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Influence of Self-Stigma, Distress Disclosure, and Self-Compassion on Post-Traumatic Stress Reactions in Deployment Veterans

Abstract

Military deployments can contribute to significant changes among the service members who experience them. Particularly regarding traumatic or highly stressful deployment experiences, the potential exists for posttraumatic stress reactions with both detrimental outcomes and beneficial influence. The present study explored this spectrum of reactions through the lenses of posttraumatic stress disorder (PTSD) and posttraumatic growth (PTG). Given the well-researched presence of stigma within military culture toward psychological distress, consideration was given to how stigma may influence severity of PTSD and degree of PTG. Rather than focusing on public stigma, the present study explored the possible influence of internalized stigma, known as self-stigma. Specifically, it was hypothesized that higher levels of self-stigma would predict higher severity of PTSD. A mirror hypothesis was that higher levels of self-stigma would predict a decreased degree of PTG. Continuing with a focus on the perspective of the individual deployment veteran, the personal tendency toward concealment or disclosure of psychological distress (distress disclosure) was hypothesized to moderate the predicted relationship of self-stigma with PTSD and PTG. Likewise, the degree to which the deployment veteran has self-compassion was added as a hypothesized moderator of the same relationships. Eighty-one deployment veterans completed a survey comprised of measures of the main variables, demographic information (including military service characteristics), and open-ended questions about the stressfulness of the deployment experience and the ways in which personal growth occurred as a result of the deployment. Results did not support the hypotheses, revealing no significant relationship between self-stigma and PTSD or PTG. Further, the moderations by distress disclosure and self-compassion were not significant. However, the results did support the occurrence of highly stressful deployment experiences for the majority of the participants. Additionally, most perceived that they grew as a result of deploying. Implications of the study for future research and for clinical practice in working with deployment veterans are discussed.

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**INFLUENCE OF SELF-STIGMA, DISTRESS DISCLOSURE, AND
SELF-COMPASSION ON POSTTRAUMATIC STRESS REACTIONS
IN DEPLOYMENT VETERANS**

A Dissertation

Presented to

the Faculty of the Morgridge College of Education

University of Denver

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

by

June M. Ashley

August 2016

Advisor: Ruth (Chu-Lien) Chao, Ph.D.

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Author: June M. Ashley

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Chapter One

Introduction

Military deployments during wartime and in support of other military conflicts have long been associated with changes in the Soldiers, Marines, Sailors, Airmen, and Coastguardsmen who experience them (Lerner, 2003; Nash, Silva, & Litz, 2009). For some, the deployment experience contributes to undesirable consequences, including not only physical injuries but also psychological ones (Nash et al., 2009; Tanielian & Jaycox, 2008). For others, deployment lends itself toward personal growth (Bryan & Morrow, 2011; Erbes et al., 2005). Regardless of the nature of the changes, whether detrimental, beneficial, or a combination of the two, it seems clear that the military service member who returns from a deployment is often somehow different from the person who departed for it. Further, these service members are commonly in the early stages of their adult development at the time of the deployment experience, creating the potential for the subsequent changes they experience to significantly influence their future relationships, their decision-making, and their overall life opportunities (Caspi, Elder, & Bem, 1987).

The number of military service members and veterans who have potentially experienced personal change subsequent to a deployment experience is considerable. Looking at only the most recent military operations (Operations Enduring Freedom, Iraqi Freedom, and New Dawn), 2.6 million service members have served or were currently serving in Afghanistan and Iraq as of March 2014 (Department of Veteran Affairs, 2014).

For many of these deployment veterans, their perceptions of these experiences are likely tailored by the influence of the military culture in which they currently serve or previously served (Dunivin, 1994). For those veterans who pursue support, whether informally or formally, with making sense of these deployment-related changes, limited understanding of the influence of military culture on their beliefs may lead to misunderstandings (Strom et al., 2012). Further, this sense of being misunderstood coupled with the pressure within military culture to be physically and mentally fit may predispose service members and veterans to the development of mental health problem self-stigma (Green-Shortridge, Britt, & Castro, 2007).

Self-Stigma, Posttraumatic Stress Disorder, Distress Disclosure, and Self-Compassion

Self-Stigma. Beliefs in both the general population and in the military culture regarding mental health problems have been shown to decrease the likelihood that deployment veterans who experience PTSD symptoms will receive psychological services (Green-Shortridge et al., 2007). Specifically, these beliefs contribute to stigma, defined by sociologists Link and Phelan (2001) as the simultaneous occurrence of “labeling, stereotyping, separation, status loss, and discrimination” (p. 363) of individuals based on an “us” versus “them” dichotomy. Mental health problem stigma is the application of the stigma processes described above to assumptions made about individuals on the basis of public beliefs about mental health problems (Corrigan, 2004). Among the assumptions made about mental health problems are that those who have psychological problems are dangerous, unsuited to make decisions for themselves, and childlike or unable to care for themselves (Rusch, Angermeyer, & Corrigan, 2005). A

key component of mental health problem stigma is the concept of self-stigma, in which individuals who have been labeled as having a mental health problem accept the related stereotypes and adopt them into their self-concept (Corrigan, 2004). The detrimental influence of self-stigma on self-esteem and on related expectations of rejection interact with the limited life opportunities often afforded to individuals who have been stigmatized, leading many to both voluntary and involuntary social withdrawal (Corrigan, 2004; Link, Cullen, Struening, Shrout, & Dohrenwend, 1989).

Within the context of the military culture, public stigma toward mental health problems overlaps with military-specific stereotypes of psychological distress, the combination of which Green-Shortridge et al. (2007) refer to as military mental health problem stigma. According to the Green-Shortridge et al. (2007) model, service members develop mental health symptoms in reaction to exposure to traumatic events while engaged in military operations. In light of public stigma regarding mental health problems, service members may already have preconceived notions about mental health problems prior to joining the military. Following their indoctrination into the military culture, they likely develop military-specific stigma toward mental health problems (Green-Shortridge et al., 2007). Within the context of a culture dominated by values of combat readiness, personal strength, and commitment to others at the risk of sacrifice of one's self (Dunivin, 1994), the occurrence of psychological distress does not fit and may lead to affected members feeling as though they no longer meet standards. Service members' realizations they have a possible mental health problem may then lead to a compounded form of self-stigma perpetuated by both public and military mental health

problem stigma. This concept of military mental health problem self-stigma is the independent variable in the present study.

Multiple studies have surveyed service members' attitudes and beliefs regarding mental health problems to estimate the prevalence of military mental health problem self-stigma. In their study of Army and Marine combat infantry units prior to or following deployment to Iraq and Afghanistan, Hoge et al. (2004) identified a difference in prevalence based on whether the service members met criteria for mental health diagnoses. The percentages of endorsed items related to stigma ranged from 25% to 65% for those who met the criteria for diagnosis and from 9% to 33% for those who did not. Britt's (2000) study of service members following their return from peacekeeping operations in Bosnia revealed that 61% of participants endorsed believing that acknowledging having a psychological problem would hurt their career. Further, 45% endorsed believing their fellow service members would spend less time with them if they revealed that they have a psychological problem.

The primary impact of military mental health problem self-stigma is its influence on whether military service members and deployment veterans pursue support for psychological distress such as the symptoms related to posttraumatic stress disorder (Green-Shortridge et al., 2007). Within the general population, mental health problem self-stigma is associated with limited treatment seeking (Corrigan, 2004). It is important to note that, unlike stigmatization based on labels assigned to physical characteristics, mental health problems are not typically identifiable based on visual observation (Rusch et al., 2005). Therefore, individuals who may need and want mental health services may not be likely to present for care because they want to avoid the label of a mental health

problem diagnosis (Corrigan, 2004; Rusch et al., 2005). Indeed, within the context of the military, combat-related psychological injuries are often referred to as the “invisible wounds of war” (Tanielian & Jaycox, 2008). Specific to PTSD, it is the position of the present study that the presence of military mental health problem self-stigma is associated with increased severity of PTSD symptoms.

Posttraumatic Stress Disorder. Perhaps the most commonly associated undesirable change in the context of the influence of military deployment experiences is posttraumatic stress disorder (PTSD) (Hoge et al., 2004; Mittal et al., 2013). PTSD is a mental health disorder that sometimes develops in individuals who have had a single or multiple traumatic experiences (American Psychiatric Association, APA, 2013). The diagnostic criteria for PTSD as set forth by the Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition-Text Revision (DSM-IV-TR, APA, 2000) describe a traumatic event as one that inspires “fear, helplessness, or horror” in response to a situation in which an individual felt as though her life and/or physical integrity, and/or that of someone emotionally close to her, was threatened (APA, 2000, p. 467). Also included in this definition of a traumatic event are the unanticipated death of someone close to the individual and witnessing violence or threat of violence to unfamiliar others (APA, 2000). The current study will focus on the diagnosis of PTSD based on the DSM-IV-TR (APA, 2000) given the use of measures that have been validated based on this version of the diagnostic system. However, it is relevant to keep in mind that the recently introduced DSM-V (APA, 2013) criteria for PTSD includes increased specificity of what constitutes a traumatic event. For example, sexual violence, chronic exposure to details of a traumatic event such as collecting human remains, and repeated occupational

exposure to situations involving child abuse are defined as potentially trauma-inducing events. Further, the requirement for the individual to respond to the traumatic event with fear, helplessness, or horror was removed.

In addition to exposure to a traumatic event, a diagnosis of PTSD requires the development of multiple categories of symptoms subsequent to the traumatic experience (APA, 2000). The categories of symptoms include reexperiencing of the event, avoidance of reminders of the trauma, and persistently increased arousal (APA, 2000). Within the category of reexperiencing the event, one or more of the reexperiencing symptoms such as dreams, feeling as though one is back in the traumatic situation, and extreme reactions to stimuli that remind the individual of the trauma must be present (APA, 2000). For the avoidance of reminders of the trauma category, at least three avoidance symptoms must be present. Examples of these avoidance symptoms include avoiding people and locations associated with the trauma, impaired memory of the traumatic event, emotional numbing, sense of a foreshortened future, and interpersonal detachment (APA, 2000). Two or more of the symptoms within the persistently increased arousal category must be present, examples of which include sleep problems, hypervigilance, and irritability (APA, 2000). Additional criteria for a diagnosis of PTSD include that the symptoms must last for more than one month and must cause significant distress in the individual's functioning (e.g., interpersonal functioning, functioning at work, and academic functioning) (APA, 2000).

Traumatic experiences have long been associated with military service, particularly in the context of war (Friedman, Resick, & Keane, 2007; Nash et al., 2009). Although PTSD was not formally defined as a mental disorder until the release of DSM-

III in 1980 (APA, 1980), symptoms consistent with the disorder in combat veterans can be found in ancient literature such as Homer's Iliad (Nash et al., 2009). Attempts to label the symptoms military members developed included the terms "soldier's heart," "sunstroke," "shell shock," "fright neurosis," "gross stress reaction," and "hysteria" (Friedman et al., 2007; Lerner, 2003; Nash et al., 2009). Among the traumatic experiences that military deployment veterans may have are those related to direct exposure to combat experiences and those related to indirect combat exposure (King et al., 2006). Direct exposure to combat involves service members who have been specifically assigned to a combat role firing upon and injuring or killing enemy combatants, being fired upon and being at risk for being injured or killed themselves, and witnessing the injuries or deaths of their fellow service members (DoD, 2013; Hoge, Castro, Messert, McGurk, Cotting, & Koffman, 2004; Keane, Fairbank, Caddell, Zimering, Taylor, & Mora, 1989; King et al., 2006). Indirect combat exposure includes witnessing noncombatants being injured, being responsible for enemy prisoners, providing medical treatment to injured service members, enemy combatants, and noncombatants, and locating and handling the remains of deceased individuals (King et al., 2006). Additional sources of potential trauma experiences for all deployed service members include exposure to dangerous elements of the deployed environment such as being on guard for nuclear, chemical, and biological threats, monitoring for improvised explosive devices, and participating in demining operations (Hoge et al., 2004; King et al., 2006).

Prevalence estimates for PTSD associated with military service vary according to the nature of the conflict (Hoge et al., 2004; King et al., 2006). The RAND Corporation

carried out a population-based survey of Operation Enduring Freedom veterans and Operation Iraqi Freedom and found a prevalence of 14% for possible PTSD in their sample (Schell & Marshall, 2008). Similarly, a review by RAND of 21 epidemiological studies of PTSD in service members who have deployed led the researchers to conclude that the prevalence of PTSD is between five to 15 percent (Ramchand, Karney, Chan Osilla, Burns, & Barnes Calderone, 2008). However, given the potential for PTSD to develop later in a deployment veteran's lifespan (Davison et al., 2006; Horesh, Solomon, Keinan, & Ein-Dor, 2013), it is too early yet to know the actual prevalence of PTSD among veterans of recent and ongoing military operations (Karney et al., 2008). There are many implications of PTSD in deployment veterans, including the potential for changes in interpersonal relationships, aggressiveness, social withdrawal, substance abuse, occupational difficulties, involvement with the legal system, co-occurring mental health disorders such as depression, increased suicide risk, and negative impact on physical health and mortality (Boscarino, 2006; Hoge & Castro, 2012; Karney et al., 2008; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Collectively, these points suggest that deployment related PTSD represents a significant burden to deployment veterans and to their family and friends. Further, the burden of care for organizations such as the Veterans Health Administration that are charged with providing psychological and medical care will likely increase for the duration of the lifespan of these returning service members.

Complicating the pursuit of mental health treatment among service members are the organizational barriers that have historically contributed to adverse effects on the service members' careers (Dingfelder, 2009). Among these potential effects are a lack of

confidentiality, the possibility of having a security clearance downgraded or denied, and concerns about the influence of known mental health problems on service members' potential for promotion. The Department of Defense and senior military leadership have made concerted efforts to reduce these organizational barriers and their influence on treatment seeking (Dingfelder, 2009). However, the remaining link in terms of creating change in the military culture's perspective of mental health problems is that of the perception of the individual service member or military veteran. The present study offers two moderating variables, distress disclosure and self-compassion, as two variables through which these individual perspectives can be explored and changed. As will be discussed, both are hypothesized to be resources that may change the associations between military mental health problem self-stigma and the development of posttraumatic changes in deployment veterans.

Distress disclosure. Distress disclosure refers to trait-like differences in the degree to which individuals tend toward disclosure or concealment of distress (Kahn & Hessling, 2001). Kahn and Hessling (2001) developed their theory of distress disclosure on the basis of decades of research on self-disclosure and self-concealment. While accepting that disclosure and concealment are distinct processes, Kahn and Hessling (2001) argue the sum of these behaviors over time suggests the presence of a unidimensional individual difference variable in the expression of distress. Subsequent research on distress disclosure supports the existence of a positive relationship between distress disclosure and psychological adjustment (Kahn, Achter, & Shambaugh, 2001; Kahn & Hessling, 2001; Sloan & Kahn, 2005). Specifically, individuals involved in counseling who scored more highly on distress disclosure at the start of counseling,

meaning they tend to disclose their distress, had higher levels of psychological adjustment following a short period of counseling than those who were measured as less disclosing. Likewise, research on individuals who have lower scores on distress disclosure because they tend to be more concealing shows that these individuals experienced more psychological distress, including guilt and loneliness (Bruno, Lutwak, & Agin, 2009), chronic pain (Cano, Leong, Williams, May, & Lutz, 2012), depressive symptoms (Garrison & Kahn, 2010), and paranoid ideation (Murphy, Shevlin, Adamson, Cruddas, & Houston, 2012).

Self-stigma and distress disclosure. Where self-stigma and distress disclosure coincide is in the choice an individual who has a mental health problem makes on whether to disclose his psychological distress. The strongest evidence for the influence of distress disclosure tendencies on military mental health problem self-stigma among service members is found in research on their attitudes about mental health care utilization. An example of this research is the previously discussed study by Hoge et al. (2004), which found that Army soldiers who had deployed to Iraq or Afghanistan were more than twice as likely to endorse concerns about mental health problem stigma if they met the criteria for mental health diagnoses. However, research by Mittal et al. (2013) suggests that service members and veterans who tend toward higher levels of distress disclosure behavior will actually experience less self-stigma. Specifically, the results of Mittal et al.'s (2013) qualitative study of combat veterans of OEF and OIF identified that veterans who do disclose their distress in the context of mental health treatment are better able to resist the influence of stigma. Therefore, it seems that any process that facilitates

distress disclosure behaviors may be beneficial for limiting the influence of military mental health problem self-stigma on the severity of PTSD symptoms.

Self-Compassion. Self-compassion refers to the application of the compassion one might feel toward others to oneself (Neff, 2003b). Neff (2003b) developed the concept of self-compassion to include “three faces:” self-kindness, common humanity, and mindfulness. Self-kindness refers to understanding of and kindness toward oneself as opposed to harshly evaluating and criticizing oneself. Common humanity encapsulates a sense that one is connected to rather than distanced from both the experience of and the general characteristics of humankind. Mindfulness specifically means being aware of and accepting of one’s distressing feelings without over-identifying with them (Neff, 2003b). Self-compassion was developed as an alternative to the concept of self-esteem, which may be conceptualized as dependent on one’s experience of success (Neff, 2003b). In contrast, self-compassion is associated with experiencing acceptance of and kindness toward oneself regardless of one’s circumstances.

At first glance, self-compassion seems inconsistent with the high expectations and individual standards for success that characterize military culture (Dunivin, 1994). It may in fact be true that values of self-compassion are incompatible with the concepts of esprit de corps and self-sacrifice that facilitate the military’s mission. However, the value of self-compassion lies in its capacity for contributing to healthy psychological functioning in a way that does not facilitate self-pity or self-indulgence (Neff, 2003b). First, when experiencing distress, an individual who has a high degree of self-compassion is able to extend kindness to his self rather than self-criticism. Similarly, in circumstances where the individual has few or no other people to turn to for support, he is

able to soothe himself through the distress. Second, someone who has self-compassion is less likely to feel isolated by his experience of distress and more likely to accept it as a common aspect of human experience. Third, the self-compassionate person acknowledges rather than avoids his distress, which may then pave the way for him to move toward the distress in order to problem-solve and to ultimately change the situation. Research since Neff's (2003b) initial development of the concept of self-compassion has shown that self-compassion is associated with more effective coping with distress (Allen & Leary, 2010) and that interventions designed to teach self-compassion show promise for working with individuals who experience psychological distress (Gilbert & Procter, 2006; Neff & Germer, 2013b).

Self-stigma and self-compassion. Comparison of the concepts of self-compassion (Neff, 2003b) and self-stigma supports the presence of a negative relationship between the two (Corrigan, 2004). Whereas self-compassion comprises a sense of kindness toward one's self (Neff, 2003b), mental health problem self-stigma consists of a negative perspective toward one's self based on internalized societal stereotypes about psychological problems (Corrigan, 2004). Further, self-compassion involves having a sense of connection with all humanity (Neff, 2003b), whereas the stigma process from which mental health problem self-stigma stems is characterized by separating individuals into "them" rather than "us" groups (Link & Phelan, 2001). What self-compassion and self-stigma do have in common is that both constructs refer to how individuals perceive themselves. Research supports the presence of this negative relationship between self-compassion and self-stigma or similarly negative self-views based on membership in a stigmatized group, examples of which include individuals who

have psychotic symptoms (Braehler, Gumley, Harper, Wallace, Norrie, & Gilbert, 2012), individuals who have HIV (Brion, Leary, & Drabkin, 2014), and sexual minority individuals (LaDuke Chandler, 2012).

Interventions designed to increase self-compassion represent a possible pathway toward decreasing the presence of self-stigma. Initiatives in the U.S. military involving the use of mindfulness-based training and other interventions based on positive psychology to increase psychological resilience point to increased receptiveness toward acceptance-based approaches to increasing well-being among service members (see for example, the Comprehensive Soldier Fitness Program; Cornum, Matthews, & Seligman, 2011). The fostering of self-compassion appears to be an appropriate fit for this focus and may be particularly efficacious toward decreasing military mental health problem self-stigma. The development of self-compassion may mitigate the severity of PTSD symptoms by playing a protective role in decreasing military mental health problem self-stigma.

Self-Stigma, Posttraumatic Growth, Distress Disclosure, and Self-Compassion

The preceding discussion has predominantly focused on the adverse changes associated with deployment experiences, specifically on how the development of military mental health problem self-stigma may predict more symptoms of PTSD. However, as mentioned previously, deployment veterans may also experience beneficial outcomes (Bryan & Morrow, 2011; Erbes et al., 2005). It is the position of the present study that, just as military mental health problem stigma predicts more symptoms of PTSD, it may also hinder the development of posttraumatic growth (PTG).

Posttraumatic growth. PTG describes the personal growth that can come about as a result of an individual's processing of long term distress following a traumatic experience or significant life crisis (Calhoun & Tedeschi, 2013; Tedeschi & Calhoun, 2004). The concept of PTG was developed in the context of a shift in psychology toward acknowledging not only functional impairments and disorders but also strengths, as typified by positive psychology (Seligman & Csikszentmihalyi, 2000; Calhoun & Tedeschi, 2013). PTG comes about through the coping processes individuals use to either strengthen or reappraise their perception of themselves, others, and the meaning of situations following the experience of a traumatic event (Tedeschi & Calhoun, 1996). Five factors characterize PTG, including relating to others, new possibilities, personal strength, spiritual change, and appreciation of life (Tedeschi & Calhoun, 1996).

Calhoun and Tedeschi (2013) describe PTG as common but not universal. Prevalence estimates for PTG vary, likely due in part to there not being a set cutoff point for how much growth constitutes PTG. Calhoun and Tedeschi (2013) estimate that between 30% and 90% of individuals who experience traumas or significant life crises will develop some degree of PTG. They emphasize that the importance of the PTG concept lies in acknowledging growth as a possible outcome of trauma experiences and in providing a framework for helping mental health providers to identify the signs of growth in their clients. The identification of such growth then permits mental health providers to work with their patients/clients to facilitate the processes of coping with ongoing distress in the aftermath of the trauma, of embracing growth-related changes, and of finding meaning in the experience (Calhoun & Tedeschi, 2013).

Just as symptoms consistent with PTSD have long been associated with military wartime experiences (Nash et al., 2009), the same experiences have also been linked with growth (Calhoun & Tedesch, 213; Lerner, 2003; Tedeschi & Calhoun, 2004). Calhoun and Tedeschi (2013) cite how Odysseus, the hero in the Odyssey, was able to reflect on both the good and the bad aspects of his combat experiences. Lerner (2003) described a belief within the German military culture of World War I that wartime experiences are masculinizing challenges that promote growth among military service members. In a contemporary example, Bryan and Morrow (2011) concluded based on their research with a deployed Air Force Security Forces Unit that it is important to “frame adversity as a necessary mechanism through which growth and development occur” (p. 21). These historical and contemporary examples of growth subsequent to difficult events suggest that deployment related experiences might set the foundation for the development of PTG among military service members and veterans.

Self-stigma and posttraumatic growth. To this author’s knowledge, no theoretical articles or empirical studies have yet been published specifically exploring the relationship between mental health problem self-stigma and PTG within the context of military culture. Hypothetically speaking, however, the Calhoun, Tedeschi, and Cann (in Calhoun & Tedeschi, 2013) model for the process through which PTG develops suggests that the presence of self-stigma will inhibit the development of PTG. Specifically, the tendency for service members and veterans who develop mental health problem self-stigma to attempt to hide their problems and to avoid help-seeking (Green-Shorridge et al., 2007) may then limit the self-disclosure and self-analysis that Calhoun et al. (2013) hypothesize will set the scene for the deliberate rumination, constructive schema change,

and narrative revision that ultimately lead to PTG. Therefore, it is the position of the current study that high levels of military mental health problem self-stigma will predict lower degrees of PTG among deployment veterans.

Given the potential for PTG to develop as a beneficial outcome of traumatic or significantly stressful deployment experiences, it is important to consider what factors may facilitate the development of PTG in military service members and veterans (Tedeschi & McNally, 2011). The primary consideration in the present study is how the hypothesized negative relationship between military mental health problem self-stigma and degree of PTG development can be moderated. In a mirror of the previously described moderators for the relationship between military mental health problem self-stigma and PTSD symptom severity, distress disclosure and self-compassion are again offered as moderators. The preceding arguments for the specific influence of distress disclosure on military mental health problem self-stigma (see p. 9) as well as of self-compassion on military mental health problem self-stigma (see p. 11) are again applied to explaining how the influence of self-stigma can be moderated in order to encourage PTG.

To conclude, the purpose of this study is to examine the relationships amongst military mental health problem self-stigma, PTSD, PTG, distress disclosure, and self-compassion in military deployment veterans in the United States. Hence, the following hypotheses will be tested: (1) self-stigma will significantly predict the level of severity of PTSD symptoms; (2) distress disclosure will moderate the relationship between self-stigma and the level of severity of PTSD symptoms; (3) self-compassion will moderate the relationship between self-stigma and the level of severity of PTSD symptoms; (4) self-stigma will significantly predict the degree of PTG; (5) distress disclosure will

moderate the relationship between self-stigma and the degree of PTG; (6) self-compassion will moderate the relationship between self-stigma and the degree of PTG.

Participants will be recruited through convenience sampling of military service members and veterans throughout the U.S. The demographics of participants are anticipated to be similar to the national military service member and veteran demographics in terms of age, sex, ethnicity or race, sexual orientation, education level, and income level. A demographic questionnaire, the Combat Exposure Scale (Keane, Fairbank, Caddell, Zimering, Taylor, & Mora, 1989), the Military Stigma Scale (Skopp, Bush, Vogel, Wade, Sirotin, McCann, & Metzger-Abamukong, 2012), the Posttraumatic Stress Checklist-Military Version (Weathers, Litz, Huska, & Keane, 1994), the Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996), the Distress Disclosure Index (Kahn & Hessling, 2001), and the Self-Compassion Scale (Neff, 2003a) will be administered to participants to collect data including their demographic information, level of military mental health problem self-stigma, extent of combat exposure, level of posttraumatic stress symptoms, degree of posttraumatic growth, distress disclosure tendencies, and level of self-compassion. Statistical analyses of multiple regression will be applied to analyze the predictive effects and moderator effects in the hypothesized models.

Chapter Two

Review of Selected Literature

This literature review begins with a description of military culture, thus providing a foundational perspective for the shared values, behaviors, and identity among current and former military service members. A discussion of the Combat Masculine Warrior paradigm (Dunivin, 1994) further elaborates the warrior ethos within the military and provides context for understanding a service member's mentality when confronted with a military service-related trauma. The independent variable, military mental health problem self-stigma, will subsequently be introduced. Military mental health problem self-stigma will be defined within the context of foundational research on stigma in general and on mental health stigma in particular.

The first of the outcome variables, PTSD, will then be described according to current conceptualizations of the disorder (APA, 2000; APA, 2013). The focus will then turn to a discussion of the historical roots of the PTSD diagnosis, highlighting the intertwined but strikingly ambivalent relationship between prior conceptualizations of PTSD and the experience of wartime military veterans (Friedman, Resick, & Keane, 2007; Lerner, 2003; Nash, Silva, & Litz, 2009). Research regarding both the prevalence and implications of deployment-related posttraumatic stress symptoms within the military and veteran populations is then reviewed (Hoge et al., 2004; Tanielian & Jaycox, 2008). This will be followed by an exploration of the consequences of military mental health

problem self-stigma in a United States military that claims PTSD as one of the “signature wounds” of recent and ongoing military operations (Tanielian & Jaycox, 2008). The research hypothesis regarding the positive relationship between military mental health problem self-stigma and deployment-related PTSD symptoms will be introduced.

These discussions prepare the way for an exploration of two variables the present study hypothesizes will moderate the relationship between mental health problem self-stigma and each of the two outcome variables. Two variables were selected as potential resources for minimizing the power of self-stigma to worsen outcomes of traumatic deployment experiences. The first of these moderating variables, distress disclosure (Kahn & Hessling, 2001), will be defined and discussed in relationship to the hypothesized influence of one’s tendency to reveal or conceal emotional distress on the effects of military mental health problem self-stigma as well as on the development of posttraumatic stress symptoms. The second variable, self-compassion (Neff, 2003b), will be similarly defined and explored in respect to the possible relationship of individuals’ levels of kindness, concern, and nonjudgmental awareness toward themselves with the influence of military mental health problem self-stigma and with the development of deployment related posttraumatic stress symptoms.

After reviewing distress disclosure and self-compassion as potential resources for moderating the positive relationship between self-stigma and posttraumatic stress symptoms, the focus will turn to examining the influence of these moderators on the relationship between self-stigma and development of PTG. Accordingly, the outcome variable of PTG will be introduced (Tedeschi & Calhoun, 2004). Following a description of this concept, the implications of PTG as a potentially beneficial outcome that some

military service members and veterans may experience following a deployment-related trauma or significant stressor are discussed. Similar to the hypothesis regarding military mental health problem self-stigma and deployment-related posttraumatic stress symptoms, the hypothesized negative relationship between military mental health problem self-stigma and PTG will be introduced. Distress disclosure and self-compassion will again be discussed in regard to the anticipated moderating effect of each on the relationship between self-stigma and posttraumatic growth.

Military Culture

Merriam-Webster (n.d.) defines “culture” as “the set of values, conventions, or social practices associated with a particular field, activity, or societal characteristic.” Individuals who elect to join the all-volunteer United States military are indoctrinated into a military culture characterized by military tradition, core values, and a social structure spanning both professional and personal lives (Dunivin, 1994; Jaffe, 1984). Regardless of specific military service (U.S. Army, U.S. Marine Corps, U.S. Navy, U.S. Air Force, U.S. Coast Guard), rank (officer or enlisted), or job assignment, all new military recruits complete an accession process involving removal from their civilian lives and placement into a controlled training environment in order to indoctrinate them into the culture of servicewomen and servicemen. Within this training process, efforts are made to inhibit recruits’ pre-existing personal identities in favor of adoption of shared identities specific to military service (Dornbusch, 1955).

Understanding the necessity for the literal and figurative separation of the military recruits from their civilian lives requires knowledge of the purpose of the military

institution. Take as example the mission statements of the five branches of military service:

The Army's mission is to fight and win our Nation's wars by providing prompt, sustained land dominance across the full range of military operations and spectrum of conflict in support of combatant commanders. (U.S. Army, n.d.)

The Marine Corps has been America's expeditionary force in readiness since 1775. We are forward deployed to respond swiftly and aggressively in times of crisis. We are soldiers of the sea, providing forces and detachments to naval ships and shore operations. We are global leaders, developing expeditionary doctrine and innovations that set the example, and leading other countries' forces and agencies in multinational military operations. These unique capabilities make us 'First to Fight,' and our nation's first line of defense. (U.S. Marine Corps, 2013)

The mission of the Navy is to maintain, train and equip combat-ready Naval forces capable of winning wars, deterring aggression and maintaining freedom of the seas. (U.S. Navy, n.d.)

The mission of the United States Air Force is to *fly, fight* and *win*...in air, space and cyberspace. (U.S. Air Force, n.d.)

The USCG's mission is to protect the public, the environment, and U.S. economic interests – in the nation's ports and waterways, along the coast, on international waters, or in any maritime region as required to support national security. (Department of Homeland Security/U.S. Coast Guard, n.d.)

Without exception, the role of the military services is to adaptively engage in military operations in order to secure and/or to defend the interests of the United States. More simply stated, service members are components of an institution whose sole design is to engage in combat. The literal initial separation from one's life prior to military service is typically accomplished through complete immersion in a military training environment (e.g. a military academy or a "boot camp") with little to no contact with outside family and friends. During this transitional training period, which represents a shared tradition across military branches, recruits are immersed in a training environment that introduces them to the specific culture of the military branch they've joined as well as to their role in the overall military culture of warfare and defense. Following this initial assimilation process and their ability to reengage to some extent in their pre-military service lives, the new service members are still figuratively separated from their previous identities by their symbolic initiation into their new self-concept as Soldiers, Marines, Sailors, Airmen, or Coast Guardsmen (Dornbusch, 1955).

The culture of the military is perpetuated by the values transmitted to and adopted by service members during their initial military training and reinforced through various experiences throughout their career. At every level of experience, service members are expected to have complete knowledge of and adherence to their particular military branch's core values. The following are the branch specific core values: 1) Army: "Loyalty, Duty, Respect, Selfless Service, Honor, Integrity, Personal Courage" (Department of the Army, 2012), 2) Marine Corps and Navy: "Honor, Courage, and Commitment" (Commandant of the Marine Corps, 2008; Naval Education and Training Command, 2009), 3) Air Force: "Integrity First, Service Before Self, Excellence in All

We do (Department of the Air Force, 1997), 4) Coast Guard: “Honor, Respect, Devotion to Duty” (United States Coast Guard, 2013). An example of the periodic reinforcement process through which these values are again disseminated is the Developmental Education system in the Air Force, which includes multiple levels of training across an Airman’s career designed to reinvigorate one’s knowledge of their service and of their role within it (Office of the Secretary of the Air Force, 2010). Anecdotally, many Airmen refer to Developmental Education as a “Re-blueing” process, a play on the color of both the Air Force emblem and the Air Force military uniform.

The core values of the military branches are one element of the composition of military culture. Other areas in which a sense of military identity is reinforced include the formalized military traditions of dress and ceremonies (e.g., uniform wearing, military formations), customs and courtesies (e.g., saluting and other distinctions based on rank), medical and physical fitness standards (including unit-based required physical training programs scheduled multiple times weekly as well as thorough medical examinations on a yearly basis), and formal codes of conduct applicable to behavior on and off duty (i.e., the Uniformed Code of Military Justice). Further, service members work and live within the context of the military “chain of command,” a formalized relationship structure based on leadership and on mission requirements (Jaffe, 1984). All service members know where they fall in the context of the chain of command, including whom they are personally responsible for and who is responsible for them.

Accountability is expected by and maintained through the chain of command, with the “chain” representing the interconnectedness and sense of responsibility between every service member, spanning within each military branch from new enlisted recruits, the

enlisted noncommissioned officer corps, the commissioned officer corps, and up to the President of the United States, who is the Commander in Chief. As in the case of the Uniform Code of Military Justice, accountability to the chain of command is not limited to service members' military-specific lives. Service members are afforded a much smaller degree of confidentiality than may be expected for civilians due to service members' responsibilities to the chain of command to be answerable for the accurate reporting of their personal status (e.g., physical and psychological health, financial preparedness, family support plans) so they are ever ready to support a changeable military mission.

Collectively, the core values, traditions, and chain of command elements maintain the sense of military culture that both facilitates a shared identity among service members and perpetuates a sense of continuous separation between service members and the civilian public. There is a belief among service members that this identity will remain with them throughout their lives, as voiced in the U.S. Navy *Bluejacket's Manual* (Cutler, 1998): "In boot camp you will take the first steps toward becoming a Sailor. You will be introduced to the many differences of Navy life... those differences will become second nature to you" (p. 10).

As mentioned previously, the purpose of the military is preparedness for and execution of combat. This emphasis has reinforced a warrior ethos within the military culture, described as a Combat Masculine Warrior (CMW) paradigm (Dunivin, 1994). Focusing on the masculine element of CMW, military service has historically been exclusively the realm of men, with service women being fully incorporated into the military branches in 1970s and not being authorized for full incorporation into combat

roles until 2013 (Dunivin, 1996; McClam, 2013). The CMW paradigm is related to stereotypically masculine values within the military culture, including moralism (such as the adherence to core values like, “Integrity First”, “Duty”, and “Loyalty”), conservatism, and homogeneity (e.g., valuing “sameness” more than differences) (Dunivin, 1994). Both male and female service members are expected to adhere to these values. There has arguably been an implicit perception within the military of the inferiority of typically feminine qualities to typically masculine qualities (Dunivin, 1994).

Focusing on the warrior aspect of CMW (Dunivin, 1994), a critical element of military culture is a commitment to putting others before oneself. By the nature of the military mission to engage in combat, service members are aware they are personally expendable. This includes knowledge that the service member may die in the execution of military operations. Within the military culture, the sacrifice of one’s life in such a circumstance is accorded significant honor. This is perhaps best captured through the often-quoted words of Nathan Hale, a soldier in the Continental Army during the American Revolution, “I only regret that I have but one life to give for my country” (ThinkExist.com, n.d.). Also relevant to the warrior ethos within military culture is the reality of being required to participate in actions that may either directly or indirectly contribute to killing an enemy combatant. During the recruitment process potential recruits are asked whether they are conscientious objectors, meaning they are morally opposed to military service on the grounds of religious training and/or personal belief due to objecting to the potential requirement to end someone else’s life in combat (Department of Defense, 2007). Being a service member, then, requires not only considering one’s own ability and willingness to carry out an act that most individuals in

the civilian world would be unlikely to do but also committing to doing so if the military mission dictates it.

An additional element of military culture in general and the CMW paradigm in particular that must be considered is the quintessential *esprits de corps*, defined by Merriam-Webster (n.d.) as, “the common spirit existing in the members of a group and inspiring enthusiasm, devotion, and strong regard for the honor of the group.” Military service members are encouraged to form close bonds with each other that are more intense and more intimate than co-workers in the majority of civilian occupations may be expected to have. The military culture’s commitment to a “brotherhood of arms” is evident in the words of the military services’ core values, including “Loyalty” and “Selfless Service” (U.S. Army), “Courage” and “Commitment” (U.S. Marine Corps and U.S. Navy), “Service Before Self” (U.S. Air Force), and “Devotion to Duty” (U.S. Coast Guard). Ambrose (2001) accurately described the importance of *esprits de corps* to the military culture in his description of the experience of the U.S. Army 506th Airborne Division during World War II: “Within Easy Company they had made the best friends they had ever had, or would ever have. They were prepared to die for each other; more important, they were prepared to kill for each other.” The military culture embraces the “Leave No Man Behind” philosophy, a statement of unknown initial origin that represents the commitment service members have to each other in even the most extreme of combat conditions.

Military culture serves the function of providing a shared language, organizational structure, experience, and sense of purpose that ultimately enables the execution of military operations. In most circumstances, these operations either place service

members into combat or into combat support roles. The toll on service members of participation in combat-related military operations has historically included psychological injuries, particularly symptoms of PTSD (Lerner, 2003; Nash, Silva, & Litz, 2009). Unfortunately, injured service members may believe they no longer meet the standards for physical and psychological strength expected within the CMW paradigm that dominates military culture (Dunivin, 1994). This perception is perhaps not unrealistic given messages service members receive about the importance of adherence to values such as “excellence in all we do” (Department of the Air Force, 1997), “commitment” (Commandant of the Marine Corps, 2008; Naval Education and Training Command, 2009), and “personal courage” (Department of the Army, 2012). All of these values perpetuate a belief that one must be “battle ready,” “fit to fight,” and “prepared for duty” at all times, an expectation that does not seem conducive to flexibility regarding limitations brought about by psychological distress.

The warrior element of the CMW paradigm also likely informs service members’ perspectives of psychological injuries (Dunivin, 1994). The warrior mentality encourages commitment to placing others’ needs, particularly those of a military unit, before one’s own needs. Coupled with masculinized values within military culture of homogeneity, stoicism, and moralism, it is not difficult to see how service members who have sustained legitimate injuries may feel reluctant to self-disclose their individual needs for psychological support (Dunivin, 1994). The expected commitment to others, up to and including the giving of one’s life for their country, appears to be incompatible with values of individuality and self-compassion that may be more conducive to help-seeking (Thompson & Waltz, 2008).

Particularly in the case of psychological injuries sustained by service members, often referred to as the “invisible wounds of war,” the temptation seems great for service members to keep their problems secret (Britt, 2000; Tanielian & Jaycox, 2008). The signature wounds of the most recent military conflicts (Operation Enduring Freedom and Operation Iraqi Freedom) are PTSD and traumatic brain injury (TBI), both of which are invisible wounds that are often not easily perceived by fellow service members, the chain of command, medical providers, family, or friends (Tanielian & Jaycox, 2008). The ability to pass as uninjured presents service members with a choice on whether to seek help. For some service members, commitment to continued participation in a military operation and particularly to remaining with their unit members will lead to a decision not to self-disclose their psychological (or, in the case of TBIs, cognitive) injury (Stecker, Fortney, Hamilton, & Azjen, 2007).

A significant barrier to service members seeking psychological help is military mental health stigma (Green-Shortridge, Britt, & Castro, 2007). Service members’ beliefs about seeking help are influenced by societal-level misconceptions and labeling of individuals who have mental health problems (Corrigan, 2004), military culture and military-specific practices that may limit opportunities for individuals who pursue mental health services (Britt, 2000; Dingfelder, 2009), and self-stigma involving assumptions of being weak and likely to be rejected by fellow service members (Green-Shortridge, Britt, & Castro, 2007; Pietrzak, 2009). The perception spread by military mental health stigma is that it is not safe to identify as having a mental health problem, including deployment-related psychological PTSD. This likely contributes to worsening and chronic symptoms (Stein et al., 2003). Military mental health problem stigma may also hinder the ability of

service members to experience posttraumatic growth (PTG), a process dependent on self-disclosure, reflection, and reexamination of values in order to experience beneficial psychological growth following the experience of a traumatic event (Tedeschi & Calhoun, 1996; Lindstrom, Cann, Calhoun, & Tedeschi, 2013). Ironically, PTG would otherwise seem congruent with military culture given the possibility it promotes for service members to develop even stronger values consistent with the CMW paradigm through combat experience (Dunivin, 1994; Bryan & Morrow, 2011; Lerner, 2003).

Military Mental Health Problem Self-Stigma

A full understanding of the independent variable in the present study, military mental health problem self-stigma, requires knowledge of the basic concept of stigma. “Stigma” is a term that defies a universally applicable definition. Merriam-Webster (n.d.) defines the word as both “a mark of shame or discredit” and “an identifying mark or characteristic;” neither of these definitions fully describe the societal context within which stigma develops (Rusch, Angermeyer, & Corrigan, 2005). Social psychology has conceptualized stigma in multiple ways, ranging from Goffman’s (1963) definition of stigma as a characteristic that is significantly shaming for an individual to Stattford and Scott’s (1986) description of a stigma as a feature people possess that is not compatible with a social norm (in Link & Phelan, 2001). A possible reason for the variability in definition is the application of the term to multiple groups based on a myriad of characteristics and contexts (Link & Phelan, 2001). As examples, stigma is active in multiple contexts, including gender, culture, ability level, and mental health. A common theme is the “us” versus “them” (e.g., “able” versus “disabled”) dichotomy resulting from

the cognitive and behavioral consequences of stigma (Morone, 1997; Link & Phelan, 2001).

