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Self-Compassion and Suicide Risk in Veterans: Serial Effects of Shame, Guilt, and PTSD

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Self-Compassion and Suicide Risk in Veterans: Serial Effects of Shame, Guilt, and PTSD

A dissertation

presented to

the faculty of the Department of Psychology

East Tennessee State University

In partial fulfillment

of the requirements for the degree

Doctor of Philosophy in Psychology

by

Jessica McKinney

August 2019

Keywords: Suicide, Self-Compassion, Shame, Guilt, PTSD, Veterans
ABSTRACT

Self-Compassion and Suicide Risk in Veterans: Serial Effects of Shame, Guilt, and PTSD

by

Jessica McKinney

Suicide is a significant public health concern and ranks as the 10th leading cause of death in the U.S. Veterans are at a disproportionately higher risk for suicide, due to risk factors such as exposure to trauma and its negative cognitive-emotional sequelae, such as PTSD, shame, and guilt. However, not all veterans exposed to traumatic events, or who experience shame and guilt, die by suicide, perhaps as a result of the presence of individual-level protective factors such as self-compassion. Conceptualized as self-kindness, mindfulness and common humanity, self-compassion is beneficially associated with mental and physical health, including reduced suicide risk. We examined the potential serial mediating effects of shame/guilt, separated into two models, and PTSD in the relation between self-compassion and suicide risk in a sample of U.S. veterans (N = 317). Participants in our IRB-approved study provided informed consent and completed the Self-Compassion Scale - Short Form, Differential Emotions Scale-IV, PTSD Checklist-Military Version (PCL-M) for DSM-IV, and Suicidal Behaviors Questionnaire - Revised (SBQ-R). Supporting hypotheses, shame/guilt and PTSD, and PTSD alone, mediated the relation between self-compassion and suicide risk, but shame/guilt alone did not. Our results remained significant when covarying depressive symptoms. Therapeutic interventions such as Mindful Self-Compassion and Compassion-Focused Therapy may increase self-compassion and ameliorate negative cognitive-emotional sequelae, including suicide risk, in veterans.
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CHAPTER 1
INTRODUCTION

Suicide is a significant public health concern, both globally (World Health Organization [WHO], 2016) and in the United States (American Association of Suicidology [AAS], 2014). Defined as the act of deliberately killing one’s self, suicide ranks as the 10th leading cause of death in the U.S., with most recent reports citing over 40,000 suicides in 2014 (Drapeau & McIntosh, 2015). Suicide risk (i.e., ideation and attempts) is also a major concern, as it is a strong predictor of eventual death by suicide and is more prevalent than suicide (WHO, 2016). For military personnel and veterans, the risk for suicide is even greater. For instance, of the over 40,000 suicides in 2014, 18% were comprised of veterans, despite the fact that veterans account for only 8% of the U.S. population (Hoffmire, Kemp, & Bossarte, 2015; U.S. Census Bureau, 2016; Veterans Affairs Office of Suicide Prevention [VA OSP], 2016).

Risk factors for suicide, for the general population, are also shared with the veteran population and include depression, anxiety, and chronic pain, among other risk factors (Finley et al., 2015; McLean et al., 2017). However, veterans may be at heightened risk for suicide due to military-specific factors, including increased exposure to trauma (i.e., military sexual trauma, combat) that may lead to the development of negative cognitive-emotional factors (e.g., shame, guilt), or posttraumatic stress disorder (PTSD). Shame and guilt, in addition to PTSD symptoms, are associated with suicide risk and death by suicide in veteran samples (Litz et al., 2009; Wisco et al., 2017). However, not all veterans who experience these negative symptoms also engage in suicidal behavior (i.e., ideation, planning, attempts) or report heightened suicide risk, perhaps due to the presence of individual-level protective characteristics, such as self-compassion.
Self-compassion involves responding to oneself in a caring and helpful manner in times of agony or distress, such as that experienced after a negative life event or trauma (Neff, 2003b). Veterans who experience a traumatic event may develop high levels of shame and guilt, which are conceptualized differently. Guilt occurs when one takes responsibility for and views one’s action or inactions during a negative or traumatic event as bad and, thus, experiences subsequent remorse or regret. Shame focuses on the global perception of self, rather than just an action or inaction committed by the self, and involves extreme and painful self-scrutiny, causing the individual to withdraw and hide one’s perceived horrible self from others (Lewis, 1971; Tangney & Dearing, 2002). However, veterans who respond to such experiences and evaluations with self-compassion may decrease their chances of developing guilt and/or shame, as they may be more understanding toward themselves, rather than judgmental of their potential role in a distressful or traumatic event (Neff 2003a; Neff, 2003b). This ability to be kinder to, and less critical of, the self may have the potential to thwart the development, or reduce the severity, of PTSD symptoms. Another component of self-compassion, mindfulness, may facilitate the release of self-critical thoughts and the relinquishment of feelings of over-responsibility, including shame and guilt, for consequences following a negative or traumatic event. Finally, acknowledging a sense of common humanity, that others experience similar hardships, may facilitate healing and bonding with others, in the knowledge that one is not alone. However, few studies to date have examined the association between self-compassion and suicide, or the potential roles of shame/guilt and PTSD as mechanisms that might explain their linkage.

In our proposed study, we will examine the relation between self-compassion and suicide risk, and the potential serial mediating roles of shame/guilt and PTSD. That is, we will
investigate whether the beneficial impact of self-compassion on suicide risk occurs directly or indirectly via the sequential amelioration of shame/guilt and PTSD symptom severity.

**Suicide**

In the U.S., in the general population, approximately 93 persons died by suicide per day in 2014, an increase compared to 62 deaths by suicide per day in 2001 (Center for Disease Control [CDC], 2015). Prevalence of suicidal ideation in U.S. adults is 3.9% within the past year in 2013 (CDC, 2015), while lifetime prevalence ranges between 5.6 and 14.3% (Crosby, Han, Ortega, Parks, & Gfroerer, 2011; Nock, Borges, Bromet, Cha, Kessler, & Lee, 2008). Finally, an estimated 2.7 million adults (1.1%) made a plan to attempt suicide within the past year and 1.3 million (0.6%) attempted suicide (CDC, 2015), with lifetime estimates for planning and attempts reaching 3.9% and 1.9-8.7%, respectively (Crosby et al., 2011; Nock et al., 2008).

Disparities in suicide rates also exist, across sex, age, and race, as well as among other demographic groups (e.g., sexual orientation). For instance, women are three times more likely to attempt suicide and slightly (6.8 vs 8.1%) more likely to have suicidal thoughts within the past 12 months compared to men (CDC, 2015; Substance Abuse and Mental Health Services Administration [SAMHSA], 2014). However, men are approximately four times more likely to die by suicide compared to women (age-adjusted rate 20.7 versus 5.8, respectively) (CDC, 2015; Sullivan, Annest, & Luo, 2013). When examining age disparities, older adults age 85 and older are at highest risk for suicide, with middle-aged adults following (age 45-64). However, intersectional data shows that middle-aged women age 45-64 were at highest risk for suicide in 2014 and older women (75 and older) were at lowest risk, while, in men, those age 75 and older were at highest risk and those 18-24 at lowest risk (CDC, 2015). Regarding ethnic/racial differences, American Indian/Alaska Natives (AIAN) are the most vulnerable racial group; for
example, both men and women in this racial group have higher rates of suicide compared to their counterparts in other racial groups, and suicide was the leading cause of death in AIAN 10-34-year olds, in 2015 (Curtin, Warner & Hedegaard, 2016).

**Epidemiology of Suicide in Veterans**

In comparison, the veteran population has rates of suicide that are disproportionately higher than those of the civilian population. For instance, in 2014, veterans had a rate of suicide 21% higher than that of civilian adults, after covarying age and sex (VA OSP, 2016). As well, from 2001 to 2014, the age-adjusted rate of suicide for veterans was approximately 31%, compared to 25% in civilians (VA OSP, 2016). Between 3.8 and 24% of veterans across eras endorse suicidal ideation annually, and approximately 2% of veterans endorse suicide attempts during a 12-month period, with rates reaching up to 24% in psychiatric veteran populations (Ashrafion, Pigeon, Conner, Leong, & Oslin, 2016; Guerra & Calhoun, 2011; Lemaire & Graham, 2011; Pietrzak et al., 2010). Veteran suicide deaths are also marked by differences across demographic groups, including based on age, era of service, sex, and use of Veterans Health Administration (VHA) services. For example, rates of suicide among younger veterans, ages 18 to 29, are twice that of all other age groups, with rates of 88 per 100,000 in male veterans and 33 per 100,000 in female veterans (VA OSP, 2016). However, the number of suicides among male veterans aged 50 years or older was the highest of all age groups, accounting for 65% of veteran suicide deaths. In 2014, approximately 700 veterans, ages 18 to 29, died by suicide, whereas there were 4,550 male veterans who died by suicide, who were age 50 and older. This discrepancy may be explained by older veterans accounting for the majority of veterans, leading to higher numbers, but younger veterans are dying by suicide more frequently and in greater numbers in proportion to all age groups (Kang & Bullman, 2008).
Suicide risk may also differ across sex/gender groups; for instance, the rate of suicide in male veterans was 37 per 100,000 veterans, and for females was 18.9 per 100,000, in 2014 (VA OSP, 2016). Compared to age-adjusted rates in 2001, by 2014, suicide risk increased by 30.5% for male veterans, and by 85.2% for female veterans (VA OSP, 2016). Although male veterans are at higher risk for suicide than female veterans, female veteran suicide rates are higher compared to their civilian counterparts, potentially due to increased risk of sexual assault and exposure to combat (McCarten, Hoffmire, & Bossarte, 2015). In past research, for instance, 81 to 93% of female veterans experience a traumatic event, compared to 51 to 69% of civilian women (Zinzow, Grubaugh, Monnier, Suffoletta-Maierle, & Frueh, 2007). Although these same factors help explain the difference between veteran and civilian male suicide rates, previous research indicates that limitation of activity due to trauma exposure (i.e., physical injuries) may be a primary factor differentiating veteran from civilian male suicide risk (Kaplan, Huguet, McFarland, & Newsom, 2007). In addition to biological sex, gender identity and sexual minority status may contribute to suicide risk in veterans, due to a general lack of support and climate of victimization. For example, in a study by Blosnich, Bossarte, and Silenzio (2012), 11.48% of sexual minority veterans endorsed suicidal ideation, compared to 3.48% of heterosexual veterans in the past year. In a transgender veteran sample, 57% endorsed past-year suicidal ideation and 66% endorsed a history of suicide plan or attempt (Lehavot, Simpson, & Shiperd, 2016).

