiers who were classified as active duty were not eligible to receive compensation.

Measures

Moral Injury Event Scale. The Moral Injury Events Scale (MIES; Nash et al., 2013) is a nine-item self-report scale that measures exposure to potentially morally injurious events. Items address exposure to perceived violations of moral beliefs by the respondent and/or others, and perceived betrayals committed by others. Respondents rate statements on a six-point Likert scale

ranging from one (strongly agree) to six (strongly disagree). All scores are then reverse scored, and the reverse scores are added together to get a total score. Scores range from 9 – 54, with higher scores indicating experiencing a greater intensity of potentially morally injurious events and greater moral injury (Nash et al., 2013 & Bryan et al., 2015). The nine-item MIES has been found to have excellent internal consistency with a Cronbach's alpha of 0.90, as well as good temporal stability over a 3-month period (Nash et al., 2013). The original study this data comes from found good internal consistency for all three scales, reporting Cronbach's alphas of .79 for Transgression-Others, .94 for Transgression-Self, and .89 for Betrayal (Bryan et al., 2015). A Cronbach's Alpha of .92 was found for this scale in the current study, with a Chronbach's Alpha = .93 for males and .87 for females, representing great internal consistency.

Prior Stressors Subscale. This study utilized the Prior Stressors subscale of the Deployment Risk and Resilience Inventory (DRRI; King, King, & Vogt, 2003). The Deployment Risk and Resilience Inventory (DRRI) assesses 14 risk and protective factors for military personnel and veterans that may be associated with psychological and physical health outcomes. The Prior Stressors subscale is a 15-item self-report measure that examines a soldier's exposure to traumatic events before deployment such as physical assault, sexual abuse, community or domestic violence, and other highly stressful life events. The Prior Stressors subscale has demonstrated good internal consistency reliability with a Cronbach's alpha score of .77 (Vogt, Proctor, King, King, & Vasterling, 2008). For the purposes of this study, only traumatic experiences in which a person experienced or witnessed interpersonal violence was used. This was decided to create consistency in the traumatic experiences being measured. Additionally, experiences of interpersonal violence may place a person at greater risk of developing moral injury compared to experiences of noninterpersonal violence due to both involving harm at the

hands of an individual, making these types of experiences particularly important to examine. Experiences of interpersonal violence were determined based on participants' responses to 6 items from the DRRI Prior Stressors scale. The six items are as follows: witnessed assault or killing, emotionally mistreated, witnessed physical fight among parents, physically punished by parent, physically injured by another person, and unwanted sexual activity.

Questions such as *Before I was deployed, I had… witnessed someone being assaulted or violently killed*, were answered by respondents in a Yes/No format, where Yes = 1 and No = 0. Scores from the 6 items were added together to get one total score, ranging from 0 to 6. Higher scores indicate more exposure to pre-deployment experiences of interpersonal violence. This 6-item scale that examines only pre-deployment experiences of interpersonal violence demonstrated good internal consistency with an overall Chronbach's alpha of .75, and a Chronbach's Alpha = .76 for males and .72 for females.

Post-Deployment Social Support Subscale. The Post-Deployment Social Support subscale is a 15 item self-report measure that examines the extent to which family, friends, coworkers, employers, and community provide emotional support and tangible aid to the respondent. Items are answered using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Items 6 and 8 were reverse scored. After reverse scoring items 6 and 8, a total score was found by adding together all 15 items. Total potential scores ranged from 15 to 75, with a higher score indicating greater perceived social support for the respondent upon returning home from deployment. A Cronbach's Alpha of .92 was found for this scale in the current study, with a Chronbach's Alpha = .92 for males and .88 for females, showing excellent internal consistency.

Data Analysis

In the original study, 253 of the 935 participants were missing data due to military training requirements that disrupted data collection. Researchers from the original study employed Little's test for missingness and found that data was missing completely at random, $\chi^2(231) = 239.27$, $p = .340$ (Bryan et al., 2015). Due to no significant demographic differences between participants who were missing data and those with complete data, listwise deletion for missing data was used in the current study.