Definition of stigma. The present study adopts Link and Phelan's (2001) definition of stigma, which addresses both the societal enactment of stigma and the subsequent effects on stigmatized individuals. The effects on individuals, examples of which are self-stigma, limited job opportunities due to discrimination, and unequal access to health care and support services, will be discussed later (Corrigan, 2004; Link and Phelan, 2006). Stigma is defined as the simultaneous occurrence of "labeling, stereotyping, separation, status loss, and discrimination" (p. 363), all within the context of the exercise of power (Link & Phelan, 2001). Unlike the dictionary definition of "stigma" as a mark or attribute of a person, the use of the word "labeling" is encouraged because it recognizes the socially determined nature of stigma and the consequent questionability of attributing the stigma to an actual characteristic residing within a person (Link & Phelan, 2001). Stereotypes then become connected with the socially determined label assigned to the stigmatized person or group, leading to the "us" versus "them" separation (Morone, 1997; Link & Phelan, 2001).

The stigmatized individual experiences status loss, defined as assignment to a lower level of the social hierarchy and representing a covert form of discrimination. Overt discrimination is also a likely experience for those who are stigmatized (Link & Phelan, 2001). This discrimination often occurs in the form of structural discrimination, meaning a system sets limits upon the stigmatized group, as in the case of businesses that create barriers to hiring ethnic minority individuals or government policies that directly or indirectly impede access to mental health care (Link & Phelan, 2001; Link & Phelan,

2006). Link and Phelan (2001) argue stigma is dependent on differences in power, including social, economic, and political power. They describe the prevalence of labeling and stereotyping and make the assertion that all individuals are likely to engage in these processes to some extent toward groups different from their own. However, Link and Phelan (2001) contend that not all groups are equal in their ability to carry out the actions that lead to status loss and discrimination. In an extreme example, without significant political, economic, and social power, the Nazis of Germany's Third Reich arguably would not have been able to exercise the power needed to capitalize on the stigma regarding the Jewish population to commit the atrocities they did in their quest for genocide.

Mental health problem stigma. Mental health problem stigma is the application of the stigma processes described above to assumptions made about individuals on the basis of public beliefs about mental health problems (Corrigan, 2004). Conceptually, Corrigan's (2004) model for mental health problem stigma is composed of public stigma toward psychological problems (including stereotyping, prejudice, and discrimination), self-stigma (to be discussed later but also including stereotypes, prejudice, and discrimination), and the influence of these two forms of stigma on mental health treatment seeking.

Foundations of public stigma. Among the assumptions made about mental health problems are that those who have psychological problems are dangerous, unsuited to make decisions for themselves, and childlike or unable to care for themselves (Rusch, Angermeyer, & Corrigan, 2005). One way in which these beliefs are perpetuated on a societal level is through the media, particularly in films (Hyler, Gabbard, & Schneider,

1991; Wahl, 1995). Among the stereotypes of mental health problems in films are “rebellious free spirit,” “homicidal maniac,” “the female patient as seductress,” “enlightened member of society,” “narcissistic parasite,” and “zoo specimen” (Hyler, Gabbard, & Schneider, 1991). It is perhaps through influences such as these that individuals are labeled as having mental health problems when they exhibit behaviors that are similar to the stereotypes of mental health diagnoses in the media (Hyler, Gabbard, & Schneider, 1991; Corrigan, 2004).

Mental health diagnoses have been demonstrated to be associated with beliefs that individuals cause these problems for themselves (Corrigan, 2004). This concept is described as an extension of attribution theory, describing how causality is assigned for mental health disorders. One study identified a disparity in the attributions made for psychological problems as compared to those made for physical problems, wherein individuals with psychological problems are attributed as having disproportionately higher responsibility for their condition (Weiner, Perry, & Magnusson, 1988). The results of this attribution were found to be increased anger and decreased pity toward individuals with psychological problems.

Self-stigma. A key component of mental health problem stigma is the concept of self-stigma, in which individuals who have been labeled as having a mental health problem accept the related stereotypes and adopt them into their self-concept (Corrigan, 2004). Given the prevalence of public mental health problem stigma, individuals who begin to recognize symptoms of psychological problems in themselves may already have preconceived and negative ideas about people who have mental health problems. As mentioned previously, they may experience a perception that they now belong to the

“them” group rather than the “us” group, leading to a decrease in self-esteem and self-efficacy (Morone, 1997; Link & Phelan, 2001; Corrigan, 2004). This influence on self-esteem and related expectations of rejection interact with the limited life opportunities often afforded to individuals who have been stigmatized, leading many to both voluntary and involuntary social withdrawal (Corrigan, 2004; Link, Cullen, Struening, Shrout, & Dohrenwend, 1989).

Influence of stigma on mental health care seeking. It is important to note that the diagnosis of a mental health disorder by a mental health or medical provider is another avenue through which labels are attributed which may then lead to stigmatization (Corrigan, 2004). Although it is not the intention of the mental health provider to convey a stigmatizing label, clients and patients may perceive the diagnosis as an assignment to a stigmatized group. Unlike stigmatization based on labels assigned to physical characteristics, mental health problems are not typically identifiable based on visual observation (Rusch et al., 2005). In fact, within the context of military culture, combat-related psychological injuries are often referred to as the “invisible wounds of war” (Tanielian & Jaycox, 2008). Research suggests individuals who may need and want mental health services are not likely to present for care because they want to avoid the label of a mental health problem diagnosis (Corrigan, 2004; Rusch et al., 2005). Self-stigma and concerns about public stigma arguably influence many individuals to try to keep their symptoms hidden rather than drawing attention to them by seeking help. Those individuals who do seek mental health care are at risk for experiencing the status loss and discrimination that result from public stigma toward individuals who are labeled as having mental health problems (Corrigan, 2004; Link & Phelan, 2001).

Military mental health problem stigma. Military mental health problem stigma is the occurrence of stigma toward mental health problems within the context of military culture. This stigma may be thought of as overlapping with the public stigma toward mental health problems that also influences military service members. Green-Shortridge et al. (2007) developed a model to illustrate the processes through which military mental health problem stigma occurs and the related influence on receiving mental health care. Their model is influenced by previous research and theories on stigma in general (e.g., Link & Phelan, 2001) and on mental health problem stigma in particular (e.g., Corrigan, 2004). According to the Green-Shortridge et al. (2007) model, service members develop mental health symptoms in reaction to exposure to traumatic events while engaged in military operations. In light of public stigma regarding mental health problems, service members may already have preconceived notions about mental health problems prior to joining the military. Following their indoctrination into the military culture, they likely develop military-specific stigma toward mental health problems. Service members' realizations they have a possible mental health problem may then lead to a compounded form of self-stigma perpetuated by both public and military mental health problem stigma. Further, when presented with a need to seek mental health care, service members may feel limited by military organizational barriers to mental health care (e.g., restricted accessibility, limited confidentiality, influence on one's career).

Service members who develop self-stigma regarding their mental health problems may be particularly unlikely to pursue mental health care, especially when faced with the additional obstacle of military organizational barriers (Green-Shortridge et al., 2007). Also included in the model of military mental health problem stigma is a decrease in self-

stigma experienced by service members who do pursue mental health care. Whether deterred by self-stigma internalized from public stigma regarding mental health problems or by organizational boundaries to seeking help, the primary point of this model is the illustration of stigma-related factors that contribute to limited mental health care utilization by service members who legitimately would benefit from care.

Prevalence of military mental health problem stigma. Multiple studies have estimated the prevalence of military mental health problem stigma. One of the most referenced studies on mental health problems and on barriers to care among service members involved in recent military operations was conducted with combat infantry units (three Army and one Marine Corps) (Hoge, Castro, Messert, McGurk, Cotting, & Koffman, 2004). The study assessed 2,530 participants just prior to deployments to Iraq and another 3,671 participants three to four months following their return from deployments to Iraq or Afghanistan (Hoge et al., 2004). Concern about mental-health related stigma was noted to be nearly twice as high among service members who met the criteria for a mental health diagnoses when compared to those who did not. The percentages of endorsed items related to stigma ranged from 25% to 65% for those who met the criteria for diagnosis and from 9% to 33% for those who did not.

An earlier study related to military mental health problem stigma was conducted with 531 service members returning from peacekeeping deployments to Bosnia during the 1990s (Britt, 2000). Of the participants, 61% endorsed believing that acknowledging a psychological problem would harm their career and 45% endorsed believing their peers would spend less time with them if they disclosed having a psychological problem. A comparison of the findings by Hoge et al. (2004) and Britt (2000) suggests the prevalence

of military mental health problem stigma remained high across three distinct military operations in different theaters of operation (i.e., peacekeeping in Bosnia, antiterrorism in Afghanistan, regime removal and support for new government in Iraq).

Prevalence of military mental health problem stigma may differ between active duty and reserve/National Guard. Based on surveys administered to 15,918 soldiers comprised of both active duty Army and reserve Air National Guard who deployed to Iraq, mean stigma scores in soldiers experiencing mental health problems were higher among active duty than reserve soldiers (Kim, Thomas, Wilk, Castro, & Hoge, 2010). The soldiers were assessed at both three months and 12 months following their return from deployment, with the stigma scores remaining consistent for both groups over time. Active duty soldiers were also found to be less likely to pursue mental health care than National Guard soldiers. The difference in stigma prevalence and help-seeking between active duty and reserve/National Guard service members may be related to differing levels of military cultural identity between full-time and part-time service members (Kim et al., 2010; Dunivin, 1994).

Variables related to military mental health problem stigma. Military mental health problem stigma appears to be related to the warrior ethos within military culture, particularly to the Combat Masculine Warrior (CMW) paradigm (Dunivin, 1994). As mentioned in the discussion on CMW, the military culture emphasizes physical and mental preparedness for the stressful circumstances of combat. A sense of loyalty to and responsibility for one's unit may contribute to hesitancy admitting to individual problems (Stecker et al., 2007). Mental health problems in particular may be viewed as a source of weakness among service members (Pietrzak, 2009). The CMW paradigm may also

contribute to a belief that combat exposure is supposed to be a growth enhancing experience that contributes to character development such as resiliency (Bryan & Morrow, 2011; Lerner, 2003; Nash et al., 2009; Pietrzak, 2009). However, arguments have been made that this conceptualization of combat exposure as a normative stressful event contributing to growth may send a detrimental message to service members who do not quickly recover that they are falling short of the willpower and personal strength expected within the military culture (Nash et al., 2009). This may then be related to the development of self-stigma described in the Green-Shortridge et al. (2007) model of military mental health problem stigma.

Another possible variable related to military mental health problem stigma is the presence of public stigma toward mental health care seeking among men (Winerman, 2005). Stereotypes of traditional male roles involve such characteristics as stoicism. Men are likely socially influenced from an early age to believe that seeking help is a sign of weakness, thus contributing to low mental health care utilization (Winerman, 2005). Given the predominant representation of men within the military services, it is reasonable to argue that the stigmatization of mental health care for men contributes to military mental health problem stigmatization. The masculine element of the CMW paradigm also encourages the adoption of traditionally masculine traits for all service members, whether men or women (Dunivin, 1994). Historically, an argument has been made that combat-related mental health problems were deliberately associated during World War I with traits such as hysteria that were stereotypically attributed to women (Lerner, 2003). As described by Lerner (2003), “the symptoms that debilitated the bodies of tens and

thousands of physically healthy soldiers represented a form of resistance, both to military authority and prevailing masculine norms” (p. 7).

Also possibly related to military mental health problem stigma are the organizational barriers that limit mental health care seeking in the military (Green-Shortridge et al., 2007). Among these barriers are concerns about confidentiality, particularly given the limited confidentiality available to service members due to requirements for extensive background checks to qualify for the security clearances required for their jobs (Dingfelder, 2009; Duke, Moore, & Ames, 2011). Further, the tendency toward administering postdeployment mental health screening simultaneously to members of a unit has been proposed to contribute to underreporting of mental health problems due to minimal guarantees of confidentiality in a group setting (Britt, 2000).

In some circumstances, mental health diagnoses contribute to adverse effects on a service member’s career, including discharge from military service (Dingfelder, 2009). Even service members who are parents of children receiving psychiatric services report concerns about the influence on their career related to the stigma of mental health problems (Sansone et al., 2008). These organizational barriers to military mental health care (lack of confidentiality, impact on security clearances, concerns about influences on service members’ career longevity) are consistent with the model of institutional discrimination based on public stigma described by Link and Phelan (2001). In contrast to these career-related concerns, Air Force commander Lieutenant Colonel Steven Pflanz (M.D.) stated, “The one airman I recommend be discharged--everyone sees him go... The other 999 airmen who get treated and return to their units happy go back quietly” (Dingfelder, 2009, p. 55). According to Colonel Scott Marrs (PhD), Chief of the Air

Force division on mental health, “seeking mental health care doesn’t harm your career... It’s not being able to do your job that harms your career” (Dingfelder, 2009, p. 54). The implication seems to be that misconceptions about the organizational barriers to mental health care in the military are leading to limited help seeking, thereby contributing to performance-based harm to service members’ careers that might have been avoided had they pursued mental health care.

Given recent organizational changes in the military to minimize the possible contributions to mental health problem stigma, including removing the requirement during security clearance applications to report counseling received for combat-related or couples counseling, why does military mental health problem stigma continue (Dingfelder, 2009)? One study suggests the attitudes and behaviors by the leadership within service members’ military units strongly predict their level of military mental health problem stigma (Brit, Wright, & Moore, 2012). In another study, 75% of National Guard participants stated they believed their military leadership would support them if they elected to pursue mental health care (Stecker et al., 2007). However, there were notable exceptions to this trend in which some participants felt unsupported in seeking help. As an example, one of the National Guard participants reportedly was told by officers and enlisted noncommissioned officers (NCOs) not to say certain things on a postdeployment health assessment survey because, “Boy if you do this and you do that, it is going to come back and haunt you” (Stecker et al., 2007, p. 1360). There is some evidence that the attitudes and behaviors of the enlisted NCO leadership are particularly predictive of both military mental health problem stigma and perceptions of barriers to care (Britt et al., 2012). Given that NCOs are frequently the first-line supervisors for the

majority of service members, it makes sense that their behaviors carry a disproportionate amount of influence in comparison to commissioned officers.

Future directions for research on military mental health problem self-stigma.

Given the efforts of the Department of Defense to make changes designed to decrease military mental health problem stigma on an organizational level, the remaining link in terms of creating change in the military culture's perspective of mental health problems is that of the perception of the individual service member. Specifically, how can the process of mental health problem self-stigma development in service members with psychological problems be prevented? The answer to this question requires further research on service members' perspectives of psychological problems, including how these perspectives develop and how some service members are able to work around them to pursue mental health services. Research on the stigma service members ascribe specifically to combat related injuries is limited, particularly in the case of PTSD (Mittal, Drummond, Blevins, Curran, Corrigan, & Sullivan, 2013). There is some evidence that the military mental health problem stigma related to PTSD is less than that attributed to other psychological disorders (Mittal et al., 2013). However, the same research suggests service members with PTSD symptoms still experience military mental health problem self-stigma that contributes to avoidance of mental health services and difficulty reintegrating into society following return from deployment.

Posttraumatic Stress Disorder

Posttraumatic stress disorder (PTSD) is the first of the two outcome variables in the present study. PTSD is a mental health diagnosis attributed to a range of symptoms sometimes experienced by individuals who have lived through single or multiple

traumatic events (American Psychiatric Association, APA, 2013). Trauma has long been considered a companion to the experience of military combat, although conceptualizations of service members' trauma reactions following wartime trauma have varied (Lerner, 2003; Nash et al., 2009). Despite the fact that PTSD is a diagnosis often associated with reactions to wartime experiences, there has been a gap between the prevalence of military-related PTSD and mental health care seeking by service members (Hoge et al., 2004; Mittal et al., 2013; Nash et al., 2009). This disparity may be explained by both public stigma within the United States toward mental health problems and by stigma perpetuated within the military culture (Corrigan, 2004; Green-Shortridge et al., 2007).

The criteria for diagnosing PTSD are set forth in the Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition-Text Revision (DSM-IV-TR, APA, 2000). The diagnosis requires that an individual develop symptoms following the experience of a traumatic event. The guiding definition for a traumatic event put forth by the DSM-IV-TR is an event that instills "fear, helplessness, or horror" in response to a situation in which an individual felt as though her/his life and/or physical integrity, and/or that of someone emotionally close to her/him, was threatened (APA, 2000, p. 467). Also included in the definition of a traumatic event are the unanticipated death of someone close to the individual and witnessing violence or threat of violence to unfamiliar others (APA, 2000).

The DSM-IV-TR diagnosis of PTSD calls for the presence of symptoms in each of the following categories: reexperiencing of the event, avoidance of reminders of the trauma, and persistently increased arousal (APA, 2000). The diagnosis requires one or

more of the symptoms of reexperiencing of the event, examples of which include dreams, feeling as though one is back in the traumatic situation, and extreme reactions to stimuli that remind the individual of the trauma (APA, 2000). At least three of the symptoms of avoidance of reminders of the trauma must be present, including such symptoms as avoiding people and locations associated with the trauma, impaired memory of the traumatic event, emotional numbing, sense of a foreshortened future, and interpersonal detachment (APA, 2000). Two or more of the symptoms within the persistently increased arousal category must be present, examples of which include sleep problems, hypervigilance, and irritability (APA, 2000).

In order to meet the diagnostic criteria for PTSD, the symptoms must last for more than one month and must cause significant distress in the individual's functioning (e.g., interpersonal functioning, functioning at work) (APA, 2000). The PTSD diagnosis is considered acute if the duration of the system is less than three months and chronic if the duration is longer than three months (APA, 2000). A diagnosis of PTSD with symptoms not occurring until six months or more following the traumatic event is considered a delayed onset (APA, 2000). Lifetime prevalence for PTSD in the adult population in the U.S. is estimated to be 8% (APA, 2000). Different types of traumatic experiences are associated with varying levels of PTSD prevalence, with the highest rates identified in individuals who experienced rape, military related traumas such as combat and being taken prisoner, political or ethnic confinement, and genocide (APA, 2000).

The present study will focus on the diagnosis of PTSD according to DSM-IV-TR criteria (APA, 2000). However, it is important to note the recent introduction of the DSM-V (American Psychiatric Association, APA, 2013) and the resulting changes to

how PTSD will be conceptualized and diagnosed in future clinical practice and research. Whereas PTSD is grouped under the Anxiety Disorders category of diagnoses in the DSM-IV-TR (APA, 2000), a new Trauma- and Stressor-Related Disorders category has been added to the DSM-V (APA, 2013). Within this new category are criteria for PTSD and other diagnoses that result from exposure to a traumatic or stressful event (APA, 2013). The rationales for the inclusion of this category include the diverse nature of trauma- and stress-related reactions as well as recognition that the symptoms are not necessarily related to anxiety and fear (APA, 2013). Rather, PTSD and other trauma- and stress-related disorders are often characterized by “anhedonic and dysphoric symptoms, externalizing angry and aggressive symptoms, or dissociative symptoms” (APA, 2013, p. 265).

The specific diagnostic criteria for PTSD set forth by the DSM-V (APA, 2013) are generally similar to the DSM-IV-TR (APA, 2000) criteria. One important difference in the DSM-V (APA, 2013) is greater specificity of what constitutes a traumatic event (e.g., sexual violence, chronic exposure to details of a traumatic event such as collecting human remains, repeated occupational exposure to situations involving child abuse) and a caveat that exposure through media is generally not considered a traumatic event. The requirement for reacting to the traumatic event with fear, helplessness, or horror was removed (APA, 2013). Another difference in the DSM-V (APA, 2013) is the splitting of the avoidance of the reminders of the trauma criteria into two criteria, persistent avoidance of stimuli associated with the traumatic event(s) and negative alterations in cognitions and mood associated with the traumatic event(s) (p. 271). Included under the revised criteria category are the following new symptoms: persistent and exaggerated

negative beliefs or expectations about one's self; persistent, distorted cognitions about the cause or consequences of the traumatic event(s) that lead the individual to blame himself/herself or others, persistent negative emotional state, and persistent inability to experience positive emotions (p. 272). The symptom involving a sense of a foreshortened future was removed. Within the increased arousal category, a symptom capturing reckless or self-destructive behavior was added (APA, 2013, p. 272). The delayed onset specification was changed to "delayed expression" (APA, 2013, p. 272). A new specifier of "with dissociative symptoms" was added, including two subtypes: depersonalization and derealization (APA, 2013).

Military service-related PTSD. Nash et al. (2009) described the documented presence of symptoms consistent with PTSD following combat throughout history, dating back to ancient literature such as Homer's Iliad and Sophocles' Ajax. Attempts to label the symptoms military members and veterans developed during or subsequent to combat included the terms "soldier's heart," "sunstroke," and "shell shock" (Nash et al., 2009). During the late 1800s psychiatrist Emil Kraepelin conceptualized post-injury or accident stress responses, which he labeled "fright neurosis" (translated from the German "schreckneurose"), as a combination of physiological and emotional origins (Friedman, Resick, & Keane, 2007). However, combat stress reactions were generally accepted to be physiological injuries brought about by the stresses of war rather than psychological reactions (Nash et al., 2009). As an example, "shell shock" was thought to be the consequence of a physical injury to the brain as a result of exposure to blasts from explosive ordnance (Nash et al., 2009).

The focus on a physiological cause of “shell shock” and similar problems permitted the monetary compensation of wartime veterans for disability related to symptoms that were likely consistent with the current diagnostic criteria for PTSD (Lerner, 2003; Nash et al., 2009). In the late 1800s neurologist Hermann Oppenheim established a diagnosis of traumatic neurosis, effectively tying together the physiological and psychological consequences of wartime exposure (Lerner, 2003). This diagnosis formalized the acceptance of combat-related stress reactions as compensation worthy. Later, the nearly epidemic levels of “shell shock” in soldiers during World War I led the German government to reconsider the physical origins and, consequently, the compensable nature of this disorder (Lerner, 2003).

Lerner (2003) argues that a move was made in Germany during and following World War I to associate war-related trauma reactions with the hysteria diagnosis that had previously been predominantly attributed to women. This association with the “powerless female hysteric” of the Victorian era effectively led to the ridicule of wartime veterans who were subsequently perceived as too emotionally weak to manage and grow from the masculinizing challenges of war (Lerner, 2003). In 1926 the German Association for Psychiatry ruled that the only explanation for the chronic symptoms in trauma victims was a pre-existing weakness of character, or “hysteria” (Nash et al., 2009). Attributing these symptoms to psychological weakness permitted the German government to disband compensation for war-related trauma (Lerner, 2003).

Although Lerner’s (2003) description of the contentious conceptualizations of the nature of war-related trauma is specific to World War I era Germany, similar skepticism about the cause of “shell shock” arose in Britain and France (Nash et al., 2009). The fact

that not all war veterans with the symptoms had been exposed to explosive ordnance blasts or other possible sources of physiological damage to the brain further fueled the controversy about the diagnosis. It was not long before the British, French, and Americans adopted similar policies to Germany's that allowed them to remove disability support to veterans with stress symptoms related to war trauma (Nash et al., 2009). War-related stress reactions were again given some acknowledgement with the release of the first DSM (DSM-I; American Psychiatric Association, 1952) following World War II (Friedman et al., 2007). The DSM-I included a "gross stress reaction" diagnosis that accounted for PTSD-like symptoms in previously asymptomatic accident survivors and combat veterans (Friedman et al., 2007).

Strikingly, the gross stress reaction diagnosis was removed from the second DSM (DSM-II; American Psychiatric Association, 1968), which was released during the Vietnam War (Friedman et al., 2007). As in World War I era America, Britain, France, and Germany, the argument has been made that this removal was politically motivated in an attempt to decrease the economic burden of providing compensation to service members and veterans who were experiencing war-related stress reactions (Friedman et al., 2007; Nash et al., 2009). Through the efforts of social movements in the United States in the 1970s to acknowledge the widespread consequences of trauma, including not only combat but also interpersonal violence, sexual violence, and child abuse, PTSD was formally recognized for the first time in the 1980 release of the third DSM (DSM-III; American Psychiatric Association, 1980; Friedman et al., 2007). The DSM-III simultaneously dropped all references to hysteria (Nash et al., 2009).

Military trauma experiences. The traumas most commonly associated with military service include direct exposure to combat, encounters with the aftermath of combat, military sexual trauma, and noncombat-related accidents (King, King, Vogt, Knight, & Samper, 2006; Maguen, Luxton, Skopp, & Madden, 2012). The current study will focus on combat-related military trauma experiences, including both direct and indirect exposure to combat situations. This is not to minimize the significance and prevalence of military sexual trauma and non-combat-related accidents. However, the factors related to these experiences are beyond the scope of the current study's focus on the development of PTSD subsequent to exposure to combat-related stressors during a military deployment.

Direct exposure to combat involves service members who have been specifically assigned to a combat role firing upon and injuring or killing enemy combatants, being fired upon and at risk for being injured or killed themselves, and witnessing the injuries or deaths of their fellow service members (DoD, 2013; Hoge, Castro, Messert, McGurk, Cotting, & Koffman, 2004; Keane, Fairbank, Caddell, Zimering, Taylor, & Mora, 1989; King et al., 2006). Other combat experiences associated with combat but not including direct combat involvement, which will collectively be referred to as indirect combat exposure, include witnessing noncombatants being injured, being responsible for enemy prisoners, providing medical treatment to injured service members, enemy combatants, and noncombatants, and locating and handling the remains of deceased individuals (King et al., 2006). Service members who experience indirect combat exposure have generally been assigned to combat support (e.g., military intelligence, military police) or combat service support (e.g., maintenance, transportation, health services) roles (DoD, 2013).

Additional sources of potential trauma experiences for deployed service members include exposure to dangerous elements of the deployed environment (Hoge et al., 2004; King et al., 2006). Examples of these hazards include continually being on guard for nuclear, chemical, and biological threats, monitoring for improvised explosive devices, and participating in demining operations.

King et al. (2006) concluded based on their review of the literature about military wartime trauma experiences that limited attention has been paid to indirect combat exposures and to their relationship with military service-related PTSD. They argued that a significant portion of service members are in combat support or combat service support roles and are therefore not directly involved in combat operations (e.g., exchanging fire with enemy combatants) but nonetheless develop PTSD. In a RAND study of Operation Enduring Freedom veterans and Operation Iraqi Freedom veterans, indirect combat exposure (e.g., providing emergency enemy care to wounded service members, enemy combatants, and civilians) was reported more frequently than direct combat exposure (Schell & Marshall, 2008). Further corroborating the influence of trauma related to indirect combat exposure, Maguen et al. (2012) found that prior to the formal inclusion of women in direct combat roles, women veterans of deployments to Iraq and Afghanistan had experienced combat-related trauma in spite of being assigned to combat support or combat support services roles. Specifically, 31% of the women veteran participants had been exposed to death, nine percent witnessed killing, four percent killed others in the context of a war zone, and seven percent were injured.

Prevalence of military service-related PTSD. Prevalence estimates for military service-related PTSD vary according to the nature of the conflict (King et al., 2006). In a

study of the prevalence of mental health problems in four military combat units, Hoge et al. (2004) identified that veterans of deployments in support of Operation Iraqi Freedom were significantly more likely to endorse mental health problems than were veterans of deployments in support of Operation Enduring Freedom. Hoge et al. (2004) suggested that these differences were related to the fact that 71 and 86% of the Soldiers and Marines deployed to Iraq, respectively, were involved in a firefight as compared to 31% of the Soldiers deployed to Afghanistan. Further, Hoge et al. (2004) found that the prevalence of PTSD diagnoses among veterans of Afghanistan was six percent and among veterans of Iraq was 12 percent.

The RAND corporation carried out a population based survey of Operation Enduring Freedom veterans and Operation Iraqi Freedom veterans to estimate the prevalence of PTSD, depression, and traumatic brain injuries (Schell & Marshall, 2008). The identified prevalence of probable PTSD in their sample of active duty, reserve, and National Guard service members, retirees, and veterans from the Army, Marines, Navy, and Air Force was 14%. This prevalence rate is consistent with a literature review also conducted by the RAND Corporation (Ramchand et al., 2008). Based on 21 epidemiological studies of PTSD in service members who have deployed, the study concluded that the prevalence of PTSD is between five to 15 percent. Translated according to the number of service members from the current conflicts in Afghanistan and Iraq, the median estimate of the number of deployment veterans with PTSD is 150,000 (Ramchand et al., 2008).

Implications of deployment-related PTSD. Multiple problems may co-occur with or develop subsequent to a diagnosis of PTSD. One way to conceptualize the risk

for other problems in individuals who develop PTSD is the life-span developmental perspective (Caspi, Elder, & Bem, 1987; Karney, Ramchand, Chan Osilla, Barnes Caldarone, & Burns, 2008). According to this perspective, mental health problems may contribute to problems in the future through two primary mechanisms. The first, interactional continuity, is the influence of one's characteristics on interactions with others (Caspi, Elder, & Bem, 1987). Specific to deployment veterans, the PTSD avoidance and arousal symptoms may lead to changes in how the veterans interact with others, thereby contributing to reciprocal changes in their relationships (Karney et al., 2008). The end result may be a worsening of the veteran's interpersonal functioning.

The second mechanism whereby mental health problems may contribute to additional problems is cumulative continuity, which involves the consequences of the individual's collective actions over time (Caspi et al., 1987). Building upon the example of changed interpersonal interactions in the description of the interactional continuity mechanism, deployment veterans who demonstrate aggressiveness or withdrawal in their interpersonal style may engage in behaviors that limit job opportunities (Karney et al., 2008). Other examples of outcomes of PTSD in deployment veterans over time include involvement with the legal system and substance abuse (Karney et al., 2008). As will be further described later, the current study adopts the cumulative continuity mechanism as the context in which military deployment veterans' actions are influenced by military mental health problem self-stigma, distress disclosure, and self-compassion. It is the position of the current study that these actions influence the development of PTSD symptoms and of PTG.

Understanding the full impact of deployment-related PTSD over the lifespan also requires an acknowledgement that the timing of symptom development may vary (Davison, Pless, Gugliucci, et al., 2006; Horesh, Solomon, Keinan, & Ein-Dor, 2013; Karney et al., 2008). Davison and colleagues (2006) completed a qualitative study of combat veterans of World War II, Korea, and Vietnam and found support for the concept of late-onset stress symptomatology (LOSS). LOSS is a phenomenon in which individuals who experienced combat-related events earlier in their lives and moved past them without developing stress-related disorders later developed combat-related stress symptomatology concurrent with experiencing the stressors of aging (Davison et al., 2006). Although Davison et al. (2006) specify that LOSS is not the same as PTSD, they hypothesized that individuals who had experienced combat-related PTSD are also prone to developing LOSS. It is possible this may bring about a resurgence of PTSD symptoms later in a combat veteran's life.

Evidence has also been found for the existence of late-onset PTSD, as supported by Horesh, Solomon, Keinan, and Ein-Dor's (2013) longitudinal study of Israeli war veterans of the 1982 Lebanon War. Horesh and colleagues (2013) found that 16.5% of the veterans developed delayed-onset PTSD, meaning they developed symptoms a year or more following the combat exposure experience. Of the 16.5% of the veterans with delayed-onset PTSD, 7.9% developed PTSD nine years following the combat exposure. Further, Horesh and colleagues (2013) found that the combat veterans who ultimately developed late-onset PTSD had long-lasting symptoms that were below the diagnostic threshold for PTSD and became increasingly pronounced subsequent to developing the disorder. Collectively, the phenomena of LOSS and late-onset PTSD suggest that

military deployment-related trauma experiences have lasting effects that may not be immediately apparent in the short term. Therefore, it is not yet possible to know the full effect of trauma experiences for deployment veterans of Operation Enduring Freedom and Operation Iraqi freedom. Predictions of these future effects may be made based on research on both PTSD in the civilian population and on veterans of previous military operations such as the Vietnam War (Karney et al., 2008).

Karney et al. (2008) conducted an extensive literature review of the consequences related to PTSD to provide recommendations for future areas of research to support the needs of Operation Enduring Freedom and Operation Iraqi Freedom veterans. Among the consequences identified were the possibility of developing co-occurring mental health disorders, increased suicide risk, impact on physical health and mortality, changes in intimate and family relationships, and influence on employment (Karney et al., 2008). Each of the effects associated with PTSD that may be anticipated to influence a deployment veteran will be further detailed below. Although the effects on levels beyond the level of the individual veteran, including intimate and family relationships and the societal burden of care, are compelling, these are subjects beyond the scope of the current study.

A diagnosis of PTSD is associated with co-occurring disorders such as anxiety disorders, substance abuse, and depression (Brady, Killeen, Brewerton, & Lucerini, 2000; Karney et al., 2008). The National Comorbidity Survey found that PTSD is co-morbid with anxiety, alcohol and substance use disorders, conduct disturbance, and mood disorders (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Regarding co-occurring anxiety disorders, Marshall et al. (2001) analyzed survey data from the 1997 National

Anxiety Disorders Screening Day and found that participants who endorsed symptoms from each of four PTSD symptom clusters (reexperiencing, withdrawal or loss of interest, insomnia, and avoidance) also met the criteria for an average of 2.7 other diagnoses. These other diagnoses included social phobia, panic disorder, obsessive-compulsive disorder, generalized anxiety disorder, and major depressive disorder (Marshall et al., 2001). With respect to substance abuse, the results of the National Vietnam Veterans Readjustment Survey in 1983 revealed that as many as 75% of combat veterans of the Vietnam War with a diagnosis of PTSD developed substance abuse or substance dependence in their lifetime (Kulka et al., 1990).

Shalev et al. (1998) conducted a prospective study of trauma survivors and identified co-occurring major depression in 43.2% of the survivors who met diagnostic criteria for PTSD four months following the trauma exposure. They further identified a relationship between major depression and PTSD wherein the trauma survivors with the co-occurring diagnoses reported greater symptom severity (Shalev et al., 1998). In a study of veterans receiving care through 10 VA primary care centers in five states, 36% of veterans with major depressive disorder were found to screen positive for PTSD (Campbell et al., 2007). Veterans with co-occurring depression and PTSD endorsed more severe depressive symptoms, more physical complaints, utilized health care services more frequently, experienced decreased social support, and reported more frequent suicidal ideation than did veterans with major depressive disorder only. Grieger et al. (2006) identified the co-occurrence of PTSD and depression in severely injured soldiers admitted to Walter Reed Army Medical Center between March 2003 and September 2004. Following the time of injury, 2.0% of the soldiers met criteria for co-

occurring disorders at one month, 7.6% met the criteria at four months, and 6.3% met the criteria at seven months (Grieger et al., 2006).

The relationship between PTSD and suicidality is of particular concern for deployment veterans given the increasing prevalence of suicidality in veterans of Operation Enduring Freedom and Operation Iraqi Freedom (Hoge & Castro, 2012; Karney et al., 2008). Between 2005 and 2009 the rate of deaths by suicide in service members in the U.S. Marines and the U.S. Army increased nearly two fold (Hoge & Castro, 2012). In a screening of the general population, Marshall et al. (2001) found that 33% of participants who endorsed symptoms from each of four PTSD symptom clusters reported suicidal ideation over the month prior to the screening, as compared to nine percent of participants who endorsed no symptoms of PTSD. Likewise, Sareen, Houlihan, Cox, and Asmundson's (2005) study based on data from the 1994 National Comorbidity Survey found that a PTSD diagnosis was significantly associated with suicidal ideation and suicide attempts (respective adjusted odds ratios were 2.67, $p < .01$, and 2.79, $p < .01$). The combination of PTSD and military deployment experience has been associated with increased suicide risk in veterans (Boscarino, 2006; Karney et al., 2008). In a nationally representative study of U.S. Army veterans 30 years after military service, Vietnam veterans with combat exposure ranging from low, moderate, high, to very high were found to be at increased risk for death by suicide as compared to same era military veterans who were not deployed to Vietnam (Boscarino, 2006). Boscarino (2006) found that, when controlled for, combat status was not associated with the increased suicide risk and therefore concluded that the PTSD diagnosis was the primary risk factor. In contrast, Maguen et al. (2011) identified an association between PTSD

symptoms, desire for self-harm, suicidal thinking, and killing in combat in which the PTSD symptoms mediated the desire for self-harm and the suicidal thinking. This finding suggests that combat exposure in general and the act of killing in combat in particular are associated with suicidal ideation and that PTSD increases this association (Maguen et al., 2011).

Multiple studies have identified the potential influence of PTSD on military veterans' physical health and mortality (Karney et al., 2008). One such possible influence is based on evidence for an association between PTSD and coronary heart disease among veterans (Boscarino & Chang, 1999). In a study of electrocardiographic results for male veterans approximately two decades after military service, PTSD diagnosis was significantly related to increased risk for coronary heart disease (odds ratio = 2.23, $p < .05$). An increased risk for death in individuals with a diagnosis of PTSD appears to be associated first with death due to external means, such as suicide, and then death due to cardiovascular disease (Boscarino, 2006; Karney et al., 2008). Self-reports of general health, endorsements of physical complaints, and work absenteeism were found to be strongly associated with PTSD in soldiers who were screened a year following their return from combat duty in Iraq (Hoge, Terhakopian, Castro, Messert, & Engel, 2007). This association was strong even when the potential influence of combat related injuries was controlled for (Hoge et al., 2007). A study of health care utilization in veterans of Operation Enduring Freedom and Operation Iraqi Freedom who were being treated at a VA hospital showed an association between PTSD and low quality of life in several domains, including general health, energy level, and physical role limitation (Erbes, Westermeyer, Engdahl, & Johnsen, 2007).

The majority of the research to date on employment status and PTSD in veterans has been accomplished with Vietnam veterans (Karney et al., 2008). Generally speaking, veterans who have been diagnosed with PTSD are less likely to be employed than veterans who are not (Karney et al., 2008). Using data from the National Vietnam Veterans Readjustment Study, Zatzick et al. (1997) found that Vietnam veterans with PTSD were more than three times as likely to be unemployed as compared to Vietnam veterans without the diagnosis (adjusted odds ratio = 3.3, $p < .05$). Likewise, Smith, Schnurr, and Rosenheck's (2005) study of male Vietnam veterans receiving care through the VA for severe or very severe PTSD found that severe PTSD symptoms were associated with a 5.9% increase in the probability that the veteran was not working, a 2.1% decrease in the probability of part-time work, and a 3.8% decrease in the probability of full-time work. Further, every 10% increase in veterans' disability rating was found to be associated with a 5.3% rise in the probability of not working and a 1.9% rise in the probability of part-time work (Smith et al., 2005).

In concluding this section on military deployment related PTSD, a few points regarding the significance of this diagnosis for current and prior service members should be made clear. First, PTSD significantly impacts the psychological, physiological, and interpersonal functioning of affected individuals in both the civilian and military populations (APA, 2000 & 2013; Karney et al., 2008). The trauma experience has the potential to affect individuals across their lifespan, with a PTSD diagnosis perhaps manifesting many years following the initial trauma exposure (Davison et al., 2006; Horesh et al., 2013). Second, the nature of the recent and ongoing military deployment operations in Afghanistan and Iraq contribute to an increased likelihood that service

members will experience combat-related traumas regardless of whether they are assigned to combat specific roles (King et al., 2006).

The third point is that it is too early yet to know the actual prevalence of PTSD among deployment veterans of recent military operations (Karney et al., 2008). Current estimates of the prevalence of deployment related PTSD range between five to 15 percent, with 150,000 being a conservative estimate for the true number of deployment veterans with PTSD (Ramchand et al., 2008). Collectively, these points suggest that deployment-related PTSD represents a significant burden to deployment veterans and to their family and friends. Further, the burden of care for organizations such as the Veterans Health Administration that are charged with providing psychological and medical care will likely increase through the duration of the lifespan of these returning service members. As was described in the previous section on stigma, beliefs in both the general population and in the military culture regarding mental health problems have been shown to decrease the likelihood that deployment veterans who experience PTSD symptoms will receive psychological services (Green-Shortridge et al., 2007).

In alignment with the need for more research clarifying the influence of service members' and veterans' perspectives toward posttraumatic stress symptoms, the present study seeks to explore the relationship between military mental health problem self-stigma and PTSD symptom severity in deployment veterans. Based on the previously described findings about the influence of self-stigma on help seeking, it is the position of the current study that self-stigma predicts the severity of PTSD symptoms. Specifically, it is hypothesized that a negative relationship will be found between degree of military mental health problem self-stigma and PTSD severity.

Hypothesis 1: Self-stigma will have a positive relationship with PTSD and will significantly predict the level of severity of PTSD symptoms.

Distress disclosure

Given the possible relationship between mental health problem self-stigma and PTSD for military service members and veterans, it is important to examine what personal resources there may be for changing that relationship. Distress disclosure (Kahn & Hessling, 2001) is the first of these potential resources and is proposed as a moderator variable in the present study. Below is a review of distress disclosure. Specifically, the foundational research on the concept of self-disclosure will be introduced, culminating in a description of distress disclosure. Distress disclosure as a specific form of self-disclosure will be the focus of the present study. Research supporting the influence of distress disclosure on mental health will then be reviewed. Subsequently, research specific to the relationship of distress disclosure with self-stigma and with PTSD will be described to provide perspective for the hypothesized influence of the distress disclosure variable.

Foundations of distress disclosure. Distress disclosure evolved from decades of research on the concept of self-disclosure (Kahn & Hessling, 2001; Kahn, Hucke, Bradley, Glinski, & Malak, 2012). Jourard and Lasakow (1958) led the way toward a research focus on the dimensions of self-disclosure with the development of a measure for self-disclosure, the Self-disclosure Questionnaire (SDQ). They defined self-disclosure as “the process of making the self known to other persons” (Jourard & Lasakow, 1958, p. 91). Jourard and Lasakow (1958) further conceptualized self-disclosure as an aspect of personality as well as a decision-making process for what to

disclose and to whom. Recognizing that self-disclosure may vary according to content, the SDQ was designed with multiple categories describing information about the self, including attitudes and opinions, tastes and interests, work, money, personality, and body (Jourard & Lasakow, 1958, p. 92).

Jourard & Lasakow (1958) administered the SDQ to samples of students at multiple colleges and in a school of nursing. The relationships between the SDQ and sex, culture (Black and White), relationship status (married and unmarried), parental attachment, and disclosure recipient were explored. Jourard and Lasakow (1958) arrived at seven main findings, the first of which was that the concept of self-disclosure is measurable and that the SDQ is one reliable measure for doing so (corrected $r = .94$). Second, females of both cultures tended to disclose more information than males. Third, self-disclosure varied by culture, with White participants of both sexes tending to disclose more information than Black participants. Fourth, unmarried participants of both sexes and cultures were more likely to engage in self-disclosure to their mothers than to their fathers or to their friends of either sex. Fifth, married participants tended to self-disclose to their spouses more often than to parents or friends, and spouses were the most highly disclosed to individual of any disclosure recipient studied in both the married and unmarried samples. Sixth, the degree to which participants self-disclosed to their parent was related to the degree to which the parent was liked, with higher self-disclosure for more liked parents. Finally, participants across the sexes and cultures tended to self-disclose more information in the attitudes and opinions, tastes and interests categories, and less in the money, personality, and body categories.