Differences in rates of suicide risk may also be due, in part, to individual usage of VHA health and mental health services. As an example, from 2001 to 2014, the rate of suicide among VHA users increased by 8.8%, while the rate among non-VHA users increased by 38.6%. Despite overall non-VHA rates being higher compared to VHA rates, there are intersectional differences. For instance, much of the increase for non-VHA users is explained by female
suicide rates, which increased by 80.9% (VA OSP, 2016). Barriers to care for female veterans may include perceived lack of sensitivity to women’s health issues, lack of transportation, and inability to get time off of work or from family to seek services (Runnals et al., 2014). However, when examining suicide rates in male VHA utilizers, compared to male non-VHA utilizers, in 2014, those who utilized VHA services were 24% more likely to die by suicide than non-VHA utilizing veterans (VA OSP, 2016). This pattern is not present for female veterans, however. A potential explanation for this VHA-based increase in suicide risk for male veterans may be that, those veterans who seek VHA services are more likely to be distressed and to have comorbid diagnoses that increase risk for suicide (Conner et al., 2013).

**General Risk Factors for Suicide**

Risk factors for suicide have been extensively examined in the general population, with studies highlighting various categories including, but not limited to: cognitive-emotional factors (e.g., hopelessness, anger), psychopathology (e.g., mood disorders), life events (e.g., trauma, adverse childhood events), historical factors (e.g., previous suicide attempts, family history of mental illness), environmental factors (e.g., access to firearms), individual factors (e.g., sex and age), and social factors (e.g., low socioeconomic status, disrupted interpersonal needs) (Bostwick, Pabbati, Geske, & McKean, 2016; de Mattos Souza, Lopez, da Silva, & Jansen, 2016; Kposowa, Hamilton, & Wang, 2016; Rajalin, Hirvikoski, & Jokinen, 2013; Van Orden et al., 2010).

Models of suicide examining cognitive-emotional factors have not only found basic associations between these factors and suicide, but also potential underlying mechanisms. For example, anger is related to suicide in civilian populations, perhaps due to increased levels of impulsivity and emotional disruption characteristic of this emotion (Ammerman, Kleiman, Uyeji,
Depression has also been repeatedly linked to suicide in the literature, with potential underlying mechanisms including decreased executive functioning and poor future planning (Hirsch et al., 2006; Marzuk, Hartwell, Leon, & Portera, 2005), use of substances (Østergaard, Nordentoft, & Hjorthøj, 2017), and increased hopelessness (Hawton, Comabella, Haw, & Saunders, 2013).

Historical factors are also associated with increased suicide risk. Individuals with family history of mental illness are at heightened risk for suicide due to potential risk of developing mental illness (Qin, Agerbo, & Mortensen, 2002) and exposure to stressors (i.e., disrupted family relationships) (Holland, Vivolo-Kantor, Logan, & Leemis, 2017). Previous trauma exposure is also related to increased suicide risk via development of PTSD and other disorders (e.g., depression) (Ramberg, Stanley, Ystgaard, & Mehlum, 2015). Finally, previous suicide attempts are also related to heightened suicide risk, as these individuals may still be struggling with distress that led to their first attempts (Suomenen, Isometsä, Ostamo, & Lönnqvist, 2004). Along with historical factors, adverse childhood experiences are also related to suicide, potentially due to increased risk of aggression development, maladaptive personality development, and development of psychopathology (Perez, Jennings, Piquero, & Baglivio, 2016).

Many of these civilian-identified risk factors for suicide have also been confirmed as risk factors for the veteran population. For instance, veterans are 58% more likely to die by suicide with the use of a firearm, as they often have more familiarity with, and accessibility to, firearms, compared to civilian counterparts (Kaplan et al., 2007), and not unlike rural civilians (Lu, Woodside, Chisholm, & Ward, 2014). With regard to psychosocial and psychopathological risk factors, veterans who score higher on, for instance, measures of hopelessness and depression, report increased risk for suicide (May, Overholser, Ridley, & Raymond, 2015) and exposure to
previous stressors in childhood also increased risk for suicidal behavior (Carroll, Currier, McCormick, & Drescher, 2017). Despite a similarly broad base of risk factors between civilians and military personnel, previous research also notes the existence of unique risk factors for suicidal behaviors among military and veteran populations.

**Risk Factors for Suicide in Veterans**

Veterans may be at increased suicide risk due to experiences and stressors specific to military careers. For instance, there may be a lack of stability, in that soldiers must adapt to separation from family and friends during training and deployments, and during changes in duty station across the U.S. or world. As well, an acculturation process occurs as soldiers adapt from civilian to military lifestyles and, for some, a shift from the end of childhood into adulthood (Burrell, Adams, Durand, & Castro, 2006). Such transitional periods for identity and relationships may be disrupted as military personnel strive to navigate the social norms that differ between civilian and military cultures (Elnitsky, Fisher, & Blevins, 2017). Indeed, in a study by Ursano et al. (2016), soldiers were at the highest risk for suicide (102 per 100,000) following basic training and while transitioning into their military occupational specialties.

In addition to such transitional changes, more intense, military-based stressors may also contribute to suicide risk. For instance, active duty personnel endure stressors related to basic and advanced training, and general strain from their military occupational specialty (Jackson, Agius, Bridger, & Richards, 2011), including, but not limited to, cognitive and physical fatigue, decreased sleep, and emotional stress resulting from separation from family. Active duty personnel are also at higher risk for exposure to traumatic events, particularly during training and combat, such as witnessing harm of fellow soldiers and/or civilians, or experiencing verbal, physical or sexual abuse from supervisors and peers. Many veterans suffer from psychological...
(e.g., depression, alcohol abuse) and physical (e.g., traumatic brain injuries) injuries after engagement in, or witnessing events related to, combat and deployment (LeardMann et al., 2013; Tanelian & Jaycox, 2004).

The most commonly studied and discussed risk factors for suicide in veterans are those that are associated with trauma exposure both in and out of combat. Specifically, negative cognitive-emotional functioning, including the presence of shame and guilt, which are often inter-related (Beck et al., 2011; Dyer et al., 2017), and the development of PTSD, are commonly experienced by veterans after exposure to traumatic events (Hoge & Warner, 2014; Litz et al., 2009; Maguen et al., 2012). Indeed, it is estimated that between 19.1% and 24% of individuals exposed to a traumatic event endorse guilt and/or shame afterward (Carmassi et al., 2017; Feiring & Taska, 2005). Although the basic relations between trauma, psychopathology and suicide risk are well established in veterans, their linkage to self-compassion, as well as their potential ordering effects have not been thoroughly examined. In theory, and in non-veteran samples, however, there is some precedent for ordering effects; for instance, with cognitive-emotional factors (i.e., shame and guilt) playing a role in the development and exacerbation of PTSD, after the experience of a trauma.

**Shame and Guilt.** After exposure to a traumatic event, and depending on the nature of the trauma, veterans, as well as other individuals, may experience changes to their cognitive-emotional functioning, including perceptions of shame and guilt (Gaudet, Sowers, Nugent, & Boriskin, 2016; Pugh, Taylor, & Barry, 2015). Shame and guilt, although frequently discussed in tandem, are conceptualized and experienced differently. Shame refers to the global negative evaluation an individual makes toward one’s self and may include, among other self-evaluations, perceptions of inferiority, worthlessness, and helplessness (Lewis, 1971; Tangney & Dearing,
2002). On the other hand, guilt involves feelings of regret, tension, and remorse for an action committed or omitted, either intentionally or unintentionally, that goes against one’s moral beliefs (Lewis, 1971; Tangney & Dearing, 2002). Another way of viewing the distinction between the two is that shame may be expressed as “I am bad,” whereas guilt may be expressed as “I did a bad thing” (Tangney & Dearing, 2002). The direction of attention differs between the two: shame focuses on the individual, while guilt emphasizes the behavior (Kim, Thibodeau, & Jorgensen, 2011).