General demographic information such as age, gender, race, income level, living situation, time since last deployment, and marital status are reported. Means, and standard deviations are reported for age, time since last deployment, and income level, and a frequency table is provided to report on race, gender, living situation, and marital status. Means and standard deviations for the variables moral injury, social support, and witnessing or experiencing interpersonal violence are also presented. T-tests were then run to examine if there were any significant gender differences for each of the variables of interest: moral injury, social support, and witnessing or experiencing interpersonal violence.

In order to test the hypotheses of interest in this study a series of hierarchical linear regressions were conducted using the IBM SPSS Statistics software (Version 21.0). Three different models were run in which moral injury was the dependent variable. The first model tests Hypothesis 1 by examining the unique contributions of pre-deployment experiences of interpersonal violence on moral injury above and beyond the effects of age, gender, time since last deployment, education level, and income level. This means that in the first model, moral injury was regressed on those five demographic variables and pre-deployment experiences of interpersonal violence. Hypothesis 2 was tested in model 2 using the PROCESS macro in IBM SPSS (Version 21.0). In model 2 the potential moderating role of post-deployment social support

was examined by regressing moral injury on the same model 1 predictors (demographic variables and pre-deployment experiences of interpersonal violence), post-deployment social support, and the interaction variable created by multiplying post-deployment social support with pre-deployment experiences of interpersonal violence. The third model examined Hypothesis 3 by using a three-way moderation analysis in the PROCESS macro for IBM SPSS (Version 21.0). Moral injury was regressed on the demographic variables, pre-deployment experiences of interpersonal violence, post-deployment social support, and a three-way interaction variable that multiplied post-deployment social support with gender and pre-deployment experiences of interpersonal violence.

Results

Independent sample t-tests were run to assess for statistically significant differences across gender regarding demographic variables as well as pre-deployment experiences of interpersonal violence, moral injury, and post-deployment social support. Means, standard deviations, t-test results, and the range of possible scores for each main variable are reported in Table 2. Overall, participants reported low levels of pre-deployment experiences of interpersonal violence (Males: M = 0.74, *SD* = 1.31; Females: M = 0.75, *SD* = 1.27), low levels of moral injury (Males: M = 20.6, *SD* = 12.56; Females: M = 20.92, *SD* = 10.87), and high levels of post-deployment social support (Males: M = 59.07, *SD* = 11.00; Females: M = 60.23, *SD* = 9.43). T-tests for independent samples showed no statistically significant gender differences for pre-deployment experiences of interpersonal violence ($t = -.041$, $p = .967$), moral injury ($t = -.230$, $p = .818$), or post-deployment social support ($t = -.773$, $p = .440$). Results showed no significant gender differences regarding age, time since last deployment, and marital status. Men reported

significantly higher family income compared to women ($F = .62, p = .002$), while women reported achieving significantly higher levels of education ($F = 4.65, p < .001$).

Table 2: *Means, Standard Deviations, and T-tests*

Variables	Overall Mean (SD)	Female (SD)	Male (SD)	Scale Range	Mean Difference	*t*	*p*
Moral Injury	20.74 (12.28)	20.92 (10.87)	20.60 (12.56)	9 – 54	-0.33	-0.23	.818
Post-Deployment Social Support	59.20 (10.78)	60.23 (9.43)	59.07 (11.00)	15 – 75	-1.16	-0.77	.440
Pre-Deployment Experiences of Interpersonal Violence	0.75 (1.32)	0.75 (1.27)	0.74 (1.31)	0 - 6	-0.01	-0.04	.967

Statistical analysis revealed positive kurtosis for the variables pre-deployment experiences of interpersonal violence (3.44) and moral injury (0.05), and negative kurtosis for the dimension post-deployment social support (-0.61). Positive skewness was reported at 2.00 for pre-deployment experiences of interpersonal violence and 0.94 for moral injury, while negative skewness was found for post-deployment social support (-0.41). The bivariate Pearson's correlations scores are reported in Table 3. Significant correlation coefficients among variables ranged from $r = -.34$ to $r = .40$.