The creation of the SDQ and the findings from Jourard and Lasakow's (1958) administration of the measurement galvanized further research into the concept of self-disclosure and the variables that may influence this behavior (Kahn et al., 2012). As described by Greene, Derlega, and Mathews (2006) in their review of the history of self-disclosure research, conceptualizations of self-disclosure branched off according to the individual researcher's focus. This made a universally accepted definition for self-disclosure elusive. To demonstrate the difficulty of selecting a specific definition, Greene et al. (2006) described the questions researchers needed to answer for themselves to operationalize their definitions for self-disclosure. As an example, should self-disclosure include both verbal and nonverbal communication? Additionally, does self-disclosure represent an aspect of personality or is it a deliberate decision made in the context of the relationship with the potential disclosure recipient? As evidenced by Jourard and Lasakow's (1958) results, are there different types of disclosure based on the type of information being disclosed? The research diversified to focus on these questions and more, with the primary commonality being a shared pursuit to understand what self-disclosure is. Much of the research also focused on the psychological and physiological implications of self-disclosure (e.g. Barr, Kahn, & Schneider, 2008; Pennebaker & Beall, 1986) as well as on the possible contributors to differences in self-disclosure (e.g. Dindia & Allen, 1992).

Recognizing the diversity of research on self-disclosure, Omarzu (2000) argued self-disclosure is a difficult construct to manage in a research context precisely because it is a particularly flexible behavior. Omarzu (2000) described the adaptability of self-disclosure by saying:

We can tell very little about ourselves to others or we can tell a great deal. We can disclose indiscriminately or very selectively. We can speak from the heart or from cynical self-interest. We can infuse our disclosures with emotion or confine them to objective facts. (p. 174)

Omarzu (2000) focused on developing a model for self-disclosure that would encompass the many researched aspects of the concept. Defining self-disclosure as the verbal communication of personal information to another, Omarzu (2000) developed a multidimensional Disclosure Decision Model (DDM) to explain self-disclosure behavior across different situations. The specific dimensions of self-disclosure included in the DDM are breadth (e.g., how many topics are disclosed), duration (e.g., how many occurrences of disclosure and their length), and depth (e.g., the intimacy of the disclosure). As will be described later, the depth dimension is the most relevant to the distress disclosure variable in the present study (Kahn & Hessling, 2001).

The DDM is designed based on an assumption that self-disclosure is a behavior motivated by social goals (Omarzu, 2000). Among the possible social goals for self-disclosure are “social approval, intimacy, relief of distress, social control, and identity clarification” (p. 178). The first stage of the DDM involves the identification of a potential for achieving one of these goals through self-disclosure. How the individual perceives this is influenced by both the situational context (e.g., the level of intimacy of the setting) as well as by individual differences (e.g., personal experiences or characteristics). Once the individual selects what she sees as a salient social goal, she then enters the second stage of the DDM. In this stage she determines whether there is an appropriate target for the self-disclosure as well as whether self-disclosure is an appropriate strategy given the context. If these conditions are not satisfied, the self-

disclosure will not be likely to occur. When the conditions are met, the individual proceeds to stage three of DDM.

The third stage of the DDM involves decisions about the breadth, duration, and depth of the self-disclosure behavior (Omarzu, 2000). These decisions stem from the individual's evaluation of both the usefulness of and the risks associated with the self-disclosure. The breadth and duration of the self-disclosure are generally based on the potential usefulness of the disclosure, as guided by the individual's characteristics, the characteristics of the disclosure recipient, and situational cues. In contrast, the depth of the self-disclosure tends to be guided by the individual's appraisal of the risks of disclosing, which may include rejection by the recipient or concerns about burdening the recipient. The DDM hypothesizes that anticipation of increased risk contributes to more guarded self-disclosure behavior (Omarzu, 2000). Further, the DDM suggests emotional disclosure may be particularly prone toward carrying increased risk, thus leading to limited disclosure of such personal information even when it may seem useful. This creates a conflict between research on the benefits of self-disclosure as a way to relieve emotional distress (e.g., Pennebaker, 1997) and the likelihood according to the DDM that these emotional disclosures may rarely happen in spite of their potential benefits (Omarzu, 2000).

Research on self-disclosure of emotions has been convoluted due to a divide that occurred between self-disclosure research and self-concealment research (Kahn & Hessling 2001; Larson & Chastain, 1990; Snell, Miller, & Belk, 1988). In contrast to the conceptualization of self-disclosure as the sharing of information about one's self with others, self-concealment has been conceptualized as the withholding of information about

one's self from others (Larson & Chastain, 1990). These concepts appear to be distinct behaviors; however, they also arguably share overlapping characteristics in terms of the processes an individual goes through to decide whether to share or to not share information about his self. As an example, the DDM suggests the emotional content of information considered for self-disclosure may carry an amount of risk that would lead the discloser to minimize the depth of the emotional content he discloses (Omarzu, 2000). This withholding of some aspects of the information during the self-disclosure may be viewed as a form of self-concealment coinciding with self-disclosure. However, the tendency to view these two concepts as independent from each other was reinforced by research such as Larson and Chastain's (1990) study comparing their Self-Concealment Scale with the Self-Disclosure Index (Miller, Berg, & Archer, 1983). Their factor analyses revealed that self-concealment and self-disclosure, as defined by the respective measures, are conceptually distinct concepts rather than "mirror images" of the same concept (Larson & Chastain, 1990, p. 447).

Given the emphasis in self-concealment research on which aspects of the information about one's self are most likely to be withheld from others, it makes sense that emotional information would be the focus for this area of research. The foundational research by Jourard and Lasakow (1958) suggests information related to one's personality may not be as highly self-disclosed as other information and this newer focus on self-concealment research provided an opportunity to return to understanding why this may be the case. Likewise, the sheer breadth of the types of self-disclosure information researched may have been so general that there was limited ability to identify specific

trends such as the cautious disclosure of emotions and distress (Larson & Chastain, 1990).

Although the field of self-concealment research may be said to have delved more deeply into understanding the emotional aspects of why one shares or does not share certain information about one's self, it would not be fair to say the field of self-disclosure research did not do so. There were exceptions in which self-disclosure researchers focused on emotional disclosure, an example of which is Snell, Miller, and Belk's (1988) development of the Emotional Self-Disclosure Scale (ESDS). Motivated by previous research suggesting women and men disclose emotions differently, Snell, Miller, and Belk (1988) designed the ESDS as self-report measure that would permit further exploration of individual differences in self-disclosure behavior. Snell, Miller, Belk, Garcia-Falconi, and Hernandez-Sanchez (1989) then used the ESDS to identify not only sex differences but also cultural differences in self-disclosure of emotions as well as trends in the types of individuals most likely to be the recipients of self-disclosed information.

Conceptualization of distress disclosure. Theoretically speaking, distress disclosure refers to trait-like differences in the degree to which individuals tend toward disclosure or concealment of distress (Kahn & Hessling, 2001). Kahn and Hessling (2001) developed their theory of distress disclosure in reaction to what they perceived as an artificial gap between theoretical conceptualizations of self-disclosure and self-concealment of problems. Coates and Winston's (1987) previous definition of distress disclosure as the degree of openness in expressing unpleasant feelings influenced Kahn and Hessling's (2001) conceptualization. In order to argue for a more integrated theory

between self-disclosure and self-concealment, Kahn and Hessling (2001) proposed that tendencies toward self-disclosure and self-concealment of distress are actually elements of a single continuum of behavior. Similar to Jourard and Lasakow's (1958) assertion that self-disclosure may vary based on the category of the potential disclosure information, Kahn and Hessling (2001) proposed that the decision to disclose or withhold emotionally distressing information is related to but distinct from general definitions of self-disclosure. As an example, an individual who tends to be highly disclosing of most information about her self may also tend toward low disclosure of distress.

Empirically speaking, Kahn and Hessling (2001) acknowledged existing research indicating different cognitive and behavioral processes involved between self-disclosure and self-concealment (e.g., Larson & Chastain, 1990). However, Kahn and Hessling (2001) argued that previous research was overwhelmingly focused on specific incidents of sharing or not sharing particular information rather than on enduring individual tendencies across time toward doing so. To test their theory that distress disclosure is a "bipolar and unidimensional trait-like individual difference" (Kahn & Hessling, 2001, p. 43), they developed the Distress Disclosure Inventory (DDI). Kahn and Hessling (2001) administered the DDI to multiple samples of college undergraduates in order to provide evidence for their conceptualization. Specifically, they tested the possible unidimensionality of distress disclosure in the context of pre-existing measures of self-disclosure and self-concealment with a sample of college undergraduates. Exploratory factor analyses supported the presence of a bipolar factor in which the concepts of self-concealment and self-disclosure of distress mirror each other (Kahn and Hessling, 2001).

Confirmatory factor analyses using the DDI, the Self-Concealment Scale (SCS; Larson & Chastain, 1990), and the Self-Disclosure Index (SDI; Miller et al., 1983) provided evidence that the DDI does measure a unidimensional distress disclosure construct that is distinct from previous conceptualizations of self-concealment and self-disclosure (Kahn and Hessling, 2001). Further, comparisons of initial scores on the DDI and DDI scores two months later demonstrated high stability of distress disclosure tendencies over time, providing support for hypothesized trait-like nature of distress disclosure. Finally, Kahn and Hessling (2001) used the DDI to explore the implications of distress disclosure for psychological adjustment. Using measures of perceived social support, self-esteem, life satisfaction, depression symptoms, and negative affectivity as representations for psychological adjustment, they found that reports of distress disclosure behavior predicted two-month increases in all of the measures of psychological adjustment with the exception of depression. Through post hoc analyses, Kahn and Hessling (2001) explored whether the lack of change in depressive symptoms may be related to diminished interpersonal activity associated with depression. In other words, individuals experiencing the depressive symptom of social withdrawal may have limited opportunity to disclose their distress due to having little contact with others. The results suggest this is the case, with depression symptoms from the first administration being associated with decreased distress disclosure to others.

Conceptually speaking, Kahn and Hessling's (2001) research on their theory of distress disclosure provides empirical support for their hypothesis that trait-like differences do exist in individuals' tendencies to disclose versus conceal distressing information across time. Their research also demonstrates that distress disclosure is

conceptually distinct from preexisting theoretical definitions of the concepts of self-disclosure and self-concealment (Kahn & Hessling, 2001). While accepting that disclosure and concealment are distinct processes, Kahn and Hessling (2001) argue the sum of these behaviors over time suggests the presence of an individual difference variable that is unidimensional. Based on the research using the DDI, Kahn and Hessling (2001) clarified the nature of distress disclosure as a specific subtype of self-disclosure that also overlaps with self-concealment. By viewing distress disclosure in this manner, they suggested that the divide in the theoretical and empirical research on self-disclosure and self-concealment might be reconciled.

Implications of distress disclosure behavior. Theoretically speaking, it may be argued that self-disclosure is a necessary element of effective mental health counseling and psychotherapy. In fact, the reference to the “talking cure” by Joseph Breuer and other early pioneers in the fields of psychology and psychiatry is synonymous with the concept of self-disclosure (Pennebaker, 1990). Individuals who pursue mental health treatment are placed in a position where they are encouraged not only acknowledge to themselves the level of their distress but also to share this information with the mental health provider. Likewise, many theoretical approaches and related interventions in counseling and psychotherapy seem designed to decrease concealment and facilitate disclosure. Therefore, research on self-disclosure and on self-concealment has long been focused on the influence of individuals’ decisions to either disclose or conceal information on both help-seeking behavior and on psychological distress. The general conclusions of the research are that withholding distressful information is associated with

psychological distress (Larson & Chastain, 1990) whereas disclosing such information is related to distress reduction (Pennebaker, 1990; Pennebaker & Beall, 1986).

Empirically speaking, distress disclosure as a specific type of self-disclosure is a recent concept and consequently has a comparatively smaller base of research than the broader concepts of self-disclosure and self-concealment do. However, the research on distress disclosure does support the preexisting literature regarding the risks of self-concealment and the benefits of self-disclosure. As previously mentioned, during the initial study validating the DDI, Kahn and Hessling (2001) found that scores on the DDI predicted psychological adjustment. Specifically, individuals who tended toward higher distress disclosure experienced increases on measures of psychological adjustment two months following the initial assessment. Similarly, Kahn, Achter, and Shambaugh (2001) identified that students receiving counseling in a college counseling center who were measured as highly disclosing on the DDI were more likely to report symptom improvement and decreased stress than were students who were measured as less disclosing. Further, Sloan and Kahn (2005) observed that college counseling center clients who scored highly on the DDI disclosed more goal-relevant information earlier on during the counseling process and made quicker therapeutic gains as compared to clients with lower DDI scores. Whereas the preceding studies identify the benefits of the disclosure element of distress disclosure, other studies have identified relationships between the concealment element (i.e., low distress disclosure tendencies) and increased psychological distress, including guilt and loneliness (Bruno, Lutwak, & Agin, 2009), depressive symptoms (Garrison & Kahn, 2010), paranoid ideation (Murphy, Shevlin,

Adamson, Cruddas, & Houston, 2012), and distress associated with chronic pain (Cano, Leong, Williams, May, & Lutz, 2012).

Conceptually, according to Kahn and Hessling's (2001) theoretical model for distress disclosure and the subsequent research on the concept, individual differences in the extent to which individuals tend to share or withhold distressing information about their selves are expected to influence mental health. This influence can come about in multiple ways. For individuals who tend to conceal their troubles from others, their distress is anticipated to remain the same or to worsen (see for example Garrison & Kahn, 2010). One pathway through which this may occur is the unlikelihood of their receiving support, whether personal or professional, due to their efforts not to display distress. On the other hand, those individuals who are more disclosing of their problems to others are likely to experience a decrease in psychological distress, potentially due to being the recipients of social and/or professional support (see for example Kahn, Achter, & Shambaugh, 2001). The preceding review and discussion of self-disclosure research in general and of distress disclosure in particular sets the scene for describing the relevance of individual differences in distress disclosure tendencies to the other variables of interest in the present study. Research pertaining to the relationship between distress disclosure, self-stigma, and posttraumatic stress symptoms will now be introduced.

Distress disclosure and self-stigma. As previously discussed, self-stigma refers to an internalization of stereotypes by a person who has been labeled as belonging to a societally stigmatized group (Corrigan, 2004). Mental health problems are one basis through which self-stigma may develop. Individuals who self-stigmatize on the basis of mental health problems tend to perceive themselves as not fitting in with others and

anticipate rejection, often contributing to social withdrawal (Corrigan, 2004). On the basis of very real public stigma toward mental health problems, those who experience them are often afforded limited life opportunities due to the contribution of mental health problem stereotypes on discriminative and prejudiced behavior (Corrigan, 2004; Link & Phelan, 2001). Where self-stigma and distress disclosure coincide is in the choice an individual who has a mental health problem makes on whether to disclose their psychological distress. As evidenced by the frequent reference to military combat-related psychological injuries as “the invisible wounds of war” (Tanielian & Jaycox, 2008), mental health problems are generally not easily identifiable based on visual observation (Rusch et al., 2005). Therefore, self-stigma and concerns about public stigma likely influence many individuals to hide rather than disclose their psychological distress.

The Disclosure Decision Model (DDM; Omarzu, 2000) suggests the depth of self-disclosure is influenced by the degree of risk the individual associates with the potential disclosure. Associated risks tend to contribute to guarded disclosure behavior even when potential benefits may also be anticipated (Omarzu, 2000). In the context of mental health problem self-stigma, the DDM indicates individuals may perceive the disclosure of their psychological distress as risky. Evidence in favor of this guarded disclosure of mental health problems includes research on predictors of seeking counseling. Vogel and Wester (2003) measured distress disclosure tendencies in two samples of college students and found that avoidance factors predicted unfavorable attitudes toward counseling as well as limited intentions to seek counseling. Specific to distress disclosure, those participants who were generally uncomfortable with disclosing emotional content of any kind were less likely to pursue counseling. Further, those participants who tended toward

more self-concealment of their distress were more likely to perceive counseling as risky. A subsequent study by Vogel, Wade, and Hackler (2008) also substantiated that the anticipated risks and benefits of counseling significantly mediated the relationship between emotional expressivity and whether an individual who is experiencing psychological distress will seek help.

Military mental health problem self-stigma refers to the development of self-stigma subsequent to sustaining a psychological injury related to military service (Green-Shortridge et al., 2007). As described within the context of military culture, military members and veterans have historically been encouraged to limit their distress disclosure (Dunivin, 1994; Lerner, 2003; Nash et al., 2009; Snell et al., 1989). Theoretically speaking, consideration of the relationship in the general population between mental health problem self-stigma and reluctance to disclose psychological distress indicates that members of the military and veteran culture who self-stigmatize are likely to be even more guarded in their distress disclosure behavior (Pederson & Vogel, 2007). According to the model of military mental health problem stigma developed by Green-Shortridge et al. (2007), individuals typically join the military with preconceived notions based on public stigma toward mental health problems and these notions are further reinforced by introduction to military-specific stigma. Service members' realizations that they have symptoms of mental health problems may then lead to a compounded form of self-stigma based on the combination of both public and military mental health problem stigma.

Empirically speaking, the strongest evidence for the influence of distress disclosure tendencies on military mental health problem self-stigma among service members is found in research on their attitudes about mental health care utilization. Hoge

et al. (2004) found that Army soldiers who had deployed to Iraq or Afghanistan were more than twice as likely to endorse concerns about mental health problem stigma if they met the criteria for mental health diagnoses. Britt (2000) found that 61% of military service members who had deployed to Bosnia believed that acknowledging a psychological problem would harm their career. Further, 45% of the service members endorsed believing their peers would spend less time with them if they disclosed having a psychological problem. Consistent with the Green-Shortridge et al. (2007) model, military mental health problem self-stigma contributes to limited mental health care utilization by service members who are uncomfortable with the potential risks of disclosing their psychological distress.

The preceding description of the relationship between self-stigma and distress disclosure illustrates a negative relationship wherein a high level of self-stigma among military service members and veterans is associated with low levels of distress disclosure (e.g., concealment). This fits with the conceptualization of distress disclosure as a bipolar construct that is comprised of both concealment and disclosure behaviors (Kahn & Hessling, 2001). Conceptually speaking, then, it is also anticipated that service members and veterans who tend toward higher levels of distress disclosure behavior will actually experience less self-stigma. Further support for this relationship is provided by a qualitative study of combat veterans of OEF and OIF that identified veterans who do participate in mental health treatment as being able to resist the influence of stigma (Mittal et al., 2013). Given the previous discussion on the likelihood that the majority of mental health treatments are likely contingent on distress disclosure, it seems that any process that facilitates such behaviors may be beneficial for limiting the influence of self-

stigma. The following statement by First Sergeant Schindler, an Army combat veteran who assisted Hoge (2010) with developing a guide for combat veterans on how to transition home, provides a vivid illustration of the importance one veteran placed on distress disclosure after participating in mental health treatment:

The single best piece of advice that I can give to any warrior who feels alone, angry, detached, afraid of crowds, suffers from lack of sleep, dislikes loud noises, or is just not feeling right, is to talk, talk, talk about how you feel with someone you feel safe with. Understanding why you react to situations will set you free and allow you to begin healing. ... When I learned that my reflex actions are directly the result of combat experiences and training, I began to see myself as a “normal” person. (p. 85)

First Sergeant Schindler’s description of his experience captures the present study’s emphasis on distress disclosure and self-stigma. By disclosing about the experiences he found distressing, he was able to move toward viewing himself as someone having an understandable reaction to trauma rather than hiding the posttraumatic stress symptoms he was experiencing (Hoge, 2010).

Distress disclosure and PTSD. Theoretically speaking, the constellation of symptoms associated with posttraumatic stress disorder includes symptoms that are reasonably expected to have a negative relationship with distress disclosure behavior. Among these are behaviors related to avoidance of reminders of the traumatic experience as well as interpersonal detachment (APA, 2000). Pennebaker (1997) pioneered research on the effects of disclosure and concealment about traumatic experiences, concluding that concealment contributes not only to the maintenance of psychological distress but also to negative consequences for physical health. According to Pennebaker (1997), self-disclosure about trauma experiences facilitates healing. Specific to the military and veteran culture, the aforementioned likelihood of guarded distress disclosure is a barrier

that may exacerbate deployment-related PTSD symptoms and decrease the potential for healing. Likewise, facilitation of more distress disclosure among military service members and veterans would be anticipated to decrease PTSD symptom severity.

Empirically speaking, research specific to distress disclosure and close variants of the construct with military deployment veterans provides evidence for its influence on PTSD symptoms (Balderrama-Durbin, Synder, Cigrang, Talcott, Tatum, & Baker et al., 2013; Bolton, Glenn, Orsillo, Roemer, & Litz, 2003; Campbell & Renshaw, 2013; Gray, Schorr, Nash, Lebowitz, Amidan, & Lansing et al., 2012). Balderamma et al. (2013) found that distress disclosure to intimate partners mediated the relationship between partner support and PTSD symptom severity in a sample of 76 Air Force service members who had deployed to high-risk missions in Iraq. Specifically, stronger partner support appeared to facilitate more disclosure about deployment-related experiences, which then contributed to a decrease in deployment- and combat-related distress. In another study exploring partner relationships in a sample of service members, this time 224 OEF/OIF-era National Guardsmen and 214 of their partners, Campbell and Renshaw (2013) identified that the emotional numbing associated with PTSD symptoms was related to decreased emotional disclosure and to decreased relationship satisfaction. Bolton et al (2003) also found that disclosure about deployment experiences, particularly to significant others, was predictive of adjustment in a sample of 425 service members who participated in peacekeeping operations in Somalia.

Conceptually speaking, whether related to self-stigma, the symptoms of PTSD, or the combination of the two, service members who experience deployment-related PTSD arguably limit their deployment-related distress disclosure due to risk assessments

influenced by both the military culture and by public opinion. The previously mentioned qualitative study of OEF and OIF veterans provides support for this through the finding that these veterans endorsed avoiding mental health treatment in order to escape being labeled with a mental health problem diagnosis (Mittal et al., 2013). However, as previously discussed, the veterans were also found to be more resistant to the influence of military mental health problem self-stigma following engagement in treatment.

The research reviewed above suggests that, similar to the relationship between distress disclosure and self-stigma, service members and veterans who are on the concealing end of the distress disclosure construct are more likely to experience unabated posttraumatic stress symptoms than those who are more disclosing. However, research also suggests that the barriers to distress disclosure can be overcome (Mittal et al., 2013). Recognizing the relevance of distress disclosure as a potential contributor to healing from military service-related psychological injuries, Gray et al. (2012) developed an adaptive disclosure intervention specifically for service members and evaluated its use with 44 Marines. The intervention was designed to encourage service members to share about and process their deployment- and combat-related experiences, thereby decreasing the severity of related PTSD symptoms, depressive symptoms, and other psychological injuries. Specific to PTSD, the results of the intervention trial with the Marine participants demonstrated that significant symptom improvement is possible after only six weekly sessions of adaptive disclosure training (Gray et al., 2012).

The preceding discussion on distress disclosure provides a foundation for understanding how the distress disclosure concept influences both concealment and disclosure behaviors among military personnel and veterans. The conflict between these

behaviors becomes clear when one considers that the research indicates those who experience military mental health problems such as PTSD may develop self-stigma. Self-stigma is associated with appraisal of distress disclosure as too risky, thereby contributing to concealment, which likely results in limited help-seeking behavior and perpetuates or perhaps worsens psychological distress. On the other hand, disclosure of distress is associated with improvements in psychological functioning and with decreases in self-stigma. Conceptually speaking, the potential for increased tendencies toward distress disclosure behavior to decrease the degree of military mental health problem self-stigma and thereby limit the influence of self-stigma on the severity of PTSD symptoms points to the importance of efforts in the contemporary U.S. military to combat the stigma by normalizing and encouraging such behavior (Dingfelder, 2009).

The present study hypothesizes that distress disclosure moderates the relationship between military mental health problem self-stigma and severity of PTSD symptoms. Specifically, it is hypothesized that distress disclosure has a negative relationship with both the self-stigma independent variable and the PTSD symptom severity outcome variable. It is the position of the present study that the identification of the influence of distress disclosure behavior on military mental health problem self-stigma and the subsequent influence on PTSD symptoms will help to guide future research on interventions that will support help-seeking among service members and veterans.

Hypothesis 2: Distress disclosure will moderate the relationship between self-stigma and the level of severity of PTSD symptoms.

Self-compassion

Self-compassion (Neff, 2003b) is the second of the potential personal resources for changing the relationship between self-stigma and PTSD among military service members and veterans and is proposed as a moderator variable in the present study. The following is a review of self-compassion. Specifically, the foundational research on the concept of self-compassion will be introduced (Neff, 2003b). Research supporting the influence of self-compassion on psychological well-being will be reviewed.

Subsequently, research supporting the possible relationship of self-compassion with both self-stigma and PTSD symptoms will be described to provide perspective for the hypothesized influence of the self-compassion variable.

Foundations of self-compassion. Neff (2003b) developed the concept of self-compassion based on a research trend involving the incorporation of Buddhist principles into Western psychology. The trend was based on a reaction against decades of research on the importance of self-esteem, a concept involving favorable comparisons of self with others and the experience of personal successes as contingent pathways to psychological well-being (Neff, 2003b). The incorporation of Buddhist principles of kindness, compassion, and mindfulness was considered a viable alternative pathway to psychological health (Neff, 2003b). In developing the concept of self-compassion, Neff (2003b) sought to further the research for the inclusion of principles based on Buddhism toward facilitating more beneficial self-attitudes than the focus on self-esteem has been able to.

Theoretically speaking, Neff (2003b) built upon the Buddhist principles of compassion and loving kindness to conceptualize self-compassion as the application of

compassion not toward others but inward (see also Thompson & Waltz, 2008). When one experiences compassion toward someone else, they feel empathy for that person and a sense of kindness toward them. So, too, can individuals feel compassion for themselves when they are free to acknowledge the validity of their feelings as well as the shared humanity they have with others. Different from self-esteem, which may be expected to be high only when one experiences success, self-compassion provides room for individuals to feel empathy and kindness toward themselves both when they are successful and when they are not (Neff, 2003b). As Neff and Germer (2013a) described, “Self-compassion also offers more emotional stability than self-esteem because it is always there for you – when you’re on top of the world and when you fall flat on your face” (p. 298).

Neff (2003b) described self-compassion as having “three faces:” self-kindness, common humanity, and mindfulness. Self-kindness refers to understanding of and kindness toward one’s self as opposed to harshly evaluating and criticizing one’s self. Common humanity encapsulates a sense that one is connected to rather than distanced from both the experience of and the general characteristics of humankind. In other words, perfection in one’s self is not to be expected when one does not expect perfection of everyone else. Mindfulness specifically means being aware of and accepting of one’s distressing feelings without over-identification with them (Neff, 2003b). Mindfulness within the context of the self-compassion concept is somewhat distinct from the general concept of mindfulness in the sense that it pertains to having a “balanced awareness of the negative thoughts and feelings involved in personal suffering” whereas mindfulness in general “refers to the ability to pay attention to any experience – positive, negative, or

neutral – with acceptance and equanimity” (Neff & Germer, 2013a, p. 294). Neff (2003b) described these three faces of self-compassion as being conceptually distinct from each other but related, such that the development of one face can contribute to the development of the others.

Self-compassion and psychological well-being. Neff (2003b) hypothesized that self-compassion would set the stage for healthy psychological functioning in a few ways. First, higher levels of self-compassion should help individuals who are experiencing distress to extend kindness toward themselves rather than self-criticism (i.e., self-kindness). Second, those experiencing distress who experience self-compassion should be less likely to feel isolated from others and more likely to acknowledge that suffering is one shared aspect of the human experience (i.e., common humanity). Third, self-compassionate individuals should be more likely to have more accurate appraisals of themselves in terms of their feelings and their abilities (i.e., mindfulness). Similarly, self-compassion may increase individuals’ likelihood of moving toward their distressing emotions rather than avoiding them. This then may help them to acknowledge their own potential role in the distress and allow them to take problem-oriented steps to improve their situation (Neff, 2003b). Using another description by Neff and Germer (2013a), self-compassion helps individuals because, “by wrapping emotional pain in the warm embrace of self-compassion, suffering is ameliorated and well-being is enhanced, allowing for a healthier and more balanced way of being” (p. 308).

Empirically speaking, Neff’s (2003a) development and validation of a Self-Compassion Scale (SCS) for use to measure individual differences in self-compassion provided a means for testing Neff’s (2003b) hypotheses about the influence of self-

compassion on psychological processes such as well-being and distress. Since the development of the SCS, multiple studies have used the measure to explore self-compassion, thus bridging the gap between Neff's (2003b) theoretical research on self-compassion and empirical research on the concept (Neff, 2003a). Specific discussion of research on self-compassion will be discussed below as it pertains to the self-stigma and posttraumatic stress variables under consideration in the current study. However, some general findings are worth noting as additional support for the relevance of the self-compassion concept. First, research supports the identification of self-compassion and self-esteem as related but conceptually distinct constructs, with self-compassion being a more stable predictor of well-being and emotional resilience (Leary, Tate, Adams, Allen, & Hancock, 2007; Neff & Vonk, 2009). Second, higher levels of self-compassion have been found to be associated with more effective coping with stress, including fewer avoidance behaviors (Allen & Leary, 2010). Clinical interventions designed based on self-compassion show promise for working with individuals experiencing psychological distress (Gilbert & Procter, 2006; Neff & Germer, 2013b). Finally, research on mindfulness and on self-compassion suggests that self-compassion may be an outcome of mindfulness-based practice (Bishop et al., 2004).

Self-compassion and self-stigma. Theoretically speaking, a comparison of the conceptualizations of self-compassion (Neff, 2003b) and self-stigma (Corrigan, 2004) provides initial evidence for a negative relationship between the two concepts. Specific to the current study, individuals who have high levels of self-compassion are theoretically less likely to experience high levels of self-stigma related to mental health problems. Whereas self-compassion comprises a sense of kindness toward one's self (Neff, 2003b),

mental health problem self-stigma consists of a negative perspective toward one's self based on internalized societal stereotypes about psychological problems (Corrigan, 2004). Further, self-compassion involves having a sense of connection with all humanity (Neff, 2003b), whereas the stigma process from which mental health problem self-stigma stems is characterized by separating individuals into "them" rather than "us" groups (Link & Phelan, 2001). What self-compassion and self-stigma do have in common is that both constructs refer to how individuals perceive themselves; save for this commonality, they appear to be constructs that are in distinct opposition with each other.

Empirically speaking, research has identified a negative relationship between self-compassion and self-stigma or similar negative self-views related to membership in stigmatized groups (Braehler, Gumley, Harper, Wallace, Norrie, & Gilbert, 2012; Brion, Leary, & Drabkin, 2014; LaDuke Chandler, 2012). For example, a randomized controlled trial of compassion focused therapy plus treatment as usual versus treatment as usual for individuals recovering from psychosis found a large negative correlation ($r = -.74, p < .01$) between change in compassion and perception of social marginalization (Braehler et al., 2012). Those individuals who received compassion focused therapy experienced not only a significant increase in compassion for themselves but also a significant decrease in their perception of being marginalized based on their mental health problems in comparison to the treatment as usual group. A study of the relationship between self-compassion and adjustment to HIV status identified that participants' degree of self-compassion predicted the level of shame associated with having HIV (Brion et al., 2014). Specifically, higher levels of self-compassion predicted lower levels of HIV-related shame [$sr = .49, t(161) = 7.32, p < .001$]. Research on the

influence of self-compassion on sexual self-stigma among sexual minority individuals identified a similar relationship (LaDuke Chandler, 2012). Through the use of hierarchical regression, the study revealed that sexual minority individuals who scored higher on trait self-compassion also had lower scores on self-stigma ($b = -.45$, $se = .15$, $p = .01$).

Additional empirical research related to self-compassion has particular relevance for the relationship of this construct with self-stigma in the military and veteran populations. Reily, Rochlen, and Awad (2014) studied the relationship between masculine norm adherence and self-compassion with shame as a hypothesized moderator variable between the two constructs. Their results suggest that a negative relationship exists between masculine norm adherence and self-compassion, with lower levels of masculine norm adherence being associated with high levels of self-compassion ($r = -.24$, $p < .05$). Further, self-compassion was negatively correlated with trait shame ($r = -.58$, $p < .01$). The interaction between masculine norm adherence and trait shame was found to significantly predict self-compassion ($\beta = -.22$, $p < .001$). Specifically, trait shame moderated the relationship between masculine norm adherence and self-compassion such that norm adherence was not significantly related to self-compassion at high levels of shame whereas norm adherence had a negative relationship to self-compassion at low levels of shame (Reily et al., 2014). Although shame is not synonymous with self-stigma, the negative self-evaluation associated with shame is conceptually similar to the negative evaluation involved in self-stigma. Further, the negative relationship between adherence to a masculine norm and self-compassion is highly relevant to the masculinized context of the military culture that influences military service members and

veterans (Dunivin, 1994; Reily et al., 2014). This appears to be somewhat in contrast to other research indicating that men have significantly higher scores on self-compassion than women (Neff, 2003a) and suggests that more research is needed to understand the variables that influence self-compassion in men.

The preceding discussion of the theoretical and empirical support for a negative relationship between self-compassion and negative views of the self highlights the likelihood of a negative relationship between self-compassion and self-stigma. However, to the best knowledge of the current study, LaDuke Chandler's (2012) study of sexual self-stigma in sexual minorities is the only existing study that specifically explored the relationship between self-compassion and self-stigma. Conceptually speaking, interventions designed to increase self-compassion represent a possible pathway toward decreasing the presence of self-stigma. Initiatives in the U.S. military involving the use of mindfulness-based training and other interventions based on positive psychology to increase psychological resilience point toward increased receptiveness toward acceptance-based approaches for increasing well-being among service members (see for example, the Comprehensive Soldier Fitness Program; Cornum et al., 2011). The fostering of self-compassion appears to be an appropriate fit for this focus and may be particularly efficacious toward decreasing military mental health problem self-stigma. However, more research is needed to clarify the relationship between self-compassion and self-stigma within the context of military culture.

Self-compassion and PTSD. Theoretically speaking, self-compassion is anticipated to have a negative relationship with the severity of PTSD symptoms (Neff, 2003b; Neff & Germer, 2013a). Whereas a key diagnostic feature of PTSD is the

experience of avoidance of distress and of trauma reminders (APA, 2000; APA, 2013), self-compassion is characterized by mindful awareness of and acceptance of distress (Neff, 2003b). Along these lines, Neff (2003b) hypothesized that self-compassion would be associated with emotional approach coping rather than emotional avoidance coping, thus facilitating psychological adjustment. Further, the social withdrawal symptom that is characteristic of PTSD is contrary with the shared humanity component of self-compassion. Finally, the negative beliefs or expectations about one's self (e.g., blame and shame) that are contained in the DSM-5 criteria for PTSD (APA, 2013) stand in contrast with the self-kindness associated with self-compassion.

Empirically speaking, research on self-compassion and related concepts such as mindfulness provide support for the negative relationship between self-compassion and posttraumatic stress symptom severity (Beaumont, Galpin, & Jenkins, 2012; Thompson & Waltz, 2008). In one study comparing the use of cognitive behavior therapy groups plus compassionate mind training versus cognitive behavior therapy only groups, Beaumont et al. (2012) found that trauma victims who received the combined condition experienced a significantly higher increase in self-compassion post-therapy than the uncombined group [$F(1,30) = 4.657, p \leq .05$]. Although the results did not reveal post-therapy differences in symptoms of PTSD between the two groups, the researchers suggest this may have been related to the comparatively higher severity of symptoms in the combined group prior to the therapy intervention. Thompson and Waltz (2008) found a connection between self-compassion and posttraumatic stress symptoms related to avoidance in their study of college students who had experienced a traumatic event. Specifically, the results of their study showed a negative correlation between scores on

the SCS and PTSD avoidance ($r = -.24, p \leq .05$). Thompson and Waltz (2008) suggested that individuals who have high levels of self-compassion are less avoidant, thereby possibly allowing them to experience a more natural exposure process that ultimately decreases traumatic stress symptom severity.

Research on mindfulness-based interventions provides additional support for the relevance of self-compassion to posttraumatic stress severity in the military service member and veteran populations (e.g., Kearney et al., 2012). Although mindfulness and self-compassion are distinct constructs, compassion and self-compassion can be considered outcomes of acquiring mindfulness skills (Bishop et al., 2004). Kearney et al. (2012) conducted a longitudinal study of veterans who received an eight-week course in mindfulness-based stress reduction (MBSR) as an adjunct to treatment as usual. The development of MBSR skills was associated with decreases in PTSD that were maintained at the six-month follow-up. A mediation analysis demonstrated that improvement in mindfulness skills mediated the relationship between participation in MBSR and PTSD symptoms [$R = .37, F(136) = 40.0, p < .01$]. Given the link between mindfulness and self-compassion, it is arguable that increased self-compassion may have been one component of what decreased PTSD symptom severity for the veterans in the study (Bishop et al., 2004; Kearney et al., 2012). Vujanovic, Niles, Pietrefesa, Schmertz, and Potter (2011) of the National Center for PTSD (NCPTSD) argue for additional research on the application of mindfulness as a means for treating PTSD, stating that one difficulty with research on mindfulness is a lack of consensus on what exactly is meant by the term. Distinguishing the specific influence of self-compassion from the

overarching umbrella of mindfulness may be one pathway toward facilitating this research.

Limited research currently exists that specifically addresses the relationship between self-compassion and posttraumatic stress symptoms in the military and veteran culture. Besterman-Dahan et al. (2012) researched self-compassion as one aspect of their study of the impact of exposure to combat on Army National Guard Chaplains who served in OEF, OIF, and/or OND. The study did not identify significant differences between Chaplains with combat experience and those without in level of self-compassion, with Chaplains from both groups averaging a moderate score on the SCS. This result led Besterman-Dahan et al. (2012) to suggest that self-compassion may mediate the relationship between stressors associated with the general responsibilities of being a Chaplain and those associated with deployment to a combat zone. Although the study suggests that self-compassion may be a protective factor against the development of posttraumatic stress symptoms, further research is needed to support this assertion. Additionally, the narrow focus on one occupation within one branch of the military may not permit generalizability to the full military and veteran culture.

The preceding discussion on self-compassion provides a foundation for understanding how the development of self-compassion may play a protective role in decreasing military mental health problem self-stigma and thereby limiting the severity of PTSD symptoms. Specifically, the review of the theoretical and empirical research on self-compassion suggests that experiencing a state of self-compassion undermines the incorporation of negative stereotypes about mental health problems into one's self-concept, thereby preventing the development of self-stigma (Corrigan, 2004; LaDuke

Chandler, 2012; Neff, 2003b). The development of self-compassion also seems to function as a protective factor against posttraumatic stress symptoms, possibly by countering negative self-evaluations such as self-stigma and by decreasing the prevalence of the avoidance symptoms (Beaumont et al., 2012; Thompson & Waltz, 2008). However, limited research exists specific to self-compassion and either self-stigma or posttraumatic stress within the context of the military and veteran cultures.

Conceptually speaking, the potential for increased development of self-compassion to decrease the degree of military mental health problem self-stigma and thereby decrease the influence of self-stigma on the severity of PTSD symptoms reinforces the importance of efforts to incorporate mindfulness-based approaches in treatment for military veterans (Vujanovic et al., 2011). The present study hypothesizes that self-compassion moderates the relationship between the military mental health problem self-stigma independent variable and the severity of PTSD symptoms outcome variable. It is the position of the present study that the identification of the influence of self-compassion on military mental health problem self-stigma and the subsequent influence on PTSD symptoms will help guide future research on interventions that may support well-being among military service members and veterans.

Hypothesis 3: Self-compassion will moderate the relationship between self-stigma and the level of severity of PTSD symptoms.

Posttraumatic Growth

The present study seeks to broaden the focus on factors that influence deployment veterans' experiences subsequent to trauma by exploring not only the negative consequences (i.e., PTSD) but also the potentially beneficial outcomes. Specifically, posttraumatic growth (PTG) will be investigated as second outcome variable in a mirror of the previously described companion study on the relationship between military mental health problem self-stigma and PTSD. Likewise, the same moderating variables (distress disclosure and self-compassion) will be examined in regard to their influence on the relationship between military mental health problem self-stigma and PTG. In the following sections, the foundational research on the concept of PTG will be introduced (Tedeschi & Calhoun, 2004). The discussion of PTG will include consideration of the appropriateness of this concept within the context of military culture. Subsequently, the hypothesized negative relationship between military mental health problem self-stigma and the development of PTG will be presented. Finally, research supporting the hypothesized moderating influence of both distress disclosure and self-compassion on the relationship between military mental health problem self-stigma and PTG will be introduced.

Unlike PTSD, PTG is not a diagnostic category within the DSM-V (APA, 2013) or DSM-IV (APA, 2000). Rather than being a mental health disorder, PTG describes the personal growth that can come about as a result of an individual's processing of long term distress following a traumatic experience or significant life crisis (Calhoun & Tedeschi, 2013; Tedeschi & Calhoun, 2004). The concept of PTG was developed in the context of a shift in psychology toward acknowledging not only functional impairments

and disorders but also strengths, as typified by positive psychology (Calhoun & Tedeschi, 2013; Seligman & Csikszentmihalyi, 2000). In 1996, Tedeschi and Calhoun published the results of an exploratory study using the Posttraumatic Growth Inventory (PTGI), a scale they developed to measure beneficial changes in individuals who have experienced traumatic events. Based on their study using the PTGI, Tedeschi and Calhoun (1996) hypothesized that PTG comes about through the coping processes individuals use to either strengthen or reappraise their perception of themselves, others, and the meaning of situations following the experience of a traumatic event. Guided by their observations of the changes experienced by individuals who experienced distress subsequent to traumatic events, Tedeschi and Calhoun (1996) used the PTGI to identify five factors that statistically characterize PTG. These factors, which will be explained in further detail below, include: relating to others, new possibilities, personal strength, spiritual change, and appreciation of life.