Shame is typically conceptualized as an intrapersonal, cognitive-affective state in which one over-internalizes flaws and perceives defects to be unique to one’s self (Lewis, 1971; Tangney & Dearing, 2002). Yet, there is also an interpersonal component to shame, as these perceived imperfections and negative traits are viewed through the lens of society; that is, shame involves a comparison of one’s own behaviors to societal norms and, when they do not match, perceived ostracization and self-imposed isolation may occur, as a means of avoiding further perceived criticism (Tangney & Dearing, 2002). As such, shame may be implicated in the development of negative cognitive-emotional (i.e., PTSD) and health outcome factors (i.e., suicide risk), since it ultimately hyper-focuses on negative (real or perceived) aspects of the self and is often accompanied by intense, negative emotions (e.g., anger, self-disgust; Kim, Thibodeau, & Jorgensen, 2011; Parker & Thomas, 2009).

Guilt, on the other hand, is predominantly conceptualized as an interpersonal cognitive-affective state, as one demonstrates “other-oriented concern” when experiencing it (Kim, Thibodeau, Jorgensen, 2011; Tangney & Dearing, 2002). For example, an individual who feels guilt may ruminate about perceived bad behavior inflicted on others, thereby contributing to increased levels of distress (e.g., nightmares associated with PTSD) (Hendin, 2014). Like shame,
guilt is comprised of negative emotions (i.e., remorse, regret), yet may manifest in either a maladaptive or adaptive manner. As with shame, guilt may impact an individual’s core sense of self, as a result of a hyper-focus on perceived responsibility for an action/inaction and its negative consequences. Alternatively, guilt may serve a constructive function, as a motivator, contributing to seeking forgiveness, atonement, and reconciliation (Parker & Thomas, 2009). Given its potential for constructive utilization, the person experiencing guilt, as compared to shame, may be able to develop positive cognitions about the self (i.e., thoughts of being able to take corrective action), experience adaptive affect (i.e., empathy), and engage in positive behaviors (i.e., socialization; reparative action). In contrast, shame involves cognitive perceptions of worthlessness, negative affectivity (e.g., anger), and behavioral avoidance (e.g., withdrawal from others) (Parker & Thomas, 2009). Such differences may be, in part, why shame is sometimes viewed as a more-intense, and negative, emotion than guilt (Kim, Thibodeau, & Jorgensen, 2011).

Indeed, previous research has highlighted differential effects of shame and guilt. For instance, shame is related to negative health outcomes including depression and anxiety (Shorey et al., 2011), reductions in treatment seeking behavior (Regan, Cachelin, & Minnick, 2017), and increased stress (Lupis, Sabik, & Wolf, 2016). As well, guilt is associated with negative outcomes, including increased depression (Tilghman-Osborne, Cole, & Felton, 2012) and anxiety (Tone & Tully, 2014), but has also been related to positive outcomes including posttraumatic growth and prosocial behaviors used to bolster relationships (Dekel, Mamon, Solomon, Lanman, & Dishy, 2016; Graton, Ric, & Gonzalez, 2016). However, in general, shame and guilt appear to exacerbate negative self-perceptions and emotions, disrupt interpersonal
functioning, and impact one’s desire to punish the self or escape, thereby contributing to suicide risk.

A positive association between shame and suicide risk has been found, for example, in adolescents (Werbart Törnblom, Werbart, & Rydelius, 2015), individuals diagnosed with borderline personality disorder (Brown, Linehan, Comtois, Murray, & Chapman, 2009), community samples (Arditte, Morabito, Shaw, & Timpano, 2016), and suicide attempters (Wiklander et al., 2012). In a sample of patients diagnosed with borderline personality disorder, self-harm was more likely if they experienced shame regarding previous self-harming behaviors (Brown et al., 2009). Shame is also linked to the thwarting of interpersonal needs via perceived burdensomeness and thwarted belongingness. Individuals may consider themselves to be bad or immoral due to their involvement in socially-taboo activities (i.e., bondage and discipline, dominance and submission, sadomasochism), or exposure to and participation in traumatic events and, thus, may feel like a burden or outcast from their loved ones and society, perhaps facilitating self-harm or suicidal behavior as a means of escaping intense feelings of negative self-scrutiny (Rogers, Kelliher-Rabon, Hagan, Hirsch, & Joiner, 2017; Roush, Brown, Mitchell, & Cukrowicz, 2017). On a broader interpersonal scale, feelings of shame about one’s sexuality is associated with higher suicide risk, perhaps because some LGBTQ persons may feel that something is inherently wrong with them and that they are unwanted based on their sexuality (Cover, 2012). These patterns of findings support the escape/punishment-motivated theory of suicide (Baechler, 1979; Gunn, Lester, & Yang, 2014), which suggests that individuals who lose an integral part of the self, such as social standing or rank, may want to escape the associated pain and, thus, view suicide as a viable option (Kim, Thibodeau, & Jorgensen, 2011; Mokros, 1995). Further, some individuals experiencing shame may feel extreme emotions, such as
embarrassment, and a sense of failure and worthlessness, and may engage in suicidal behavior as an escape from both socially-imposed and self-generated negative critiques (Baechler, 1979; Gunn, Lester, & Yang, 2014; Kim, Thibodeau, & Jorgensen, 2011).

Similar to shame, the relation between guilt and suicide risk is well-established across a variety of populations, including in sexual minority youth (Puckett et al., 2017), women with a history of childhood sexual abuse (Kealy, Spidel, & Ogrodniczuk, 2017), community adults (Li et al., 2014), male prisoners (Mandelli, Carli, Roy, Serretti, & Sarchiapone, 2011), political prisoners (Lopez-Munoz, Cuerda-Galindo, & Krischel, 2017), and survivors of genocide (Bursztein Lipsicas, Levav, & Levine, 2017). As examples, in two studies involving patients diagnosed with affective disorders, guilt, specifically inappropriate guilt, was a significant predictor of suicide risk (Pawlak et al., 2013; Stange et al., 2016). Although these studies did not explore underlying mechanisms or define the construct of inappropriate guilt, findings from other studies suggest that guilt may be related to suicide risk via its association with psychopathology (i.e., depressive symptoms) (Jovanović et al., 2013; Puckett et al., 2017). Potential explanations for the guilt-suicide linkage also align with the escape/punishment-motivated theory of suicide. For example, in a sample of outpatient adults, religious-based feelings of guilt were associated with increased suicidal ideation, as belief in the commission of a sin and subsequent distress prompted a view of suicide as a potential escape (Exline, Yali, & Sanderson, 2000). Further in line with this, political prisoners who endorsed distress related to guilt from committing atrocities were more likely to die by suicide (Lopez-Munoz et al., 2017). These potential linkages and mechanisms are also beginning to be explored in the military/veteran population.
For veterans, shame and guilt may develop after experiencing traumatic events that involve participation in or witnessing events, both in and out of combat, that are in opposition to their moral, ethical, societal, and/or spiritual belief systems. Examples often encountered include killing during combat, witnessing the death of innocent civilians and/or fellow soldiers, and failing to prevent injury to or mistreatment (e.g., sexual harassment) of fellow soldiers (Buchanan, Settles, Hall, & O’Connor, 2014; Maguen et al., 2010; Schell & Marshal, 2008). These events may involve ethical dilemmas that the individual struggled to resolve in the moment, as well as difficulty coping with the subsequent consequences (Frankfurt & Frazier, 2016; Thompson & Jetly, 2014). A soldier, for example, may have to choose between the moral ideal of not harming individuals versus defying military training, values, and orders (Vargas, Hanson, Kraus, Drescher, & Foy, 2013). Military personnel and, later, veterans, may criticize themselves for their action/inaction during these experiential dilemmas. For example, veterans may develop shame if they judge themselves to be “monsters” or “evil” for not preventing the deaths of children or civilians, despite orders by commanding officers, or may view themselves as worthless, cowardly soldiers for not following orders (Maguen et al., 2009). Individuals in such situations may also, later, feel guilt, blaming themselves and ruminating on their action or inaction and, thus, may assume a disproportionate amount of responsibility, and potential self-punishing thoughts, for the occurrence and after-effects of the event (e.g., “I should have died instead”) (Litz et al., 2009; Ross, 2013). The resulting self-deprecation and self-blame may contribute to increased vulnerability to suicide risk.

Indeed, there are a few studies that examine the association between shame, guilt and suicide risk in veterans exposed to these types of events. Wisco et al. (2017) found that veterans exposed to these types of traumatic events had higher levels of shame and guilt and were at
higher risk for suicide. However, the authors do not explicitly separate the constructs of shame and guilt, making it difficult to see individual effects. Further, in a military outpatient sample, both shame and guilt were independent predictors of suicidal ideation (Bryan et al., 2013). In another study with Vietnam veterans, using semi-structured interviews, feelings of shame related to societal reactions during homecoming (i.e., cruel treatment of veterans including name calling, mistreatment) were endorsed by individuals who also reported suicide risk (i.e., ideation and history of attempts); however, the authors did not run statistical analyses and only relied on self-report (McCormack & Joseph, 2014).

Specifically, the guilt-suicide linkage may also reflect the tenets of the escape/punishment-motivated theory of suicide in veterans as with civilians. For example, Vietnam combat veterans who reported re-examining ways they could have handled their behaviors and emotions during battle to prevent atrocities (i.e., death of fellow soldiers), often felt that they should have died instead and, thus, engaged in suicidal behaviors to both escape these negative emotions as well as to be able to join their fellow soldiers in death (Hendin & Haas, 1991). Veterans who experience guilt may also engage in self-harm or suicidal behavior as a means to express remorse or to pay penance for their actions, particularly related to killing innocent civilians (Hendin, 2014; Singer, 2004).