Table 3: *Pre-Deployment Experiences of Interpersonal Violence, Moral Injury, Post-Deployment Social Support, Time Since Last Deployment, Age, Income Level, and Education: Correlations and Descriptive Statistics (N = 693 males and 151 females)*

Variables	1	2	3	4	5	6	7
1. Moral Injury	1.00						
2. Pre-Deployment Experiences of Interpersonal Violence	.18**	1.00					
3. Post-Deployment Social Support	-.34**	-.12*	1.00				
4. Time Since Last Deployment	-.04	.12**	-.04	1.00			
5. Age	-.07	.07	.08	.37**	1.00		
6. Income Level	-.09	.02	.13*	.13**	.33**	1.00	
7. Education	-.05	.12*	.12*	.16**	.40**	.30**	1.00

Note. *p<.05; **p<.01; ***p<.001.

Age, gender, time since last deployment, education level, and income were included as covariates in the analyses to test hypotheses 1, 2, and 3. These demographic variables were selected in order to determine if the interaction between pre-deployment experiences of interpersonal violence and moral injury were influenced specifically by post-deployment social support, or if other demographic factors were influencing this relationship.

Stepwise linear regression results for Model 1 indicated that pre-deployment experiences of interpersonal violence were significantly associated with moral injury (b = 1.64, t = 2.87, p = .004, R^2 = .028). Given the large sample size, effect-size correlation r_{Y1} was calculated yielding 0.75, representing a very large effect size. These results provide support for hypothesis 1.

Moderation analysis results for Model 2 revealed no significant moderating effect for post-deployment social support on the relationship between pre-deployment experiences of

interpersonal violence and moral injury ($b = 0.01, t = 0.06, p = 0.923, R^2 = .166$). However, it was found that greater post-deployment social support was associated with lower levels of moral injury ($b = -0.34, t = -3.91, p < .001$). Three-way moderation analysis for Model 3 showed no gender differences in the moderating role of post-deployment social support between pre-deployment experiences of interpersonal violence and moral injury ($b = 0.15, t = 0.82, p = 0.41, R^2 = .176$). Demographic variables including age, gender, time since last deployment, education level, and income were all not found to have any significant effect on results. Regression statistics for the three hypothesis can be found in Table 4.

Table 4: *Model of Predictors of Moral Injury*

	b	*SE*	*t*	*p*	R^2
constant	40.95	5.67	7.23	.000	
Age	-0.12	0.11	0.82	.414	
Gender	10.70	13.13	0.82	.412	
Time since last deployment	0.06	0.40	0.14	.886	
Education level	1.15	0.88	1.30	.195	
Income level	-0.15	0.63	-0.67	.501	
Pre-Deployment Experiences of Interpersonal Violence*	1.64	0.57	2.87	.004	.028
Post-Deployment Social Support	-0.34	0.09	-3.91.	.000	
Pre-Deployment Experiences of Interpersonal Violence x Post-Deployment Social Support**	0.01	0.06	-0.10	.923	.166
Pre-Deployment Experiences	-6.60	10.61	-0.62	.535	

of Interpersonal Violence x gender					
Post-Deployment Social Support x gender	-0.18	0.21	-0.85	.394	
Pre-Deployment Experiences of Interpersonal Violence x Post-Deployment Social Support x gender***	0.15	0.19	0.82	.414	.176

Note. Model 1=; Model 2=**; Model 3=***.*

Discussion

This study was the first to examine the relationship between pre-deployment experiences of interpersonal violence and combat-related moral injury, and the moderating role of post-deployment social support among a military sample. The hypotheses in this study were partially supported by the results of the analysis. Pre-deployment experiences of interpersonal violence were found to be significantly associated with combat-related moral injury. These results are consistent with the literature on experiences of interpersonal violence and future vulnerability to psychological distress (Polusny et al., 2010; Zaidi & Foy, 1994; Schumm et al., 2005). Research has shown that experiencing violence caused by another individual can result in shame, depression, aggression, isolation, low self-esteem, anxiety (Nader, 2011 & Feiring, Taska, & Chen, 2002) and sadness (Holl et al., 2017). These symptoms have been discussed by researchers Litz et al., as risk factors to moral injury (2009), so the results of the current study further support researchers working framework to understanding the etiology of moral injury.