Tedeschi and Calhoun (2004) describe PTG as characterized by “transformation.” Unlike concepts such as hardiness, optimism, and resilience, which describe characteristics that may allow an individual to endure through challenges, PTG captures a quality of development that transforms an individual into someone qualitatively different than their pre-trauma self (Tedeschi & Calhoun, 2004). These changes are most frequently noticed in the context of the previously identified five factors of PTG, which Calhoun and Tedeschi (2013) further broke down into three overarching conceptual categories. The first category of PTG factors is a changed sense of oneself, which is aptly described as, “I am not who I was” (Calhoun & Tedeschi, 2013). While adjusting in the aftermath of a trauma or life crisis, an individual is confronted with the reality of

the limited control they have in their life. This reality can be distressing and can contribute to symptoms of posttraumatic stress. However, this same realization can also lead an individual to develop increased confidence in their ability to cope regardless of what difficulties life may bring their way. Calhoun and Tedeschi (2013) described this changed sense of oneself as being typified by such statements as, “I know bad stuff can happen to me, but I think I am much more capable of handling it than I was before I faced this” (Kindle Locations 262-263).

The second category of factors associated with PTG is changed relationships (Calhoun & Tedeschi, 2013). Traumatic experiences can challenge an individual’s relationships, sometimes leading to relationship problems. However, it is also possible for an individual to recognize new depths in their relationships following a trauma, leading to a new sense of strength and commitment (Calhoun & Tedeschi, 2013). Calhoun and Tedeschi (2013) suggest that some of the changes in relationships are contributed to by a possible tendency for individuals who have developed PTG to become more emotionally expressive. Another aspect of changed relationships is the development of a new sense of compassion for all people that can be characteristic of PTG (Calhoun & Tedeschi, 2013; Tedeschi & Calhoun, 2004). Examples of this quality of compassion in individuals with PTG include commitment by trauma survivors to helping others through similar experiences, such as contributing to local or national support organizations with missions that are relevant to the trauma or stressor they experienced.

The final category of factors characteristic of PTG falls under the concept of changes to life philosophy (Calhoun & Tedeschi, 2013). Calhoun and Tedeschi (2013)

described the development of a new appreciation for life as one of the most common growth-related experiences among individuals who have experienced a trauma. In the same vein, it is possible for individuals to develop a new set of life priorities that may be quite different from what they held pre-trauma (Calhoun & Tedeschi, 2013).

Overlapping with the previously described category of changed relationships, family and other relationships often become more highly prioritized than they previously had been (Calhoun & Tedeschi, 2013). An additional aspect of changes to life philosophy is the potential for growth in one's existential beliefs, which may include spiritual or religious beliefs (Calhoun & Tedeschi, 2013). Tedeschi & Calhoun (1996) described how the trauma encounter could initiate existential exploration in which one's previously held beliefs and assumptions are challenged. Wisdom is one of the qualities that Tedeschi and Calhoun (1996) hypothesized might be an outcome of such existential struggle in the aftermath following a trauma.

Empirically speaking, research on the prevalence of PTG varies, leading Calhoun and Tedeschi (2013) to give a rough estimate that 30% to 90% of individuals who experience traumas or significant life crises will evidence some degree of PTG. Calhoun and Tedeschi (2013) emphasize that "posttraumatic growth is common, but it is by no means universal" (Kindle Location 377). Unlike DSM diagnoses (APA, 2000; APA, 2013), there is no set cutoff point for whether an individual has enough features of post-trauma growth to qualify as specifically having PTG (Calhoun & Tedeschi, 2013; Tedeschi & Calhoun, 1996). Further, the categories of growth described by Calhoun & Tedeschi (2013) are indicative of only the most common examples of PTG experiences and may not be inclusive of all of the ways in which an individual may grow. Therefore,

it is difficult to specify the frequency with which PTG occurs. Conceptually speaking, however, the importance of acknowledging PTG as a possible outcome of trauma experiences lies in the framework it provides for helping mental health providers identify the signs of potential growth in their clients/patients (Calhoun & Tedeschi, 2013). The acknowledgment of the presence of growth then permits mental health providers to work with their patients/clients to facilitate the process of coping with ongoing distress in the aftermath of the trauma and of finding meaning in the experience (Calhoun & Tedeschi, 2013).

In considering the relevance of PTG for military service members and veterans, it is helpful to recognize that the possibility of growth following traumatic experiences has long been acknowledged (Calhoun & Tedeschi, 2013; Tedeschi & Calhoun, 2004).

Calhoun and Tedeschi (2013) support this observation through the following examples:

Homer in *The Odyssey*, the story about Odysseus' long journey home from the Trojan War, says, "Even his griefs are a joy long after to one that remembers all that he wrought and endured." Paul, in the Christian New Testament, says, "We also rejoice in our sufferings, because we know that suffering produces perseverance; and perseverance character." An African proverb tells us that, "Smooth seas do not make skillful sailors." (Kindle Locations 205-208) (Posttraumatic Growth: Background, Paragraph 1)

As can be seen from the reference to Odysseus' wartime experience, PTG is also consistent with the previously noted observations that wartime experiences tend to be viewed as growth inspiring within the context of military culture (Bryan & Morrow, 2011; Lerner, 2003). Lerner (2003) referred to a belief within the German military culture of World War I that wartime experiences are masculinizing challenges that promote growth among military service members. As described previously, this belief about the growth potential from wartime service spread to other Western European

military cultures, including that of the U.S. military. Theoretically, these historical and contemporary examples of growth subsequent to difficult events suggest that deployment-related combat experiences might set the foundation for the development of PTG among military service members and veterans.

Empirically speaking, there is some evidence for the development of PTG following the experience of a military-related trauma (Bryan & Morrow, 2011; Erbes, Eberly, Dikel, Johnsen, Harris, & Engdahl, 2005). Bryan and Morrow (2011) advocated for focusing on growth associated with combat exposure, based on their experience with implementing an integrated mental health and educational program (Defender's Edge) for a deployed Air Force Security Forces unit. Erbes et al. (2005) measured PTG in 95 former Prisoners of War (POW) who were taken prisoner during World War II or the Korean War and identified that those POWs with the highest level of trauma exposure reported the highest degree of growth in the realm of personal strength. This is consistent with the category of changes in one's view of oneself described by Calhoun and Tedeschi (2013) as characteristic of PTG. Maguen, Vogt, King, King, and Litz (2006) measured PTG in a sample of 83 Gulf War I (Operation Desert Shield and Operation Desert Storm) veterans and found that the categories of PTG experienced by these veterans were significantly predicted by such factors as military status, perceived threat, postdeployment social support, and minority status. Maguen et al. (2006) concluded that multiple factors (including background variables, deployment experiences, and postdeployment experiences) contribute to PTG in veterans.

Tedeschi and McNally (2011) described their preliminary work with the U.S. Army to incorporate a posttraumatic growth-enhancing component into the

Comprehensive Soldier Fitness Program. Although cautious about the possibility of preparing soldiers prior to deployment for PTG, given that such qualities as resilience may actually limit the development for PTG by removing the requisite period of long duration trauma-related distress to prompt the growth, Tedeschi and McNally (2011) remarked that, “the ability to respond to other survivors of combat and other traumas with the wise perspective of a trauma survivor who has experienced posttraumatic growth” would likely be of benefit to both the individual soldier and to the mission of the Army. Speaking to the conceptual level and the role of mental health providers in working with deployment veterans, Bryan and Morrow (2011) provided the following recommendations:

Recognize the potential for personal growth associated with combat exposure, rather than perceiving combat solely as a “bad” life experience. Ask service members what they have learned about life or themselves, what new skills they have acquired or mastered, or how they have become better people as a result of combat. Frame adversity as a necessary mechanism through which growth and development occur. (p. 21)

Self-stigma and PTG. Having established the importance of a focus on PTG as a possible beneficial outcome of deployment experiences among military service members and veterans, it is necessary to consider how military mental health problem self-stigma may interfere with PTG. As previously described, military mental health problem self-stigma refers to the internalization of stigma toward mental health problems within the context of military culture (Green-Shortridge et al., 2007). This self-stigma develops when an individual who has been labeled as having mental health problems accepts the related stereotypes and adopts them into her self-concept (Corrigan, 2004). The prevalence of military service members and veterans who endorse the presence of

stigmatization of mental health problems in the military is estimated to be between 25% and 65% (Hoge et al., 2004; Britt, 2000), indicating that a large section of the population could be susceptible to developing self-stigma. Refer to page 34 for further detail regarding the concept of military mental health problem self-stigma.

To this author's knowledge, no theoretical articles or empirical studies have yet been published specifically exploring the relationship between mental health problem self-stigma and PTG within the context of military culture. Hypothetically speaking, however, the Calhoun, Tedeschi, and Cann (in Calhoun & Tedeschi, 2013) model for the process through which PTG develops suggests that the presence of self-stigma will inhibit the development of PTG. Specifically, their model for PTG begins with how an individual's pre-trauma schemas intersect with the trauma experience and subsequent emotional distress. For a military member or veteran whose assumptions about reactions to military deployment or combat include a belief that mental health problems (e.g., posttraumatic stress symptoms) signify a problem of individual character or failure to grow, the development of self-stigma should he develop such problems is possible (Green-Shortridge et al., 2007). The tendency for service members and veterans who develop mental health problem self-stigma to attempt to hide their problems and to avoid help-seeking (Green-Shortridge et al., 2007; Corrigan, 2004) may then limit the self-disclosure and self-analysis that Calhoun et al. (in Calhoun & Tedeschi, 2013) hypothesize will set the scene for the deliberate rumination, constructive schema change, and narrative revision that ultimately lead to PTG.

Empirically speaking, one study of the relationship between internalized stigma and PTG does support the existence of a negative relationship between the two concepts

(Murphy & Hevey, 2013). Specifically, Murphy and Hevey (2013) studied the relationship between HIV-related internalized stigma and PTG in a sample of 74 participants in Ireland who were diagnosed with AIDS/HIV. The results of the study suggest the presence of a negative relationship between HIV-related stigma and PTG. Specifically, individuals with higher levels of internalized stigma had lower levels of growth in the PTG subcategories of personal strength, relating to others, and new possibilities than individual with lower levels of internalized stigma.

The preceding discussion of the possible relationship between self-stigma and PTG prepares the case for the position of the current study. Specifically, the current study seeks to combine and build upon the theoretical and empirical research on both self-stigma and PTG in order to explore the contribution of self-stigma on the development of PTG. As discussed, history supports the relevance of PTG to the experiences of generations of wartime veterans. Contemporary research highlights the influence of post-trauma self-stigma reactions in deployment veterans. It is the position of the current study that a negative relationship exists between military mental health problem self-stigma and the development of PTG. Specifically, service members and veterans with higher levels of self-stigma will hypothetically experience a lesser degree of PTG than their peers who have less or no self-stigma.

Hypothesis 4: Self-stigma will have a negative relationship with PTG and will significantly predict the degree of PTG.

Distress Disclosure and PTG. Given the potential for PTG to develop as a beneficial outcome of traumatic or significantly stressful deployment experiences, it is important to consider what factors may facilitate the development of PTG in military

service members and veterans (Tedeschi & McNally, 2011) despite their experience of mental health problem self-stigma. In the case of the present study, the primary consideration is how the hypothesized negative relationship between military mental health problem self-stigma and PTG can be moderated. As discussed within the context of self-stigma and PTSD, distress disclosure is one potential moderator of the influence of self-stigma on post-trauma reactions (refer to page 76 for a review of this hypothesis). Following is a brief summary of the previously described concept of distress disclosure.

Distress disclosure refers to trait-like differences in the degree to which individuals tend toward disclosure or concealment of distress (Kahn & Hessling, 2001). According to Kahn and Hessling's (2001) theoretical model for distress disclosure and the subsequent research on the concept, individual differences in the extent to which individuals tend to share or withhold distressing information about their selves are expected to influence mental health. For example, individuals who tend to conceal their troubles from others tend to experience unresolved or increased psychological distress (see for example Garrison & Kahn, 2010). One pathway through which this may occur is the likelihood that individuals who tend not to display distress consequently receive little or no social support. On the other hand, individuals who tend toward more disclosure of their problems to others are more likely to receive social support and to experience a subsequent decrease in in psychological distress (see for example Kahn, Achter, & Shambaugh, 2001).

Where self-stigma and distress disclosure coincide is in the choice an individual who has a mental health problem makes on whether to disclose their psychological distress. Specific to military service members and veterans, research on their attitudes

toward mental health problems and treatment provides empirical support for the influence of distress disclosure tendencies on military mental health problem self-stigma (see for example Britt, 2000; Green-Shortridge et al., 2007; Hoge et al., 2004). Whereas military mental health problem self-stigma contributes to limited distress disclosure, those service members and veterans who do disclose their distress within the context of a supportive relationship experience reductions in self-stigma (see for example Mittal et al., 2013).

Within the context of Calhoun et al.'s (in Calhoun & Tedeschi, 2013) model, self-disclosure is a necessary step for the development of PTG. Individuals who experience long term distress following a traumatic or significantly stressful event are likely to engage in rumination characterized by the automatic and unwanted thoughts about the experience (Calhoun & Tedeschi, 2013). These intrusive and distressing thoughts are one aspect of the reexperiencing symptom criteria of the DSM-IV (APA, 2000) diagnosis of PTSD. PTG is facilitated when individuals are able to express to someone else their emotional distress related to the challenge to their assumptive beliefs about the world that was brought about as a result of the trauma (Calhoun et al., 2013). Within the context of a supportive person to whom the individual can disclose, the person is helped to engage in self-analysis that leads to reflective rather than intrusive rumination (Calhoun et al., 2013). Following reflective rumination, they can engage in deliberate consideration of their experience, schema change, and a revision of their narrative experience (Calhoun et al., 2013), ultimately providing the conditions for permitting them to accept a changed view of the world that results in PTG (Calhoun et al., 2013).

Empirically speaking, a study by Lindstrom et al. (2013) provides support for the importance of self-disclosure to the development of PTG. Participants in the study

were 129 college students who experienced a trauma or other significant stressor in the two years prior to the start of the study. The participants were asked whether they had sometimes discussed negative consequences of the stressful experience with their family or friends as well as whether they discussed positive consequences with them. The Rumination Scale (Calhoun, Cann, & Tedeschi, 2010) was also administered to the participants to measure the degree of intrusive rumination and of deliberate rumination they engaged in both two weeks following the stressful event and in the two weeks prior to their participation in the study. Participants also completed the PTGI (Tedeschi & Calhoun, 1996). The results showed that participants who engaged in discussion of negative consequences reported higher levels of deliberate rumination two weeks following the event than those who did not disclose. Participants who engaged in disclosure of positive consequences also reported higher levels of deliberate rumination two weeks after the event; however, these participants also reported lower levels of current stress related to the event at the time of the study than those who did not report having disclosed positive consequences (Lindstrom et al., 2013).

Whereas the research discussed up to this point has focused on self-disclosure behavior, it is important to remember that the distress disclosure variable of interest in the current study pertains to trait-like individual differences in the degree to which someone discloses or conceals their psychological distress (Kahn & Hessling, 2001). As has been previously discussed, an individual's tendencies in disclosure behavior have likely been influenced by risk analyses of the costs and benefits of disclosing rather than concealing distress (see for example Omarzu, 2000). Conceptually speaking, whether related to self-stigma, posttraumatic stress, or the combination of the two, service members who

experience distress following a deployment experience arguably limit their distress disclosure due to risk assessments influenced by both the military culture and by public opinion (refer to page 71 for further discussion of this concept).

Lindstrom et al. (2013) hypothesized based on their study of college students' self-disclosure following a distressing event that cultural values related to the appropriateness of self-disclosure behavior influence the degree to which PTG occurs. Specifically, they suggest that cultural values affect the response of the person to whom the individual is disclosing, thus either facilitating or hindering the transition to deliberate rather than intrusive rumination that paves the way for possible PTG (Lindstrom et al., 2013). Conceptually speaking, then, it is possible that self-stigma among service members and veterans related to deployment-specific trauma and distress reactions creates the conditions in which these individuals censure any idea they have of disclosing their distress before ever doing so. To explain further, these service members' and veterans' internalizations of stereotypes about mental health problems in the military culture and their perception that disclosure is not safe may prevent them from disclosing even when supportive others are available. Based on this possibility as well as on the preceding theoretical and empirical discussion of distress disclosure in the context of PTG, the present study hypothesizes that the identification of the influence of distress disclosure traits on military mental health problem self-stigma and the subsequent influence on the development of PTG will help to guide future research on interventions that will support help-seeking and growth among service members and veterans.

Hypothesis 5: Distress disclosure will moderate the relationship between self-stigma and the degree of PTG.

Self-compassion and PTG. An additional factor of interest to the present study is how self-compassion may moderate the hypothesized negative relationship between military mental health problem self-stigma and PTG. As discussed within the context of self-stigma and PTSD, self-compassion is one potential moderator of the influence of self-stigma on post-trauma reactions (refer to page 87 for a review of this hypothesis). Following is a brief summary of the previously described concept of self-compassion.

Self-compassion is a concept based on the incorporation of Buddhist principles into Western psychology (Neff, 2003b). Similar to PTG, self-compassion was developed in the context of a shift toward positive psychology, particularly in regard to a move toward understanding not only psychological distress but also psychological well-being (Neff, 2003b). Theoretically speaking, Neff (2003b) built upon the Buddhist principles of compassion and loving kindness to conceptualize self-compassion as the application of compassion not toward others but inward. Self-compassion is described as having “three faces:” self-kindness, common humanity, and mindfulness (Neff, 2003b). Self-kindness refers to understanding of and kindness toward one’s self as opposed to harshly evaluating and criticizing one’s self. Common humanity encapsulates a sense that one is connected to rather than distanced from both the experience of and the general characteristics of humankind. In other words, perfection in one’s self is not to be expected when one does not expect perfection of everyone else. Mindfulness specifically means being aware of and accepting of one’s distressing feelings without over-identification with them (Neff, 2003b). Neff (2003b) described these three faces of self-compassion as being conceptually distinct from each other but related, such that the development of one face can contribute to the development of the others.

Empirically speaking, research supports the presence of a positive relationship between self-compassion and psychological well-being (see for example Leary et al., 2007; Neff & Vonk, 2009). Notably, higher levels of self-compassion have been found to be associated with more effective coping with stress, including fewer avoidance behaviors (Allen & Leary, 2010). Additionally, clinical interventions designed based on self-compassion show promise for working with individuals who are experiencing psychological distress (Gilbert & Procter, 2006; Neff & Germer, 2013b).

Theoretically speaking, a comparison of the conceptualizations of self-compassion (Neff, 2003b) and self-stigma (Corrigan, 2004) provides initial evidence for a negative relationship between the two concepts. Specific to the current study, individuals who have high levels of self-compassion are theoretically less likely to experience high levels of self-stigma related to mental health problems. The reasons for this assertion include the emphasis within self-compassion on self-kindness and on developing a sense of shared humanity (Neff, 2003b), whereas self-stigma is characterized by negative self-evaluations and a sense of being different from others (Corrigan, 2004).

Empirically speaking, research has identified a negative relationship between self-compassion and self-stigma or similar negative self-views related to membership in groups that are often stigmatized, such as individuals who experience psychoses (Braehle et al., 2012), individuals who have HIV (Brion et al, 2014), and individuals who identify as sexual minorities (LaDuke Chandler, 2012). LaDuke Chandler's (2012) study on the influence of self-compassion on sexual self-stigma among sexual minority individuals is particularly relevant because, to the best knowledge of this author, it is the only empirical

study to specifically research the relationship between self-compassion and a form of self-stigma. The results of LaDuke Chandler's (2012) study revealed that sexual minority individuals who scored higher on trait self-compassion tended to have significantly lower scores on sexual self-stigma when compared to those with lower levels of the self-compassion trait.

Also of relevance given the background context of military culture within the present study is Reily et al.'s (2014) study of the relationship between masculine norm adherence and self-compassion using shame as a hypothesized moderator variable between the two constructs. Specifically, trait shame moderated the relationship between masculine norm adherence and self-compassion such that norm adherence was not significantly related to self-compassion at high levels of shame whereas norm adherence had a negative relationship to self-compassion at low levels of shame (Reily et al., 2014). Although shame is not synonymous with self-stigma, the negative self-evaluation associated with shame is conceptually similar to the negative evaluation involved in self-stigma. Further, the negative relationship between adherence to a masculine norm and self-compassion is highly relevant to the masculinized context of the military culture that influences military service members and veterans (Dunivin, 1994; Reily et al., 2014).

Little is known about the relationship between self-compassion and PTG. To the knowledge of this author, the current study will be the first to empirically assess for the presence of both of these concepts in a sample of the military and veteran populations. As previously described, self-compassion is anticipated to have a negative relationship with the severity of PTSD symptoms (Neff, 2003b; Neff & Germer, 2013). The primary rationale for this proposed relationship is that self-compassion is characterized by

mindful awareness and acceptance of distress (Neff, 2003b), in contrast to the distress avoidance that is a diagnostic criterion for PTSD (APA, 2000; APA, 2013). In the context of PTG, however, the possible relationship between self-compassion and growth following a traumatic experience seems less clear.

Conceptually speaking, in the sense that self-compassion has been hypothesized to improve individuals' ability to cope with stress and to enhance psychological well-being (see for example Allen & Leary, 2010), it is possible that cultivating self-compassion in military service members pre-deployment may actually decrease the likelihood that PTG will occur. This is consistent with Tedeschi and McNally's (2011) cautionary statement that attempts to enhance such personal qualities as resilience may limit the potential for PTG by removing the period of longstanding distress post-trauma that is necessary for an individual's assumptive beliefs to be challenged. In contrast, it is possible that self-compassion-based interventions that are delivered sometime after the trauma experience may enhance the development of PTG by facilitating acceptance of the distress (Neff, 2003b) and thereby opening the way to the deliberate rumination that contributes to the schema adjustment, narrative rewriting, and development of a new assumptive world view that facilitate PTG (Calhoun et al., 2013).

Based on the previous discussion of the relationship between self-compassion and self-disclosure, it is the position of the current study that self-compassion will moderate the hypothesized negative relationship between military mental health problem self-stigma and PTG. Specifically, high levels of self-compassion will influence self-stigma such that the level of self-stigma decreases. Although it is not clear based on a lack of empirical research what the relationship may be between self-compassion and PTG, the

evidence supporting the hypothesized moderation of self-stigma by self-compassion is sound. Therefore, it is the position of the current study that the identification of the influence of self-compassion on military mental health problem self-stigma and the subsequent influence on degree of PTG will help to guide future research on interventions that will support beneficial post-trauma outcomes among military service members and veterans.

Hypothesis 6: Self-compassion will moderate the relationship between self-stigma and the degree of PTG.

Chapter Three

Method

Participants

The target sample for the present study was military service members and military veterans who deployed as part of their military service. Inclusion criteria therefore included: 1) a history of having actively served in one of the branches of the U.S. military (including Active Duty, Reservists, National Guardsmen, and Coast Guardsmen), 2) a history of having deployed at least once in support of a military operation, 3) willingness to consent to completing the self-report measures including demographic variables, questions about the nature and possible effects of their deployment experiences, and questions about their perceptions of their distress disclosure tendencies as well as about their degree of self-compassion, and 4) ability to answer the self-report measures via an online survey collection site. As current or former military service members, the assumption was reasonably made that the participants completed either a high school education or its equivalent and would be at an English reading level that would enable them to complete the measures. The assumption was similarly made that the participants would be at least 18-years-old. Exclusionary criteria included not having a history of military service and, for individuals who did serve in the military, never having deployed. Participants who served in militaries other than the U.S. were excluded. Participants were solicited from ages 18 through 89, from all education levels of high school/high

school equivalent or above, from all ranks and military career fields, and from all previous and ongoing military operations.

Participants were 81 military deployment veterans. After cleaning and finalizing the sample, it was determined that these 81 participants provided data that was viable. To address participants' potential concerns about confidentiality, the majority of the survey items were not designed as forced responses. Therefore, the response rates to items from the main measures used in the study as well as demographic questions varied and missing data was evident. The majority of the participants identified as male, with 21.8% ($n = 19$) identifying as female. The mean age for the participants was 46 years, with a range of 26 years to 80 years. The majority of the participants identified their ethnicity as White non-Hispanic ($n = 55$, 67.9%), with 4.9% identifying as "other" ($n = 4$), 3.7% as Hispanic or Latino/a ($n = 3$), 2.5% as Black or African American ($n = 2$), 2.5% as American Indian or Alaskan Native ($n = 2$), 1.2% as Asian or Asian American ($n = 1$), and 1.2% as Biracial/Multiracial ($n = 1$). Among the participants, 3.7% ($n = 3$) identified as gay or lesbian while the remainder identified as heterosexual ($n = 64$). Participants' education level varied, with 38.3% ($n = 31$) having completed a master's degree, 16.0% ($n = 13$) a bachelor's degree, 12.3% ($n = 10$) an associate's degree, 12.3% ($n = 10$) some college or technical school, 3.7% ($n = 3$) a doctoral degree, and 1.2% ($n = 1$) high school or GED. See Table 1 below for a full outline of the general demographic characteristics of the participants.

Table 1

Overview of General Demographic Variables

Characteristic	Frequency	Percentage
Gender		
Female	19	23.5
Male	49	60.5
Transgender	0	0.0
Missing	13	16.0
Age		
20-29	3	3.7
30-39	17	20.9
40-49	14	17.4
50-59	8	9.8
60-69	5	6.1
70-79	3	3.6
80-89	1	1.2
Missing	30	37.0
Race/Ethnicity		
American Indian or Alaska Native	2	2.5
Asian or Asian American	1	1.2
Biracial/Multiracial	1	1.2
Black or African American	2	2.5
Hispanic or Latino/a	3	3.7
White	55	67.9
Other	4	4.9
Missing	13	16.0
Sexual Orientation		
Gay or Lesbian	3	3.7
Heterosexual	64	79.0
Other	0	0.0
Missing	14	17.3
Current Relationship Status		
Live alone	11	13.6
Live with partner/spouse, without children	19	23.5
Live with partner/spouse, with child(ren)	25	30.9
Live with child(ren)	5	6.2
Live with someone else	5	6.2
Other	3	3.7

Missing	13	16.0
Approximate Household Income		
Under \$25,000	5	6.2
\$25,000 - \$50,000	12	14.8
\$50,001 - \$75,000	14	17.3
\$75,001 - \$100,000	17	21.0
\$100,001 or Higher	20	24.7
Missing	13	16.0
Highest Level of Education		
High School/GED	1	1.2
Some College/Technical School	10	12.3
Associate's (2-year) Degree	10	12.3
Bachelor's (4-year) Degree	13	16.0
Master's Degree	31	38.3
Doctoral Degree	3	3.7
Missing	13	16.0
Participation in Mental Health Counseling or Psychotherapy		
Yes – Currently	4	4.6
Yes – Previously, during military service	13	16.0
Yes – Previously, after military Service	13	16.0
Yes – A combination of the above	5	6.2
No	33	40.7
Missing	13	16.0
Perceived Helpfulness of Counseling/Psychotherapy		
Not at all helpful	5	6.2
A little bit helpful	9	11.1
Moderately helpful	9	11.1
Quite helpful	10	12.3
Extremely helpful	2	2.5
Not applicable	46	56.8
Use of Psychotropic Medication		
Yes – Currently	8	9.9
Yes – Previously, during military service	5	6.2
Yes – Previously, after military service	7	8.6
Yes – A combination of the above	1	1.2
No	47	58.0
Missing	13	16.1

Perceived Helpfulness of Psychotropic Medication		
Not at all helpful	4	4.9
A little bit helpful	5	6.2
Moderately helpful	6	7.4
Quite helpful	6	7.4
Extremely helpful	0	0.0
Not applicable	60	74.1
Source of Majority of Current Medical Care		
Military Medical Center or Clinic	20	24.7
Private/Public Medical Center or Clinic	23	28.4
Veterans Affairs Medical Center or Clinic	25	30.9
Missing	13	16.0

Regarding military service characteristics, the highest percentage of participants served in the U.S. Air Force ($n = 26$, 32.1%). Of the remaining participants, 18.4% served in a combination of branches ($n = 15$), 14.8% served in the U.S. Army ($n = 12$), 8.6% served in the U.S. Navy ($n = 7$), 6.2% served in the U.S. Marine Corps ($n = 5$), 2.5% served in the U.S. Army Reserve ($n = 2$), and 1.2% served in the U.S. Army National Guard ($n = 1$). The mean years of military service for the participants was 13.56 years ($SD = 7.49$), with a range of two to 30 years. Participants' current military service status varied, including 35.8% who are separated ($n = 29$), 22.2% who are retired ($n = 18$), 21.0% who are on active duty ($n = 17$), 3.7% who are in the active Reserves or Guard ($n = 3$), and 1.2% who are in the inactive ready reserve ($n = 1$). Specific to military service type, 46.9% identified as enlisted ($n = 38$), 28.4% as commissioned officers ($n = 23$), and 8.6% as prior-enlisted officers ($n = 7$).

Deployment characteristics varied among the participants. The most frequently reported number of deployments for the participants was two ($n = 23$, 28.4%), with the number of deployments ranging from one to 16. In regard to operations deployed in

support of, 17.3% ($n = 14$) of participants reported deploying in support of two operations including OEF, OIF, or OND, with 4.9% ($n = 4$) having deployed in support of all three. Specific to one-time deployments in support of recent operations, 14.8% ($n = 12$) of participants reported deploying for OEF and 9.9% ($n = 8$) for OIF. Other operations deployed in support of include: the Vietnam War ($n = 8$, 9.9%); a combination of operations not including OEF, OIF, OND, or the Vietnam War ($n = 8$, 9.9%); a combination of operations including OEF, OIF, or OND ($n = 7$, 8.6%); a combination of operations including the Vietnam War ($n = 2$, 2.5%); Operation Desert Storm ($n = 2$, 2.5%); Operation Deliberate Force ($n = 1$; 1.2%); humanitarian operations ($n = 1$, 1.2%); and steady state operations ($n = 1$, 1.2%). Types of military occupational specialty while deployed varied, with 33.3% ($n = 27$) identifying as combat services support, 24.7% ($n = 20$) as combat support, 17.3% ($n = 14$) as combat, and 8.6% as some combination of roles ($n = 7$). Likewise, combat exposure as measured by the total score on the Combat Exposure Scale varied, with a mean of 9.55 ($SD = 7.82$) and a range of 0 to 36. See Table 2 below for a complete outline of the military and deployment characteristics of the participants.

Table 2

Overview of Military and Deployment Demographic Variables

Characteristic	Frequency	Percentage
Branch(es) of Service		
U.S. Army	12	14.8
U.S. Marine Corps	5	6.2
U.S. Navy	7	8.6
U.S. Air Force	26	32.1
U.S. Army Reserve	2	2.5

U.S. Army National Guard	1	1.2
Combination of Active Duty and Reserve/Guard, includes Army, Army National Guard, and/or Army Reserve	9	11.1
Combination of Active Duty and Reserve/Guard, includes Air Force, Air Force Reserve, Navy, and/or Navy Reserve	4	4.9
Combination of Active Duty Branches, Includes Army and/or Marine Corps	1	1.2
Combination of Active Duty Branches, includes Air Force and Navy	1	1.2
Missing	13	16.0
Total Years of Military Service		
2 to 5	11	13.5
6 to 10	21	25.8
11 to 15	10	12.3
16 to 20	8	9.8
21 to 25	14	17.3
26 to 30	3	3.6
Missing	13	16.0
Year Joined the Military		
1950s	1	1.2
1960s	9	11.1
1970s	2	2.4
1980s	15	18.5
1990s	20	24.6
2000s	21	25.8
Missing	13	16.0
Current Military Status		
Active Duty	17	21.0
Active Reservist/Guardsman	3	3.7
Inactive Ready Reserve	1	1.2
Separated	29	35.8
Retired	18	22.2
Missing	13	16.0
Military Service Type		
Enlisted	38	46.9
Commissioned Officer	23	28.4
Prior-Enlisted Officer	7	8.6

Missing	13	16.0
Number of Deployments		
1	16	19.8
2	23	28.4
3	14	17.3
4	6	7.4
5	2	2.5
6	1	1.2
7	1	1.2
8	1	1.2
10	1	1.2
15	1	1.2
16	1	1.2
Missing	13	16.0
Operations Deployed in Support of		
Operation Iraqi Freedom	8	9.9
Operation Enduring Freedom	12	14.8
Operation Desert Storm	2	2.5
Vietnam War	8	9.9
Steady State Operations	1	1.2
Humanitarian Operations	1	1.2
Operation Deliberate Force	1	1.2
Combination, includes 2 of OEF, OIF, or OND	14	17.3
Combination, includes all 3 of OEF, OIF, and OND	4	4.9
Combination, includes 1 of OEF, OIF, or OND	7	8.6
Combination, does not include OEF, OIF, OND, or the Vietnam War	8	9.9
Combination, includes the Vietnam War	2	2.5
Missing	13	16.0
Military Occupational Specialty		
Combat Role	14	17.3
Combat Support Role	20	24.7
Combat Services Support Role	27	33.3
Combination of Combat and Combat Support Roles	3	3.7
Combination of Combat Support and Combat Services Support Roles	3	3.7
Combination of all Three Roles	1	1.2
Missing	13	16.0

Injured During a Military Deployment		
Yes	14	17.3
No	54	66.7
Missing	13	16.0
Traumatic Experience Prior to Military Service		
Yes – One traumatic experience	8	9.9
Yes – Multiple traumatic experiences	7	8.6
No	53	65.4
Missing	13	16.0
Perception of Stressfulness of Deployment Experience		
Not at all stressful	1	1.2
A little bit stressful	13	16.0
Moderately stressful	23	28.4
Quite a bit stressful	23	28.4
Extremely stressful	8	9.9
Missing	13	16.0
Perception of Growth as a Result of Deployment Experience		
Yes	58	71.6
No	10	12.3
Missing	13	16.0
Combat Exposure Scale – Combat Patrols or Dangerous Duty		
No	26	32.1
1 - 3 times	10	12.3
4 - 12 times	17	21.0
13 - 50 times	10	12.3
51 or more times	12	14.8
Missing	6	7.4
Combat Exposure Scale – Under Enemy Fire		
Never	32	39.5
Less than 1 month	13	16.0
1-3 months	10	12.3
4-6 months	6	7.4
7 months or more	14	17.3
Missing	6	7.4
Combat Exposure Scale – Surrounded by Enemy		
No	58	71.6
1-2 times	8	9.9
3-12 times	5	6.2
13-25 times	3	3.7
26 or more times	1	1.2

Missing	6	7.4
Combat Exposure Scale – Percentage of KIA, Wounded, Missing in Unit		
None	35	43.2
1 - 25%	37	45.7
26 – 50 %	2	2.5
51 – 75%	1	1.2
76% or More	0	0.0
Missing	6	7.4
Combat Exposure Scale – Frequency of Firing Rounds at Enemy		
Never	55	67.9
1 – 2 times	6	7.4
3 – 12 times	7	8.6
13 – 50 times	3	3.7
51 or more times	4	4.9
Missing	6	7.4
Combat Exposure Scale – Frequency of Seeing Someone Hit by Rounds		
Never	52	64.2
1 – 2 times	20	24.7
3 – 12 times	3	3.7
13 – 50 times	0	0.0
51 times or more	0	0.0
Missing	6	7.4
Combat Exposure Scale – Frequency of Risk for Injury or Being Killed		
Never	25	30.9
1 – 2 times	26	32.1
3 – 12 times	18	22.2
13 – 50 times	4	4.9
51 times or more	2	2.5
Missing	6	7.4

Power and sample size. A power analysis was conducted using the computer software *G*Power 3.1.9.2* for Mac OS X to determine the sample size needed in order to achieve statistical power in the present study (Faul, Erdfelder, Buchner, & Lang, 2009). The “Linear Multiple Regression: Fixed model R^2 deviation from zero” statistical test was used. The type of power analysis was “A priori: compute required sample size – given α , power, and effect size” and the “F tests” test family was selected. Power ($1 - \beta$ err prob) was set at .95. The analysis was computed using three possible effect sizes:

small = .02, medium = .15, and large = .35 (Cohen, 1988). Three predictor variables were included to account for the military mental health problem self-stigma independent variable and the distress disclosure and self-compassion moderator variables. The power analysis revealed that the following number of participants would be needed: 863 with a small effect size, 119 with a medium effect size, and 54 with a large effect size. A medium effect size was selected as the goal for the present study given the unlikelihood of recruiting enough participants for the small effect size.

Measures

Demographics. A 20-item demographic questionnaire was designed for the present study. The items were developed to facilitate descriptive analyses as well as for use as demographic control variables. The information contained in this questionnaire includes socio-demographic variables (e.g., gender, age, race/ethnicity, income level), variables related to military service (e.g., branch of service, total years served), variables related to deployment experiences (e.g., which military operations the participant deployed in support of, how many times the participant was deployed), and variables related to both medical and mental health care utilization (e.g., participating in counseling or psychotherapy, where the participant currently receives medical care). The demographic questionnaire also included two questions designed for this study to evaluate the subjective degree of distress the participant experienced at the time of their deployment experience as well as the subjective degree to which the participant presently experiences distress related to the deployment experience. See Appendix E for the full demographic questionnaire. The Combat Exposure Scale (*CES*; Keane, Fairbank,

Caddell, Zimering, Taylor, & Mora, 1989) was also used in the present study to obtain further information about the participants' deployment experiences.

Combat Exposure Scale (CES; Keane, Fairbank, Caddell, Zimering, Taylor, & Mora, 1989). The CES is a seven-item self-report scale that has been designed to measure stressors experienced by wartime combatants (Keane et al., 1989). Three of the seven items were adapted from a prior combat experience scale (Figley, 1980) with the remaining four items being developed by a team of four psychologists who had significant experience both assessing for and treating combat-related PTSD (Keane et al., 1989). The scale contains questions specific to experiences combat veterans may have been exposed to. Response options are based on a five-point scale with the meanings of point values on the scale varying according to the nature of the question. The following is a sample question; see Appendix F to review the full scale:

How often were you in danger of being injured or killed (i.e., being pinned down, overrun, ambushed, near miss, etc.)?

1	2	3	4	5
Never	1-2X	3-12X	13-50X	51 or more

The raw scores for each item of the CES are converted and then the converted scores are added to arrive at a total score. The five categories of combat exposure based on total score are 1: light (0-8), 2: light-moderate (9-16), 3: moderate (17-24), 4: moderate-heavy (25-32), and 5: heavy (33-41).

The seven items initially developed by Keane et al. (1989) were administered to a sample of 362 veterans of the Vietnam War. All of the participants were male and all were receiving care at Vet Centers. The mean response on the CES was 25.57 ($SD =$

10.12). Internal consistency between the items was high ($\alpha = .85$), indicating that the items are reliably measuring either the same or a similar construct. A PCA using a varimax rotation yielded a one-factor model that accounted for 57% of the shared variance among the items, providing evidence that the model reliably measures a single construct of combat exposure (Keane et al., 1989).

Keane et al. (1989) further assessed the reliability and validity of the CES by evaluating test-retest reliability with a second sample of Vietnam combat veterans ($n = 39$) and by comparing CES scores in a third sample comprised of Vietnam combat veterans with and without PTSD diagnoses (PTSD $n = 30$, non-PTSD $n = 32$). Test-retest reliability with the second sample indicated high consistency after a one-week interval [$r(29) = .97, p < .0001$] with mean CES scores of 23.22 at Time 1 and 22.22 at Time 2. Comparisons of CES scores between the groups in the third sample (PTSD diagnosis compared to no PTSD diagnosis) demonstrated a statistically significant difference [$t(60) = 2.98, p < .005$]. For the PTSD group, the mean score was 29.37 ($SD = 6.12$), whereas the mean score for the no-PTSD group was 22.84 ($SD = 10.42$). The PTSD group was found to have a higher degree of combat exposure, which Keane et al. (1989) concluded, “may be attributed to either actual differences in amount of combat exposure or differences in subjective recall of combat experience by clinically distressed individuals” (p. 54).

Although the normative group for the CES was comprised of Vietnam War veterans, the scale has often been used with veterans of other military operations. For example, McCranie and Hyer (2000) used the CES in their study of PTSD symptoms among combat veterans of the Korean Conflict and of World War II. Groer, Murphy,

Hazlett, Padgett, and Radford used the CES in their study of PTSD, depression, and anxiety symptoms in active duty soldiers (2012). Likewise, Price, Gros, Strachan, Ruggiero, and Acierno (2013) used the CES in their study of factors that may moderate the effectiveness of treatment for PTSD in a sample of OEF and OIF veterans. Collectively, these examples support the use of the CES in the current study as a way to measure wartime experiences among a broad range of service members and veterans. Further, the CES was specifically designed to be a brief, psychometrically sound, and easily scored measure that can be easily used to facilitate research with combat veterans (Keane et al., 1989) and has been made freely available for use by the National Center for PTSD (NCPTSD, 2012). One potential limitation of using the CES for the current study is that it has been designed for combat veterans rather than for veterans who deployed in roles that were not specific to combat. However, it is the position of the current study that the CES is still an appropriate measure of experiences among deployment veterans given the likelihood that many deployed service members have indirect combat experiences. See page 47 for a review of indirect combat experiences and combat support roles.

Military Stigma Scale (MSS); Skopp et al., 2012). The MSS is a 26-item scale that has been designed to measure among military service members both public stigma and self-stigma toward mental health problems. The scale contains statements specific to public and self-stigma, examples of which include: “I would worry about my personal problems being part of my military records” (public stigma item) and “I would feel worse about myself if I could not solve my own problems” (self-stigma item) (Skopp et al., 2012). See Appendix G to review the full scale. Response options indicate the extent to

which the respondent agrees or disagrees to a statement and are based on a four-point scale ranging from “definitely disagree” to “definitely agree.”

Skopp et al.’s (2012) development of the MSS was guided by Corrigan’s (2004) conceptualizations of public stigma as the prejudices and stereotypes enacted toward others based on the label of having mental health problems and of self-stigma as the internalization of those processes by an individual who experiences a mental health problem. The MSS was also developed in the context of Green-Shortridge et al.’s (2007) adaptation to the military culture of Corrigan’s (2004) conceptualizations of mental health stigma. According to Green-Shortridge et al. (2007), public stigma in the military is made more complex by the existence of institutional barriers that reinforce service members’ perceptions of the cost of mental health problems. Likewise, values within the military culture such as personal strength and resilience can exacerbate the development of self-stigma among service members (Green-Shortridge et al., 2007).