As noted, guilt and shame are often intertwined within the literature, and previous studies suggest they may interact. For instance, a veteran who takes responsibility for a traumatic event or its aftermath may experience guilt for the action/inaction (e.g., I did something wrong) and, as a result, may also experience shame for their perceived role (e.g., I did something wrong; Something is wrong with me), both of which, as noted previously, are risk factors for suicide (McLean et al., 2017; Selby et al., 2010). As well, individuals with greater shame may be more
likely to blame themselves for actions/inactions in traumatic situations, as their negative self-perceptions contribute to a ruminative focus on their, and not others’, roles in the event (Parker & Thomas, 2009). This potential cyclical relation highlights an area of contention in the extant literature (Kim, Thibodeau, & Jorgensen, 2011; Tangney & Dearing, 2002; Parker & Thomas, 2009), in that some previous studies have failed to distinguish the two concepts when examining their impact on outcomes (e.g., PTSD, suicide), making it imperative to focus on their separate impact, particularly in populations vulnerable to their experience, such as military personnel and veterans.

This cluster of psychosocial symptoms has much in common with another psychiatric disorder commonly found in military personnel and veterans – posttraumatic stress disorder, and it may be that shame and guilt exacerbate the likelihood of development, or complicate the trajectory, of PTSD after a trauma (Gaudet et al., 2016; Pugh et al., 2015). In previous research, an association exists between shame/guilt and PTSD across samples, including college students (La Bash & Papa, 2014), veterans (Bryan, Roberge, Bryan, & Ray-Sannerud, 2015; Freeman, Roca, & Moore, 2000), outpatient adults (Harman & Lee, 2010), and refugees (Stotz, Elbert, Muller, & Schauer, 2015). Further, a strong link exists between PTSD and suicide, including in veterans, suggesting potential ordering effects.

**Posttraumatic Stress Disorder.** Posttraumatic stress disorder, which is characterized by avoidant (e.g., avoiding certain places) and intrusive symptoms (e.g., nightmares), negative cognitions and moods (e.g., inability to experience positive emotion), and arousal symptoms (e.g., hypervigilance) (American Psychological Association, 2013), is one of the most frequently diagnosed disorders in U.S. veterans. It is estimated that lifetime prevalence of PTSD is approximately 7-8% in the general U.S. population (Kilpatrick et al., 2013), and ranges from 8-
31% in U.S. veterans across all eras and branches of service (Gates et al., 2012). These numbers may also be an underestimation of the true rate of PTSD among U.S. veterans, as stigma and potential negative consequences associated with disclosure of symptoms (i.e., barriers to job attainment/promotion) may contribute to underreporting of symptoms (Gates et al., 2012; Hoge et al., 2004).

Posttraumatic stress disorder, as well as sub-clinical trauma-related symptoms, is associated with poor physical and mental health in veterans, including increased suicide risk (Asnaani, Reddy, & Shea, 2014; Gill et al., 2014; Jakupcak et al., 2011; Pietrzak, Russo, Ling, & Southwick, 2011; Wisco et al., 2014). For example, veterans with PTSD are approximately three times more likely to report suicidal ideation than those without PTSD (Jakupcak et al., 2011), and up to 70.6% of those with PTSD endorse suicidal ideation (Pietrzak et al., 2010). In a sample of older veterans, 31.1% of those with PTSD endorsed a previous suicide attempt while only 1.8% without PTSD endorsed a previous attempt. Further, 24.2% of those with PTSD endorsed suicidal ideation while only 1% of those without PTSD endorsed ideation (Fanning & Pietrzak, 2013).

There are multiple models that attempt to explain the relation between PTSD and suicide that include comorbid mental diagnoses (e.g., depression; Panagioti, Gooding, Taylor, & Tarrier, 2012), frequency and type of trauma (LeBouthillier, McMillan, Thibodeau, & Asmundson, 2015), combat exposure (Maguen et al., 2012), and interpersonal difficulties (Davis, Witte, & Weathers, 2014). Models focusing on comorbid mental diagnoses (e.g., depression, anxiety, substance use disorders) have yielded results suggesting multiple pathways. For example, previous research suggests that PTSD is associated with suicide risk via its exacerbating effects on depression and anxiety (Fordwood, Asarnow, Huizar, & Reise, 2007; Holtzheimer, Rousso,
Zatzick, Bundy, & Roy-Byrne, 2005; McKinney, Hirsch, & Britton, 2017; Stevens et al., 2013). Other models, however, suggest that individuals with co-occurring PTSD and substance use diagnoses tend to use substances as a coping mechanism for PTSD-related distress, resulting in impaired executive functioning, increased impulsivity, and greater suicide risk (Lineberry & Brady, 2014; Maloney, Degenhardt, Darke, Mattick, & Nelson, 2007; McCauley, Killeen, Gros, Brady, & Back, 2012). Yet other studies note distinct pathways, indicating the existence of independent contributions to suicide risk, for PTSD, depression, and substance abuse (Panagioti, Gooding, & Tarrier, 2009; Ramsawh et al., 2014). Although these studies contribute to knowledge of potential explanations for the PTSD-suicide linkage, the existence of distinct mechanisms of action for other disorders and symptoms, underscore the notion that PTSD is a complex disorder, with numerous etiological and trajectory pathways (Panagioti et al., 2012).

In models examining frequency and types of trauma, including combat exposure, significant associations exist between PTSD and suicide. For example, positive associations between PTSD and suicide have been found in persons experiencing childhood abuse (Lopez-Castroman et al., 2015), intimate partner violence (Bradley, Schwartz, & Kaslow, 2005; Seedat, Stein, & Forde, 2005), sexual and physical abuse (Dixon-Gordon, Tull, & Gratz, 2014; Thompson, Kaslow, Lane, & Kingree, 2000), and combat (Maguen et al., 2012). Many of these studies posit that trauma acts via facilitation of comorbid symptoms (e.g., anxiety), cognitive-affective factors (e.g., anger), and the type of coping (e.g., avoidance/withdrawal from others), often negative, utilized to deal with PTSD symptoms. However, other studies have found that type of trauma (i.e., childhood sexual abuse) is directly linked to suicide risk, regardless of the presence of PTSD (de Mattos Souza et al., 2016; Joiner et al., 2007).
Some past research suggests that trauma (i.e., killing in combat, general childhood trauma) may also be linked to suicide via multiple pathways, including intrapersonal (e.g., guilt, shame) and interpersonal factors (e.g., thwarted belongingness, and the interpersonal nature of many traumas) (Milligan & Andrews, 2005; Rice & Sher, 2013; You, Talbot, He, & Conner, 2012). This is consistent with interpersonal models of PTSD and suicide, which posit that feeling like a burden and feeling ostracized from one’s social network, may be a potential mechanism of action for the PTSD-suicide linkage (Davis et al., 2014).

Despite being implicated as factors contributing to both interpersonally-based risk for suicide and posttraumatic stress disorder, previous models of suicide have rarely examined the interrelations between these variables (Gaudet et al., 2016; Pugh et al., 2015). Given the increasing support for the associations between shame, guilt, and PTSD, and the current research interest in moral injury, it is critical that future models of PTSD and suicide address the shared associations between, and combined effects of, these variables (Stern, 2014).

**Shame/Guilt and PTSD.** Simple, positive associations between shame, guilt, and PTSD have been established in refugee (Stotz et al., 2015), college student (La Bash & Papa, 2014), adult outpatient (Harman & Lee, 2010), and veteran samples (Bryan et al., 2013; Freeman et al. 2000; Held, Owens, & Anderson, 2015). In addition to their basic relations, shame and guilt may serve as potential contributors to, and predictors of severity of, PTSD in veteran and trauma-exposed adults (Brewin, Andrews, & Rose, 2000; Hathaway, Boals, & Banks, 2010; Leskela, Dieperink, & Thuras, 2002; Van Dam, Sheppard, Forsyth, & Earleywine, 2011).

With regard to shame, for instance, Andrews, Brewin, Rose, and Kirk (2000), found that shame predicted levels of PTSD six months after exposure to a violent crime in an adult sample and these, and other, authors suggest that shame influences PTSD specifically by increasing
levels of avoidance and comorbid negative emotions, such as anger. Indeed, each of the criteria comprising a PTSD diagnosis may be influenced by shame in a different way. For instance, re-experiencing symptoms, specifically intrusive memories, is thought to occur when an individual struggles with the conflict (i.e., shame) between prior beliefs about one’s self (e.g., I am a good person) and thoughts during/after the traumatic event (e.g., I did not prevent harm to that individual, thus I am a bad person) (Stein et al., 2012). Such cognitive dissonance can also lead to anger, which is linked to increased physiological arousal (Gilbert, 2000; Stein et al., 2012; Taft et al., 2007), PTSD (Renshaw & Kiddie, 2015), and suicide risk (Jang et al., 2014). Another criterion for PTSD, avoidance, may be influenced by shame, in that shame prevents individuals from disclosing shame-related cognitions and emotions to others, leading to isolation (Forbes, Creamer, Hawthorne, Allen, & McHugh, 2003; Mason et al., 2001; Rangganadhan & Todorov, 2010). Finally, shame has a strong influence on the negative cognitions and mood criteria of PTSD; for instance, shame has a positive relation with negative rumination, a symptom shared by both PTSD and depression (Speckens, Ehlers, Hackmann, Ruths, & Clark, 2007), which consists of feelings of helplessness, hopelessness, and inadequacy (Kim et al., 2011).