While significance at the .004 level was found for the Model 1 analysis, the R^2 value was .028 indicating that only 2.8% of the variance in moral injury is explained by pre-deployment experiences of interpersonal violence. This may be explained by the analysis model that was

used being somewhat weak due to the limitations of the Prior Stressors subscale. Additionally, some of this result can be explained by the fact that human behavior is highly variable and hard to predict.

Higher levels of post-deployment social support were found to be associated with lower levels of moral injury. This is consistent with results from Nash et al. (2013) who found that higher reports of moral injury were related to lower reports of social support among Marines. From a theoretical standpoint these results are not surprising. According to cognitive theories of stress and stress injury, social support can help an individual cognitively restructure damaged beliefs about themselves due to traumatic experiences, leading the individual to hold more adaptive beliefs about the world and themselves (Horowitz, 2001 & Figley, 1985). Additionally, there is much research showing that social support acts as a buffer against the development of trauma and stressor related disorders, as well as helps attenuate negative symptoms associated with trauma and stressor related disorders once they manifest (Cohen & Wills, 1985, Evans & DiLillo, 2013, & Schumm, Briggs-Phillips, & Hobfoll, 2006).

Contrary to the hypothesized model, results showed no significant moderating effect for post-deployment social support on the relationship between pre-deployment experiences of interpersonal violence and moral injury. Due to all data being collected at the same time, the studies ability to accurately capture the impact of social support as a moderating variable may have been weakened. When examining the data from this study, a large majority of the participants (65%) reported no prior experience of interpersonal violence, and almost a third of the sample (30%) didn't endorse experiencing moral injury. These minimal reports of moral injury and experiences of interpersonal violence among participants may account for why social support was found to have no moderating effect.

It is also important to consider the unique circumstances those who serve in the Army National Guard undergo in order to understand these results. Those in the National Guard are only required to report for training one weekend a month and two weeks per year (Department of Veterans Affairs, 2012). Given these minimal interactions with their fellow National Guard members, those in the Army National Guard are likely not experiencing the same levels of social support from their fellow service members when compared to active duty military personnel who spend significantly more time training with other service members and therefore have more time to develop supportive bonds. Those in the National Guard often hold other jobs due to the nature of their military commitment being part-time. Their civilian colleagues and friends may not be aware of the soldier's military commitment and therefore may not be intentional about offering support to the soldier. For these reasons, those in the Army National Guard may face unique barriers to receiving social support from others when compared to members of other branches, which could explain why social support was not found to be a moderating variable in the current study.

When looking at theory to further understand these results, cognitive theories of stress and stress injury do support that positive social support can influence and individual's negative or maladaptive beliefs developed after a traumatic situation, to be cognitively restructured into more adaptive thoughts about the world. However, theorist Janoff-Bulman did find that in situations involving an "extreme negative event", such as an experience of interpersonal violence, years after the traumatic event occurred the individual still held significantly more negative world views compared to nonvictims (p. 131, 1989). In the context of this study, individuals with a history of experiencing interpersonal violence would have developed negative appraisals about themselves and the world that were then reinforced and given additional

negative meaning after subsequently experiencing a morally injurious event. Theory supports that given this pile up of traumatic life experiences, and the persistent negative views that developed as a result of these experiences, social support may not be enough at this point to cognitively restructure an individual's deeply rooted maladaptive views.

Another potential reason for why social support was not found to be a moderating variable is that those who experience interpersonal violence and moral injury may not be as inclined to seek out or receive social support. Researchers and clinicians who have worked with veterans struggling with moral injury have discussed self-imposed isolation as a common behavior they see among those with moral injury, due to the intense guilt, anger, and distress they may be experiencing regarding the moral transgression. It could be that those who experienced interpersonal violence prior to deployment, and then combat-related moral injury, due to the nature of their behaviors associated with each traumatic experience, make them less likely to seek out and receive social support.