Skopp et al. (2012) initially developed a pool of 18 items specific to public stigma and 10 items specific to self-stigma. The public stigma items were developed based on prior research on mental health stigma among service members (Porter & Johnson, 1994). For the self-stigma items, 10 items from Vogel, Wade, and Haake’s (2006) Self-Stigma of Seeking Help Scale (SSOH) were adapted for use with service members. The selected public and self-stigma items were then administered as a 28-item scale to a sample of 1,038 Army Soldiers who were completing a mandatory post-deployment screening. The participating Soldiers were randomly divided into an exploratory group ($n = 520$) and a confirmatory group ($n = 518$).

The results of exploratory factor analysis (EFA) with the exploratory group ($n = 520$) supported the adoption of a two-factor model that accounted for 52.1% of the variance (Skopp et al., 2012). Principal component analysis (PCA) using an oblique rotation was also used because the public stigma and self-stigma items are theoretically related, with the results again supporting a two-factor model. The EFA and the PCA yielded similar factor loadings that supported the retention of 26 of the 28 original items. Based on the factor loadings, 16 items were loaded to Factor 1 and labeled “Public Stigma” [$\alpha = .94$; mean (M) = 32.46, $SD = 10.94$]. Ten items were loaded to Factor 2 and labeled “Self-stigma” ($\alpha = .89$, $M = 19.69$, $SD = 6.43$).

Skopp et al.’s (2012) confirmatory factor analysis (CFA) with the confirmatory group ($n = 518$) upheld the use of the two-factor model found in the EFA [χ^2 (298, $N = 518$) = 929.74, $p < .001$, comparative fit index (CFL) = .98, root mean square error of approximation (RMSEA) = .064 (90% confidence interval [CI], .059, .069); standardized root mean square residual (SRMR) = .050]. Further examination of the two-factor model supported the use of the model with a higher order stigma factor, with a correlation of .58 between public stigma and self-stigma when controlling for the higher order factor. Internal consistency scores for the confirmatory group were .95 for the Public Stigma (with a mean score of 30.99, $SD = 11.38$) factor and .87 for the Self-Stigma factor (with a mean score of 18.54, $SD = 6.05$).

Additional analyses were conducted using the combined exploratory and confirmatory sample to measure the reliability and validity of the MSS for use with military service members (Skopp et al., 2012). Regarding reliability, internal consistency scores across racial/ethnic groups for the Public Stigma subscale were:

White/Caucasian .95 ($n = 703$), Black/African American .95 ($n = 87$), Latino/Hispanic .92 ($n = 137$), Asian American .95 ($n = 53$), Multiracial/Other .93 ($n = 54$); biological sex: male .94 ($n = 972$) and female .94 ($n = 63$); and rank: E1-E4 .95 ($n = 570$), E5-5-9 .94 ($n = 399$), and O1-O5 .92 ($n = 64$). (Skopp et al., 2012, p. 1043)

For the Self-Stigma subscale, the internal consistency scores across racial/ethnic groups were: “White/Caucasian .90 ($n = 703$), Black/African American .80 ($n = 87$), Latino/Hispanic .86 ($n = 137$), Asian American .84 ($n = 53$), multiracial/other .85 ($n = 54$)” (Skopp et al., 2012, p. 1043). For biological sex, internal consistency scores for Public Stigma were .94 for female ($n = 64$) and .94 for male ($n = 972$). For Self-Stigma, the internal consistency scores were .87 for female ($n = 63$) and .99 for male ($n = 972$). For military rank and Public Stigma, the internal consistency scores were .95 ($n = 570$) for E1-E4, .94 ($n = 399$) for E4-E9, and .92 ($n = 64$) for O1-O5. For Self-Stigma, the internal consistency scores were .87 ($n = 570$) for E1-E4, .89 ($n = 399$) for E5-E-9, and .93 ($n = 64$) for O1-O5.

Analyses of variance identified that males ($M = 19.46$, $SD = 6.15$) in the combined sample scored higher than females ($M = 17.32$, $SD = 5.66$) on self-stigma, $F(1, 1034) = 2.59$, $p = .035$, $\eta^2 = .01$ (Skopp et al., 2012). No differences were found for gender and public stigma. Significant differences were present among the racial/ethnic groups based on self-stigma but not on public stigma. Follow-up analyses showed that White/Caucasian sample participants ($M = 19.64$, $SD = 6.28$) had higher scores on self-stigma than Black/African American participants ($M = 17.71$, $SD = 5.53$), with no significant difference between all other racial/ethnic groups. No significant differences were found based on rank for either public stigma ($p = .62$) or self-stigma ($p = .26$). Skopp et al. (2012) further identified significant differences in self-stigma between

participants who had previously seen a mental health provider ($M = 18.68, SD = 5.81$) and those who had not ($M = 19.70, SD = 6.26$) on self-stigma, $F(1, 963) = 5.98, p = .015, \eta^2 = .01$. No differences were found on public stigma based on whether participants had previously seen a mental health provider ($p = .50$).

There are few measures of mental health stigma that have been validated (Skopp et al., 2012). Further, those measures that have been developed tend to be specific either to assessing stigma based on specific and/or severe mental problems (see for example Perlick et al., 2007) or to predicting help-seeking behavior (see for example Komiya, Good, Sherrod, 2000). Specific to self-stigma, Vogel et al. (2006) developed the Self-Stigma of Seeking Help (SSOSH) scale. The SSOSH was found to have good reliability and validity (Vogel et al., 2006) and, as described previously, Skopp et al. (2012) incorporated aspects of the SSOSH in the development of the MSS. The fact that these previously developed mental health stigma scales, including the SSOSH, were designed for and normed off of civilian populations makes them of questionable use with the military and veteran populations. As described by Skopp et al. (2012), “(m)ilitary mental health stigma may differ from mental health stigma within the civilian realm by virtue of the significant differences between civilian and military mental health care systems and cultures such as warrior ethos” (p. 1037). Given that the MSS was specifically developed with the military population in mind, it is the scale that most accurately matches the intention of the current study to measure mental health problem self-stigma among veterans of military deployments. Therefore, the MSS has been selected as the measure of the self-stigma independent variable.

PTSD Checklist – Military Version (PCL-M; Weathers, Litz, Huska, & Keane, 1994). The PCL-M is a 17-item self-report scale that was developed by Weathers et al. (1994) to assess for PTSD symptoms among military service members and veterans who may have had stressful military-related experiences (Wilkins, Lang, & Norman, 2011). The 17 items on the PCL-M align with the DSM-IV-TR (APA, 2000) diagnostic criteria for PTSD. The PCL-M is a specific adaptation of the original PTSD Checklist (PCL) developed by Weathers, Litz, Herman, Huska, and Keane (1993). The primary difference between the original PCL and the PCL-M is the use of language to “anchor” the stress-inducing experience to military-related stressors (Wilkins et al., 2011). The PCL-M contains 17 statements describing symptoms of PTSD to which the respondent is asked to indicate “how much you have been bothered by that problem in the past month (Weathers et al., 1994). Response options are based on a five-point scale including (1) “Not at all,” (2) “A little bit,” (3) “Moderately,” (4) “Quite a bit,” and (5) “Extremely.” The following is a sample statement (see Appendix H to review the full scale): “Having *physical reactions* (e.g., heart pounding, trouble breathing, sweating) when *something reminded you* of a stressful military experience?”

Weathers et al. (1994) did not set specific scoring criteria for the PCL-M, although they did suggest that a cut-off score of 50 on the total score would be the most efficacious for diagnosing combat-related PTSD (Forbes, Creamer, & Biddle, 2001). Per the scoring guidelines recommended by the NCPTSD (2014), the following are three appropriate scoring options from which to select. The first option is to use the total symptom severity score by summing the selected responses to each of the items. The total severity score ranges from 17 to 85. The second option is to use the responses to

determine whether the person meets DSM-IV-TR criteria for PTSD. To accomplish this, symptoms rated as (3) (“Moderately”) or above signify the presence of the symptom. Items one through five on the PCL-M represent the DSM-IV-TR (APA, 2000) symptom B (reexperiencing) criteria, items six through 12 represent symptom C (avoidance and numbing) criteria, and items 13 through 17 represent symptom D (arousal) criteria. The third scoring option is to choose a cut-point score to use for deciding whether PTSD criteria are met. The cut-point is selected based on the purpose for which the PCL-M is being administered as well as on the estimated prevalence of PTSD in the population to which the person being assessed belongs. For example, the NCPTSD (2014) suggests PCL cut-point scores of 30-35 for Department of Defense screening and 36-44 for VA primary care.

In their initial presentation of the reliability and validity of the PCL at the Annual Meeting of the International Society for Traumatic Stress Studies, Weathers et al. (1993) reported a test-retest reliability of .96 with an unspecified inter-test period (Blanchard, Jones-Alexander, Buckley, & Forneris, 1996). The correlation of PTSD diagnosis based on the PCL with diagnosis based on the Structured Clinical Interview for DSM-III-R (SCID; Spitzer, Williams, Gibbon, & First, 1990) in a sample of 123 male Vietnam veterans was moderately high ($\kappa = .64$), providing support for the validity of the PCL (Blanchard et al., 1996). Blanchard et al. (1996) carried out an additional study of the psychometric properties of the PCL with samples of predominantly female civilians who had experienced either a motor vehicle accident ($n = 27$) or a sexual assault ($n = 13$). High agreement was found between total scores based on the PCL and those based on the Clinician-Administered PTSD Scale (CAPS; Blake et al., 1990), $r(38) = .929$ ($p < .01$).

Using a cut-off score of 50, a sensitivity of .778, specificity of .864, and overall diagnostic efficiency of .825 was found for classifying participants as having PTSD using the PCL (Blanchard et al., 1996). Internal consistency for the total scale was high ($\alpha = .939$).

Specific to the use of the PCL with military service members and veterans, Forbes et al. (2001) found the scale to have high levels of diagnostic accuracy both prior to and following treatment for PTSD in a sample of 97 Vietnam veterans. Specifically, the diagnostic power of the individual items on the PCL ranged between .57 (psychogenic amnesia) to .94 (sleep difficulties), with an overall mean diagnostic power of .81. A significant but modest correlation was found between total scores on the PCL and the CAPS, $r(97) = .70$ ($p < .01$). Although Forbes et al. (2001) cautioned that the accuracy of PTSD diagnoses made based on the PCL is not as high as those (like the CAPS) that incorporate a clinical interview, they did emphasize the value of the PCL as a screening instrument and they suggested a cut-off of 45 for diagnoses based on the total PCL score. Forbes has since gone on to use the PCL in research with deployment veterans, including veterans who have deployed to Iraq or Afghanistan as well as those who have deployed in support of military operations in Somalia, Rwanda, and East Timor (Forbes et al., 2013). Specific to female veterans, a study of 55 female OEF and OIF veterans found excellent internal consistency reliability ($\alpha = .98$) for the PCL-M (Owens, Herrera, & Whitesell, 2009).

The PCL-M has been commonly used in research on PTSD related to military stressors since its development (see for example: Arbisi et al., 2012; Monnelly, Ciraulo, Knapp, & Keane, 2003; Tsai, Pietrzak, Southwick, & Harpaz-Rotem, 2011). Similar to

the CES, the PCL-M was developed under the purview of the NCPTSD and has been made available through them in the public domain. Although the PCL-M as a screening measure does not have diagnostic accuracy as high as the gold standard clinical interviews possess, psychometric studies of the PCL in general and of the PCL-M in particular support its reliability and validity. The “anchoring” of the language on the PCL-M to military-related stress makes the scale an ideal fit for the deployment-stressor focus of the present study (Wilkins et al., 2011). Likewise, the self-report structure of the scale and its brevity are appropriate to the design of the study. Therefore, the PCL-M has been selected as the measure of the PTSD outcome variable in the present study.

Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996). The PTGI is a 21-item self-report scale developed by Tedeschi and Calhoun (1996) to assess positive outcomes individuals may have following a traumatic experience. The PGI contains 21 statements describing possible changes an individual may have experienced subsequent to a significant stressor. The respondent is asked to “[i]ndicate for each of the statements below the degree to which this change occurred in your life as a result of your crisis” (Tedeschi & Calhoun, 1996). Researchers are permitted to replace “your crisis” with a more specific descriptor, which in the present study will be “as a result of your deployment experience.” Response options are based on a six-point scale including: (0) I did not experience this change as a result of my crisis, (1) I experienced this change to a very small degree as a result of my crisis, (2) I experienced this change to a small degree as a result of my crisis, (3) I experienced this change to a moderate degree as a result of my crisis, (4) I experienced this change to a great degree as a result of my crisis, and (5) I experienced this change to a very great degree as a result of my crisis. The following is a

sample statement (see Appendix I to review the full scale): “I established a new path for my life.” The PTGI is comprised of five factors: Factor I – Relating to Others, Factor II – New Possibilities, Factor III – Personal Strength, Factor IV – Spiritual Change, and Factor V – Appreciation of Life. Adding all of the responses and then computing the average yields the overall score on the PTGI. Adding the responses together for each item in a respective factor yields the factor score.

Tedeschi and Calhoun (1996) developed the PTGI to explore their conceptualization of PTG. Specifically, they designed the PTGI to measure “the extent to which survivors of traumatic events perceive personal benefits, including changes in perceptions of self, relationships with others, and philosophy of life, accruing from their attempts to cope with trauma and its aftermath” (Tedeschi & Calhoun, 1996, p. 458). Based on a review of prior research on potentially beneficial changes experienced following a traumatic event, Tedeschi and Calhoun (1996) developed 34 potential items. This initial pool of items was administered to a sample of 604 college students who endorsed having experienced a significantly negative life event within the previous five years. In addition to the items, the participants were asked to write a description of the difficult life event. Internal consistency reliability for the 34 items was high ($\alpha = .94$).

An initial PCA with the sample yielded six factors with eigenvalues greater than one, with five of the six factors to which a total of 21 items loaded being easily interpretable (Tedeschi & Calhoun, 1996). A second PCA was accomplished with these 21 items and yielded a five-factor model that accounted for 62% of the common variance. The five factors were labeled Relating to Others, New Possibilities, Personal Strength, Spiritual Change, and Appreciation of Life (Tedeschi & Calhoun, 1996). Internal

consistency of the 21-item PTGI was found to be high (.90). Pearson product-moment correlations indicated overlap among the factors (ranging from $r = .35$ to $r = .63$) but also supported that the factors made some independent contributions from the overall PTGI score (ranging from $r = .62$ to $r = .83$). A smaller sample of college students ($n = 28$) was used to determine test-retest reliability, which was found to be acceptable ($r = .71$) with a two-month inter-test interval (Tedeschi & Calhoun, 1996).

Tedeschi and Calhoun (1996) also explored the concurrent and discriminant validity of the PTGI with subsamples of the same college student participants. In addition to completing the PTGI, 235 participants completed the NEO Personality Inventory (Costa & McCrae, 1985), 318 completed the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960), and all of these participants also answered two questions about the positive and negative effects of the event on the person using a six-point Likert scale. The PTGI was found to be unrelated to social desirability with the exception of those participants who scored highly on the Appreciation of Life factor ($r = -.15, p < .01$). Multiple personality domains and factors from the NEO were significantly related to the PTGI. Notably, the extraversion facets of Activity ($r = .31$) and Positive Emotions ($r = .34$) and the Openness facet of feelings ($r = .28$) were the most strongly related to the total score on the PTGI as well as to all five factors. Regarding the participants perception of the effects of the stressful event, 60% reported “some” to “extreme” positive effect and 94% reported “some” to “extreme” negative effect. The correlation between the PTGI scores and the positive effect ratings was $r = .24 (p < .01)$ whereas the correlation between the PTGI score and the negative effect ratings was $r = .21 (p < .01)$.

Construct validity of the PTGI was then explored to determine whether it does measure benefits that are unique to having experienced trauma (Tedeschi & Calhoun, 1996). To accomplish this, the PTGI was administered to 117 college students. Of these students, 54 had reportedly experienced a “major trauma of great severity in the previous year” whereas the remaining 63 had not (Tedeschi & Calhoun, 1996, p. 465). Compared to the non-trauma group, the group who had experienced severe trauma had significantly higher scores on the following factors: New Possibilities [$F(1,113) = 4.95, p < .05$], Personal Strength [$F(1,113) = 9.23, p < .01$], and Appreciation of Life [$F(1,113) = 17.58, p < .01$]. On the basis of the multiple studies Tedeschi and Calhoun (1996) completed as part of the development of the PTGI, it can be concluded that the PTGI has appropriate internal consistency and test-retest reliability. Additionally, their exploration of concurrent, discriminant, and construct validity supports the use of the use of the PTGI for assessing the changes survivors of traumatic experiences perceive in their selves.

The PTGI has been extensively utilized in research relating to a variety of traumatic events and significant stressors. For example, the PTGI has been used in studies of the experience of individuals who have a chronic disease (Bluvstein, Moravchick, Sheps, Schreiber, & Bloch, 2012), cancer survivors (Brunet, McDonough, Hadd, Crocker, & Sabiston, 2010), survivors of politically motivated violence (Konvisser, 2013), and survivors of natural disasters (Qian, Yang, Li, Xu, & Wang, 2012). Further support was recently found for the validity of the PTGI through the use of a qualitative study by Shakespeare-Finch, Martinek, Tedeschi, & Calhoun (2013). Fourteen participants who had experienced trauma were administered the PTGI in addition to a semi-structured interview about how the participant interpreted the PTGI

items that they either did not endorse at all or strongly endorsed. Thematic analysis of the interviews identified relationships between the identified themes and the five PTGI factors, although the relationship was less strong for the Spiritual Change factor.

Shakespeare-Finch et al. (2013) concluded that the participants were answering the PTGI statements in a way that is consistent with the PTGI, thus supporting the content validity of the PTGI.

Of particular importance to the present study is a CFA accomplished by Palmer, Graca, and Occhietti (2012) to explore the use of the PTGI with military veterans who have PTSD. Participants in the study were 221 veterans who were in an intensive PTSD residential treatment at the time of the study. The veteran participants included 208 males and 308 females. The majority of the participants reported combat-related traumas (79.6%) with other military-specific traumas including non-combat trauma (15.4%) and military sexual trauma (9.5%). The participants were veterans of a broad range of military operations, although the majority had served in OEF, OIF, or the first Gulf War (47.5%). The internal reliability of the PTGI with this sample was found to be excellent ($\alpha = .92$). The mean for the total PTGI score was 39.59 ($SD = 22.39$). Internal consistency among the factors ranged from moderate to high ($\alpha = .63$ to $.86$). The CFA supported the five-factor model of the PTGI [$\chi^2 = 362.662$, $df = 179$, $CFI = .906$, $IFI = .907$, $RMSEA$ (90% CI) = $.068$ ($.058 - .078$), $ECVI = 2.121$, $p < .01$]. A five-factor model with one higher order “general” factor was also supported [$\chi^2 = 373.281$, $df = 184$, $CFI = .903$, $IFI = .904$, $RMSEA$ (90% CI) = $.068$ ($.058 - .078$), $ECVI = 2.124$, $p < .01$]. Palmer et al. (2012) concluded that, “Given general equivalence of the two models in our study, one can conclude that both factor scores and the total score of the PTGI can

provide useful information for professionals who treat veterans with PTSD to target treatment and assess progress.” On the basis of the Palmer et al. (2012) study as well as on the previously described research on the psychometric properties of the PTGI, the present study has selected the PTGI as the measure for the PTG outcome variable.

Distress Disclosure Inventory (DDI; Kahn & Hessling, 2001). The DDI is a 12-item self-report scale developed by Kahn and Hessling (2001) to measure trait-like individual differences in tendency to disclose as opposed to conceal one’s psychological distress. The DDI contains 12 statements regarding disclosure behavior to which the respondent is asked to indicate “the extent to which you agree or disagree.” Response options are based on a five-point scale ranging from (1) “Strongly Disagree” through (5) “Strongly Agree.” The following is a sample statement (see Appendix J to review the full scale): “When something unpleasant happens to me, I often look for someone to talk to.” Six of the 12 items are stated in the direction of concealment and are reverse scored prior to summing the 12 items. The range of possible total scores is 12 to 60. Higher total scores suggest a higher tendency toward distress disclosure whereas lower total scores suggest distress concealment (Kahn & Hessling, 2001).

Coates and Winston (1987) had developed a scale for distress disclosure based on a bipolar spectrum of self-disclosure and self-concealment. However, the validity of their original distress disclosure scale was never tested. Kahn and Hessling (2001) adopted the distress disclosure concept in developing their theory, leading to the creation of the DDI. The DDI was used to test Kahn and Hessling’s (2001) theory of distress disclosure by validating a measure of distress disclosure, testing the possible unidimensionality of distress disclosure in the context of pre-existing measures of self-disclosure and self-

concealment, and assessing the relationship between their conceptualization of distress disclosure and psychological adjustment. The initial development and validation of the DDI involved the administration of a distress disclosure questionnaire to 557 undergraduate students who were split into a development sample ($n = 278$) and a validation sample ($n = 279$). The Self-Concealment Scale (SCS; Larson & Chastain, 1990), the Self-Disclosure Index (SDI; Miller et al., 1983), and measures of perceived social support, personality traits, disposition toward positive and negative affect, depressive symptoms, anxiety symptoms, and predilection for social desirability were also administered.

Following EFA with the development sample, the original 32-item distress disclosure questionnaire was reduced to 12 items with an internal consistency of .94 (Kahn & Hessling, 2001). The results supported the presence of a bipolar factor in which the concepts of self-concealment and self-disclosure of distress mirror each other. The results from EFA with the validation sample confirmed the findings from the development sample, with factor loadings ranging from .61 to .84, a median factor loading of .73, and a Cronbach's alpha of .93. Convergent validity of the DDI was supported by the presence of anticipated gender differences in self-disclosure as well as by positive correlations with measures of self-disclosure, social support, extraversion, and positive affect and negative correlations with measures of self-concealment and depressive symptoms. Discriminant validity for the DDI was demonstrated through negative correlations with neuroticism and social desirability.

Confirmatory factor analyses (CFA) were accomplished using a different sample of undergraduate students from the same university (Kahn & Hessling, 2001). Kahn and

Hessling (2001) hypothesized that distress disclosure is conceptually distinct from self-concealment and self-disclosure as measured by the SCS and the SDI. The CFA suggested that the DDI is measuring a unidimensional construct. Further, the CFA demonstrated that the hypothesized three-factor model of distress disclosure, self-concealment, and self-disclosure was the best fit for the data. The distress disclosure factor was found to have a negative correlation of $-.38$ with the self-concealment factor and a positive correlation of $.43$ with the self-disclosure factor.

Kahn and Hessling (2001) then turned their attention to establishing the stability of the DDI over time as well as the relationship between the DDI and measures of psychological adjustment. Using a sample of 90 undergraduate students from a different university than had been used with their other studies, they administered the DDI as well as measures of perceived social support, self-esteem, life satisfaction, depressive symptoms, and negative affectivity. Two months following the initial testing, students who had indicated they were interested in participating in the follow-up were given the same measures. The temporal stability of the DDI was found to be strong, with a correlation of $.80$ ($p < .001$). Hierarchical analyses demonstrated that the reports of distress disclosure from the first administration predicted 2-month increases in all of the measures of psychological adjustment with the exception of depression. These results held even when controlling for reports of negative affectivity from the first administration. Through post hoc analyses, Kahn and Hessling (2001) explored whether the lack of change in depressive symptoms may be related to diminished interpersonal activity associated with depression. The results suggest that this is the case, with depression

symptoms from the first administration being associated with decreased distress disclosure to others.

The DDI has been used in multiple studies on disclosure behavior. For example, the use of the DDI has helped to identify relationships between distress disclosure and the depth of emotional content in counseling sessions as well as with treatment outcomes for clients in college counseling centers (Kahn et al., 2001; Kahn et al., 2008). The DDI has also been used in research on understanding the sources of individual differences in tendencies toward distress disclosure. As an example, Greenland, Scourfield, Maxwell, Prior, and Scourfield (2009) used Omarzu's (2000) disclosure decision model to explore the development of distress disclosure as an individual trait, as measured by the DDI, in a sample of 18-year-old participants in the United Kingdom. Similarly, Garrison, Kahn, Sauer, and Florczak (2012) explored the influence of depressive symptoms and adult attachment on emotional disclosure and used the DDI as a measure of disclosure tendency.

Recently, Kahn, Hucke, Bradley, Glinski, and Malak (2012) conducted a multitrait-multimethod study to further the evidence for the validity of the DDI. A primary focus of the study was to address psychometric findings up to that point that indicated the DDI does not correlate as highly as would be expected with other measures of verbal disclosure (Kahn et al., 2012). The multitrait-multimethod study involved the examination of distress disclosure “using three methods: (a) generalized self-reports (i.e., the DDI as is typically used), (b) situational self-reports (i.e., disclosure of distress related to a recent, specific emotional event), and (c) generalized peer reports (i.e., an informant report on the DDI)” (p. 138). The participants in the study were 153 college students

who completed the first two parts of the study (DDI and situational self-report) and another sample of 153 friends of the first sample. The friends completed the third part of the sample (peer report). Both the DDI ($\alpha = .93$) and the version of the DDI modified for peer report ($\alpha = .93$) had excellent internal consistency in the study. Convergent validity for the DDI was supported by a strong correlation between DDI self-reports and situational self-reports ($r = .55$) and by a moderate CFA was then accomplished

The DDI is the measure of choice for the distress disclosure moderator variable in the present study because it is the only scale that measures distress disclosure of psychological distress on a continuum of disclosure and concealment. As previously described, it is anticipated that military culture may favor concealment over disclosure. Therefore, a scale that captures both behaviors is important to the population of interest to the current study.

Self-Compassion Scale (SCS; Neff, 2003a). The SCS is a 26-item self-report scale developed by Neff (2003a) to measure the degree to which individuals experience self-compassion. The SCS contains 26 items regarding how the respondent tends to act toward herself in difficult times. The respondent is asked to “indicate how often you behave in the stated manner.” Response options are based on a five-point scale ranging from (1) “Almost never” through (5) “Almost always.” The following is a sample statement (see Appendix K to review the full scale): “I’m tolerant of my own flaws and inadequacies.” The SCS is comprised of six subscales: self-kindness, self-judgment, common humanity, isolation, mindfulness, and over-identification. Thirteen of the 26 items, comprising all of the items in the self-judgment, isolation, and over-identification subscales, are stated in the opposite direction of self-compassion and are reverse scored.

Neff (2009) recommends scoring the SCS in one of two ways. The first is to add the responses for each subscale together to arrive at a total score. The second, which Neff (2009) stated might better facilitate interpretation, is to sum all of the responses across the subscales and then compute a total mean score. The mean scores of each of the subscales can also be computed for more specific analysis. According to interpretation guidelines on Neff's (2009) self-compassion website, the average total self-compassion score (based on computing a mean overall score) tends to be about 3.0. Scores of 1 to 2.5 tend to indicate low self-compassion, scores between 2.5 and 3.5 represent moderate self-compassion, and scores of 3.5 to 5 suggest high self-compassion.

Neff (2003a) developed the SCS as a way to test her theory on the construct of self-compassion. Self-compassion was conceptualized as being composed of three qualities: 1) extending kindness and understanding to oneself rather than harsh self-criticism and judgment; 2) seeing one's experiences as part of the larger human experience rather than as separating and isolating; and 3) holding one's painful thoughts and feelings in balanced awareness rather than over-identifying with them" (p. 224). Prior to the development of the SCS, the concept of self-compassion had not been explored empirically (Neff, 2003a). The initial development of the SCS began with pilot testing of potential scale items to two groups of college students (Neff, 2003a). The first group ($n = 68$) participated in three- to five-person focus group in which discussion about self-compassion and related subjects took place. At the conclusion of each focus group, the participants completed brief questionnaires containing potential scale items that Neff's (2003a) research team had developed. The potential items were modified each week based on outcomes of the focus groups and of the questionnaires.

The second group ($n = 71$) was not primed with discussion of self-compassion prior to being asked to complete surveys containing the items developed through the first group (Neff, 2003a). In addition to completing the surveys, the participants were asked to indicate any items they found unclear. Those items that were noted as unclear more than once were deleted from the potential item pool. This group also completed a separate survey about values and beliefs expected to relate to self-compassion. The results indicated that this was the case, with overall mean self-compassion scores being highly correlated with “convictions such as: ‘I believe it is important for me to be as kind and caring toward myself as I am to other people’” (Neff, 2003a, p. 227).

Neff (2003a) then administered the refined pool of possible self-compassion items to a group of 391 college students in order to complete an EFA, CFA, and analyses of construct validity. An EFA was completed for each of the three components of self-compassion (self-kindness versus self-judgment, common humanity versus isolation, and mindfulness versus over-identification) and all items with factor loadings of less than .40 were removed from their respective subscales. The CFAs accomplished for each of the three subscales did not support one-factor models, resulting in each of the subscales being split into two-factor models. For the self-kindness and self-judgment subscales, the two-factor model provided an adequate fit to the data (NNFI = .80; CFI = .84). The internal consistency reliabilities for the self-kindness (five items) and self-judgment (five items) subscales were .78 and .77, respectively. A good fit was found for the two-factor model for the common humanity and isolation subscales (NNFI = .99; CFI = .99). The internal consistency reliabilities for the common humanity (four items) and isolation (four items) subscales were .80 and .79, respectively. A good fit was also found for the two-factor

model for the mindfulness and over-identification subscales (NNFI = .94; CFI = .96).

The internal consistency reliabilities for the mindfulness (four items) and over-identification (four items) subscales were .75 and .81, respectively.

An overall CFA was completed to assess the fit of the six-factor model using the final 26 scale items (Neff, 2003a). The fit of this model with the data was adequate (NNFI = .90; CFI = .91) with every factor loading being significantly different from zero ($p < .01$). Given the high inter-correlations among the six factors, a higher-order CFA was accomplished to explore whether a higher-order factor of self-compassion might explain the inter-correlations. The resulting model had a marginally good fit with the data (NNFI = .88; CFI = .90). The internal consistency for the final 26-item SCS, based on calculating each subscale mean score and then adding the means to arrive at a total score, was .92. A nonsignificant correlation was found between the SCS and the Marlowe-Crowne Social Desirability scale (Strahan & Gerbasi, 1972), $r = .05$ ($p = .34$), which supports that scores on the SCS were not confounded by social desirability bias. In regard to construct validity, the SCS was found to have expected and significant correlations with measures of self-criticism (negative correlation), social connectedness (positive correlation), attentiveness to feelings (positive correlation), clarity of feelings (positive correlation), and mood state regulation (positive correlation). Scores on the SCS were also found to significantly predict mental health, based on significant correlations with depressive symptoms (negative correlation), anxiety symptoms (negative correlation), perfectionism (negative correlation), and life satisfaction (positive correlation).

Neff (2003a) again explored the psychometric properties of the SCS with a different sample of 232 college students. A primary goal of this study was to demonstrate how self-compassion differs from self-esteem. A CFA with this sample again supported the six-factor model (NNFI = .92; CFI = .93). Further, CFA with a single higher-order self-compassion factor again accounted for inter-correlations between the factors (NNFI = .90; CFI = .92). Test-retest reliability for the SCS with an interval of approximately three weeks was found to be good at .93 for the overall score. To demonstrate discriminant validity between self-compassion and self-esteem, Neff (2003a) compared SCS scores with scores on other self-attitude scales. SCS was moderately correlated with scales measuring self-esteem, self-acceptance, self-determination, and psychological needs. However, the SCS was found to have a nonsignificant negative correlation with a measure of narcissism when controlling for the variance due to self-esteem, $r = -.08, p = .23$. In contrast, the self-esteem scale and all of the other self-attitude scales were significantly positively correlated with the narcissism scale. Neff (2003a) concluded that, while self-compassion and self-esteem are related, the correlations between them “were low enough to indicate that the two constructs were measuring different psychological phenomena”, with the component of “self-aggrandizement” particularly differentiating between the two constructs (p. 241).

The SCS has been used widely in research on multiple outcomes that may be influenced by self-compassion. For example, the SCS is often used in research on treatment outcomes in studies measuring the effectiveness of mindfulness-based training (Bergen-Cico, Possemato, & Cheon, 2013; Newsome, Waldo, & Gruszka, 2012). As previously mentioned, the SCS has been used in research on interventions for trauma and

stress (Beaumont et al., 2012; Gilbert & Procter, 2006; Neff & Germer, 2013b).

Translated versions of the SCS have also been found to be reliable and valid for use, including a Chinese version (Chen, Yan, & Zhou, 2011) and a Turkish version (Deniz, Engin, Kesici, & Sümer, 2008). Neff (2009) has made the SCS freely available via the Self-Compassion website for use by researchers. Given the focus of the present study on self-compassion among military deployment veterans, the SCS is the measure of choice for the self-compassion moderator variable. As previously described, it is anticipated that military culture may not facilitate self-compassionate thoughts and behaviors. Therefore, the fact that the SCS incorporates subscales describing not only self-compassion but also its opposite (e.g., self-judgment) is important to the population of interest in the present study.

Procedure

The dissertation research proposal and supporting documentation regarding the present study were submitted to the Institutional Review Board (IRB) at the University of Denver for review and approval prior to beginning recruitment for participants. Once the University of Denver IRB granted permission to conduct this study, an initial pilot of the online survey containing the demographic questions and the self-report measures was administered to a small group of military deployment veterans. The purpose of the pilot study was to gather feedback on the online accessibility of the survey, the clarity of the survey items, the time needed to complete the full survey, and any other areas for improvement.

Participants were recruited via convenience sampling. To facilitate the recruitment of a broad group of military service members and veterans who have

deployment experience, the following steps were taken to maximize the recruitment effort. First, the primary researcher distributed recruitment e-mails to her acquaintances who currently serve or who have served in the military. In addition to inviting these acquaintances to participate in the study, they were asked to consider forwarding the recruitment e-mail to their own military and veteran acquaintances. Second, online recruitment postings with links to the survey page were distributed via Facebook, Twitter, and Google+ in a similar process to the e-mails. Third, recruitment e-mails distributed to local military and veteran organizations as well as to American Psychological Association listservs.

Interested participants clicked on a hyperlink in the recruitment e-mail or a recruitment post (Facebook or Twitter) to access the online version of the survey, which was hosted through Qualtrics. The first screen on the survey page contained three pre-screen questions to verify the potential participants' eligibility to participate. The first question was, "Have you served in a branch of the U.S. military (including Active Duty, Reservist, National Guard, and Coast Guard)?" The second question was, "Have you deployed in support of military operations (examples of which include Operations Enduring Freedom, Iraqi Freedom, and New Dawn, Desert Storm/Desert Shield, the Vietnam War, steady state operations such as Navy cruises, or humanitarian operations)?" The third question was, "Are you between the ages of 18 and 89?" Participants who answered "yes" to all three questions will be taken to an online version of the informed consent (see Appendix D), which contained a description of the purpose of the study, potential risks and benefits of participating in the study, participants' rights, and contact information for the primary researcher.

Participants were informed as part of the informed consent that collecting anonymous survey data rather than requesting personal information maintains the confidentiality of their data. Further, only the primary researcher has access to the survey data, which was accessed on Qualtrics via a secure password known only to her. Likewise, although survey data was downloaded for the purpose of data analysis, the data were saved in a password-protected file on the primary researcher's computer, access to which also requires user identification and an additional password known only by the primary researcher. Given that all survey information was be anonymous, the participants were asked to indicate their consent by checking a box at the bottom of the online informed consent page.

Participants were given the option to provide their e-mail address via a separate link at the conclusion of the survey in order to be entered in a random drawing for four \$25 Amazon e-gift cards. The primary investigator used a random number generator at the conclusion of this study to select four winners and to distribute the e-gift cards to the email they provided. Participants were also given the option, via the separate link at the conclusion of the survey, to indicate where they would like the \$5 charitable donation for their completed survey to be sent. This option was incorporated out of respect for the *esprit de corps* that is commonly shared among military service members and veterans. The options for the charitable donation distribution, all of which were specific to organizations supporting military service members and veterans, were: the Fisher House Foundation, Operation Homefront, the United Service Organizations (USO), the participant's local Student Veterans of American Chapter, the participant's local American Legion Post, the participant's local Disabled American Veterans Chapter, and

the participant's local Veterans of Foreign Wars Post. For those participants who did not provide a response for where they would prefer the donation to go, the primary investigator will evenly divide the donations between the Fisher House Foundation, Operation Homefront, and the USO.

Those participants who completed the informed consent were directed to a survey page containing the first of the self-report scales. The order in which the self-report scales were administered was counterbalanced to control for order effects. The participants completed the CES, PCL-M, PTGI, DDI, and SCS in this counterbalanced manner. The demographic questionnaire was the last item administered to all participants. Following the completion of the survey, the participant was thanked for her/his time and the primary researcher's contact information was again be provided.

To increase recruitment and per the request of some of the veterans organizations contacted by the primary investigator, a decision was made to distribute hard copies of the survey. Following approval of this additional recruitment strategy by the University of Denver IRB, 50 hard copies of the survey were distributed. Pre-paid envelopes accompanied the hard copy surveys for ease of return to the primary investigator. One completed hard copy survey was returned during the recruitment period, with two additional completed surveys arriving after the conclusion of recruitment.

General Procedures for Data Analysis. The first step in the data analysis involved preliminary analyses of the data. Specifically, cases of missing data were identified and explored in order to determine the nature of the missing data. The exploration of missing data was guided by recommendations made by Tabachnik and Fidell (2001). For example, the data may be missing completely at random, missing at

random, or not missing at random. It is important to identify the nature of the missing data in order to determine whether there is a pattern to it, which may indicate that the nature of a particular item contributed to the missing data. A dummy variable specifying missing versus non-missing data was developed to test mean differences in the independent and dependent variables. Outliers were also identified given the potential for these extreme values to skew the results of the planned statistical analyses. Data cleaning was conducted as necessary to address missing data and outliers. Further data screening procedures were used to assess the data for the regression assumptions of normality, linearity, and homoscedasticity (Tabachnick & Fidell, 2001). Descriptive statistics were then accomplished, including identifying the demographic characteristics of the participants, computing correlations among variables, and calculating internal reliability estimates for the measures used.

Following the completion of the preliminary analysis of the data, the main analyses of the study's hypotheses were conducted. Multiple regression analyses were used to test the hypotheses. Covariate variables (e.g., demographic variables) were statistically controlled to address their potentially confounding effects on the dependent variables in this study, PTSD and PTG. The covariate variables for the present study were selected based on research supporting their possible influence on the independent variable, outcome variables, and/or moderator variables. These variables include: age, gender, level of education, type of career field in the military, number of military deployments, whether an injury was sustained during a deployment, combat exposure, and history of mental health counseling or psychotherapy.

Both the predictor and moderator variables were centered to minimize multicollinearity between the variables (Frazier, Tix, & Barron, 2004; Tabachnik & Fidell, 2007). Interaction terms were computed following the centering of the data, including the following: self-stigma \times distress disclosure and self-stigma \times self-compassion. As part of a hierarchical analysis, variables were entered into the equation in a specified order (Tabachnik & Fidell, 2007). Specifically, the covariates were entered in Step 1, the variables of interest were entered in Step 2, and the interaction terms were entered in Step 3. The resulting regression coefficients and significance values were examined to determine which terms significantly contribute to the prediction of the dependent variable.

A hierarchical linear regression was conducted to investigate the relationship between the independent variable (military mental health problem self-stigma) and the first of the outcome variables (symptoms of PTSD). To test Hypothesis 1, the analysis indicated whether self-stigma is positively associated with PTSD symptoms. The covariate variables were entered at Step 1 and self-stigma was added at Step 2. To Test Hypothesis 2, hierarchical multiple regression analysis was used to examine whether distress disclosure moderates the relationship between self-stigma and posttraumatic stress symptoms. The covariate variables were entered at Step 1, self-stigma and distress disclosure were entered at Step 2, and the interaction term of self-stigma \times distress disclosure was entered at Step 3. If the regression coefficient for the two-way interaction of self-stigma \times distress disclosure were statistically significant, the next step was to interpret the interaction or test the moderator effect. One potential strategy for doing so is to examine the moderator's effect at two levels (i.e., lower levels of distress disclosure

and higher levels of distress disclosure) by plotting distress disclosure scores for depression scores of one standard deviation above and below the mean (Aiken & West, 1991). Simple regression analysis can then be used to test the slopes of the lines in order to see whether the slopes at high and low distress disclosure are significantly different from zero. If the slopes are significantly different from zero, it means that with lower levels of distress disclosure, deployment veterans who reportedly experience self-stigma are more prone to have posttraumatic stress symptoms and, with higher levels of distress disclosure, deployment veterans who report self-stigma will have fewer posttraumatic stress symptoms.

The examination of Hypothesis 3, whether self-compassion will moderate the relationship between self-stigma and posttraumatic stress symptoms, also followed three steps that are similar to the examination of Hypothesis 2. The covariate variables were entered at Step 1, self-stigma and self-compassion were entered at Step 2, and the interaction term of self-stigma \times self-compassion was entered at Step 3. If the regression coefficient for the two-way interaction of self-stigma \times self-compassion were statistically significant, the next step was to interpret the interaction or test the moderator effect at two levels (i.e., lower levels of self-compassion and higher levels of self-compassion) by plotting self-compassion scores for self-stigma scores of one standard deviation above and below the mean (Aiken & West, 1991). Simple regression analyses would be conducted to determine whether the slopes of simple regression lines at high and low self-compassion are significantly different from zero. If the slopes are significantly different from zero, it means that with lower levels of self-compassion, deployment veterans who reportedly experience self-stigma are more prone to have posttraumatic

stress symptoms and, with higher levels of self-compassion, deployment veterans who report self-stigma will have fewer posttraumatic stress symptoms.

A hierarchical linear regression was conducted to investigate the relationship between the independent variable (military mental health problem self-stigma) and the second of the outcome variables (degree of PTG). To test Hypothesis 4, the analysis will indicate whether self-stigma is positively associated with degree of PTG. The covariate variables were entered at Step 1 and the self-stigma variable was added at Step 2. To test Hypothesis 4, a regression analysis was conducted to examine whether self-stigma is negatively associated with degree of PTG. The covariate variables were entered at Step 1 and self-stigma was added at Step 2. The examination of Hypothesis 5, whether distress disclosure moderates the relationship between self-stigma and degree of PTG, also followed three steps that are similar to the examinations of Hypotheses 2 and 3. The covariate variables were entered at Step 1, self-stigma and distress disclosure were entered at Step 2, and the interaction term of self-stigma \times distress disclosure was entered at Step 3. If the regression coefficient for the two-way interaction of self-stigma \times distress disclosure were statistically significant, the next step would be to interpret the interaction or test the moderator effect at two levels (i.e., lower levels of distress disclosure and higher levels of distress disclosure) by plotting distress disclosure scores for self-stigma scores of one standard deviation above and below the mean (Aiken & West, 1991). Simple regression analyses would be conducted to determine whether the slopes of simple regression lines at high and low levels of distress disclosure are significantly different from zero. If the slopes are significantly different from zero, it means that with lower levels of distress disclosure, deployment veterans who reportedly

experience self-stigma will have less PTG, and with higher levels of distress disclosure, deployment veterans who report self-stigma will have more PTG.