Compared to studies examining the relation between shame and PTSD, fewer have examined the linkage between guilt and PTSD (Kim et al., 2011) and, as well, these models also often include shame (McLean & Foa, 2017). For instance, in a sample of victims of interpersonal violence, both guilt and shame were related to higher levels of PTSD (Beck et al., 2011). These basic associations have been replicated in other samples including journalists (Browne, Evangeli, & Neil, 2012), recovering addicts (Langman & Chung, 2013), former child soldiers (Klasen, Reissmann, Voss, & Okello, 2015), patients undergoing PTSD treatment (Oktedalen, Hoffart, &
Langkaas, 2015), trauma-exposed individuals (Dewey, Shuldberg, & Madathil, 2014), and veterans (Brown, Trim, Myers, & Norman, 2015; Huang & Kashubeck-West, 2015).

Other studies delve further into potential explanatory mechanisms, suggesting that guilt, like shame, may impact PTSD via its effects on cognitive-emotional functioning and coping abilities. For example, in a study of trauma-exposed substance users by Held, Owens, and Anderson (2015), both shame and guilt indirectly increased PTSD severity via emotion-focused disengagement coping (i.e., emotional and interpersonal avoidance). As with shame, this finding suggests that individuals who experience guilt may isolate from others due to self-blame and a desire to not repeat mistakes, or because they do not want to reveal distress to others as it may serve as a reminder of culpability, thereby increasing guilt-related distress (Kim et al., 2011).

Guilt may also influence intrusive symptoms, as the individual experiencing guilt may ruminate on the “what if” questions, repeatedly berating oneself for the perceived failure or offense (Henning & Frueh, 1997; Kubany & Watson, 2003). It should be noted, however, that several studies have indicated a lack of association between guilt and PTSD. For example, in samples of former prisoners of war (Leskela et al., 2002) and youth diagnosed with HIV (Bennett, Hersh, Herres, & Foster, 2016) shame, but not guilt, was related to PTSD symptoms. In the extant literature, some studies also fail to separate guilt from shame in analyses, making it difficult to discern guilt’s potential contribution to negative outcomes (i.e., PTSD, suicide) (Pugh et al., 2015). These findings suggest a need for continued examination of guilt in different contexts (i.e., trauma), and exploration of the independent effects of guilt and shame on PTSD.

This ordering, of shame and guilt as a foundation for the development and exacerbation of PTSD, has some precedent, as previous research indicates that residual symptoms of shame and guilt exist after evidence-based treatments are utilized to address PTSD symptoms (Lee,
Scragg, & Turner, 2001). As well, despite treatment, PTSD symptoms may increase without addressing shame and guilt, as these emotions are not readily targeted by current evidence-based treatments (Dalgleish, 2004). However, the extant literature, despite evidence of basic associations and ordering effects, has failed to extend this investigation to suicide risk (Bryan et al., 2013; Tripp & McDevitt-Murphy, 2017) and have, largely, failed to examine shame and guilt separately, as we do in the current study.

As well, most research on PTSD and suicide, as we have reviewed, focuses on negative characteristics and risk factors associated with the person experiencing a trauma, which has driven a historical focus on symptom reduction. However, addressing negative outcomes, to the exclusion of bolstering adaptive characteristics and coping, does not always reduce symptoms and subsequent maladaptive outcomes (i.e., suicide; Najavits, 2015). As well, not all veterans who are exposed to traumatic events develop negative cognitive-emotional factors, or symptoms of PTSD, or engage in suicidal behavior, perhaps as a result of factors of resiliency, such as hope (Hassija, Luterek, Naragon-Gainey, Moore, & Simpson, 2012). Currently, researchers and clinicians are beginning to focus on potential protective, often “positive psychological,” factors that some veterans may possess, or that may be cultivated, in order to reduce risk for psychopathology and suicide-related outcomes (Joseph & Linley, 2008; Wingate et al., 2006).

**Protective Factors for Suicide in Veterans**

In many areas of psychosocial research, there has been a paradigm shift toward acknowledgment of the potential benefits of protective factors and their roles in preventing or reducing psychopathology and suicide. As with risk factors, veterans and civilians share many of the same protective factors against suicide risk. For example, dispositional optimism is associated with decreased risk of developing PTSD, perhaps because optimistic persons tend to
utilize adaptive and proactive coping strategies (i.e., cognitive reframing), and hold the expectation that good outcomes will occur, which may counteract some negative beliefs held by individuals with PTSD (i.e., the world is not safe, so I am not safe) (Gil & Weinberg, 2015; Thomas, Britt, Odle-Dusseau, & Bliese, 2011). Other shared protective factors include spirituality/religiousness (Currier, Holland, & Drescher, 2015; Gerber, Boals, & Schuettler, 2011), cognitive flexibility (Keith, Velezmaro, & O’Brien, 2015; Park, Chang, & You, 2015), and secure attachment to family (Armour, Elklit, & Shevlin, 2011; Wisco et al., 2014). However, some protective factors are examined more often in veterans due to increased relevance in the military culture. For example, a sense of connectedness may play a major role in decreasing suicide risk, as veterans can bond over common experiences (i.e., hardships endured during training and combat, sense of brother/sisterhood) and help one another cope with distressing symptoms (i.e., shame, guilt, PTSD) (Lemaire & Graham, 2011; Pietrzak et al., 2010). As well, having a sense of purpose and agency can alleviate suicidal ideation in military personnel (Bryan, Andreski, McNaughton-Cassill, & Osman, 2014; Pietrzak et al., 2010), as a result of increased levels of self-confidence and sense of living a meaningful life. In addition to these protective factors, other characteristics, such as self-compassion, are being explored as potential clinical resources for use in the treatment of psychopathology.

**Self-Compassion**

Self-compassion, which is conceptualized as opening up to one’s own suffering non-judgmentally and providing kindness to the self to alleviate suffering, is comprised of three components: self-kindness, mindfulness, and a sense of common humanity. Self-kindness focuses on how individuals respond, emotionally, to pain and failure, and involves being kind and understanding toward one’s suffering and inadequacies without judgment and self-criticism.
(Neff, 2003a; Neff, 2003b). Having a sense of common humanity allows the individual to see that he/she is not alone in his/her suffering but, rather, is a part of the larger human experience and involves how one cognitively conceptualizes one’s suffering (Neff, 2003a). Finally, mindfulness focuses on how one pays attention to suffering and involves balanced awareness of thoughts and feelings, rather than over-identification with suffering (Neff, 2003a; Neff, 2003b).

Each of these components contains an opposing component: self-judgment, versus self-kindness, involves berating one’s self, and thinking of one’s suffering in a judgmental way; isolation, versus common humanity, involves viewing one’s suffering in an egocentric manner; and, over-identification, versus mindfulness, involves focusing only on the negative aspects of one’s self and experiences (Neff, 2003a, Neff, 2016). These three components, although separate, interact to enhance each other’s effects. For example, the embrace of a nonjudgmental stance of mindfulness results in a decrease of self-criticism, and an increase in self-understanding and kindness (Neff, 2003b). As well, acknowledging that others share similar suffering may promote self-kindness (Neff, 2003b). Finally, if one is able to engage in mindful awareness and, thus, maintain distance from negative experiences of the self, disconnection from feelings of isolation and an embrace of feelings of interconnectedness (e.g., common humanity) may be possible (Neff, 2003a). Although self-compassion is measured across these three factors, Neff (2003b, 2016) argues that self-compassion requires the “synergistic state of interaction” between the components and their opposite poles.

Self-compassion may arise, or may be more likely to be needed, during difficult experiences, or after exposure to a traumatic event, as it is both hypothesized and empirically supported as being more salient during times of distress (Leary et al., 2007; Neff, 2003a; Neff, 2003b). During distressful times, the ability to engage in self-compassion may allow an
individual to access and utilize adaptive coping skills such as cognitive reframing (e.g., being self-kind rather than self-critical) or mindfulness/relaxation rather than avoidant ones, including self-blame and behavioral disengagement, as a way of attempting to ameliorate effects emerging from trauma exposure, such as the development or exacerbation of trauma-related symptoms (i.e., shame/guilt, PTSD; Allen & Leary, 2010; Neff, Hseih, & Dejittirat, 2005; Rabon, Brooks, Kaniuka, Sirois, & Hirsch, 2017; Sirois, Molnar, & Hirsch, 2015). Such effects may extend to suicide risk, in the face of trauma. As examples, self-compassion is beneficially related to trauma-related symptoms and suicidal ideation in adolescents (Zeller, Yuvai, Nitzan-Assayag, & Bernstein, 2015) and survivors of childhood maltreatment (Tanaka, Wekerle, Schmuck, Paglia-Boak, 2011; Tarber, Cohn, Casazza, Hastings, & Steele, 2016). With regard to military application, self-compassion is related to lower suicide risk through its bolstering effect on other protective factors, such as spirituality (Bryan, Graham, & Roberge, 2015).