Yet another reason why social support was not found to moderate the relationship between experiences of interpersonal violence could be that experiences of interpersonal violence are a significant risk factor for moral injury. This study found a significant association between high levels of post-deployment social support and low levels of moral injury, showing that social support is beneficial in alleviating and buffering against the development of moral injury among service members. This is consistent with much of the literature that shows social support to be a strong mitigating variable for trauma and stressor related negative mental health outcomes (Cohen & Wills, 1985, Evans & DiLillo, 2013, & Schumm, Briggs-Phillips, & Hobfoll, 2006). However, because past experiences of interpersonal violence could not be mitigated by social support, experiences of interpersonal violence may be a great risk factor for

moral injury. This finding speaks to the detrimental effects of experiencing interpersonal violence.

Given that minimal differences were found between males and females on their endorsement of moral injury (men: 20.60, women: 20.92), social support (men: 59.07, women: 60.23), and pre-deployment experiences of interpersonal violence (men: 0.74, women: 0.75), post-deployment social support was not a moderating variable that varied by gender. This lack of differences by gender may be due to the relatively homogenous sample, as well as similar characteristics of the military population. Individuals who are drawn to the military often have similar personality traits, and through military training have gained similar skills as other service members. These similar traits, skills, and experiences could have led to similar outcomes for both men and women in this study.

While no significant gender differences were found between men and women regarding moral injury, experiences of interpersonal violence, social support, age, time since last deployment, and marital status, men in this sample were found to have a significantly higher family income compared to women, and women reported achieving significantly higher levels of education compared to men. In the current study, education for women, and high family income for men, may potentially serve as protective factors to service members developing moral injury.

Limitations and Directions for Future Research

There are some notable limitations to the current study. First, over one third of participants had just returned from deployment in Afghanistan. This may have limited this studies ability to appropriately examine onset of moral injury in participants as well as examine the impact of social support as some participants may not have had the opportunity to reconnect with family and friends since being stateside. Additionally, all cross sectional datum was

collected at the same time, so the moderating role of post-deployment social support may have been difficult to capture in this analysis. The data was also skewed and not normally distributed. Moreover, this sample consists mainly of white, male members of the National Guard, so the results may not be applicable to females, service members in other branches, and those who are of another race.

This study was also limited by the use of the condensed Prior Stressors subscale to measure experiences of interpersonal violence. The dichotomous scale only allowed for participants to report if they had or had not experienced a particular event, making it so that those who had experienced a particular type of event involving interpersonal violence more than one time received the same score as those who had experienced the same event only once. Additionally, all "*Yes*" answers were added to create a total score, where higher scores indicated greater experiences of interpersonal violence. However, this scoring method is problematic as one experience of interpersonal violence may be highly distressing and traumatic on its own, and having one experience of interpersonal violence may actually be more devastating for one individual than multiple experiences of interpersonal violence for another individual. While the Prior Stressors subscale was not necessarily intended to measure the cumulative impact of experiences involving interpersonal violence, it was the best option available given that this study used data that was collected prior to the conceptualization of the current study, which therefore limited the measures that were available.

Results may also have been influenced by response bias, due to the fact that data was collected using self-report methodology. Participants may have underreported experiences of interpersonal violence and moral injury knowing that due to the studies funding coming from the DoD, the DoD had the legal right to review the data at the individual level. Additionally,

traumatic experiences and resulting mental health issues are often underreported among civilians, and even more so among the military population (Perez-Stable, Miranda, Munoz, & Ying, 1990, Magruder & Yeager, 2008, & Kimerling et al., 2010). Service members are often concerned about reporting traumatic experiences and mental health issues due to limited confidentiality in the military, and fear that their career may be jeopardized due to their disclosure (Tanielian et al., 2008). Other factors that may lead to an underreporting of experiences of interpersonal violence and moral injury include concern that the individual would be denied a security clearance, worry other service members and higher-ranking officers may lose confidence in them (Tanielian et al., 2008) or treat them differently, the belief among OIF soldiers and marines that one "ought to handle it on my own" (Stecker, Fortney, Hamilton & Ajzen, 2007), and the prevalent stigma regarding mental illness in the military (Kim, Britt, Klocko, Riviere, & Adler, 2011).