The examination of Hypothesis 6, whether self-compassion will moderate the relationship between self-stigma and degree of PTG, likewise followed three steps that are similar to the examinations of Hypotheses 2, 3, and 5. The covariate variables were entered at Step 1, self-stigma and self-compassion were entered at Step 2, and the interaction term of self-stigma \times self-compassion was entered at Step 3. If the regression coefficient for the two-way interaction of self-stigma \times self-compassion were statistically significant, the next step would be to interpret the interaction or test the moderator effect at two levels (i.e., lower levels of self-compassion and higher levels of self-compassion) by plotting self-compassion scores for self-stigma scores of one standard deviation above and below the mean (Aiken & West, 1991). Simple regression analyses would be conducted to determine whether the slopes of simple regression lines at high and low self-compassion are significantly different from zero. If the slopes are significantly different from zero, it means that with lower levels of self-compassion, deployment veterans who reportedly experience self-stigma will have less PTG, and with higher levels of self-compassion, deployment veterans who report self-stigma will have more PTG.

Chapter Four

Results

Overview. Data analysis for this study consisted of the following: preparation and cleaning of the data, preliminary analyses of the data, a description of the characteristics of the sample, and analyses of the six primary hypotheses. A two-tailed approach with an alpha level of $p < .05$ was used for all of the statistical tests.

Data preparation. Following closure of recruitment for both the online survey and the hard copy surveys, participants' responses were individually examined for missing data. Given the deliberate decision to permit participants to choose not to respond to specific items if they felt uncomfortable doing so, a permissive stance was adopted with anticipation of missing data. Therefore, participants who did not respond to some or all of the demographic data were not removed from the sample. For measures of the main variables of the study (MSS, PCL-M, PTGI, DDI, and SCS), participants were removed from the sample if they did not complete at least two of the variables in their entirety. Thirty cases were therefore deleted, reducing the sample size from 111 to 81. These participants agreed to participate in the study but did not progress much beyond the informed consent page.

The impact of the survey format used was evaluated. The primary administration of the survey occurred online, with hard copies of surveys later distributed by mail later in an effort to increase sample size. One hard copy of the survey was ultimately returned

by mail. Given the limited sample size for the hard copy version of the survey, it is unrealistic to statistically determine the homogeneity of the survey across the online and hard copy versions. However, a review of the hard copy survey showed that it was both complete and that the responses were consistent with those from the online survey sample. Therefore the one hard copy survey's data was incorporated with the larger online survey sample in the final data set.

The data were evaluated for consistency of responses, the presence of responses that did not fall within the expected range of scores or values, and for coding fidelity. Specific to consistency of responses, the response format of the online survey generally prevented values that were outside of the expected range for measures of the main variables. The exception was the demographic questionnaire, in which participants were invited to provide text responses for some items. For example, when entering a year, some participants appeared to mistakenly enter an extra digit (e.g., "19899"). These data entry errors were examined and corrected on a case-by-case basis. Also related to the demographic variables, all items to which a participant responded "Other" were reviewed and were recoded as appropriate. For example, for Race/Ethnicity, the response of a participant who identified as "Caucasian Asian" was re-coded to "Biracial/Multiracial," which is a response item that was available to the participant. Similarly, "Other" responses that were frequent were examined for possible recoding of the response options for a variable for the purposes of statistical analyses. An example of this was the participation in multiple military operations by many of the participants, resulting in the creation of new categories of combined deployment experiences.

Analysis of missing data. The exploration of missing data was guided by recommendations made by Tabachnik and Fidell (2007). Missing data were present across all of the survey items, ranging from 6.2% for all items on the DDI and for the majority of the items on the PCL-M to 62.1% on items 23 through 26 of the MSS. Missing values analyses were conducted for all scales, with the PCL-M, PTGI, SCS, and MSS determined to be missing completely at random. Regarding the DDI, further review of the missing data revealed the only missing items were from five participants who discontinued the survey prior to completing the DDI; all other participants responded to the DDI items in their entirety. Likewise, for the CES, the only missing data resulted from six participants who had discontinued the survey prior to the CES. Although the MSS was determined to have data missing completely at random, closer evaluation was made due to the large proportion of missing responses for the last four items. This problem was specific to the initial time period of the survey collection when the final four items were mistakenly omitted from the online survey without the primary investigator's knowledge. Following correction of this error, further missing data on these items was consistent with that of missing data in other scales. Given the importance of the MSS as the measure of the self-stigma independent variable for the current study, the decision was made to utilize expectation-maximization in SPSS to estimate the probable responses for the missing data based on the pattern of responses to the answered items (Schafer & Olsen, 1998). Following the expectation-maximization procedure, no missing values were available on the MSS in subsequent analyses.

The scales measuring the moderating variables of self-compassion and distress disclosure, the SCS and the DDI, were further explored to determine whether missing

items contributed to significant differences on the scales measuring the dependent variables of PTSD and PTG (the PCL-M and the PTGI, respectively). The moderator variables were dummy coded as missing versus non-missing, then applied to t-tests to determine the presence of significant differences on the dependent variables (Tabachnik & Fidell, 2007). No significant differences were found for the PCL-M or the PTGI based on missing data from the DDI. No significant difference was found for the PTGI based on missing data from the SCS. However, a significant difference was found for the PCL-M based on missing data from the SCS. Specifically, on average, participants with missing data for the SCS total score had higher levels of PTSD symptoms as measured by the PCL-M ($M = 50.0$, $SE = 7.29$) than those who did not have missing data ($M = 31.29$, $SE = 1.65$). This difference was significant, $t(74) = -3.12$, $p < .05$, $r = 0.04$, which represents a small effect size.

Following completion of these analyses of missing values, consideration was given to the overall amount of missing data across the survey items to determine appropriate responses for managing the missing values in subsequent analyses. Although mean substitution was considered to substitute missing values with estimates based on other data with the goal of increasing sample size (Tabachnik & Fidell, 2007), this approach was not selected due to the global presence of more than 5% missing data across the survey items. The exception to this decision was the expectation-maximization procedure described above for addressing the missing values on the MSS, the predictor variable in this study. For the remaining missing data, it was determined that deleting cases listwise would be the best approach for accurately representing the

data (Tabachnik & Fidell, 2007). This approach involves removing all cases with missing values from subsequent analyses.

Initial data exploration. Initial exploration of the data, following the previously described analyses of missing data, included procedures for calculating the following for the main variables in the study: means, standard deviations, score ranges, skewness, and kurtosis. Internal reliability estimates were also calculated for the measures used. As previously described, with the exception of the already completed modifications to the MSS to account for missing items, these calculations are based only on responses that were completed. Refer to Table 3. The reliability coefficients for the MSS Self-Stigma subscale ($\alpha = .94$), the PCL-M ($\alpha = .95$), the PTGI ($\alpha = .92$), the SCS ($\alpha = .85$) and the DDI ($\alpha = .93$) were all within an acceptable range. Frequencies and percentages for the demographic variables were also calculated and reported under Participants in Chapter 3; see Table 1.

Table 3

Overview of Independent, Moderator, and Dependent Variables: Means, Standard Deviations, Ranges of Scores, Skewness, Kurtosis, and Cronbach's Alpha

Variable	N	Mean	SD	Range	Skewness	Kurtosis	α
MSS-SS*	81	21.67	7.60	11 - 39	.266	-.713	.94
PCL-M*	76	32.76	14.92	16 - 77	.955	.101	.95
PTGI	74	2.14	.99	.24 - 4.43	.082	-.786	.92
SCS	71	2.94	.59	2.04 - 4.44	1.024	.201	.85
DDI*	76	29.42	10.03	13 - 60	.72	.391	.93

*Scored continuously.

Note: MSS-SS = *Military Stigma Scale – Self-Stigma Subscale*, PCL-M = *Posttraumatic Stress Checklist-Military Version*, PTGI = *Posttraumatic Growth Inventory*, SCS = *Self-Compassion Scale*, DDI = *Distress Disclosure Inventory*.

Relationships among the variables were also explored by calculating the correlations between them. A significant positive correlation was found between the PCL-M and the PTGI ($r = .355, p < .01$). This indicated that, as a participant's endorsement of PTSD symptom increased, so did their endorsement of evidence of posttraumatic growth. This is consistent with the commonality between the two variables of having undergone a traumatic experience. No other significant correlations were identified, which was inconsistent with the research hypotheses for this study. See Table 4 for a listing of the correlation coefficients and associated significance values.

Table 4

Correlation Coefficients

Variable	1	2	3	4	5
1. MSS-SS	--				
2. PCL-M	.144	--			
3. PTGI	-.134	.355*	--		
4. SCS	-.099	-.074	.195	--	
5. DDI	-.221	-.072	-.063	-.178	--

* $p < .01$.

Potential covariate variables (e.g., demographic variables) were selected based on research supporting their possible influence on the independent, dependent, and/or moderator variables. These variables were evaluated for inclusion as controls to address their potentially confounding effects on the dependent variables in this study, PTSD and PTG. Independent samples t-tests, correlations, and ANOVAs were conducted to determine which variables would be included in the regression analyses. The only variable found to have a significant effect on either of the dependent variables was whether an injury was sustained during deployment. There was a significant difference

for the PCL-M, $t(66) = 3.47$, $p < .01$. Likewise, there was a significant difference for the PTGI, $t(65) = 3.103$, $p < .01$. Therefore, injury during a deployment was included as a control variable in the regression analyses. Regarding the non-significant potential covariates, there were no significant differences for: age, $r = -.052$, $p > .05$ for PCL-M, $r = .017$, $p > .05$ for PTGI; gender, $t(66) = .59$, $p > .05$ for PCL-M, $t(65) = -1.821$, $p > .05$ for PTGI; level of education, $F(5, 62) = .233$, $p < .05$ for PCL-M, $F(5, 61) = 1.686$, $p < .05$ for PTGI; type of career field in the military, $F(5, 62) = 1.360$, $p < .05$ for PCL-M, $F(5, 61) = 1.787$, $p < .05$ for PTGI; number of military deployments, $r = -.195$, $p < .05$ for PCL-M, $r = -.149$, $p < .05$ for PTGI; and history of mental health counseling or psychotherapy, $F(4,63) = 2.101$, $p < .05$ for PCL-M, $F(4,62) = .968$, $p < .05$ for PTGI.

The possible incorporation of the subscales of the CES as covariates was explored given their potential relationship to the traumatic experiences that may contribute to scores on the PCL-M and the PTGI. All seven of the subscale scores were found to significantly correlate with the PCL-M, including the following: combat patrol ($r = .406$, $p < .01$), enemy fire ($r = .477$, $p < .01$), surrounded by enemy ($r = .450$, $p < .01$), killed in action or missing in action in unit ($r = .593$, $p < .01$), fired rounds ($r = .422$, $p < .01$), witnessed incoming our outgoing rounds ($r = .602$, $p < .01$), and danger of being injured or killed ($r = .379$, $p < .01$). These CES subscales were included as control variables in the regression analyses including the PCL-M as the dependent variable. For the PTGI, two of the CES subscales were significantly related, including: witnessed incoming or outgoing rounds ($r = .242$, $p < .05$), and danger of being injured or killed ($r = .236$, $p < .05$). These two CES subscale scores were included as control variables in the regression analyses including the PTGI as the dependent variable.

Analyses of the assumptions of multiple regression. Prior to conducting the analyses for the hypotheses in the present study, it was necessary to evaluate the accuracy of the data for making predictions about the population under consideration (Field, 2013). Specifically, parametric tests like the regression and moderation techniques used in this study rely on assumptions about their fit with a normal distribution. Further data screening procedures were therefore used to assess the data for the regression assumptions of normality, linearity, and homoscedasticity (Field, 2013; Tabachnick & Fidell, 2007). Given the different combination of variables for each of the six hypotheses, these assumptions were evaluated for all of the main analyses. The procedure used for exploring these assumptions and the general results are described below. Specific instances of deviations from the assumptions and atypical cases will be described as part of the specific results for each hypothesis.

The first area examined in regard to the regression assumptions was the presence of excessively influential cases that may skew the regression model (Field, 2013). Mahalanobis distances, which provide a measure for each case of its distance from the predictor variable or variables, were used to identify potential multivariate outliers (Field, 2013). Mahalanobis distances have a chi-square distribution and degrees of freedom equaling the number of predictor variables, which makes it possible to determine the cutoff Mahalanobis distance value based on the critical value for chi-square (Field, 2013; Tabachnick & Fidell, 2012). For this study the alpha level for the chi-square was set at .01 and used to identify potential outliers. Cases of multivariate outliers were identified and deleted accordingly; see the specific results for each hypothesis for additional information.

Specific to the assumption of normality, normal distribution is required for the residuals in the population (Field, 2013). To examine this, standardized residuals were visually inspected using histograms and normality plots for the data associated with the hypotheses. The histograms of the residuals associated with the regression analyses for each hypothesis were approximately normally distributed. Likewise, the probability-probability (PP) plots of the standardized residual for each regression were generally consistent with a diagonal line that was indicative of a normal distribution (Field, 2013). See Table 5 for the skewness and kurtosis of each of the hypotheses. Of note, the residuals of the first three hypotheses were somewhat positively skewed (indicating more scores on the left-side of the distribution). Additionally, the residuals of hypotheses four through six tended to be both slightly positively skewed and slightly flat.

Table 5

Skewness and Kurtosis Values of the Standardized Residuals for Primary Hypotheses

Hypothesis	Skewness	Kurtosis
Hypothesis 1	.542	-.008
Hypothesis 2	.542	-.008
Hypothesis 3	.523	-.029
Hypothesis 4	.282	-.266
Hypothesis 5	.321	-.258
Hypothesis 6	.255	-.257

Continuing with tests of the normality of the residuals, the Kolmogorov-Smirnov test was conducted for each hypothesis. For the Kolmogorov-Smirnov test, any significance value lower than .05 would suggest that the residuals deviate from normality (Field, 2013). For all of the hypotheses, the significance value for the Kolmogorov-Smirnov test was greater than .05, which supports the normality of the distribution. The

following are the significance tests for each hypothesis: Hypothesis 1, $D(64) = .073$, $p = .200$; Hypothesis 2, $D(64) = .073$, $p = .200$; Hypothesis 3, $D(64) = .071$, $p = .200$; Hypothesis 4, $D(64) = .066$, $p = .200$; Hypothesis 5, $D(64) = .086$, $p = .200$; Hypothesis 6, $D(64) = .083$, $p = .200$.

Scatterplots of the standardized predicted values against the standardized residuals were examined for each hypothesis to further evaluate the assumptions of linearity and homoscedasticity (Field, 2013). The plots demonstrated general linearity of the data. The absence of funneling in the shape of the plots supported the presence of heteroscedasticity. Multicollinearity, or the presence of strong correlation between variables in the regression equations, was further investigated to identify any potential situations in which unanticipated correlations decrease the ability to demonstrate the influence of the predictors on the dependent variable (Field, 2013). One way to explore this is through the use of the variance inflation factor (VIF), which provides an indication of whether there are strong linear relationships among the predictors. General guidelines for identifying concerns through the use of VIF include identifying VIF scores greater than 10 as well as determining whether the average value for F is considerably greater than 1.0, both of which would indicate potential problems with multicollinearity (Bowerman & O'Connell, 1990; Field, 2013). The VIF was within these guidelines across the regressions associated with all the hypotheses, suggesting that the results of the regressions were not influenced by high correlations among the predictor variables.

The final regression assumption evaluated was that of independent errors, meaning that the residuals of the regression analysis are not correlated (Field, 2013). To test this, the Durbin-Watson test was used. The guideline for interpreting the Durbin-

Watson test is that values near two are a likely indication the residuals are not correlated, whereas values significantly below two and significantly above two would likely be negatively and positively correlated, respectively (Field, 2013). All of the Durbin-Watson values for the regressions associated with the hypotheses were near 2, which suggests that no problematic correlations of the residuals were present. The following are the Durbin-Watson values by hypothesis: Hypothesis 1, $d = 1.74$; Hypothesis 2, $d = 1.72$; Hypothesis 3, $d = 1.74$; Hypothesis 4, $d = 1.92$; Hypothesis 5, $d = 1.98$; Hypothesis 6, $d = 1.70$.

Analyses of the primary research hypotheses.

Hypothesis 1. Hypothesis 1 stated that self-stigma would have a positive relationship with PTSD and would significantly predict the level of severity of PTSD symptoms. A hierarchical regression analysis was accomplished with block 1 consisting of the covariates identified for control in the model (whether an injury was sustained during deployment and the seven subscale scores on the CES). Block 2 consisted of the score on the MSS Self-Stigma (MSS-SS) subscale. Based on the findings from Mahalanobis distance, two multivariate outliers of concern were identified and removed. See Table 6 for the unstandardized regression coefficients (B) and intercept, standard errors, the standardized regression coefficients (β), R^2 , and R^2 change (ΔR^2). The regression showed that the model containing the controlled covariates and the independent variable significantly predicted the severity of PTSD symptoms, $F(9, 55) = 3.33, p < .01$. However, the coefficient for MSS in the prediction was not significant ($p = .19$). Comparison of the models for blocks 1 and 2 further demonstrated that level of self-stigma did not significantly increase the predictive value in comparison to the covariates.

Specifically, Block 1 consisted of only the controlled covariates and produced an R^2 of .33, $p < .01$, accounting for 33% of the variance in the dependent variable. Block 2, which contained both the variable of interest (MSS-SS) and the controlled covariates, produced an R^2 of .35, $p = .19$, indicating that MSS-SS did not contribute to a significant increase in the predictive value.

Table 6

Hierarchical Regression of Posttraumatic Stress Symptoms on Military Self-Stigma, Controlling for Injury During Deployment and Combat Exposure

Block 1	B	SE B	β	p
Constant	33.31	7.99		.00
Injured During Deployment	- 5.54	3.82	-.18	.15
CES: Combat Patrol	.20	.63	.05	.76
CES: Enemy Fire	1.01	1.14	.12	.38
CES: Surrounded	1.12	1.39	.09	.42
CES: KIA or MIA	5.84	3.17	.25	.07
CES: Fired Rounds	.04	1.69	.00	.98
CES: In/Out Rounds	2.31	1.78	.17	.20
CES: Danger of Injury/Death	.14	.89	.02	.16
Block 2				
Constant	30.40	8.23		.00
Injured During Deployment	- 6.48	3.82	-.21	.10
CES: Combat Patrol	-.03	.65	-.01	.97
CES: Enemy Fire	.81	1.14	.10	.48
CES: Surrounded	.64	1.42	.05	.66
CES: KIA or MIA	5.37	3.16	.23	.10
CES: Fired Rounds	.56	1.72	.04	.75
CES: In/Out Rounds	2.46	1.77	.18	.17
CES: Danger of Injury/Death	.24	.89	.04	.79
MSS Self-Stigma	.26	.19	.16	.19

Note. For block 1, $R^2 = .33$, $p = .003$, and for block 2, $R^2 = .35$, $\Delta R^2 = .02$, $p = .19$. Adjusted $R^2 = .25$.

Hypothesis 2. Hypothesis 2 predicted that distress disclosure would moderate the relationship between self-stigma and the level of severity of PTSD symptoms. Two multivariate outliers were identified through the use of Mahalanobis distance and

removed for the purpose of this analysis. Interaction terms were created from the product of centered values for the independent variable (MSS-SS) and the moderator variable (DDI), labeled, "MSS-SS x DDI." Similar to the hierarchical regression for hypothesis 1, the controlled covariates (whether an injury was sustained during deployment and the seven subscale scores on the CES) were entered in the first block. The second block consisted of the MSS-SS and the DDI. For the third block, the interaction term for MSS-SS x DDI was entered. See Table 6 for the unstandardized regression coefficients (B) and intercept, standard errors, the standardized regression coefficients (β), R^2 , and R^2 change (ΔR^2). The results indicated significant models for the combination of variables in block 2, $F(10, 54) = 2.95, p < .01$ as well as for the combination of variables in block 3, $F(11, 53) = 2.65, p < .01$. However, the coefficients for MSS-SS ($p = .22$) and DDI ($p = .82$) were not significant in the prediction for block 2. Likewise, the coefficient for the interaction term of MSS-SS x DDI ($p = .71$) was not significant in the prediction for block 3. Block 1 consisted of only the controlled covariates and produced an R^2 of .33, $p < .01$, accounting for 33% of the variance in the dependent variable. Block 2, which contained both the variables of interest (MSS-SS and DDI) and the controlled covariates, produced an R^2 of .35, $p = .42$, indicating that the addition of MSS-SS and DDI did not represent a significant increase in the predictive value. Similarly, the interaction term entered in block 3 did not significantly increase prediction with an R^2 of .35, $p = .71$.

Table 7

Hierarchical Regression of Posttraumatic Stress Symptoms on Military Self-Stigma, Distress Disclosure, and Military Self-Stigma x Distress Disclosure, Controlling for Injury During Deployment and Combat Exposure

Block 1	B	SE B	β	p
Constant	33.31	7.99		.00
Injured During Deployment	- 5.54	3.82	- .18	.15
CES: Combat Patrol	.20	.63	.05	.76
CES: Enemy Fire	1.01	1.14	.12	.38
CES: Surrounded	1.12	1.39	.09	.42
CES: KIA or MIA	5.84	3.17	.25	.07
CES: Fired Rounds	.04	1.69	.00	.98
CES: In/Out Rounds	2.31	1.78	.17	.20
CES: Danger of Injury/Death	.14	.89	.02	.16
Block 2				
Constant	31.28	9.17		.00
Injured During Deployment	- 6.33	3.95	- .20	.12
CES: Combat Patrol	- .05	.67	- .20	.94
CES: Enemy Fire	.80	1.15	.10	.49
CES: Surrounded	.63	1.44	.05	.66
CES: KIA or MIA	5.48	3.23	.24	.10
CES: Fired Rounds	.55	1.73	.04	.75
CES: In/Out Rounds	2.49	1.79	.19	.17
CES: Danger of Injury/Death	.25	.90	.04	.78
MSS Self-Stigma	.25	.20	.16	.22
Distress Disclosure	- .03	.14	- .03	.82
Block 3				
Constant	31.17	9.25		.00
Injured During Deployment	- 6.54	4.03	- .21	.11
CES: Combat Patrol	- .10	.68	- .02	.89
CES: Enemy Fire	.63	1.24	.08	.61
CES: Surrounded	.56	1.47	.05	.72
CES: KIA or MIA	5.57	3.27	.24	.09
CES: Fired Rounds	.71	1.80	.06	.69
CES: In/Out Rounds	2.39	1.82	.18	.20
CES: Danger of Injury/Death	.24	.89	.04	.79
MSS Self-Stigma	.28	.22	.18	.21
Distress Disclosure	- .03	.14	- .02	.84
MSS-SS x DDI	1.45	3.94	.05	.71

Note: For block 1, $R^2 = .33$, $p < .01$. For block 2, $R^2 = .35$, $\Delta R^2 = .02$, and $p = .42$. For block 3, $R^2 = .35$, $\Delta R^2 = .002$, and $p = .71$. Adjusted $R^2 = .22$.

Hypothesis 3. Hypothesis 3 stated that self-compassion would moderate the relationship between self-stigma and the level of severity of PTSD symptoms. Two multivariate outliers were identified through the use of Mahalanobis distance and removed for the purpose of this analysis. Interaction terms were created from the product of centered values for the independent variable (MSS-SS) and the moderator variable (SCS), labeled, “MSS-SS x SCS.” Following the same procedure as for hypothesis 2, the controlled covariates (whether an injury was sustained during deployment and the seven subscale scores on the CES) were entered in the first block. The second block consisted of the MSS-SS and the SCS. For the third block, the interaction term for MSS-SS x SCS was entered. See Table 8 for the unstandardized regression coefficients (B) and intercept, standard errors, the standardized regression coefficients (β), R^2 , and R^2 change (ΔR^2). The results indicated significant models for the combination of variables in block 2, $F(10, 54) = 2.94, p < .01$ as well as for the combination of variables in block 3, $F(11, 53) = 2.64, p < .01$. However, the coefficients for MSS-SS ($p = .20$) and SCS ($p = .85$) were not significant in the prediction for block 2. Likewise, the coefficient for the interaction term of MSS-SS x SCS ($p = .72$) was not significant in the prediction for block 3. Block 1 consisted of only the controlled covariates and produced an R^2 of .33, $p < .01$, accounting for 33% of the variance in the dependent variable. Block 2, which contained both the variables of interest (MSS-SS and SCS) and the controlled covariates, produced an R^2 of .35, $p = .42$, indicating that the addition of MSS-SS and SCS did not represent a significant increase in the predictive value. Similarly, the interaction term entered in block 3 did not significantly increase prediction with an R^2 of .35, $p = .72$.

Table 8

Hierarchical Regression of Posttraumatic Stress Symptoms on Military Self-Stigma, Self-Compassion, and Military Self-Stigma x Self-Compassion, Controlling for Injury During Deployment and Combat Exposure

	B	SE B	β	<i>p</i>
Block 1				
Constant	33.31	7.99		.00
Injured During Deployment	- 5.54	3.82	- .18	.15
CES: Combat Patrol	.20	.63	.05	.76
CES: Enemy Fire	1.01	1.14	.12	.38
CES: Surrounded	1.12	1.39	.09	.42
CES: KIA or MIA	5.84	3.17	.25	.07
CES: Fired Rounds	.04	1.69	.00	.98
CES: In/Out Rounds	2.31	1.78	.17	.20
CES: Danger of Injury/Death	.14	.89	.02	.16
Block 2				
Constant	31.64	10.72		.01
Injured During Deployment	- 6.37	3.94	- .20	.11
CES: Combat Patrol	- .02	.66	- .004	.98
CES: Enemy Fire	.82	1.15	.10	.48
CES: Surrounded	.65	1.44	.05	.66
CES: KIA or MIA	5.24	3.27	.23	.1
CES: Fired Rounds	.55	1.73	.04	.75
CES: In/Out Rounds	2.49	1.79	.18	.18
CES: Danger of Injury/Death	.25	.90	.04	.78
MSS Self-Stigma	.25	.19	.16	.20
Self-Compassion	- .48	2.60	- .02	.85
Block 3				
Constant	31.27	10.86		.01
Injured During Deployment	- 6.60	4.01	- .21	.11
CES: Combat Patrol	- .07	.68	- .15	.92
CES: Enemy Fire	.65	1.24	.08	.60
CES: Surrounded	.55	1.47	.05	.7
CES: KIA or MIA	5.38	3.31	.23	.11
CES: Fired Rounds	.71	1.81	.06	.70
CES: In/Out Rounds	2.34	1.82	.18	.20
CES: Danger of Injury/Death	.29	.91	.04	.76
MSS Self-Stigma	.28	.21	.18	.19
Self-Compassion	- .34	2.65	- .02	.90
MSS Self-Stigma x SCS	.14	.40	.05	.72

Note. For block 1, $R^2 = .33$, $p < .01$. For block 2, $R^2 = .35$, $\Delta R^2 = .02$, and $p = .42$. For block 3, $R^2 = .35$, $\Delta R^2 = .002$, and $p = .72$. Adjusted $R^2 = .22$.

Hypothesis 4. Hypothesis 4 predicted that self-stigma would have a negative relationship with PTG and would significantly predict the degree of PTG. Based on the findings from Mahalanobis distance, four multivariate outliers of concern were identified and removed. A hierarchical regression analysis was accomplished with block 1 consisting of the covariates identified for control in the model (whether an injury was sustained during deployment and the sixth and seventh subscale scores of the CES). Block 2 consisted of the score on the MSS Self-Stigma (MSS-SS) subscale. The regression analysis indicated no statistically significant results, $F(4, 59) = 1.88, p = .13$. See Table 9 for the unstandardized regression coefficients (B) and intercept, standard errors, the standardized regression coefficients (β), R^2 , and R^2 change (ΔR^2).

Table 9

Hierarchical Regression of Posttraumatic Growth on Military Self-Stigma, Controlling for Injury During Deployment and Combat Exposure

Block 1	B	SE B	β	p
Constant	3.11	.61		.00
Injured During Deployment	-.62	.31	-.25	.05
CES: In/Out Rounds	.08	.13	.07	.58
CES: Danger of Injury/Death	.07	.07	.12	.36
Block 2				
Constant	3.29	.67		.00
Injured During Deployment	-.60	.31	-.25	.06
CES: In/Out Rounds	.08	.14	.08	.56
CES: Danger of Injury/Death	.07	.07	.13	.33
MSS Self-Stigma	-.01	.02	.08	.50

Note. For block 1, $R^2 = .11, p = .08$, and for block 2, $R^2 = .11, \Delta R^2 = .01, p = .50$, and adjusted $R^2 = .05$.

Hypothesis 5. Hypothesis 5 stated that distress disclosure would moderate the relationship between self-stigma and the degree of PTG. Four multivariate outliers were identified through the use of Mahalanobis distance and removed for the purpose of this

analysis. The controlled covariates (whether an injury was sustained during deployment and the scores for subscales 6 and 7 on the CES) were entered in the first block. The second block consisted of the MSS-SS and the DDI. For the third block, the interaction term based on the product of the centered scores for MSS-SS and DDI was entered (MSS x DDI). The regression analysis resulted in no statistically significant results for block 2, $F(5, 58) = 1.53, p = .19$, or for block 3, $F(6, 57) = 1.59, p = .17$. See Table 10 for the unstandardized regression coefficients (B) and intercept, standard errors, the standardized regression coefficients (β), R^2 , and R^2 change (ΔR^2).

Table 10

Hierarchical Regression of Posttraumatic Growth on Military Self-Stigma, Distress Disclosure, and Military Self-Stigma x Distress Disclosure, Controlling for Injury During Deployment and Combat Exposure

Block		B	SE B	β	p
Block 1	Constant	3.11	.61		.00
	Injured During Deployment	-.62	.31	-.25	.05
	CES: In/Out Rounds	.08	.13	.07	.58
	CES: Danger of Injury/Death	.07	.07	.12	.36
Block 2	Constant	3.46	.76		.00
	Injured During Deployment	-.58	.32	-.24	.07
	CES: In/Out Rounds	.08	.14	.08	.54
	CES: Danger of Injury/Death	.07	.07	.13	.32
	MSS Self-Stigma	-.01	.02	-.10	.44
	Distress Disclosure	-.01	.01	-.06	.63
Block 3	Constant	3.38	.76		.00
	Injured During Deployment	-.60	.31	-.25	.06
	CES: In/Out Rounds	.08	.14	.07	.58
	CES: Danger of Injury/Death	.08	.07	.14	.31
	MSS Self-Stigma	-.01	.02	.06	.68
	Distress Disclosure	-.01	.01	-.08	.56
	MSS-SS x DDI	-.002	.001	-.17	.19

Note. For block 1, $R^2 = .11, p = .08$. For block 2, $R^2 = .12, \Delta R^2 = .01$, and $p = .71$. For block 3, $R^2 = .14, \Delta R^2 = .03$, and $p = .19$. Adjusted $R^2 = .05$.

Hypothesis 6. Hypothesis 6 predicted that self-compassion would moderate the relationship between self-stigma and the degree of PTG. Four multivariate outliers were identified through the use of Mahalanobis distance and removed for the purpose of this analysis. The controlled covariates (whether an injury was sustained during deployment and the scores for subscales 6 and 7 on the CES) were entered in the first block. The second block consisted of the MSS-SS and the SCS. For the third block, the interaction term based on the product of the centered scores for MSS-SS and SCS was entered (MSS x SCS). The regression analysis resulted in no statistically significant results for block 2, $F(5, 58) = 2.22, p = .07$, or for block 3, $F(6, 57) = 1.82, p = .11$. See Table 10 for the unstandardized regression coefficients (B) and intercept, standard errors, the standardized regression coefficients (β), R^2 , and R^2 change (ΔR^2).

Table 11

Hierarchical Regression of Posttraumatic Growth on Military Self-Stigma, Self-Compassion, and Military Self-Stigma x Self-Compassion, Controlling for Injury During Deployment and Combat Exposure

Block		B	SE B	β	p
Block 1	Constant	3.11	.61		.00
	Injured During Deployment	-.62	.31	-.25	.05
	CES: In/Out Rounds	.08	.13	.07	.58
	CES: Danger of Injury/Death	.07	.07	.12	.36
Block 2	Constant	2.35	.84		.01
	Injured During Deployment	-.72	.31	-.29	.02
	CES: In/Out Rounds	.11	.13	.11	.41
	CES: Danger of Injury/Death	.07	.07	.12	.34
	MSS Self-Stigma	-.01	.02	-.07	.56
	Self-Compassion	.39	.21	.23	.08
Block 3	Constant	2.35	.85		.01
	Injured During Deployment	-.72	.31	-.29	.03
	CES: In/Out Rounds	.11	.14	.11	.44
	CES: Danger of Injury/Death	.07	.07	.12	.36
	MSS Self-Stigma	-.01	.02	.07	.60

Self-Compassion	.39	.22	.23	.08
MSS-SS x SCS	.002	.03	.01	.94

Note. For block 1, $R^2 = .11$, $p = .08$. For block 2, $R^2 = .16$, $\Delta R^2 = .05$, and $p = .16$. For block 3, $R^2 = .16$, $\Delta R^2 = .00$, and $p = .94$. Adjusted $R^2 = .07$.

Post-hoc analyses. The following analyses were conducted to clarify the nature of the results for the central hypotheses and to identify potential areas for future research. First, frequencies were determined based on participants' responses to items that were included to provide increased understanding of their personal experiences. Traumatic experiences prior to serving in the military were assessed, with 64.9% ($n = 50$) reporting none, 9.1% ($n = 7$) reporting one traumatic experience, and 9.1% ($n = 7$) reporting multiple traumatic experiences. This item was not significantly correlated with the independent, moderator, or dependent variables. Participants' ratings of the stressfulness of their deployment experience while they were going through them varied, including the following: not at all stressful (1.3%, $n = 1$), a little bit stressful (16.9%, $n = 13$), moderately stressful (28.6%, $n = 22$), quite a bit stressful (28.6%, $n = 22$), and extremely stressful (7.8%, $n = 6$). This item was significantly positively correlated with both PTSD symptom severity ($r = .432$, $p < .01$) and with degree of PTG ($r = .313$, $p < .05$), which is consistent with the nature of both of these dependent variables relying on the occurrence of highly stressful events. No correlation was found between the ratings of stressfulness of the deployment experience and the independent or moderator variables. Responses to an item asking whether the participants perceive themselves as having experienced growth as a result of their deployment experience were overwhelmingly rated in the affirmative (71.4%, $n = 55$), with 11.7% ($n = 9$) stating they had not experienced growth. Independent samples t -tests revealed no significant differences in mean scores on the

independent, moderator, or dependent variables based on whether participants perceived themselves as experiencing growth.

An open-ended question was incorporated for participants to specify the most stressful aspect of their deployment experience; see Appendix L for the participants' responses ($n = 68$). Using the DSM-5 (APA, 2013) criteria for a traumatic event as a guide, the responses were coded by type of traumatic exposure, including: direct experience (Criterion A1), personally witnessing the events occurring to others (Criterion A2), learning about traumatic events happening to someone with whom the person is close (Criterion A3), and repeated and/or severe exposure to details of the event that are aversive, such as interacting with human remains (Criterion A4). Twenty-two of the participants' responses matched Criterion A1, nine matched Criterion A2, one matched Criterion A3, and three matched Criterion A4. There were multiple responses that might match the criterion but which were questionable as stated, including seven for Criterion A1, five for Criterion A5, and three for Criterion A4. In addition to the DSM-5 trauma exposure categories, multiple of the participants' responses were coded into categories based on areas of overlap. Among these were 12 responses indicating that separation from family and loved ones was a highly stressful aspect of the deployment experience. For 13 of the participants, the environmental conditions (e.g., sandstorms, high operations tempo, limited sleep, leadership) were stressors associated with deployment. Four participants identified stressors related to gender (e.g., being a woman deployed with mostly men) and/or to sexual harassment and assault as severe stressors associated with deployment. Six participants provided responses that were unclear and not easily matched to any of the previously described categories. Collectively, the responses to this

item support the presence of deployment-related stress among the majority of the participants. Among these participants' responses, 35 appear to meet DSM-5 (APA-2013) criteria for a traumatic event and an additional 15 of the responses possibly meet the criteria.

A second open-ended question asked participants to state the ways in which they believe they have grown as a result of the deployment experience; see Appendix M for the participants' responses ($n = 57$). These responses were coded according to their apparent fit with the five factors of PTG, including relating to others, new possibilities, personal strength, spiritual change, and appreciation for life (Tedeschi & Calhoun, 1996). Thirty-five of the participants reported growth consistent with the personal strength factor, followed by 17 for relating to others, 11 for appreciation for life, five for new possibilities, and one for spiritual change. Six participants reported growth that might be consistent with the PTG factors but cannot be clarified, including three for appreciation for life, two for spiritual change, and one for personal strength. One participant's response, "the ability to be numb to certain aspects of my life," was not consistent with the factors of PTG. Looked at as a whole, 56 of the participants reported changes that seem to align with factors of PTG.

Correlations were also conducted to explore possible relationships between the scales, subscales, and individual items of the primary variables of interest in the present study. A significant negative relationship was found between the MSS-SS and the DDI ($r = -.25, p < .05$) for the 72 participants who completed the DDI and were retained after data cleaning, such that increases in self-stigma were associated with decreases in distress disclosure (i.e., becoming more concealing of distress). This finding is similar to the

conceptualization of mental health self-stigma as being related to a decreased likelihood to pursue mental health treatment (Corrigan, 2004; Green-Shortridge et al., 2007). MSS-SS was also significantly negatively correlated with multiple individual items from the DDI. Notably, all of the items with significant correlations were stated in the reverse direction (i.e., toward concealment rather than distress disclosure) and had been reverse-scored. For the first of these significant items, “when I feel depressed or sad, I tend to keep those feelings to myself” (Kahn & Hessling, 2001), the correlation was significant at $r = -.26, p < .05$. The second correlated item was, “if I have a bad day, the last thing I want to do is talk about it” (Kahn & Hessling, 2001) was significant at $r = -.29, p < .05$. For the third correlated item, “I rarely look for people to talk with when I am having a problem” (Kahn & Hessling, 2001), the correlation was significant at $r = -.29, p < .05$. The final of the correlated items, “when I’m distressed I don’t tell anyone” (Kahn & Hessling, 2001), was significant at $r = -.306, p < .01$. Collectively, these correlations between MSS-SS and both the overall score for the DDI and its specific items support part of Hypothesis 2 in the sense that they indicate the presence of a negative relationship between self-stigma and distress disclosure.

MSS-SS did not have a significant relationship with the SCS total score. However, there was a significant positive relationship with the SCS subscale of self-judgment ($r = .27, p < .05$), indicating that increases in self-stigma are associated with increases in self-judgment. This may be an indication that self-stigma and self-judgment are conceptual constructs with some overlap, which seems consistent with self-stigma being associated with the internalization of negative stereotypes about mental health

problems (Corrigan, 2004) and with self-judgment being defined as the reverse of extending understanding and compassion to one's self (Neff, 2003a).

On a symptom level, MSS-SS was significantly positively correlated with three of the PCL-M items measuring symptoms of PTSD. For the item measuring the intrusive symptom of “repeated, disturbing memories, thoughts, or images of a stressful military experience” (Weathers et al., 1994), the correlation was significant at $r = .27, p < .05$. For “suddenly acting or feeling as if a stressful military experience were happening again (as if you were reliving it)” (Weathers et al., 1994), the correlation was significant at $r = .27, p < .05$. Finally, for “avoiding thinking about or talking about a stressful military experience or avoiding having feelings related to it” (Weathers et al., 1994), the correlation was significant at $r = .26, p < .05$. In all of these cases, increases in self-stigma were related to increases in the severity of the specific PTSD symptom.

Chapter Five

Discussion

Overview of study. Military deployments have long been linked with corresponding changes in the military service members and veterans who experienced them (Lerner, 2003; Nash, Silva, & Litz, 2009). Some of these changes can be detrimental, examples of which are the mental health diagnoses like PTSD that can sometimes arise subsequent to deployment-related trauma. Other changes can be beneficial, such as a sense of personal growth or a broadened perspective of the world. Given the significant number of service members who have deployed over recent decades, including the more than 2.6 million who deployed in support of OEF/OIF/OND (Department of Veteran Affairs, 2014), the potential collective impact of these deployment-related changes is considerable. Within the context of detrimental changes, the occurrence of deployment-related PTSD highlights the need for mental health services for deployment veterans. Complicating this access to supportive services is the presence of stigma within the military culture toward perceived weakness, including mental health problems (Green-Shortridge et al., 2007). The current study sought to understand how deployment veterans' internalization of this stigma toward mental health problems (self-stigma) might predict the presence of PTSD symptoms. The possible role of personal tendencies toward disclosing or concealing distress (distress disclosure) was included as potentially moderating the relationship between self-stigma and PTSD.

Further, the positive psychology concept of self-compassion was explored as a possible moderator between self-stigma and PTSD.

Where the preceding discussion predominantly focuses on the undesirable changes that may come about after a deployment experience, it was also mentioned that desirable changes might occur. Military recruitment advertisements build upon expectations of growth based on military experience, including the WW-II Navy advertisement, “Join the Navy, it’ll make a man out of you” and the contemporary, “Those who desire our title must first endure our training, and undergo an everlasting change that is external, internal and undeniable. The transformation will not happen overnight, but will last a lifetime” (U.S. Marine Corps, 2016). Even when traumatic deployment experiences occurred, the possibility exists that the deployment veteran will experience personal growth directly related to the traumatic experience, known as posttraumatic growth (PTG; Calhoun & Tedeschi, 2013; Tedeschi & Calhoun, 2004). However, this growth is conceptualized to occur after an individual actively copes with the distress associated with the experience and finds meaning in it. This open acknowledgement of distress may be contrary to the previously described stigma toward mental health problems in the military, which may then limit the opportunities for PTG. The current study sought to explore whether self-stigma predicts the degree of PTG. Given the theoretical importance of disclosing distress to the development of PTG, distress disclosure was again included as a moderator of the predicted relationship between self-stigma and PTG. Self-compassion was also included again as potentially moderating the relationship between self-stigma and PTG.