Self-Compassion and Suicide

In preliminary research, many of the independent components of self-compassion are related to suicide risk. Very little research has focused on the relation between self-kindness, as conceptualized by Neff, and suicide risk; however, related constructs, such as self-forgiveness, may reduce this risk (Bryan, Theriault, & Bryan, 2015; Nagra, Lin, & Upthegrove, 2016). In previous research, holding a positive perception of the self (i.e., self-esteem) is negatively related to suicide risk, in adolescents (Martin, Richardson, Bergen, Roeger, & Allison, 2005), college students (Lin, 2015), psychiatric outpatients (Bhar, Ghahramanlou-Holloway, Brown, & Beck, 2008), and prisoners (Gooding et al., 2015). Potential mechanisms of action for this relation have been explored, including self-esteem’s positive impact on depression (Bhar, Ghahramanlou-Holloway, Brown, & Beck, 2008), as a mediator of the relation between social support and
suicide, and as a moderator of the relation between gratitude and suicide (Kleiman & Riskind, 2013; Lin, 2015).

Regarding self-judgment, in previous research by Joiner, Gencoz, Gencoz, Metalsky, & Rudd (2001), self-hatred, but not depressive symptoms, were associated with higher suicide risk. Further, in a sample of undergraduate students, negative self-evaluation was associated with increased suicidal ideation (Selimbegović & Chatard, 2013). One’s judgment of the self, including perceptions of self-worth, is also linked to greater suicide risk, as negative self-perceptions tend to exacerbate depressive symptoms (Robinson, Kissane, Brooker, Hempton, & Burney, 2017; Wild, Flisher, & Lombard, 2004). Self-compassion may work by decreasing the tendency to view one’s self and experiences in a negative light, and by enhancing ability to engage in self-kindness instead of self-criticism, thereby engendering a sense of autonomy, self-worth and self-confidence, and decreasing risk for suicide (Ehret, Joorman, & Berking, 2015; Korner et al., 2015; Matos, Carvalho, Cunha, Galhardo, & Sepodes, 2017; Wong & Mak, 2013).

The development of mindfulness is also related to decreased suicide risk, in community adults (Zeng, Ma, & Li, 2017), undergraduate students (Anastasiades, Kapoor, Shweta, Wootten, & Lamis, 2017), adolescents (Heath, Carsley, De Riggi, Mills, & Mettler, 2016), and veterans (Gallegos, Cross, Pigeon, 2015; Walser et al., 2015). Mindfulness appears to facilitate adaptive, emotion-focused coping, including a focus on, and acceptance of, the fleeting nature of stressors and distressful feelings, thereby attenuating rumination and the intensity of negative cognitive-emotional factors that contribute to suicide risk (Diedrich, Hofmann, Cuijpers, & Berking, 2016; Johnson & O’Brien, 2013; Melyani, Allahyari, Falah, Ashtiani, & Tavoli, 2015; Trompetter, Kleine, & Bohlmeiher, 2016). For example, mindfulness is indirectly related to lower levels of suicidal ideation, via decreases in depressive symptoms, in college students, perhaps because
more-mindful students are able to defuse from negative thoughts (Lamis & Dvorak, 2014). Mindfulness is also related to decreases in perceived stress in older adults, suggesting that awareness and processing of stressors, rather than avoidance, may facilitate adaptive self-soothing (Zeng, Ma, & Li, 2017). Another way that mindfulness may decrease suicide risk is through its impact on the satisfaction of interpersonal needs. For instance, in a study of college students experiencing thwarted belongingness and perceived burdensomeness, mindfulness-based techniques (i.e., guided meditation) were associated with a reduction in the feeling of need to escape from interpersonal adversities via suicide (Collins, Best, Stritzke, & Page, 2016; Collins, Stebbing, Stritzke, & Page, 2017).

On the other hand, over-identification with the negative aspects of a traumatic event is also related to suicide risk. For instance, rumination, or focusing on negative emotional thoughts, and its subtypes (i.e., brooding), are related to increased suicide risk via increasing stress levels (Cole et al., 2015). In a recent meta-analysis indicating an association between rumination and its sub-types (i.e., brooding) and suicide, it is suggested that a continuous focus on negative mood and stressors increases depressive symptoms and subsequent suicide risk (Rogers & Joiner, 2017).

Finally, common humanity is also associated with well-being and mental health outcomes, although research has been minimal to date. For example, in a sample of postpartum women, normative feedback about the prevalence of postpartum depression promoted sense of common humanity (e.g., that others go through similar struggles), potentially enabling them to seek out assistance (Scrandis, 2005). Although conceptualized as an existentially-oriented construct, common humanity is also more-literally related to a sense of interdependence, concern for others, and social conformity, as noted in a study of undergraduate students from Thailand,
Taiwan, and the U.S. (Neff, Pisitsungkagarn, & Hsieh, 2008). Indeed, isolation in the context of interpersonal relations, and feeling as if one cannot connect with others, is related to increased suicide risk in adolescents (Zamora-Kapoor et al., 2016), community adult women (Tsai, Lucas, & Kawachi, 2015), and rural-dwelling adults (Hirsch, 2006; Manoranjitham et al., 2010; Van Orden et al., 2010). Social networks and relationships (e.g., marriage, family support) can provide emotional and instrumental support, serving as potential buffers against suicide risk, in a wide array of populations including college students (Tran et al., 2015), U.S. adults (Kleiman & Liu, 2013), and veterans (Weisenhorn, Frey, van de Venne, & Cerel, 2017).

Although the extant research suggests independent, beneficial associations between self-compassion and an array of physical and mental health outcomes, including suicide risk, this work is limited in veterans and few studies have elaborated on potential mechanisms of action between self-compassion and suicide, particularly in the context of trauma. For instance, given the aforementioned benefits of self-compassion for cognitive-emotional and psychological functioning, it may be that the constellation of self-kindness, mindfulness, and common humanity also has utility for the sequelae of trauma, including potential amelioration of feelings of shame or guilt and symptoms of PTSD.

Shame, Guilt, and Self-Compassion

Across a variety of samples, self-compassion, particularly the component of self-kindness, is related to lower levels of shame (Castilho, Carvalho, Marques, & Pinto-Gouveia, 2017; Kelly, Carter, & Borairi, 2014). For instance, in samples of patients with eating disorders, those with higher levels of self-compassion reported less self-criticism and, in turn, less shame (Kelly & Tasca, 2016). Similarly, in patients diagnosed with borderline personality disorder, the effect of self-compassion on self-criticism attenuated the experience of shame and reduced
engagement in self-harm, when patients were instructed to recount previous stories of self-harm using compassionate language (Warren, 2015). With regard to common humanity, in a study utilizing a group therapy format, participants who were victims of war, but not necessarily endorsing PTSD, were able to recognize that others were also victimized by atrocities and, thus, were able to forgive themselves for being unable to assist (Urlic & Simunkovic, 2009). As well, common humanity, perhaps enacted via meaningful interpersonal interactions, may beneficially impact shame. For instance, in a sample of college students, social connectedness was related to decreased levels of shame, as individuals who feel more connected with others may be able to recognize the existence of, and have access to, others going through similar hardships, instead of differentiating themselves or isolating from others (Williamson, Sandage, & Lee, 2007). Supporting this premise, in a study by Matos, Gouveia, and Duarte (2015), adults who had established safe and validating social networks, were less likely to develop shame when reflecting on memories laden with shame-oriented themes. Finally, self-compassion, particularly the component of mindfulness, may help to reduce the effects of negative rumination, a major component of shame that involves over-identification with previous actions and a reduction of self-worth, by allowing the individual to approach such thoughts and feelings in a non-judgmental and present-moment manner, thereby disrupting the ruminative cycle (Woods & Proeve, 2014).

The beneficial relation of self-compassion to shame is also evident in trauma-exposed individuals. In a study by Shahar (2014), individuals exposed to interpersonal trauma who developed more self-compassion via emotion-focused therapy, were also able to develop a more positive view of the self, accompanied by decreased shame. Self-compassion may also reduce shame via its impact on shame-based traumatic memories; as an example, individuals who were
able to recount traumatic memories utilizing self-kindness and decreased self-judgment experienced lower levels of shame related to the memory (Ferreira, Matos, Duarte, & Pinto-Gouveia, 2014). With regard to veteran samples, Au et al. (2017) found that self-compassion-based therapy used to address trauma-related shame and PTSD in veterans was successful in reducing levels of both. Some authors have argued for the use of self-compassion strategies for couples who have experienced trauma (Karris & Caldwell, 2015), and for victims of intimate partner violence (Tesh, Learman, & Pulliam, 2015), as mindful self-compassion strategies may help to alleviate symptoms of shame in trauma populations.

Self-compassion is also beneficially associated with guilt, including in persons with personality disorders (Schanche, Stiles, McCullough, Svartberg, & Nielsen, 2011), college students (Doehring, 2017), restrictive eaters (Adams & Leary, 2007), and veterans (Bryan et al., 2013). Some studies have explored potential underlying mechanisms between guilt and suicide. For example, Held and Owens (2015) examined the effects of a self-compassion protocol on trauma-related guilt in a sample of homeless veterans, finding that recipients of the intervention experienced reductions in guilt, perhaps as a result of common humanity (e.g., others shared responsibility; others have experienced similar events) or self-kindness (e.g., realizing they could not control the situation). The component of mindfulness is also beneficially related to guilt (Friese & Hofmann, 2016). In a sample of adults with depression, for instance, utilization of mindfulness techniques alleviated feelings of guilt, as these individuals were able to view their negative experiences in a balanced, and not ruminative, way (Stotter et al., 2013). Common humanity also has a potential association with guilt; for instance, in a study of a caregiver support group, participant guilt decreased as they learned of the similar experiences of others (Riley et al., 2011). Finally, in a sample of college students, self-kindness was related to less
guilt, perhaps because self-kindness facilitates development of a positive perception of the self, rather than negative (Hall & Fincham, 2008). Such negative self-judgment has previously been linked to poor mental health. For example, self-hatred is linked to guilt in veterans (Singer, 2004) and in depressed patients (Hendin, Maltsberger, & Szanto, 2007).