Future research would benefit from a longitudinal design, allowing the impact of social support to be observed over time. This process may allow for a clearer understanding of social support as a moderating variable. It would also be beneficial to examine moral injury among military personnel longitudinally, as some of the soldiers who had recently returned from warzones may still be in a combat mindset, and unable to yet face morally injurious experiences. On the contrary, the collection of data so close to some of the soldiers' homecoming may make morally injurious experiences more salient for some.

It would behoove future researchers to examine the relationship between the different facets of moral injury (Betrayal, Transgression-Self, Transgression-Other) and each unique experience of interpersonal violence, with social support as a moderator. First, critically examining the relationship between facets of moral injury and experiences of interpersonal violence would provide a clearer understanding of how specific traumas may make an individual

more vulnerable to experience a category of moral injury. Second, by examining these relationships with social support as a moderator, clinicians and researchers would gain invaluable insight into the path toward healing for soldiers who report distress due to their exposure to both traumatic experiences prior to deployment and morally injurious experiences while at war.

Lastly, given that the current study examined mainly members of the National Guard, it would be important to examine the relationship of these main variables among members of other military branches. Additionally, future studies would benefit from a more diverse sample.

Clinical Implications

While more studies examining the relationships between experiences of interpersonal violence, combat related moral injury, and social support are necessary before proposing informed clinical recommendations, this study does have important clinical implications. Results of the current study showed that for both men and women, past experiences of interpersonal violence related to moral injury. Given these findings, men and women service members with a history of experiences involving interpersonal violence may benefit from routine check-ins from a mental health provider or chaplain while in warzones so that the soldier may feel supported. During these check-ins it may be important for the mental health provider to complete a risk assessment with the service member, given that we know the consequences of experiencing a morally injurious event while at war can be greatly devastating. By monitoring service members' mental health through administering risk assessments, the mental health provider could more intentionally take action toward getting the soldier necessary mental health services before their work as a service member becomes compromised.

Once the soldier is reintegrating into civilian life it may be appropriate to have them work with a mental health provider to aid them in processing potentially re-traumatizing experiences while at war, to help buffer against the development of moral injury. Due to the nature of war, mental health providers may not be accessible to military members during deployment, and it may not be safe for the soldier to begin processing morally injurious experiences while deployed, so an emphasis may need to be placed on treating moral injury once the service member is reintegrating into civilian life.

Adaptive Disclosure (AD), developed by Brett Litz, Leslie Lebowitz, Matt Gray, and William Nash (2016) is currently the only therapeutic treatment option that has been designed to specifically treat moral injury among service members and veterans. In addition to AD, Cognitive processing therapy, mindfulness-based approaches, and spiritual care such as pastoral care, meditation, and Reiki have all been recommended as viable treatment options for moral injury (Kopacz et al., 2015). Given that this studies findings also highlight the attenuating effect of social support on moral injury, it may be beneficial to educate military personnel on the importance of social support as a part of these treatments, and if appropriate, emphasize group interventions. Administering programs specifically for members of the National Guard that emphasize building supportive networks and comradery among military members would likely help protect those in the national guard against developing moral injury.

Educating soldiers' loved ones on the importance of providing social support to military personnel and providing them with strategies involving appropriate ways to offer support may also be fruitful. Offering couple and family therapy services on bases and through the Department of Veterans Affairs could be beneficial to helping a soldier feel supported by their family or partner, and could also help family members and partners understand the unique

struggles our service members face and learn how to effectively support them. Additionally, by the military offering couple and family therapy services to service members, the service member may also feel supported by their country, which could help to improve overall moral, mental health, and likelihood of a soldier continuing to serve in the military after their service commitment has ended. This study also emphasizes the importance of assessing for traumatic experiences prior to military service that may be further influencing a service member or veterans morally injurious experience.

Conclusion

This study is the first to examine the moderating role of post-deployment social support on the relationship between pre-deployment experiences of interpersonal violence and moral injury. While post-deployment social support was not found to be a significant moderating variable, high levels of post-deployment social support were greatly associated with lower levels of moral injury, suggesting that social support helps in alleviating moral injury among military members. Results also indicate a significant association between pre-deployment experiences of interpersonal violence and combat-related moral injury, providing clinicians and researchers with a future direction for developing prevention strategies and interventions.

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