Discussion of hypotheses. Examination of the correlation coefficients between the primary variables of interest in this study revealed a significant and positive relationship between PTSD symptoms (as measured by the PCL-M) and degree of PTG (as measured by the PTGI). This is consistent with the nature of both of these constructs relying on the occurrence of a traumatic or highly stressful event. However, none of the other variables of interest were significantly related based on the findings of the correlation analyses. This was unanticipated given the hypothesized relationships between self-stigma (as measured by the MSS-SS) and PTSD severity, self-stigma and degree of PTG, self-stigma and tendency toward disclosing or concealing distress (as measured by the DDI), and self-stigma and the extent to which one has compassion for their self (as measured by the SCS). The lack of apparent relatedness between these variables based on the participant data set the stage for none of the hypotheses of this study to be supported. Each of the hypotheses will be described in further detail below, including possible contributors to the lack of significant findings.

The first hypothesis was that self-stigma would have a positive relationship with PTSD and would significantly predict the level of severity of PTSD symptoms. As previously stated, no significant relationship was found between participants' scores on the MSS-SS and their scores on the PCL-M. The regression analysis showed that the model containing the MSS-SS and the covariate variables (including whether an injury was sustained during the deployment and scores on the CES subscales) did significantly predict the PCL-M score. However, this model did not significantly increase the predictive value in comparison to the model containing only the covariates. The MSS-SS variable accounted for only 2% of the variance in the PCL-M variable, suggesting that

the presence of high self-stigma does not result in significantly higher levels of PTSD severity. Therefore, hypothesis 1 was rejected. The results of the correlation and regression analyses for this hypotheses are surprising given the support for the influence of self-stigma on help-seeking for mental health problems in the general population (Corrigan, 2004; Rusch et al., 2005) and in the military population (Green-Shortridge et al., 2007; Hoge et al., 2004). A premise of the present study was that decreased likelihood for seeking help is synonymous with increased PTSD symptom severity, thus making self-stigma a predictor for PTSD symptoms. However, it may be that help seeking and symptom severity are not immediately linked, thereby making self-stigma a less direct predictor of PTSD symptom severity than was anticipated.

An additional possible contributor to the non-significant finding for hypothesis 1 is the response characteristics to the MSS-SS variable. The MSS-SS, a subscale of the MSS, has possible total scores ranging from 10 to 40, with higher responses indicating more self-stigma and responses of 10 indicating an absence of self-stigma (Skopp et al., 2012). The mean score for the participants was 21.7 ($n = 81$), which suggests a low overall amount of self-stigma in the sample. The responses ranged from 11 to 39, with three modes identifiable on a histogram of the values at approximately 22, 11, and 25 (in order of height). Eleven of the participants had scores in the higher range, which may have contributed to limited ability to demonstrate a predictive relationship between self-stigma and PTSD symptom severity. Similarly, a possible contributor to the non-significant finding is the response characteristics to the PCL-M variable. The PCL-M has possible total scores ranging from 17 to 85, with scores of 50 or higher on the PCL-M considered to be positive for the presence of PTSD (Weathers, Litz, Huska, & Keane,

1994). The mean score for the participants on the PCL-M was 32.8 ($n = 81$), which is indicative of some symptoms of PTSD but falls below the recommended diagnostic threshold. The responses ranged from 16 to 77. A total of 13 of the participants were at or above the threshold, possibly limiting the ability to identify a predictive relationship between self-stigma and PTSD symptom severity.

The lack of an identified positive and significant relationship between self-stigma and PTSD symptom severity may also demonstrate that deployment veterans are resistant to the development of self-stigma. In a qualitative study with OEF/OIF combat veterans in treatment for PTSD, Mittal et al. (2013) found that the veterans were generally not disposed to being influenced by self-stigma. Rather, they felt more influenced by a perception of public stigma toward mental health problems among veterans. Although they reported disagreement with the stereotypes associated with the public stigma, they cited public stigma as a main factor in their initial hesitancy to seek treatment because they did not want to be “labeled” with PTSD. This is consistent with observations made by Corrigan (2004) and Rusch et al. (2005) that individuals with mental health problems in the general population may be unlikely to present for care because they want to avoid the label of a mental health diagnosis. This may mean the perception of public stigma among deployment veterans is a more potent predictor of decreased help seeking and, by relation, PTSD symptom severity than self-stigma would be. Although the hypotheses of the present study are specific to self-stigma, participants completed the full MSS so data for the second subscale of the MSS (Military Stigma Scale – Public Stigma) is available for future analyses. Mittal et al. (2013) also observed that the veterans in their study perceived PTSD to be less stigmatizing than other mental health diagnoses such as

schizophrenia. If this characteristic is generalizable to the participants in the present study this, too, may be consistent with the weak relationship found between self-stigma and PTSD symptom severity.

In contrast to the above discussion regarding the apparent minimal role of self-stigma among deployment veterans, a study of self-stigma among service members in the National Guard found a strong relationship between self-stigma, anticipated enacted stigma from unit leadership, and intention to seek help (Blais & Renshaw, 2014). Specifically, high anticipation of stigma from leadership predicted low intention to seek help, with self-stigma mediating the relationship. Interestingly, PTSD symptoms (which were measured by the PCL-M) were unrelated to intention to seek help. This would seem to indicate that self-stigma is a relevant area of continued research for possible stigma-reducing interventions that would increase engagement with mental health treatment among deployment veterans. The specific relationship between self-stigma and PTSD symptoms may not be the appropriate avenue for this future research. It is important to note that the Blais and Renshaw (2014) study differs from the present study in multiple ways, including its focus on National Guard service members from one unit, the use of a different measure for self-stigma (the Self-Stigma of Seeking Help Scale; Vogel, Wade, & Haake, 2006), and the incorporation of intention to seek help as the dependent variable.

Additionally, the present study found evidence through correlational analyses for significant and positive relationships between the MSS-SS and individual items on the PCL-M. Specifically, scores on the MSS-SS were significantly and positively related to the following PTSD symptoms: “Repeated, disturbing memories, thoughts, or images of a

stressful military experience,” “Suddenly acting or feeling as if a stressful military experience were happening again (as if you were reliving it),” and, “avoiding thinking about or talking about a stressful military experience or avoiding having feelings related to it” (Weathers et al., 1994). In all cases, increases in self-stigma were related to increases in the severity of the specific PTSD symptom. For the first two PTSD symptom items described above, both of which pertain to intrusion symptoms, it could be that these symptoms are perceived as more stigmatizing (e.g., uncontrollable, difficult to keep from the notice of others) than other symptoms, and are thus related to internalized self-stigma. For the third PTSD symptom item described above, which relates to avoidance symptoms, this relationship may be indicative of the previously described potential for those who are experiencing self-stigma to be less likely to express their thoughts and feelings related to the mental health problem (Corrigan, 2004; Green-Shortridge et al., 2007).

The second hypothesis in the present study stated that distress disclosure (as measured by the DDI) would moderate the relationship between self-stigma and the level of severity of PTSD symptoms. The regression analysis showed that the model containing the MSS-SS, the DDI, and the covariate variables significantly predicted the PCL-M score, as did the model containing the MSS-SS, the DDI, the interaction between the MSS-SS and the DDI, and the covariate variables. However, neither of these models significantly predicted the PCL-M score. This did not support the presence of a relationship between self-stigma and distress disclosure that would moderate the predictive influence of self-stigma for PTSD symptom severity. Hypothesis 2 was therefore rejected. The aforementioned possible explanations under hypothesis 1 are

again applicable to hypothesis 2 in regard to the non-significant relationship found between the MSS-SS and the PCL-M. Therefore, discussion for hypothesis 2 will center on the relationship between distress disclosure and self-stigma. Following data cleaning and removal of outliers, a significant and negative correlation was found between the MSS-SS and the DDI. This supports a premise of the present study that, as level of self-stigma decreases, level of distress disclosure decreases. In other words, a participant experiencing self-stigma would be likely to become more concealing of their distress. This relationship is supported by research suggesting that men in particular (the predominant gender represented in the present sample) experience gender role conflict when they are not “tough enough” to tolerate distress, which is then related to both self-stigma and decreased distress disclosure (Pederson & Vogel, 2007). For women deployment veterans, expectations of adherence to masculinized values within military culture (Dunivin, 1994) may contribute to self-stigma and concealment of distress.

A review of the characteristics of distress disclosure among the participants in the present study is important. The DDI ranges from scores of 12 to 60, with lower scores indicating a personal tendency toward concealment and higher scores indicating a personal tendency toward disclosure (Kahn & Hessling, 2001). The mean score among the participants was 29.4 ($n = 76$), which is relatively balanced between concealment and disclosure. The participants’ scores ranged between 13 and 60. Based on a visual inspection of the histogram of the scores, there was a slight trend toward concealment, with 40 of the participants scoring below 30. This resonates with the observation that military culture reinforces stoicism (Dunivin, 1994) and with previous research

suggesting that military service members perceive disclosure of distress as risky (Britt, 2000; Hoge et al., 2004).

The third hypothesis was that self-compassion would moderate the relationship between self-stigma and the level of severity of PTSD symptoms. The regression analysis showed that the model containing the MSS-SS, the SCS, and the covariate variables significantly predicted the PCL-M score, as did the model containing the MSS-SS, the SCS, the interaction between the MSS-SS and the SCS, and the covariate variables. However, neither of these models significantly predicted the PCL-M score. This did not support the presence of a relationship between self-stigma and self-compassion (as measured by the SCS) that would moderate the predictive influence of self-stigma for PTSD symptom severity. Hypothesis 3 was therefore rejected. Similar to the discussion under hypothesis 2, the possible explanations for the lack of a significant relationship between self-stigma and PTSD symptom severity again apply. Focusing on self-compassion, then, it is noteworthy that no significant correlation was found between the SCS with either the MSS-SS or the PCL-M. Given this, no moderation effect would likely be present.

One consideration is whether the self-compassion construct has utility in terms of identifying variety of personal tendencies within a military deployment veteran population. Given the theoretical difference surmised by the present study between extending compassion to one's self (Neff, 2003b) and the demands for self-discipline and rejection of distress in the military culture (Dunivin, 1994), it was anticipated that self-compassion scores could be uniformly low within the present sample. The total SCS is scored based on the mean of the summed responses across all of the subscales, after

reverse scoring the negatively phrased subscales (Neff, 2003a). The total scores can therefore range between one and five, with higher scores indicating more self-compassion. Participants in the present study had a mean score of 2.9 ($n = 71$), suggesting a moderate amount of self-compassion. The scores ranged from 2.0 to 4.4. Based on visual review of the histogram of the scores, the participants' scores were slightly skewed in the direction of lower self-compassion, with 50 of the participants scoring below the midpoint of three. This would seem to support the possibility that self-compassion is generally lower among deployment veterans and that this could be indicative of the influence of military culture. Also consistent with this was the finding that the MSS-SS had a significant, positive relationship with the SCS subscale of self-judgment (one of the negatively stated subscale items). It is possible that this relationship is particularly relevant for deployment veterans who may generally tend toward decreased self-compassion.

The fourth hypothesis in the present study stated that self-stigma would have a negative relationship with PTG and would significantly predict the degree of PTG. No significant correlation was found between self-stigma and PTG (as measured by the PTGI). Likewise, the regression model for the MSS-SS and the PTGI was not significant, indicating that self-stigma did not predict degree of PTG in this sample. Based on these findings, hypothesis 4 was rejected. The position of the present study was that the presence of self-stigma would disrupt the active grappling to understand the trauma experience that is theoretically a necessary condition for the development of PTG (Calhoun & Tedeschi, 2013). One study previously provided support for this theoretical relationship through the identification of a negative relationship between internalized

stigma based on HIV diagnosis and the development of PTG. It may be that this relationship is not generalizable to the self-stigma specifically related to mental health diagnoses among the deployment veterans in the present sample.

Similar to the discussion under hypothesis 1, another possible explanation for the lack of a significant relationship between self-stigma and PTG in the present study could be a lack of highly stressful or traumatic experiences among the participants. Based on scores on the PCL-M, it could be concluded that a minority of the participants experienced severe distress given the few who met the cutoff criteria for the presence of PTSD. However, caution is warranted in making this assumption because the presence of PTSD is not a prerequisite for the occurrence of PTG. Further, PTG includes both traumatic events and significant life crisis as possible contributors to growth (Calhoun & Tedeschi, 2013; Tedeschi & Calhoun, 2004), which is broader than the definition of a traumatic event under the diagnostic criteria for PTSD (APA, 2013). Participants' responses to the question of how stressful their deployment experience was while they were going through it was largely in the direction of stressful, with 28.6% rating it as moderately stressful, 28.6% as quite a bit stressful, and 7.8% as extremely stressful. Further, coding of the open-ended question about which aspects of the deployment experience were most stressful indicates that 22 of the participants likely experienced an event that met DSM-5 diagnostic criteria for a traumatic event. Overall, these suggest that a comparatively small yet still substantial proportion of the participants had experiences that could contribute to PTG.

A review of the characteristics of PTG among the participants in the present study is important. Total scores on the PTGI are calculated based on summing the responses

and obtaining an average score, with possible total scores ranging between zero and five and higher levels indicating a higher degree of PTG (Tedeschi & Calhoun, 1996). The mean PTGI score for the participants in the present study was 2.14 ($n = 74$), with a range between 0.24 and 4.43. The majority of the participants experienced a small degree of PTG or no PTG; of the remainder, 18 experienced a moderate or higher degree of PTG. Given the limited presence of PTG among the participants, coupled with the previously described low presence of self-stigma, it may not have been possible based on this study to fully explore the possible relationship between self-stigma and PTG.

Hypothesis 5 predicted that distress disclosure would moderate the relationship between self-stigma and the degree of PTG. The regression analysis was not found to be significant for the model containing the MSS-SS, the DDI, and the PTGI. Likewise, the model adding the interaction term between the MSS-SS and the DDI was not significant. This demonstrates that distress disclosure did not moderate the relationship between self-stigma and degree of PTG. Hypothesis 5 was therefore rejected. A large portion of the explanation for the lack of significance of this hypothesis is likely the previously described lack of predictive power of self-stigma for degree of PTG. The relationship between self-stigma and distress disclosure has been discussed under hypothesis 2 and is also applicable to hypothesis 5. Focusing only on distress disclosure and PTG, it was a supposition of the current study that distress disclosure tendencies would be related to the development of PTG. This was based both on the conceptual model of PTG (Calhoun & Tedeschi, 2013; Tedeschi & Calhoun, 2004) and on a study by Lindstrom et al. (2013) that supported the importance of disclosing about traumatic events to the eventual development of PTG. It was therefore unanticipated that there would be no relationship

between distress disclosure and degree of PTG in the present study. However, as described in the discussion of previous hypotheses, the low presence of traumatic experiences coupled with a tendency toward low distress disclosure (i.e., concealment) could also have contributed to the lack of a significant relationship among the participants in the present study.

Hypothesis 6 stated that self-compassion would moderate the relationship between self-stigma and the degree of PTG. The regression analysis was not found to be significant for the model containing the MSS-SS, the SCS, and the PTGI. Likewise, the model adding the interaction term between the MSS-SS and the SCS was not significant. Therefore there is no evidence that self-compassion moderated the relationship between self-stigma and degree of PTG; hypothesis 6 was rejected. Similar to the discussion under hypothesis 5, one potential explanation for the lack of significance of this hypothesis may be the lack of predictive power of self-stigma for degree of PTG. The relationship between self-stigma and self-compassion has been discussed under hypothesis 3 and is also applicable to hypothesis 5. Turning, then, to exploration of the relationship between self-compassion and degree of PTG, little was known about the relationship between these two constructs prior to the present study. It was possible that SCS could facilitate the development of PTG by increasing acceptance rather than avoidance of distress (Neff, 2003b), while it was also possible that personal characteristics associated with self-compassion (e.g., resilience) might cushion the distress a person feels during a highly stressful or traumatic event, thereby limiting the potential for PTG (Allen & Leary, 2010; Tedeschi & McNally, 2011). The present study would indicate that self-compassion and PTG are largely unrelated concepts. Possible

caveats to this conclusion are the previously described low presence of traumatic experiences coupled with a tendency toward lower levels of self-compassion among the participants in the present study.

Implications. The results of the present study have implications for understanding the impact of deployment experiences on service members and Veterans. Included within this are their views of themselves, their tendencies to share or conceal distress, and both the suffering and the personal growth that can come about from traumatic or stressful circumstances during deployment. Regarding their views of themselves, this study considered self-stigma specific to mental health problems. The participants' scores were generally low on self-stigma. Applied broadly to the population of military service members and Veterans who have deployed, this may suggest that they are resistant to the internalization of military-specific stigma toward mental health problems. Taken to another level, this may indicate that values within military culture of sameness, stoicism, and putting others first (Dunivin, 1994) do not influence military service members and veterans to such an extent that they minimize or do not acknowledge to themselves their own experience of psychological distress. However, their internal recognition may butt up against their perceived expectations of stigma from the military as well as from the public should they speak openly about or seek help for their distress.

Perhaps the present study was too optimistic in its early assertion that efforts by the Department of Defense to decrease stigma toward mental health problems (Dingfelder, 2009) were well underway, leaving the individual perspective of the service member (e.g., self-stigma) as the remaining link for intervention. Or it could be the case

that these organizational-level changes to decrease stigma have, in fact, worked on the individual level by normalizing mental health problems such that service members are more resistant to internalized stigma. However, this normalization process may not yet have contributed to a decrease in the impact of decades (if not centuries) of military institutional discrimination toward mental health problems (Dingfelder, 2009; Stecker et al., 2007). Should this be the case, it may also have contributed to the finding in the present study that participants tended to be more concealing of their psychological distress than disclosing of it.

Taken together, the findings on self-stigma and distress disclosure in this study paint a possible picture of military service members and veterans as being aware of and perhaps even understanding of their psychological distress while also being more likely to conceal the distress than to share about it with others. This suggests that those who would likely benefit from mental health services may instead be choosing to manage on their own and actively avoiding the outward expression of their discomfort. Without opportunities to share about their distress and receive support, it is likely that the distress could worsen. Indeed, research on distress disclosure suggests that concealment is associated with increased psychological distress (see for example Bruno, Lutwak, & Agin, 2009).

Self-compassion was incorporated in the present study as a means to understand how a characteristic so seemingly at odds with the characteristics of military culture may serve as a protective moderator between self-stigma and trauma-related stress. Although not ultimately significant in its relationship to either variable, it is worth further examining the findings on self-compassion from the present study as it may be the first to

explore the applicability of this construct to a non-clinical sample of military service members and veterans. Generally speaking, the majority of the participants were slightly on the lower end of self-compassion. This is consistent with a military culture built upon exacting standards, evaluation, and “service before self” (Dunivin, 1994), which likely does not emphasize service members extending the care, understanding, and acceptance to themselves that would be characterized by higher levels of self-compassion (Neff, 2003b). However, there were certainly indicators that self-compassion was not absent among the participants. For example, no participant had a total score of one, which would have indicated an absence of self-compassion. Although no participants had a total score of five, the highest end of self-compassion, seven participants had scores of four or higher. Perhaps this is an indication that military culture and self-compassion are not incompatible, which could open pathways for the facilitation of training on self-compassion as one resource for service members to learn for taking care of themselves during highly stressful or traumatic circumstances. Then, too, there is some support for the efficacy of teaching self-compassion to veterans following a traumatic experience as an adjunct to treatment for PTSD (Thompson & Waltz, 2008).

When considering PTSD, 16% of the participants in the present study met the diagnostic threshold for the disorder based on the recommended total score cutoff on the PCL-M. Although this represents a relatively small portion of the participants, it is somewhat higher than the estimated PTSD prevalence of between five- and 15-percent suggested by the RAND Corporation on the basis of 21 epidemiological studies of PTSD in service members who have deployed (Ramchand et al., 2008). Based on responses to an open-ended question about the most stressful aspect of the deployment experience,

32% of the present study's participants reported experiences that seem to meet diagnostic criteria for a traumatic event (APA, 2013). Limitations of both the PCL-M for diagnosing PTSD and of the military branch representativeness of the participants will be discussed. However, it should be noted that these numbers are somewhat higher than might be anticipated from a sample that was disproportionately heavy with U.S. Air Force deployment veterans, a branch that is often associated with less exposure to potentially traumatic deployment experiences.

Regardless of whether participants experienced traumatic events while deployed or met criteria for a PTSD diagnosis, it is clear that the majority perceived their deployment as stressful. 84% of the participants responded to the open-ended question about which aspects of their deployment were stressful, with many reporting real or perceived danger to themselves or to others. More than a handful of participants reported stressors related to gender and/or to sexual harassment and assault. For many, the stressors were specific to the deployed environment, including toxic leadership, hostile weather, and a high operations tempo contributing to poor sleep. For others, separation from family and loved ones was the primary stressor. It is noteworthy that, in the case of this question, participants did not opt for concealment of potential distress. In fact, some provided quite detailed descriptions of the stressors they experienced. Clinically speaking, this may support the use of open questions (e.g., "What was your deployment experience like? What was the worst part? Best part?") when talking with deployment veterans about their experiences, vice closed-ended ones (e.g., "Was your deployment stressful?").

Specific to growth following traumatic or highly stressful deployment experiences, results based on the PTGI suggest that the majority of the participants in the present study experienced little to no PTG. However, 24% did experience between a moderate and a high degree of PTG. Given that PTG is not a diagnostic category, there is not a prevalence rate or a comparable statistic for the expected occurrence of PTG. It is encouraging that nearly a quarter of the participants experienced a positive transformation in their development subsequent to the traumas or stressors they experienced. Looking beyond PTG, 70% of the participants responded to an open-ended question about the ways in which they perceived that they had grown as a result of their deployment experience. Of these, 98% reported growth consistent with one or more of the factors of PTG. An implication following this is that, regardless of whether a traumatic circumstance occurred, service members and veterans seem to view deployments as important life events that can bring about beneficial personal growth.

Limitations. The present study contained multiple limitations that should be considered in the context of interpreting and making use of the results. First, the recruitment strategy yielded a smaller sample size than had been desired based on a power analysis. Second, the recruitment strategy used was convenience sampling. This means that the participants may not be fully representative of the population of deployment veterans. Possibly related to this were over-representations and/or under-representations of some demographics for the participants. In regard to race/ethnicity, the participants were representative based on the 2014 Demographics Profile of the Military Community (DoD, n.d.). The percentage of female participants was higher (23.5% vice 15.1%), suggesting that women were over-represented in this study. Age was generally

higher in this study, with a mean age of 46 years compared to mean ages of 27 years (enlisted) and 34 years (officer). In regard to branches of service, the present study had the highest number of participants from the Air Force, followed in order by the Army, the Navy, and Marine Corps. In reality, the order of branch size is: Army, Navy, Air Force, and Marine Corps (DoD, n.d.). Therefore, the Air Force was over-represented in this study. Further, there was a disproportionate amount of officers compared to enlisted, with a nearly equal amount of each whereas a 1 to 4.6 ratio would be expected in the active duty military (DoD, n.d.).

Also along the lines of convenience sampling, a decision was made not to restrict participation in this study to a particular era of service (e.g., OEF/OIF/OID) or to a specific kind of military deployment (e.g., combat, humanitarian, steady-state operations). In addition to maximizing recruitment, an intention behind this decision was to observe any potential differences between participants based on era of service and type of deployment operation. This means the results are likely not generalizable to the currently serving military, which may account for some of the demographic differences (such as age) between the present study and the 2014 demographics of military service members (DoD, n.d.). Further, this study made the assumption that the variables being studied would generalize across currently serving service members, veterans, and retirees across branches and across multiple eras of service. This limits the ability of the results to generalize to any particular one of these different groups of deployment veterans.

Related to the diversity of era of service is the potential problem of chronicity, with participants' year of joining the service ranging from the 1950s to the 2000s. For some of the participants, their deployment experience could have been as recent as a year

ago. For others, their deployment experience may have occurred in the 1960s. This makes it difficult to say with any degree of certainty what the timeline has been for the development of PTSD symptoms or for the potential for PTG. For example, a Vietnam veteran may have had upwards of 40 years for symptoms of PTSD to emerge as well as decades in which these symptoms could have gradually abated or during which he could have sought treatment. For an OND veteran who returned from deployment two years ago, the process of PTG may still be in progress as she works to make meaning of her experiences. Further, generational differences both within the military culture and in society as a whole may have influenced participants' responses to questions about stigma, distress disclosure, and self-compassion. Finally, the nature of the traumatic experiences or stressors during deployment likely differs to some extent by era of service, which could have impacted participants' responses.

The means by which the present study measured PTSD symptom severity may also have limited the results. The PCL-M is a self-report screening tool used to indicate the presence of PTSD symptoms (Weathers, Litz, Huska, & Keane, 1994). Self-report screening tools may be prone to false findings, including indicating the presence of PTSD symptoms where there are none or indicating no symptoms when they are in fact present. This can be related to how the person completing the self-report interprets the items as well as to the person's hoped-for result. For diagnostic purposes, a clinician-administered assessment would be a more accurate assessment of the presence of PTSD symptoms and for diagnostic decisions. For example, the Clinician Administered PTSD Scale for DSM-5 is considered the "gold standard" for assessing PTSD (NCPTSD, 2016). Speaking of the DSM-5 (APA, 2013), another limitation of the present study was its

utilization of the DSM-IV (APA, 2000) criteria for PTSD. This decision was guided by the lack of psychometrically validated self-report measures based on the DSM-5 diagnostic criteria for PTSD at the time the study was started. The slightly different conceptualization of PTSD in the DSM-5 includes a new criteria category consistent with negative changes in mood and cognition, an example of which would be a changed view of one's self and others. It is possible that this item might have been more related to the self-stigma, distress disclosure, and self-compassion variables from the previous study than the preexisting DSM-IV items were.

A final and important limitation to the present study was the existence of a large amount of missing data. This came from two sources, one of which was the decision not to make the online questions forced-response items. The intent was to decrease potential distress participants might have while responding to the questions by making clear that the participant could skip some of the items should they perceive that it was necessary to do so. This may have particularly impacted response rates to the demographic questionnaire, which was always the last part of the survey presented online. Given the large number of items on the survey overall, it could be that both content-specific distress and item response fatigue contributed to missing items. The second source of missing items was an initial error in the online survey such that the last four items of the MSS were omitted. Because this was the independent variable in the study and a large percentage of participants were therefore not able to answer the full scale, efforts were made to offset the impact by using the expectation-maximization procedure to replace the missing items. However, it may be the case that this influenced the results of the study such that it is not fully representative of the participants' perceptions of self-stigma.

Future research. Based on the findings of the present study, it is recommended that future studies continue to focus on the impact of stigma on the decisions military service members and veterans make regarding mental health services. While this study did not identify a significant influence of self-stigma on trauma-related distress or growth in a non-clinical convenience sample, it may be the case that it would be relevant to a clinical sample. Further, self-stigma may be applicable to other conditions, both physical and mental, that are prevalent among service members and veterans (e.g., depressive disorders, chronic pain, traumatic brain injury, moral injury). Looking at stigma more broadly, military stigma and public stigma merit ongoing research. In particular, the effectiveness of stigma-reduction measures in the military should continue to be evaluated and used to guide future interventions.

Related to the continued research on stigma, additional research on distress disclosure in the military and veteran populations is indicated. Specifically, this could be a pathway for identifying ways in which a generally concealing population can be encouraged to adaptively disclose their distress. In the present study, the majority of the participants responded quite openly about their deployment stressors and their growth and this may have been facilitated by the anonymous nature of the survey. Might it be possible to offer mental health services to military members and veterans in a way that feels less risky or stigmatizing for them to disclose distress? For example, future research could focus on the distress disclosure tendencies of service members who seek mental health services outside of military channels, such as through Give an Hour. Additionally, research into smart phone applications specific to mental health may prove

beneficial for providing support to service members and veterans who are more concealing of their distress.

Continued research focusing on the application of positive psychology to the lives of military service members and veterans is merited. The present study looked at two concepts within this realm, self-compassion and PTG, and found evidence for both among the participants. This is consistent with efforts by both the military and by the VA to foster wellness, examples of which include resiliency training in the Army and the incorporation of mindfulness-based techniques in the Veterans Health Administration. It may be that continued research on the facilitation of positive psychology for the military and veteran populations will contribute a more balanced perspective of mental health. Specifically, should the general perception among these populations of mental health care change such that it includes both the treatment of distress and the fostering of wellness, stigma associated with help-seeking might decrease.

Perhaps related to the above, it seems clear that more research focusing on service members' and veterans' own perspectives of their experiences is needed. Studies that center on a predefined and narrow construct may not provide opportunities to understand the multifaceted aspects of their experiences. This likely does not foster a full understanding of military and veteran culture, which could limit the potential learning for clinicians and effective care for these populations. Therefore, qualitative research seeking to understand the experiences of those who serve or who served is called for. Further, increasing the use of military and/or veteran participatory research could increase awareness of service members' and veterans' perspectives, thereby fostering

clinicians' sensitivity to their unique needs and improving both policy and clinical interventions for these populations.

Concluding Remarks

For the millions of Soldiers, Marines, Sailors, and Airmen who deployed in support of the U.S., deployments are a profound time of change. Some of these changes can be detrimental and with potentially lifelong consequences, including both psychological and physical injuries. Other changes can have equally life-spanning outcomes but in a beneficial direction, such as changed priorities or a sense of personal growth. For many, the deployment experience brings about both the positive and the negative. Those deployment veterans who seek support, whether informally or formally, with making sense of these changes may be confronted by limited understanding from others of how not only the deployment experience but also military culture influenced them. Even among their military and veteran peers, they may feel compelled to focus only on the positive out of concern for stigmatization of psychological distress within their shared culture. For those clinicians who work with deployment veterans, it can feel like a challenge to foster a relationship in which the veteran can move past these perceived barriers. An important step toward doing so is opening the door to their experience by being curious about and open to their perceptions while giving them the space to decide when they are ready to share.

Heidi Squier Kraft (2007), a psychologist who served on active duty with the Navy during OIF, shared a powerful example of how her deployment experiences influenced her, including that disclosing her distress was not her first impulse:

... a rack that was being moved on the floor above us crashed to the deck. The sound was deafening, a terrible crack of metal and concrete that caused my window to shudder in its sill.

I froze.

My heart seized. I clutched the medical chart I was holding so tight that my fingers blanched. I darted looks out my window at the blue fall sky and up at my white ceiling. I stood and walked to my open doorway, looking into the hall for signs that anyone else had heard the crash. Our doctors, corpsmen, and admin staff moved through their morning routines as if nothing had slammed into the ceiling above our heads. I bit my lip, battling tears of frustration. I knew it was just me. I knew it was the war, still with me.

HM3 Betancourt, a relatively junior psychiatric technician who had deployment experience with the Marines, saw me in the doorway and stopped. He moved toward me cautiously.

“Hey, ma’am. You okay?”

“Oh, sure,” I said, not making eye contact and moving back into my office, looking at my feet. He followed me, closing the door behind him.

“Dr. Kraft?”

I looked up.

“It’s okay if you’re not okay.”

Two big tears slid down my face.

“I’m not,” I whispered, sinking to the couch my patients used and covering my face with my hands.

HM3 Betancourt sat in my chair.

“I know, ma’am.

Ten minutes and very few words later, I shook his hand and strode out my door to wash my face and then retrieve my first patient from our waiting room.
(p. 225-226)

The response of HM3 Betancourt beautifully describes the validation and support a clinician can provide by being attentive to the individual veteran's experiences, perceptions, and needs.

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Appendix A

Glossary of Terms

Combat Masculine Warrior (CMW) paradigm. The military's mission of preparedness for and execution of combat has reinforced a warrior ethos within the military culture, which Dunivin (1994) described as the Combat Masculine Warrior (CMW) paradigm. The CMW paradigm is related to stereotypically masculine values within the military culture, including moralism (such as the adherence to core values like, "Integrity First", "Duty", and "Loyalty"), conservatism, and homogeneity (e.g., valuing "sameness" more than differences) (Dunivin, 1994). The "warrior" component of the CMW paradigm captures elements of military culture that contribute to a war-fighting mentality. Among these elements are a commitment to putting others before one's self, an awareness of one's expendability in support of a larger purpose, and *esprits de corps*.

Combat role. Service members who deploy within the context of a mission involving the use of force up to and including deadly force when engaging with combatants. The designation of a combat role is typically closely associated with the specific career field to which a service member has been assigned and trained for (e.g., infantry, special operations, some aviation roles, submarine warfare, artillery, tank crew).

Combat support role. According to the Department of Defense (DoD) Dictionary of Military and Associated Terms, combat support is "fire support and operational assistance provided to combat elements" (DoD, 2013, p. 48). The designation of a combat support role is typically closely associated with the specific career field to which a service member has been assigned and trained for (e.g., military police or security forces, intelligence, air defense, missile launch, engineering).

Combat service support role. According to the DoD Dictionary of Military and Associated Terms, combat service support is “The essential capabilities, functions, activities, and tasks necessary to sustain all elements of operating forces in theater at all levels of war. Within the national and theater logistic systems, it includes but is not limited to that support rendered by service forces in ensuring the aspects of supply, maintenance, transportation, health services, and other services required by aviation and ground combat troops to permit those units to accomplish their missions in combat” (DoD, 2013, p. 47).

Deployment. According to the DoD Dictionary of Military Associated Terms, a deployment is “the rotation of forces into and out of an operational area” (DoD, 2013, p. 79). For the purpose of the current study, “deployment” refers to a military member being sent to a foreign country in support of military operations such as Operation Iraqi Freedom, Operation Enduring Freedom, Operation Desert Storm, Operation Joint Endeavor, the Vietnam War, the Korean War, and World War II.

Direct Combat Exposure. Direct exposure to combat involves service members who have been specifically assigned to a combat role firing upon and injuring or killing enemy combatants, being fired upon and being at risk for being injured or killed themselves, and witnessing the injuries or deaths of their fellow service members (DoD, 2013; Hoge, Castro, Messert, McGurk, Cotting, & Koffman, 2004; Keane, Fairbank, Caddell, Zimering, Taylor, & Mora, 1989; King et al., 2006).

Enlisted. An enlisted service member joins the military as a recruit and completes basic training. The enlisted force comprises the majority of service members.

Generally speaking, enlisted service members are considered the specialists and the primary work force within the military branches.

Indirect Combat Exposure. Service members assigned to combat support or combat support service roles are more likely to be exposed to indirect combat than to direct combat. Examples of combat experiences associated with combat but not including direct combat involvement include witnessing noncombatants being injured, being responsible for enemy prisoners, providing medical treatment to injured service members, enemy combatants, and noncombatants, and locating and handling the remains of deceased individuals (King et al., 2006).

Mental health problem stigma. The present study adopts Corrigan's (2004) conceptualization of mental health problem stigma as the application of the stigma process (see "Stigma") to assumptions made about individuals on the basis of public beliefs about mental health problems. Corrigan's (2004) model for mental health problem stigma is composed of public stigma toward psychological problems (including stereotyping, prejudice, and discrimination toward individuals with mental health problems), self-stigma (also including stereotypes, prejudice, and discrimination but directed by an individual with mental health problems toward her/himself), and the influence of these two forms of stigma on mental health treatment seeking.

Military culture. A shared culture among military service members that is characterized by military tradition, core values, and a social structure spanning both professional and personal lives (Dunivin, 1994; Jaffe, 1984). Regardless of specific military service (U.S. Army, U.S. Marine Corps, U.S. Navy, U.S. Air Force, U.S. Coast Guard), rank (officer or enlisted), or job assignment, all new military recruits are

indoctrinated into the military culture through the completion of an accession process involving removal from their civilian lives and placement into a controlled training environment. Within this training process, efforts are made to inhibit recruits' pre-existing personal identities in favor of adoption of shared identities specific to military service (Dornbusch, 1955).

Military mental health problem self-stigma. Service members' realizations they have a possible mental health problem may lead to a compounded form of self-stigma (see "Self-stigma") perpetuated by both public and military mental health problem stigma (Green-Shortridge, Britt, & Castro, 2007).

Military mental health problem stigma. The present study adopts Green-Shortridge, Britt, and Castro's (2007) conceptualization of military mental health problem stigma as the occurrence of stigma toward mental health problems within the context of military culture. According to the Green-Shortridge, Britt, and Castro (2007) model, service members develop mental health symptoms in reaction to exposure to traumatic events while engaged in military operations. In light of public stigma regarding mental health problems, service members may already have preconceived notions about mental health problems prior to joining the military. Following their indoctrination into the military culture, they likely develop military specific stigma toward mental health. Service members' realizations they have a possible mental health problem may then lead to a compounded form of self-stigma perpetuated by both public and military mental health problem stigma. Further, when presented with a need to seek mental health care, service members may feel limited by military organizational barriers to mental health care (e.g., restricted accessibility, limited confidentiality, influence on one's career).

Officer. An officer is a service member who has received a commission into the military. As a general rule, officers have bachelor's degrees or higher prior to being commissioned. Officers comprise the command authority within the military.

Noncommissioned officer (NCO). A noncommissioned officer (NCO) is an enlisted service member who has achieved a rank placing her/him within leadership roles over other enlisted service members. NCOs who have achieved one of the three highest ranks in their military branch are also referred to as "senior enlisted leadership".

Posttraumatic growth (PTG). Posttraumatic growth (PTG) refers to the positive changes experienced by some individuals following a traumatic event, significantly stressful situation, or life crisis (Tedeschi & Calhoun, 2004). The present study adopts Tedeschi and Calhoun's (2004) conceptualization of the PTG process as the combination of cognitive and affective elements of individuals' attempts to shift their assumptions about the world (i.e., schema) in order to accommodate to changes in their lives following a crisis. According to Tedeschi and Calhoun (1996), the major "domains" (i.e., outcomes) of posttraumatic growth are the following: "greater appreciation of life and changed sense of priorities; warmer, more intimate relationships with others; a greater sense of personal strength; recognition of new possibilities or paths for one's life; and spiritual development" (in Tedeschi & Calhoun, 2004, p. 6).

Posttraumatic stress disorder (PTSD). According to the Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition-Text Revision (American Psychiatric Association, APA, 2000), posttraumatic stress disorder (PTSD) involves the development of symptoms following the experience of a traumatic event. The hallmark of a traumatic event is the "fear, helplessness, or horror" felt by the affected individual in

response to a situation in which s/he felt as though her/his life and personal integrity, or that of someone close to the individual, was threatened (APA, 2000, p. 467). Also included in the definition of a traumatic event are the unanticipated death of someone close to the individual and witnessing violence or threat of violence to unfamiliar others (APA, 2000). Following the traumatic event, the individual develops symptoms from each of the following categories: reexperiencing of the event (e.g., dreams, feeling as though one is back in the traumatic situation, extreme reactions to stimuli that remind the individual of the trauma); avoidance of reminders of the trauma (e.g., avoiding people, locations, and so forth associated with the trauma, impaired memory of the traumatic event, emotional numbing, sense of a foreshortened future, interpersonal detachment); persistently increased arousal (e.g., sleep problems, hypervigilance, irritability) (APA, 2000). In order to meet the diagnostic criteria for PTSD, the symptoms must last for more than one month and must cause significant distress in the individual's functioning (e.g., interpersonal functioning, functioning at work) (APA, 2000).

The specific diagnostic criteria for PTSD set forth by the DSM-V (APA, 2013) are generally similar to the DSM-IV-TR (APA, 2000) criteria. One important difference in the DSM-V (APA, 2013) is greater specificity of what constitutes a traumatic event (e.g., sexual violence, chronic exposure to details of a traumatic event such as collecting human remains, repeated occupational exposure to situations involving child abuse) and a caveat that exposure through media is generally not considered a traumatic event. The requirement for reaction to the traumatic event with fear, helplessness, or horror was removed (APA, 2013). Another difference in the DSM-V (APA, 2013) is the splitting of the avoidance of the reminders of the trauma criteria into two criteria, persistent

avoidance of stimuli associated with the traumatic event(s) and negative alterations in cognitions and mood associated with the traumatic event(s) (p. 271). Included under the new criteria category are the following new symptoms: persistent and exaggerated negative beliefs or expectations about oneself; persistent, distorted cognitions about the cause or consequences of the traumatic event(s) that lead the individual to blame himself/herself or others, persistent negative emotional state, and persistent inability to experience positive emotions (p. 272). The sense of a foreshortened future symptom was removed. Within the increased arousal category, a symptom capturing reckless or self-destructive behavior was added (APA, 2013, p. 272). The delayed onset specification was changed to “delayed expression” (APA, 2013, p. 272). A new specifier of “with dissociative symptoms” was added, including two subtypes: depersonalization and derealization (APA, 2013).

Self-compassion. The present study adopts Neff’s (2003) definition of self-compassion as “being touched by and open to one’s own suffering, not avoiding or disconnecting from it, generating the desire to alleviate one’s suffering and to heal oneself with kindness” (p. 87). Neff (2003) conceptualizes self-compassion as being comprised of three components: self-kindness, common humanity, and mindfulness. Self-compassion characterizes an attitude toward one’s self that is believed to be a protective factor when individuals are coping with stress (Allen & Leary, 2010).

Self-disclosure. The current study defines self-disclosure as one’s tendency to reveal emotional distress with others (Kahn & Hessling, 2001). Specifically, the study adopts Kahn, Hucke, Bradley, Glinski, and Malak’s (2012) definition of distress disclosure as one’s usual level of disclosure of troubling emotions, thoughts, and personal

concerns across different places and times (p. 134). According to this definition and for the purposes of this study, self-disclosure pertains to an individual's enduring comfort level with sharing distress rather than to situation-specific reactions (e.g., a traumatic event) or the behavioral act of disclosing information.

Self-stigma. Within the context of mental health problems, self-stigma occurs when individuals who have been labeled as having a mental health problem accept the related stereotypes brought about through public stigma and adopt the stereotypes into their self-concept (Corrigan, 2004).