Yet, despite empirical support for the basic associations between self-compassion, shame and guilt, PTSD and suicide risk, including in veterans, and despite theoretical and empirical support for potential ordering effects between these variables, comprehensive models of potential mechanism of action are lacking. It may be, however, that self-compassion beneficially impacts PTSD, perhaps via amelioration of some of the negative cognitive-emotional factors (e.g., shame, guilt) associated with trauma.

**Self-Compassion and PTSD**

Despite the influence of negative cognitive-emotional factors (i.e., shame and guilt) on PTSD symptoms, there are numerous protective factors that might aid in the reduction of PTSD symptom severity, including marriage prior to deployment (Weisenhorn, Frey, van de Venne, & Cerel, 2017), social support (Zang et al., 2017), optimism (Gil & Weinberg, 2015), future orientation (Israel-Cohen, Kashy-Rosenbaum, & Kaplan, 2016), cognitive flexibility (Joseph, Moring, & Bira, 2015; Keith et al., 2015), religiosity and spirituality (Currier et al., 2015; Hasanovic & Pajevic, 2010), and forgiveness (Currier, Drescher, Holland, Lisman, & Foy, 2016).

One of the more recent protective factors being investigated in relation to PTSD is self-compassion. Self-compassion serves as a buffer against symptoms of PTSD, such as anger, and comorbid disorders, including depression and anxiety (Jang et al., 2014; Novaco, Swanson, Gonzalez, Gahm, & Reger, 2012), as well as against PTSD itself. Indeed, self-compassion is
associated with decreased PTSD symptom severity in veterans (Dahm et al., 2015; Hiraoka et al., 2015), college students (Barlow, Goldsmith, & Gerhart, 2017; Thompson & Waltz, 2008), trauma-exposed adolescents (Zeller et al., 2015), trauma-exposed community adults (Maheux & Price, 2016), and victims of intimate partner and intentional violence (Tesh et al., 2015; Valdez & Lilly, 2016). These studies propose different mechanisms by which self-compassion might influence PTSD severity. For example, it may be that the mindfulness and self-kindness components of self-compassion prevent the use of emotional numbing commonly seen in individuals with PTSD and instead, promote the use of awareness and tolerance of negative emotions, allowing for processing and alleviation of these symptoms (Thompson & Waltz, 2008; Valdez & Lilly, 2016).

Consistent with these explanations, Germer and Neff (2015) have proposed a model indicating how each component of self-compassion targets distinct symptom clusters of PTSD. The most common symptom clusters found in PTSD are arousal (i.e., hypervigilance, increased startle response), avoidance (i.e., utilizing distractions, avoiding triggers), and intrusive symptoms (i.e., nightmares, day time memories). These clusters map onto the fight-flight-freeze response and are experienced as self-criticism (arousal), self-isolation (avoidance), and self-absorption (intrusions) when threatened by internal emotions of shame, guilt, and dread that arise after trauma exposure and further development of PTSD. When self-compassion develops, its three components help alleviate arousal and negative cognition and mood (self-kindness), and the avoidant (common humanity) and intrusive (mindfulness) symptoms of PTSD.

Self-kindness may facilitate the attenuation of the severity and presence of arousal, and negative cognition and mood symptoms, associated with PTSD, by allowing for greater tolerance of the anxiety symptoms. As an example, victims of interpersonal violence able to develop self-
kindness had lower levels of anxiety, as these individuals were able to engage in less self-criticism, thereby halting the cyclical role of self-criticism that would ordinarily heighten anxiety (Valdez & Lilly, 2016). Further, individuals who utilize self-kindness techniques (e.g., positive self-talk) may ease negative self-talk associated with PTSD (e.g., “I deserve to feel like this…I should have prevented this from happening,” “I should not be like this, I was trained better…I failed my country”), allowing development of a more-accepting self-perspective and greater likelihood of engaging in treatment of PTSD (Hoffart, Oktedalen, & Tomas, 2015). In contrast, self-judgment is positively related to PTSD symptoms. For example, in a sample of adults, self-criticism was associated with increased levels of PTSD, potentially due to self-criticism’s exacerbating influence on shame (Harman & Lee, 2010), and lower levels of self-worth are associated with greater risk for PTSD in police offers (Yuan et al., 2011) and assault victims (Ali, Dunmore, Clark, & Ehlers, 2002).

Although not thoroughly examined in relation to PTSD and suicide risk, constructs similar to common humanity may buffer against the development or exacerbation of PTSD. For example, in interviews with non-Western translators exposed to trauma, developing a sense of shared suffering and trauma helped to facilitate a feeling of normalization and a decrease in trauma reactions (Johnson, Thompson, & Downs, 2009). Further, in a study of veterans undergoing group therapy for PTSD, sharing trauma experiences facilitated normalization of the experience, and decreased the sense of being alone (Mott et al., 2013). Veterans also acknowledged that they feel more able to express their emotions to other veterans who have shared similar experiences (Mittal et al., 2013). Although not explored in the study by Mittal and colleagues, expression of emotion is related to a reduction of PTSD symptoms (Hassija et al., 2012). Finally, the ability to increase sense of social connectedness, which may stem from
common humanity, may help to alleviate avoidant symptoms of PTSD, via enhancement of perceived and actual human connections. Much clinical research indicates that social connectedness is related to decreased PTSD symptoms, as those who feel they have a strong social support system, to which they belong and can relate, are less likely to become isolative (Pietrzak & Cook, 2013). Further, engagement in these social groups may provide evidence that they are not alone in their struggles, thereby reducing maladaptive and isolation-inducing cognitive-emotional factors, such as shame and guilt (Dahm et al., 2015).

Finally, mindfulness may assist in the reduction of the intrusive symptoms of PTSD, as it promotes present-moment awareness and balance of one’s current emotions, rather than a focus on past memories. Intrusive memories typically occur in the context of nightmares or day-time intrusive memories that replay traumatic situations in one’s head, often intertwined with punitive emotions such as shame and guilt (e.g., “I should have/could have done something differently,” “This shows exactly why I am a bad person”) (Kleim, Graham, Bryant, & Ehlers, 2013). In the absence of mindfulness, a sense of over-identification with the trauma and its negative emotional sequelae may occur which can, cyclically, contribute to increased likelihood of nightmares and intrusive memories, in samples including traffic accident survivors (Ehring, Frank, & Ehlers, 2008), outpatient adults (Birrer & Michael, 2011), and breast cancer patients (Yu, Chen, & Chang, 2008). However, individuals who, instead, are able to engage in mindfulness, can focus on the present-moment in a non-judgmental manner, perhaps providing counterfactual evidence that one is not reliving the traumatic situation and promoting a balance between the presence, and resolution, of negative emotions, as they are replaced with more-neutral, positive, and self-kind reflections toward the self (Maheux & Price, 2015).
Further supporting these assertions, studies implementing compassion-based treatments in trauma-samples have found great efficacy in the reduction of PTSD symptoms. For instance, in a sample of adult patients undergoing prolonged exposure modified to include self-compassion components, self-compassion increased and was associated with decreased PTSD symptoms (Hoffart et al., 2015). Similarly, Au et al. (2017) found that the use of compassion-based therapy in a trauma-exposed community adult sample significantly reduced PTSD severity, specifically through the reduction of shame. The authors argue that the use of a self-compassion driven therapy, rather than those oriented in reasoning and logic, can provide a distinct sensory-based experience that combats against critical feelings toward oneself which, in turn, reduces the intensity of PTSD symptoms.

In summary, it may be that self-compassion contributes to the amelioration of PTSD symptoms, and consequent suicide risk, by allowing individuals to tolerate negative emotions in the moment, rather than ruminate on traumatic events and, thereby, intensify distressful emotions. Self-compassion may also allow an individual to be kinder to the self when experiencing distressful emotions, such as shame and guilt. Finally, self-compassion may help to facilitate an adaptive world view of common humanity; that is, the acknowledgment that others have also experienced trauma and its negative repercussions.

**Statement of the Problem**

Suicide is a major concern within the veteran population, particularly as growing evidence demonstrates its strong, positive relation with PTSD, one of the most common diagnoses found in veterans (Wisco et al., 2014). Further, negative cognitive-emotional factors such as shame and guilt are contributors to suicide risk and may, in fact, exacerbate other psychopathological risk factors (i.e., PTSD) that worsen suicide risk (Bryan et al., 2015; Gaudet
et al., 2016). However, not every veteran who experiences shame, guilt, and PTSD engages in suicidal behavior, perhaps due to the presence of protective factors, such as self-compassion, which has beneficial relations with other psychological outcomes (Neff, 2003a; Neff, 2003b).