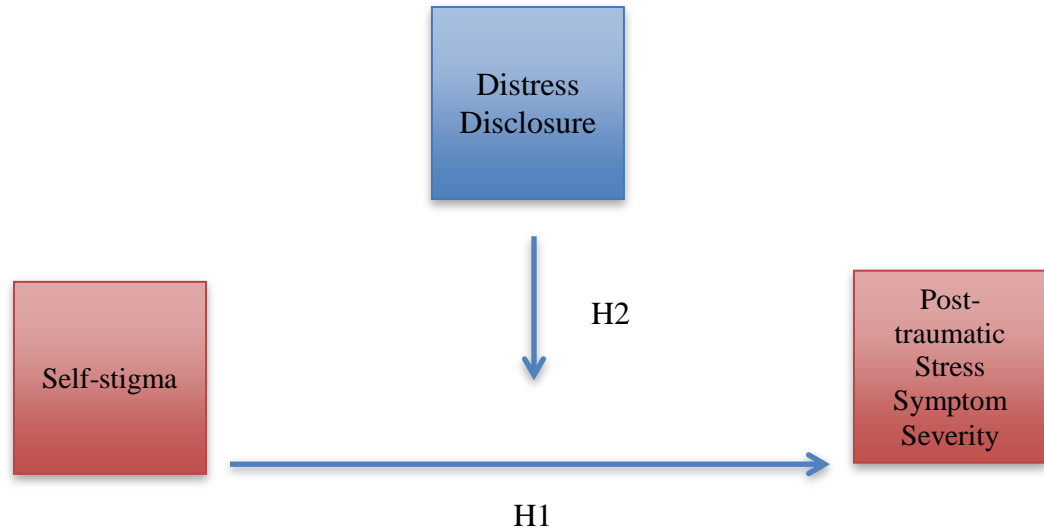
Service member(s). For the purpose of this study, a service member is a person who is actively serving in the military. People who are serving in the active duty military, reserve military, or National Guard are included under this term.

Stigma. The present study adopts Link and Phelan's (2001) conceptualization of stigma as the simultaneous occurrence of "labeling, stereotyping, separation, status loss, and discrimination" (p. 363), all within the context of the exercise of power. According to Link and Phelan (2001) the use of the word "labeling" is encouraged as opposed to the dictionary definition of "stigma" as a mark or attribute of a person (Merriam-Webster, n.d.). "Labeling" recognizes the socially determined nature of stigma and the consequent questionability of attributing the stigma to an actual characteristic residing within a person. Stereotypes become connected with the socially determined label assigned to the stigmatized person or group, leading to an "us" versus "them" separation (Morone, 1997; Link & Phelan, 2001).

Veteran(s). For the purpose of this study, a veteran is a former service member who either separated or retired from the active duty or reserve military or from the National Guard.

Appendix B

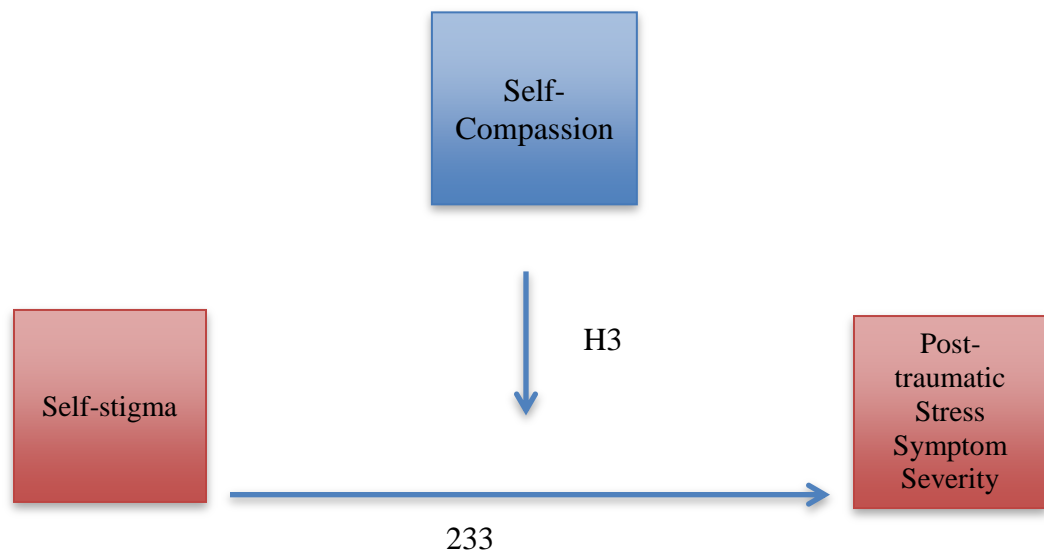
Model Illustration: Posttraumatic Stress as Dependent Variable



Hypothesis 1: Self-stigma will significantly predict the level of severity of posttraumatic stress symptoms.

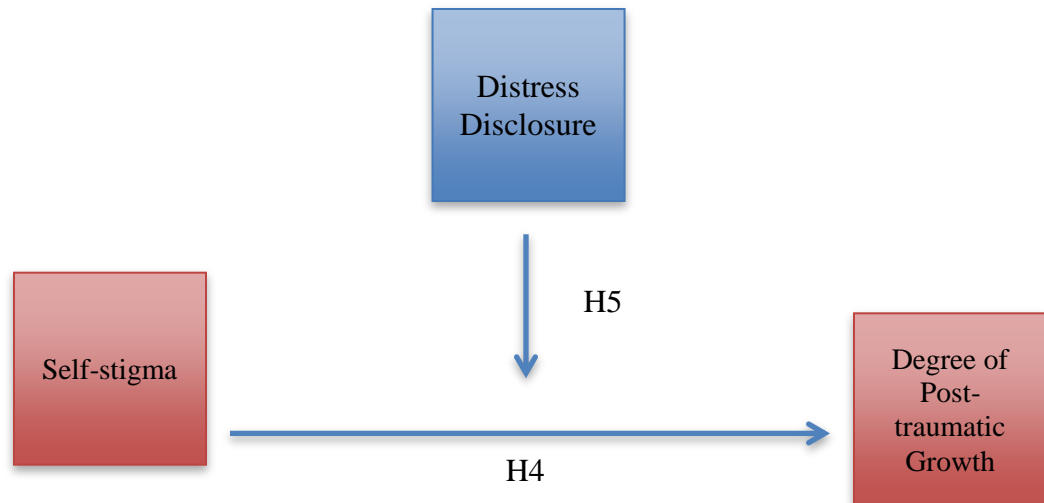
Hypothesis 2: Distress disclosure will moderate the relationship between self-stigma and the level of severity of posttraumatic stress symptoms.

Hypothesis 3: Self-compassion will moderate the relationship between self-stigma and the level of severity of posttraumatic stress symptoms.



Appendix C

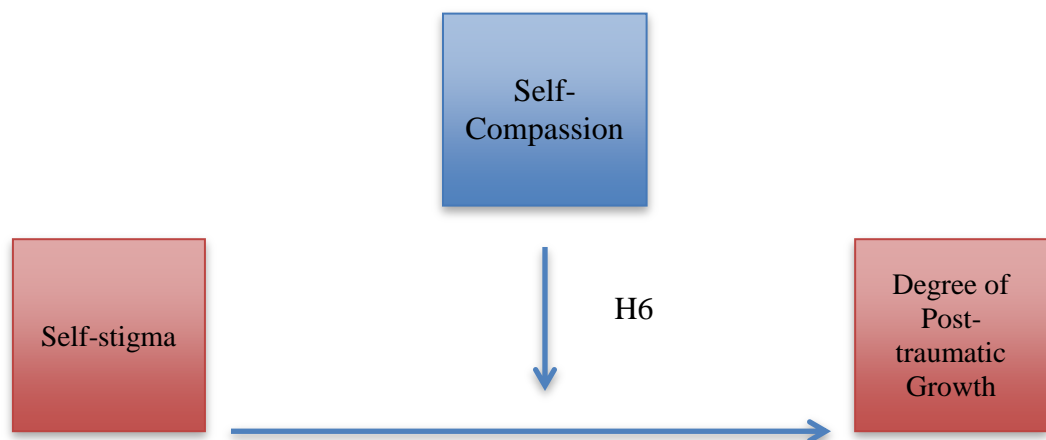
Model Illustration: Posttraumatic Growth as Dependent Variable



Hypothesis 4: Self-stigma will significantly predict the degree of posttraumatic growth.

Hypothesis 5: Distress disclosure will moderate the relationship between self-stigma and the degree of posttraumatic growth.

Hypothesis 6: Self-compassion will moderate the relationship between self-stigma and the degree of posttraumatic growth.



Appendix D

University of Denver
Information Sheet for Exempt Research (Online and Hard-copy Versions)

*University of Denver
Social, Behavioral, and Educational Research
Informed Consent Form*

DU IRB Approval Date: 08/18/15 Valid for Use Through: March 24, 2016

Project Title: Influence of self-stigma, distress disclosure, and self-compassion on posttraumatic stress reactions in deployment veterans

Principal Investigator: June Ashley, M.S.

Faculty Sponsor: Chu-Lien Chao, Ph.D.

DU IRB Protocol #: 694095-4

You are being asked to be in an online survey for research. This form provides you with information about the study. Please read the information below and ask questions about anything you don't understand before deciding whether or not to take part.

This study is being conducted by: June Ashley, M.S., Doctoral Candidate, Counseling Psychology, University of Denver.

You are being asked to participate because you have served in the U.S. military and have deployed as part of your military experience. This survey has been distributed through email, Facebook, LinkedIn, Google+, and Twitter. You have received this survey because someone known to you believes you meet the criteria for participating in this online survey. The eligibility criteria include: 1) personal history of having actively served in one of the branches of the U.S. military (including Active Duty, Reservists, National Guardsmen, and Coast Guardsmen), 2) a personal history of having deployed at least once in support of a military operation, and 3) being between the ages of 18 and 89. We ask that you read this form and contact us with any questions you may have before completing the survey.

If you agree to participate, you will complete a survey about changes that can sometimes come about in military service members' and military veterans' lives as a result of deployment experiences. This study looks at both the difficult and the beneficial changes that may occur following a deployment experience. If you agree to be part of the research study, you will be asked to complete a questionnaire online. The questionnaire will ask you about your personal ideas, your behaviors, and your deployment experience(s). You will also be asked demographic questions, questions about your military service, and questions about your current and/or prior use of mental health

counseling or therapy and medication management for mental health. Participation in this study should take about 30 minutes or less of your time.

The risks from participating in this study may include experiencing some distress related to answering questions about potentially stressful or traumatic experiences associated with your prior military deployment(s). Participants in previous studies on traumatic experiences who have felt distress have typically found the distress to be minimal to moderate in intensity and of short duration. Because all of the information collected is anonymous, the potential for breaches of confidentiality is limited. You may skip questions or stop the survey at any time. We respect your right to choose not to answer any questions that may make you feel uncomfortable. As described previously, some of the survey questions may be distressing to you or may bring up emotions as you think about your experiences. If you need to talk to someone about these feelings, a resource list of community counseling agencies (such as the Veterans Crisis Line at <http://www.veteranscrisisline.net/> or Military OneSource at <http://www.militaryonesource.mil/non-medical-counseling>) will be provided at the end of the survey. If you are feeling depressed and/or are having thoughts of suicide or self-harm, it is important that you contact the National Suicide Prevention Lifeline at 1-800-273-TALK (8255) or via the online chat function at <http://www.suicidepreventionlifeline.org/>

You are not likely to have any direct benefit from being in this research study, although some participants in similar studies have reported finding the questions interesting, learning something about themselves, or feeling satisfied that their participation may contribute to knowledge about and help for individuals with similar experiences.

Taking part in this study may help researchers to better understand the factors that contribute to both the difficult and the beneficial changes that may come about following military deployments. Such information can be used to increase understanding about the range of experiences deployment veterans may have as well as to learn more about deployment veterans' perceptions of these experiences.

Participation in this study will involve no cost to you.

You will not be paid for participating in this study. However, the Primary Investigator will donate \$5 for every completed survey to a nonprofit organization that supports service members, veterans, and their families. Should you choose to, you can go to a separate survey link provided at the end of this online survey to select which organization you would like the donation from your completed survey to go to. The options include naming one of your local Veterans Service Organizations (i.e., your local Veterans of Foreign Wars Post, Disabled American Veterans Chapter, American Legion Chapter, or Student Veterans of America chapter), or selecting one of the following national nonprofit organizations: the Fisher House Foundation, Operation Homefront, or the United Service Organizations (USO). Your decision whether to indicate where you would prefer for the charitable donation for your survey to go to is entirely up to you. If you do

elect to indicate a charitable donation preference, your indicated preference will be stored in a separate database from your survey responses and will not in any way be linked with your responses. For all completed surveys that do not have specific donations indicated, the Primary Investigator will evenly distribute the donations among the Fisher House Foundation, Operation Homefront, and the USO.

Additionally, at the completion of the online survey you can choose to access the same separate survey link as for the charitable donation preferences to provide your e-mail address for entry in a random drawing for one of four \$25 electronic gift certificates to Amazon.com. Your decision whether to participate in the random drawing is entirely up to you. The chances of winning one of the gift certificates are approximately 1 in 32. If you do elect to participate in the drawing, your e-mail address will be stored in a separate database from your survey responses and will not in any way be linked with your responses. The sole purpose of collecting e-mail addresses is to provide a means to notify participants if they win one of the gift cards. The winners will be selected using an Internet random number generator and will be notified via e-mail at the conclusion of the study.

This survey is being hosted by Qualtrics and involves a secure connection. Terms of Service, addressing confidentiality, may be viewed at <http://www.qualtrics.com/terms-of-service/>

Your participation in this research study is completely voluntary. You can skip questions in the survey and you can withdraw at any time by just exiting the survey.

Contact Information

The researcher carrying out this study is June Ashley, M.S. You may ask any questions you have now or later. You may call June Ashley at (720) 507-5863 or e-mail at june.ashley@du.edu.

If the researchers cannot be reached, or if you would like to talk to someone other than the researcher(s) about; (1) questions, concerns or complaints regarding this study, (2) research participant rights, (3) research-related injuries, or (4) other human subjects issues, you may contact the Chair of the Institutional Review Board for the Protection of Human Subjects, at 303-871-4015 or by emailing IRBChair@du.edu, or you may contact the Office for Research Compliance by emailing IRBAdmin@du.edu, calling 303-871-4050 or in writing (University of Denver, Office of Research and Sponsored Programs, 2199 S. University Blvd., Denver, CO 80208-2121).

If you want a copy of this consent for your records, you can print it from the screen. If you would you like documentation linking you to this research study, please email your request to the Principal Investigator at june.ashley@du.edu.

If you wish to participate, please select the Accept button below to begin the survey. If you do not wish to participate in this study, please select the Decline button, and your session will end.

University of Denver
Social, Behavioral, and Educational Research
Informed Consent Form

DU IRB Approval Date: 08/18/15 Valid for Use Through: March 24, 2016

Project Title: Influence of self-stigma, distress disclosure, and self-compassion on posttraumatic stress reactions in deployment veterans

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This study is being conducted by: June Ashley, M.S., Doctoral Candidate, Counseling Psychology, University of Denver.

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If you agree to participate, you will complete a survey about changes that can sometimes come about in military service members' and military veterans' lives as a result of deployment experiences. This study looks at both the difficult and the beneficial changes that may occur following a deployment experience. If you agree to be part of the research study, you will be asked to complete the survey that comprises the majority of this packet. The survey will ask you about your personal ideas, your behaviors, and your deployment experience(s). You will also be asked demographic questions, questions about your military service, and questions about your current and/or prior use of mental health counseling or therapy and medication management for mental health. Participation in this study should take about 30 minutes or less of your time.

The risks from participating in this study may include experiencing some distress related to answering questions about potentially stressful or traumatic experiences associated with your prior military deployment(s). Participants in previous studies on traumatic experiences who have felt distress have typically found the distress to be minimal to moderate in intensity and of short duration. Because all of the information collected is anonymous, the potential for breaches of confidentiality is limited. You may skip questions or stop the survey at any time. We respect your right to choose not to answer any questions that may make you feel uncomfortable. As described previously, some of the survey questions may be distressing to you or may bring up emotions as you think about your experiences. If you need to talk to someone about these feelings, a resource list of community counseling agencies (such as the Veterans Crisis Line at <http://www.veteranscrisisline.net/> or Military OneSource at <http://www.militaryonesource.mil/non-medical-counseling>) will be provided at the end of the survey. If you are feeling depressed and/or are having thoughts of suicide or self-harm, it is important that you contact the National Suicide Prevention Lifeline at 1-800-273-TALK (8255) or via the online chat function at <http://www.suicidepreventionlifeline.org/>

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Taking part in this study may help researchers to better understand the factors that contribute to both the difficult and the beneficial changes that may come about following military deployments. Such information can be used to increase understanding about the range of experiences deployment veterans may have as well as to learn more about deployment veterans' perceptions of these experiences.

Participation in this study will involve no cost to you.

You will not be paid for participating in this study. However, the Primary Investigator will donate \$5 for every completed survey to a nonprofit organization that supports service members, veterans, and their families. Should you choose to, you can complete the page provided at the end of this packet to select which organization you would like the donation from your completed survey to go to. The options include naming one of your local Veterans Service Organizations (i.e., your local Veterans of Foreign Wars Post, Disabled American Veterans Chapter, American Legion Chapter, or Student Veterans of America chapter), or selecting one of the following national nonprofit organizations: the Fisher House Foundation, Operation Homefront, or the United Service Organizations (USO). Your decision whether to indicate where you would prefer for the charitable donation for your survey to go to is entirely up to you. If you do elect to indicate a charitable donation preference, your indicated preference will be stored in a separate database from your survey responses and will not in any way be linked with your responses. For all completed surveys that do not have specific donations indicated,

the Primary Investigator will evenly distribute the donations among the Fisher House Foundation, Operation Homefront, and the USO.

Additionally, on the same page at the end of this packet you can choose to provide your e-mail address for entry in a random drawing for one of four \$25 electronic gift certificates to Amazon.com. Your decision whether to participate in the random drawing is entirely up to you. The chances of winning one of the gift certificates are approximately 1 in 32. If you do elect to participate in the drawing, your e-mail address will be stored in a separate database from your survey responses and will not in any way be linked with your responses. The sole purpose of collecting e-mail addresses is to provide a means to notify participants if they win one of the gift cards. The winners will be selected using an Internet random number generator and will be notified via e-mail at the conclusion of the study.

Your participation in this research study is completely voluntary. You can skip questions in the survey and you can withdraw at any time by stopping the survey and not sending it in.

Should you complete the survey, please return the completed packet to the Primary Investigator using the provided, pre-addressed and stamped envelopes. To maintain your anonymity, please remember not to include your name on any part of the survey packet or on the return envelope.

Contact Information

The researcher carrying out this study is June Ashley, M.S. You may ask any questions you have now or later. You may call June Ashley at (720) 507-5863 or e-mail at june.ashley@du.edu.

If the researchers cannot be reached, or if you would like to talk to someone other than the researcher(s) about; (1) questions, concerns or complaints regarding this study, (2) research participant rights, (3) research-related injuries, or (4) other human subjects issues, you may contact the Chair of the Institutional Review Board for the Protection of Human Subjects, at 303-871-4015 or by emailing IRBChair@du.edu, or you may contact the Office for Research Compliance by emailing IRBAdmin@du.edu, calling 303-871-4050 or in writing (University of Denver, Office of Research and Sponsored Programs, 2199 S. University Blvd., Denver, CO 80208-2121).

If you want a copy of this consent for your records, you can detach the first copy of this consent from the packet (two copies have been included for your convenience). If you would you like documentation linking you to this research study, please email your request to the Principal Investigator at june.ashley@du.edu.

If you wish to participate, please check the box below indicating your agreement to participate.

If you do not wish to participate in this study, thank you for taking the time to learn more about it. Please discard this packet.

Agreement to be in this study

I have read this paper about the study or it was read to me. I understand the possible risks and benefits of this study. I know that being in this study is voluntary. If I choose to be in this study I may keep a copy of this consent form. Please **check** the box below:

I agree to participate in this study.

Appendix E

Demographic Questionnaire

1. What is your age? _____

2. What is your gender?
 - a. Female
 - b. Male
 - c. Transgender

3. Which of the following categories do you feel best describes your race or ethnicity?
 - a. American Indian or Alaska Native
 - b. Asian or Asian American
 - c. Biracial/Multiracial
 - d. Black or African American
 - e. Hispanic or Latino/a
 - f. Native Hawaiian or other Pacific Islander
 - g. White
 - h. Other

4. Which of the following best describes you?
 - a. Bisexual
 - b. Gay or Lesbian
 - c. Heterosexual
 - d. Not sure/Questioning
 - e. Other

5. What is your current relationship status?
 - a. Committed relationship
 - b. Divorced/Separated
 - c. Married/Remarried
 - d. Single (never married)
 - e. Widowed
 - f. Other (please specify)

6. What is your current living arrangement?
- a. Live alone
 - b. Live with partner/spouse, without children
 - c. Live with partner/spouse, with child(ren)
 - d. Live with children
 - e. Live with someone else (please specify)
 - f. Other (please specify)
7. What is your approximate household income?
- Check one income range that best describes your household income for last year from all sources of income (e.g., salaries, wages, tips, social security, disability income or insurance, retirement income, or any other income)
- a. Under \$25,000
 - b. \$25,000 - \$50,000
 - c. \$50,001 - \$75,000
 - d. \$75,001 - \$100,000
 - e. \$100,001 +
8. What is the highest level of education you have completed?
- a. Less than high school
 - b. High School/GED
 - c. Some college/Technical School
 - d. Associate's (2-year) degree
 - e. Bachelor's (4-year) degree
 - f. Master's degree
 - g. Doctoral degree (e.g., JD, MD, PhD, PsyD, PharmD)
9. Which branch(es) of the military have you served in? Please check as many as apply.
- a. United States Army
 - b. United States Marine Corps
 - c. United States Navy
 - d. United States Air Force
 - e. United States Army Reserve
 - f. United States Marine Corps Reserve
 - g. United States Navy Reserve
 - h. United States Air Force Reserve
 - i. United States Coast Guard Reserve
 - j. United States Army National Guard
 - k. United States Air National Guard
 - l. United States Army Air Corps
 - m. United States Merchant Marines
 - n. Other

n-1. Please specify which other branch: _____

10. How many total years have you served in the military? _____

11. During which year did you join the military? _____

12. Which best describes your military service?

- a. Enlisted
- b. Warrant Officer
- c. Commissioned Officer
- d. Prior-Enlisted Officer

13. What type of military career field (e.g., MOS, Rate, AFSC) have you been in?
Please check as many as apply.

- a. Combat role (e.g., infantry, special operations, some aviation roles, submarine warfare, artillery, tank crew)
- b. Combat Support role (e.g., military police or security forces, intelligence, air defense, missile launch, engineering)
- c. Combat Services Support role (e.g., supply, maintenance, transportation, health services)

14. How many times have you been deployed by the military? _____

15. Which military operation(s) have you deployed in support of? Please check as many as apply.

- a. Operation New Dawn
- b. Operation Iraqi Freedom
- c. Operation Enduring Freedom
- d. Operation Allied Force
- e. Operation Desert Storm
- f. Operation Desert Shield
- g. Vietnam War
- h. Korean War
- i. World War II
- j. Steady State Operations (e.g., Navy cruises)
- k. Humanitarian Operations
- l. Other

l-1. Please specify which other military operation(s): _____

16. Which of the following best describes your current military status?

- a. Active Duty

- b. Active Reservist/Guardsman
- d. Inactive Ready Reserve (IRR)
 - d-1. How long have you been in the IRR? _____
- e. Separated
 - e-1. How long have you been separated from the military? _____
- f. Retired
 - f-1. How long have you been retired from the military? _____

17. Were you injured during a military deployment?

- a. Yes
- b. No

18. Have you ever participated in mental health counseling or psychotherapy?

- a. Yes – currently
- b. Yes – previously during my military service
- c. Yes – previously after my military service
- d. Yes – prior to my military service
- e. Yes – a combination of the above
 - e-1. Please specify which combination: ____
- f. No

18-1 (for all a, b, c, d, and e responses): How helpful was the mental health counseling or psychotherapy for you?

- a. Not at all helpful
- b. A little bit helpful
- c. Moderately helpful
- d. Quite helpful
- e. Extremely helpful

19. Have you ever taken psychotropic medication (e.g., medication to help with mental health concerns such as feelings of anxiety, sadness, or anger)?

- a. Yes – currently
- b. Yes – previously during my military service
- c. Yes – previously after my military service
- d. Yes – prior to my military service
- e. Yes – a combination of the above
 - e-1. Please specify which combination: ____
- f. No

19-1 (for all a, b, c, d, and e responses): How helpful was the psychotropic medication for you?

- a. Not at all helpful
- b. A little bit helpful
- c. Moderately helpful
- d. Quite helpful
- e. Extremely helpful

20. Have you had a traumatic experience prior to serving in the military?

- a. Yes – one traumatic experience.
- b. Yes – multiple traumatic experiences.
- c. No.

21. Where do you currently receive the majority of your medical care?

- a. Military Medical Center or Clinic
- b. Private/Public (not military-affiliated) Medical Center or Clinic
- c. Veterans Affairs (VA) Medical Center or Clinic

22. How stressful was your deployment experience while you were going through it? (If you have deployed more than once, please think back on the deployment that felt the most stressful for you)

- f. Not at all stressful
- g. A little bit stressful
- h. Moderately stressful
- i. Quite a bit stressful
- j. Extremely stressful

23. How stressful is it for you now when you think about your deployment experience? (If you have deployed more than once, please think back on the deployment that felt the most stressful for you)

- a. Not at all stressful
- b. A little bit stressful
- c. Moderately stressful
- d. Quite a bit stressful
- e. Extremely stressful

24. Which aspect of your deployment experience was the most stressful for you? Please write your answer in the space below.

25. Do you think you have experienced growth as a result of your deployment experience?

a. Yes.

a-1. Please describe in the space below in which way(s) you believe you have grown.

b. No.

Appendix F

Combat Exposure Scale

For each question, please circle the number above the answer that best describes your experience.

1) Did you ever go on combat patrols or have other dangerous duty?

1	2	3	4	5
No	1-3X	4-12X	13-50x	51+ times

2) Were you ever under enemy fire?

1	2	3	4	5
Never	<1 month	1-3 months	4-6 months	7 mos or more

3) Were you ever surrounded by the enemy?

1	2	3	4	5
No	1-2X	3-12X	13-25X	26+times

4) What percentage of the soldiers in your unit were killed (KIA), wounded, or missing in action (MIA)?

1	2	3	4	5
None	1-25%	26-50%	51-75%	76% or more

5) How often did you fire rounds at the enemy?

1	2	3	4	5
Never	1-2X	3-12X	13-50x	51 or more

6) How often did you see someone hit by incoming or outgoing rounds?

1	2	3	4	5
---	---	---	---	---

Never 1-2X 3-12X 13-50X 51 or more

7) How often were you in danger of being injured or killed (i.e., being pinned down, overrun, ambushed, near miss, etc.)?

1 2 3 4 5
Never 1-2X 3-12X 13-50X 51 or more

Appendix G

Military Stigma Scale

INSTRUCTIONS: Please choose the response that best matches how much you agree or disagree with each statement. There are no right or wrong answers. Circle the number that is right for you.

DEFINITION: A mental health provider is a licensed professional who deals with psychological problems or issues that people sometimes have (e.g. psychologist, psychiatrist, licensed counselor, social worker). Psychological problems are reasons a person would go to a mental health provider. Similar terms include mental health issues, psychological issues, mental troubles, mental health concerns, and emotional problems.

Please use the 4-point scale to rate the degree to which agree or disagree with each statement.

1 ----- 2 ----- 3 ----- 4

Definitely Disagree Somewhat Disagree Somewhat Agree Definitely Agree

_____ 1. My self-confidence would be harmed if I got help from a mental health provider.

_____ 2. I would be given less responsibility, if my chain of command knew I was seeing a mental health provider.

_____ 3. If my chain of command discovered I was seeing a mental health provider, I would NOT lose their respect.

_____ 4. People would judge me poorly if they knew that I received mental health services.

_____ 5. I would worry about my personal problems being part of my military records.

_____ 6. People I respect would think less of me if they knew I had mental health problems.

_____ 7. My view of myself would change if I made the choice to see a therapist.

_____ 8. My chances of promotion would be harmed if I sought mental health services.

_____ 9. I would feel okay about myself if I made the choice to seek professional help.

- _____ 10. I am open to seeking services, but I worry about how it could hurt my career.
- _____ 11. My reputation in my community would be harmed if people knew that I had seen a mental health provider.
- _____ 12. I would be afraid that my peers would find out what I tell my mental health provider.
- _____ 13. I would feel worse about myself if I could not solve my own problems.
- _____ 14. It would make my problems worse if my peers knew I was seeing a mental health provider.
- _____ 15. I would feel inadequate if I went to a therapist for psychological help.
- _____ 16. Seeking psychological help would make me feel less intelligent.
- _____ 17. My peers would think less of me if they knew I was getting help from a mental health provider.
- _____ 18. If I went to a therapist, I would be less satisfied with myself.
- _____ 19. I'd lose the respect of my subordinates if they found out I was receiving mental health care.
- _____ 20. There are things I am afraid to talk about because of what others would think.
- _____ 21. A person seeking mental health treatment is seen as weak.
- _____ 22. It would make me feel inferior to ask a therapist for help.
- _____ 23. I am afraid that my chain of command would find out what I told a mental health provider.
- _____ 24. My peers would think I was unreliable if they knew I was receiving mental health treatment.
- _____ 25. My self-confidence would NOT be threatened if I sought professional help.
- _____ 26. My self-esteem would increase if I talked to a therapist.

Appendix H

Posttraumatic Stress Checklist – Military

INSTRUCTIONS: Below is a list of problems and complaints that veterans sometimes have in response to stressful military experiences. Please read each one carefully, then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past month.

Please use the 5-point scale to indicate how much you have been bothered by that problem in the past month.

1 ----- 2 ----- 3 ----- 4 ----- 5

Not at all A little bit Moderately Quite a bit Extremely

_____ 1. Repeated, disturbing *memories, thoughts, or images* of a stressful military experience?

_____ 2. Repeated, disturbing *dreams* of a stressful military experience?

_____ 3. Suddenly *acting or feeling* as if a stressful military experience *were happening again* (as if you were reliving it)?

_____ 4. Feeling *very upset* when *something reminded you* of a stressful military experience?

_____ 5. Having *physical reactions* (e.g., heart pounding, trouble breathing, sweating) when *something reminded you* of a stressful military experience?

_____ 6. Avoiding *thinking about* or *talking about* a stressful military experience or avoiding *having feelings* related to it?

_____ 7. Avoiding *activities* or *situations* because *they reminded you* of a stressful military experience?

_____ 8. Trouble *remembering important parts* of a stressful military experience?

_____ 9. *Loss of interest* in activities that you used to enjoy?

_____ 10. Feeling *distant* or *cut off* from other people?

_____ 11. Feeling *emotionally numb* or being unable to have loving feelings for those close to you?

- _____ 12. Feeling as if your *future* will somehow be *cut short*?
- _____ 13. Trouble *falling* or *staying asleep*?
- _____ 14. Feeling *irritable* or having *angry outbursts*?
- _____ 15. Having *difficulty concentrating*?
- _____ 16. Being “*super-alert*” or watchful or on guard?
- _____ 17. Feeling *jumpy* or easily startled?

Appendix I

The Posttraumatic Growth Inventory

People sometimes find that a difficult experience such as a military deployment may eventually lead to positive changes in their lives. For each of the items below, indicate the degree to which the changes described in the items has occurred in your life-as of today-as a result of your deployment experience, using the scale below.

Use the 6-point scale below to indicate for each question below, “As a result of my deployment, I experienced this change....”

1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6
... I did not ... to a very small ... to a small ... to a moderate ... to a great ... to a very
 degree degree degree degree great degree

- _____ 1. I changed my priorities about what is important in life.
- _____ 2. I have a greater appreciation for the value of my own life.
- _____ 3. I developed new interests.
- _____ 4. I have a greater feeling of self-reliance.
- _____ 5. I have a better understanding of spiritual matters.
- _____ 6. I more clearly see that I can count on people in times of trouble.
- _____ 7. I established a new path for my life.
- _____ 8. I have a greater sense of closeness with others.
- _____ 9. I am more willing to express my emotions.
- _____ 10. I know better that I can handle difficulties.
- _____ 11. I am able to do better things with my life.
- _____ 12. I am better able to accept the way things work out.
- _____ 13. I can better appreciate each day.

- _____ 14. New opportunities are available which wouldn't have been otherwise.
- _____ 15. I have more compassion for others.
- _____ 16. I put more effort into my relationships.
- _____ 17. I am more likely to try to change things which need changing.
- _____ 18. I have a stronger religious faith.
- _____ 19. I discovered that I'm stronger than I thought I was.
- _____ 20. I have learned a great deal about how wonderful people are.
- _____ 21. I better accept needing others.

Appendix J

Distress Disclosure Index

Please read each of the following items carefully. Indicate the extent to which you agree or disagree with each item according to the 5-point rating scale below.

1 ----- 2 ----- 3 ----- 4 ----- 5
Strongly Disagree Strongly Agree

- _____ 1. When I feel upset, I usually confide in my friends.
- _____ 2. I prefer not to talk about my problems.
- _____ 3. When something unpleasant happens to me, I often look for someone to talk to.
- _____ 4. I typically don't discuss things that upset me.
- _____ 5. When I feel depressed or sad, I tend to keep those feelings to myself.
- _____ 6. I try to find people to talk with about my problems.
- _____ 7. When I am in a bad mood, I talk about it with my friends.
- _____ 8. If I have a bad day, the last thing I want to do is talk about it.
- _____ 9. I rarely look for people to talk with when I am having a problem.
- _____ 10. When I'm distressed I don't tell anyone.
- _____ 11. I usually seek out someone to talk to when I am in a bad mood.
- _____ 12. I am willing to tell others my distressing thoughts.

Appendix K

Self-Compassion Scale

HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES

Please read each statement carefully before answering. To the left of each item, indicate how often you behave in the stated manner, using the 5-point scale below.

1 ----- 2 ----- 3 ----- 4 ----- 5
Almost Never Almost Always

- ____ 1. I'm disapproving and judgmental about my own flaws and inadequacies.
- ____ 2. When I'm feeling down I tend to obsess and fixate on everything that's wrong.
- ____ 3. When things are going badly for me, I see the difficulties as part of life that everyone goes through.
- ____ 4. When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world.
- ____ 5. I try to be loving towards myself when I'm feeling emotional pain.
- ____ 6. When I fail at something important to me I become consumed by feelings of inadequacy.
- ____ 7. When I'm down and out, I remind myself that there are lots of other people in the world feeling like I am.
- ____ 8. When times are really difficult, I tend to be tough on myself.
- ____ 9. When something upsets me I try to keep my emotions in balance.
- ____ 10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.

- _____ 11. I'm intolerant and impatient towards those aspects of my personality I don't like.
- _____ 12. When I'm going through a very hard time, I give myself the caring and tenderness I need.
- _____ 13. When I'm feeling down, I tend to feel like most other people are probably happier than I am.
- _____ 14. When something painful happens I try to take a balanced view of the situation.
- _____ 15. I try to see my failings as part of the human condition.
- _____ 16. When I see aspects of myself that I don't like, I get down on myself.
- _____ 17. When I fail at something important to me I try to keep things in perspective.
- _____ 18. When I'm really struggling, I tend to feel like other people must be having an easier time of it.
- _____ 19. I'm kind to myself when I'm experiencing suffering.
- _____ 20. When something upsets me I get carried away with my feelings.
- _____ 21. I can be a bit cold-hearted towards myself when I'm experiencing suffering.
- _____ 22. When I'm feeling down I try to approach my feelings with curiosity and openness.
- _____ 23. I'm tolerant of my own flaws and inadequacies.
- _____ 24. When something painful happens I tend to blow the incident out of proportion.
- _____ 25. When I fail at something that's important to me, I tend to feel alone in my failure.
- _____ 26. I try to be understanding and patient towards those aspects of my personality I don't like.

Appendix L

Responses to, "Which aspect of your deployment experience was the most stressful for you?"

Dead children and women body recovery after Indian ocean tsunami
Being away from family
Refueling aircraft severely damaged during what should have been a humanitarian AMCIT retrieval.
Separation from family
Being mortared, friends being killed, guys trying to hit on you
Cut off from the outside world. No communication for weeks at a time. Not knowing what is going on back home.
Separation from family
Initial arrival and first week in-country, after seeing constant newws coverage of "IEDs everywhere and all the time"
Being the only woman on the deployment team, possible bombings
Being under constant threat of attack.
enironmental conditions were drastic (130 degree heat, sand storms, locust plaques)
uncertainty
Being away from my husband
While flying combat missions in unarmed aircraft e.g. reconnaissance and transport aircraft
Performing extremely technical operations with dire consequences in a sleep deprived state for months on end
My best friend made me her contact after she was injuries in OEF while I was in theater in Iraq. I had to contact her family and tell them the news and be a liaison between them. Especially when the docs thought she was going to die.
Constant mortar attacks, roadside attacks and disposing of bodies
helo crash
mortar attacks
12 hour shifts, 7 days a week
I was sexually harrassed/assaulted by a superior during my first deployment and this continued after deployment. I was forced to deploy with this person several times.
Seeing other soldiers killed.
high optempo; pressure of leadership decisions; being away from my family and young children
Tet Offensive , 1972 , 1973
Living on a small FOB in Baghdad where we got mortared and there were IEDs on the roads nearby
daily threat of violence

The extreme hours
Being under attack but not being able to return fire (i.e., rockets, mortars, while on helicopters, etc.)
The build up to leaving
Parts runner
personal relationships at home
Single mom, leaving children with family while getting mortared daily
Being bombed
Daily counter terrorism measures like checking my car for bombs.
The convoys through Kabul.
Getting rocketed in Kandahar 3 or 4 times per evening during the ~month of Ramazan. And, convoys "outside the wire."
hitting an IED
Friend's vehicle was hit by IED.
Not knowing when the base will get attacked again
The endless hours without a break.
Caring for and coordinating funeral arrangements with family members of recently fallen Airmen
We had a suicide bomber walk up to the point man. Hand him the bomb. But the bomber was too high on drugs to detonate. I was the 2 man. Me and probably 6 other marines would had died that day. The what ifs of that day can get to me.
Fire fights protecting my troops from harm
The unknown of mortars
poor leadership and personnel issues
Rape Investigations/Toxic Leadership/Brother died while deployed
Waiting for action
Dealing with personal affairs at home with limited communication and competing operational priorities.
Sexual harrasment. Death of family members. Going through a divorce. 85+ hour work weeks.
Dealing with infantry assholes
prefer not to answer
Seperation from family and loved ones
Death
killing
Fear of failng my Marines or them dying
Officer Candidate School
Going alone, being NCO in charge, fear of injury/death, missing everyday comforts
Killing NVA and VC. Personally shot 5 men, killed 1 man with a knife, and crushed the skull of a female VC.
Flying combat missions over North Vietnam as an attack pilot. Being shpot at by ground fire and missiles.
The possibility that I might be killed or injured
Seeing a friend being medivacked

Time away from friends and family
The possibility of being attacked, under fire at any given time.
Rocket attacks; daily long hours; short-notice taskings
During the Cuban Blockaid
Waiting for approval to shoot a fire mission (ARTY) in support of our troops.

Appendix M

Responses to, "Please describe in the space below the way(s) in which you believe you have grown as a result of your deployment experience"

Responsibilities
More independent
Learned more about other cultures and some of the people associated. Also a greater appreciation for what members of other military branches do.
Maturity
Increased self reliance, increased goal setting and self determination.
I have reset my priorities: family and life enjoyment are much higher now; staying in the office to do paperwork much lower. Also much less tolerance for b.s. bureaucracy; more appreciation for the actual work and people who get the job done.
Relying on myself for long periods of time
Greater value placed on life in general and family in particular.
perspective of the world
More self reliant
More confidence in my abilities to advance as an Air Force Officer. Learned to separate and workplace stress from home life.
As a result of my service, I believe there is nothing we cannot do with effort. We are better than we know, and we have amazing grit.
Not taking life for granted. Caring for my sisters more. Harder dedication for what I do and never complain
The ability to be numb to certain aspects of my life
learning to handle chaotic situations
(1) Who I could rely on became apparent, & it helped me shape the path to reach my goals. (2) It always enhances my appreciation of my spouse. (3) It reminds me of how even little changes were startling when I would return (ie: seasons) & how overwhelming this may be to people who have experienced trauma while deployed.
I will never let myself be taken advantage of like that again.
different perspective on self and humanity, development of cautious optimism, ability to ask why questions
I have come to value the here and now, the value of living life to the fullest, the importance of seeking happiness and not waiting
adaptability & patience increased as a result of deployments. Also, 'everyday' 'civilian life' stressors became much less significant and stressful, by comparison to being deployed.
More externally patient and have a greater respect for life.
I appreciate life more
Respect for life
Sense of teamwork

better coping skills with personal issues
Intelligence, maturity, decision making, leadership
Can understand others better when they go through stressful situations.
I saw that I can help people keep calm.
I can be alone. I can sleep anywhere.
Im more strengthbased
Greater appreciation for different personality types. I recognize trivial problems as trivial.
I learned that I can handle stressful situations, and help others handle those situation. I learned that I can trust others, and that I didn't have to control everything
I can imagine very few things in my life that would be as difficult as a deployment. In my mind there is nothing I can't handle.
A better appreciation of life
I am a far more confident person. Able to handle any situation live had to offer
Out going w family
grateful for America
I've developed new ways to get back into a positive relationship with my husband.
I know that I am a proven warrior and man of strong values; I value my family more.
Learning to cope with grief and stress
Maturity level increased tremendously.
I am more decisive and a stronger leader.
became more alert of surroundings and wanted to continue developing knowledge
Experience new cultures/people/food. Acceptance of diverse views and ways of living. Appreciation of our US standards of living
Understanding life isn't fair and you have to play the hand you're dealt...but sometimes you can be smart and count the cards and change the outcome of the hand.
Able to handle stressful situation in the civilian world due to combat experience
I became mature and responsible
greater appreciation for life, military logistics, contributed to American society
Growth initially was negatively, however after approximately 10 yrs of treatment for PTSD and Cancer, today I am better because of understanding my behavior at the time of the killings and my behavior after returning to the USA. This understanding of what makes me "Tick" helps in daily relationships; however, today that growth is somewhat better - not sure if killing people in any form results in positive growth.
I have truly learned the value of teamwork. Flying combat missions from an aircraft carrier teaches one to rely on his/her training while depending on the interaction with others - in my case, other aviators flying in combat situations with me. Finally, the total teamwork of all those working on the aircraft carrier to support our flight missions was amazing, especially when so many of them were so young.
Increases confidence and self worth
I'm more confident in myself
I used it to my advantage so that I could excel in my career.
I was a shy person prior to my experience but was placed in a leadership position with great responsibilities. It changed my entire personality.

Faith in God; put life into perspective, not everything is really important enough to consume my limited mental and emotional energy
--

Came out an E-5 had a crew under me of about 10 guys, learned to be a leader and some one that they could look up to and depend on.

I am more self-assured, confident, not afraid to act.