Although scarce, previous research indicates a potential relation between self-compassion and suicide (Bryan et al., 2015; Zeller et al., 2015); however, the underlying mechanisms of action are still unclear. Self-compassion appears to beneficially impact risk factors for suicidal risk in veterans, including levels of shame and guilt, and PTSD symptoms (Held & Owens, 2015; Hiraoka et al., 2015; Shahar, 2014). As well, there may be potential ordering effects of this linkage, with self-compassion impacting suicide via its association with shame and guilt and, sequentially, PTSD (Au et al., 2017).

Veterans are at heightened risk for experiencing feelings of shame and guilt as they are often placed in situations where they face ethical dilemmas and traumatizing situations, both in and out of combat (Maguen et al., 2012). Because military culture has historically promoted the suppression of emotions and stigmatizes seeking mental health services (Rosen et al., 2011), many veterans may be self-critical of their suffering, internalizing their feelings of self-hatred and taking on more responsibility for past traumatic events and subsequent emotions, rather than processing these thoughts and emotions (Litz et al., 2009). This process can lead to further exacerbation of PTSD symptoms (Neff, 2003a). The promotion of healthier, self-caring attitudes toward oneself after a traumatic event may allow the veteran to engage in proactive behaviors (e.g., cognitive reframing, reaching out to social support networks), thereby decreasing suicide risk (Neff, 2003a). Although self-compassion has been examined as an independent predictor of shame, guilt, and PTSD, and the latter three as predictors of suicidal behavior, a comprehensive model including all these factors has yet to be examined.
Hypotheses

As such, our study examined the serial mediating roles of shame, in Model 1, and guilt, in Model 2 (first order mediators) and PTSD symptoms (second order mediator) in the relation between self-compassion and suicidal behavior within a veteran sample. We hypothesize the following:

1. At the bivariate level, we hypothesize that self-compassion will be inversely related to shame, guilt, PTSD symptoms, and suicidal behavior. Suicidal behavior, shame, guilt, and PTSD symptoms will all be positively related to one another.

2. At the multivariate level, we hypothesize that shame/guilt and PTSD symptoms will mediate the relation between self-compassion and suicidal behavior in a serial fashion, such that higher levels of self-compassion will be associated with lower levels of shame and guilt and, in turn, to lower levels of PTSD symptoms and less consequent suicide risk.
CHAPTER 2

METHOD

Participants and Procedures

The study utilized a pre-existing, cross-sectional data set, comprised of data from 612 United States veterans. The study was approved by the ETSU Institutional Review Board (IRB), and was administered online, via secure server, through Survey Monkey [www.surveymonkey.com]. Participants were recruited via online invitations sent to veteran-related social media groups (e.g., veteran-oriented Facebook groups) as well as national organizations (e.g., Veterans of Foreign Wars [VFW] chapters). Participants provided electronic informed consent prior to completing online self-report measures and were entered into a drawing for a chance to win an Amazon gift card.

After excluding cases with missing data, our sample was comprised of 317 United States veterans. The average age was 47.5 years old (SD = 16.3), with a range of 22 to 92 years old. Additional demographic information is provided below (Table 1).
Table 1  
*Characteristics of Participants*

<table>
<thead>
<tr>
<th></th>
<th>Percentage of participants (%)</th>
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<td><strong>Sex</strong></td>
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<tr>
<td>Asian</td>
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<td>0</td>
</tr>
<tr>
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<td>Air Force</td>
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<td>National Guard</td>
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<td><strong>Era of Service</strong></td>
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<td>August 1990 to August 2001</td>
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<td>December 1941 to December 1946</td>
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Table 1 (continued)

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<th>Education Level</th>
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<td>12 years; High School/GED</td>
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<tr>
<td>14 years; Associate’s Degree</td>
<td>24.3%</td>
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<tr>
<td>16 years; Bachelor’s Degree</td>
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<td>18 years; Master’s Degree</td>
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<tr>
<td>22 years; Doctorate or other Professional Degree</td>
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</tr>
<tr>
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</tr>
<tr>
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<td>1.9%</td>
<td>6</td>
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<th>Income Level</th>
<th>Percentage of participants (%)</th>
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<tbody>
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<tr>
<td>$10,000 - $19,999</td>
<td>6.9%</td>
<td>22</td>
</tr>
<tr>
<td>$20,000-$29,999</td>
<td>11.4%</td>
<td>36</td>
</tr>
<tr>
<td>$30,000-$39,999</td>
<td>11.4%</td>
<td>36</td>
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<td>$40,000-$49,999</td>
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<td>$50,000-$59,999</td>
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<td>$70,000-$79,999</td>
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<td>$90,000-$99,999</td>
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<td>$100,000-$150,000</td>
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<td>More than $150,000</td>
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<tr>
<td>Don’t Know</td>
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</tr>
<tr>
<td>No Response</td>
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<td>17</td>
</tr>
</tbody>
</table>
Measures

Demographic information was collected utilizing a questionnaire that assessed for characteristics including age, sex, race, ethnicity, branch of service, era of service, and use of Veterans Health Administration (VHA) medical services (see Table 1). These variables were included as covariates in all analyses, given their strong association with suicide risk in the veteran population (Eaton, Messer, Wilson, & Hoge, 2006; Fanning & Pietrzak, 2013; Hoffmire, Kemp, & Bossarte, 2015; Pietrzak, Russo, Ling, & Southwick, 2011; Wisco et al., 2014).

Self-compassion was assessed using the Self-Compassion Scale – Short Form (SCS-SF; Raes, Pommier, Neff, & Van Gucht, 2011), a 12-item scale, which assesses three components of dispositional self-compassion, including self-kindness (e.g., “When I’m going through a very hard time, I give myself the caring and tenderness I need”), common humanity (e.g., “I try to see my failings as part of the human condition”), and mindfulness (e.g., “When something upsets me I try to keep my emotions in balance”). Participants are asked to indicate how often they behave in accordance to the statement, utilizing a 5-point Likert-scale ranging from 1 (“almost never”) to 5 (“almost always”). A total self-compassion score, which we use in our study, is calculated by reverse scoring the negative items (i.e., self-judgment, isolation, and over-identified items), summing the items, and computing a total mean. Higher scores indicating greater levels of self-compassion, with a minimum mean score of 1 and maximum mean score of 5. The SCS-SF has a strong correlation with the 26-item version of the SCS ($r \geq 0.97$) and has shown good internal consistency ($\alpha = 0.86$) in community adult samples (Raes et al., 2011), trauma-exposed adults ($\alpha = 0.89$; Beaumont, Durkin, McAndrew, & Martin), and veterans ($\alpha = 0.89$; Rabon, Brooks, Kaniuka, Sirois, & Hirsch, 2017). In the current sample, internal consistency was good (Cronbach’s $\alpha = .89$).
Symptoms of shame and guilt were assessed using the Differential Emotions Scale-IV, trait form (DES-IV-B; Izard, 1979). The 36-item scale measures discrete trait emotions, including shame and guilt, with each subscale (i.e., emotion) utilizing three items. Participants are prompted to answer how often they feel shame (e.g., “Feel embarrassed when anybody sees you make a mistake”) and guilt (e.g., “Feel regret, sorry about something you did”) in their daily life, utilizing a Likert scale ranging from 1 (“Rarely or never”) to 5 (“Very often”). Items are summed to create a total score for each subscale, with a minimum score of 3 and maximum score of 15 on each subscale, and with higher scores indicating greater levels of shame and guilt. In previous research, the DES-IV has shown acceptable to good internal consistency (α = 0.70, shame; α = .73-.81, guilt) in community adult samples and good test-retest reliability (r = .70) (Akande, 2002; Blumberg & Izard, 1985; Izard, Libero, Putnam, & Haynes, 1993). In a recent study with veterans, the shame subscale exhibited good internal consistency (α = 0.83; Rabon, Brooks, Kaniuka, Sirois, & Hirsch, 2017). The guilt subscale has not been examined in veterans but has good internal consistency in trauma-exposed populations (α = 0.88; Gasparre, Bosco, & Bellelli, 2010). In the current sample, internal consistency was good for both shame (Cronbach’s α = .83) and guilt (Cronbach’s α = .86) subscales.

PTSD symptoms were measured using the PTSD Checklist-Military Version (PCL-M) for DSM-IV (Weathers, Huska, & Keane, 1991), which prompts participants to respond to items while thinking about stressful military experiences. No other Criteria A trauma specifier was assessed. The PCL-M is comprised of 17 items that measure different types of PTSD symptoms including re-experiencing the event (e.g., “Repeated, disturbing memories, thoughts, or images of a stressful military experience), avoidance (e.g., “Avoid activities or talking about a stressful military experience or avoid having feelings related to it), numbing (e.g., “Feeling distant or cut
off from other people”), and hyperarousal (e.g., “Feeling irritable or having angry outbursts) symptoms. Participants rate each item on a Likert scale that ranges from 1 (“Not at all”) to 5 (“Extremely”), based on how intensely they are bothered by these symptoms over the past month. Item scores are summed to yield a severity score, which ranges from 0 (lowest) to 75 (highest), with higher scores indicating greater severity of symptoms. The scale has excellent internal consistency in military samples (α = .97), and adequate sensitivity (.82; proportion of those with PTSD who were correctly identified as having PTSD by the measure) and specificity (.83; proportion of those without PTSD who were correctly identified as not having PTSD by the measure), with a suggested clinical cut-off score of 50 in U.S. Vietnam and Gulf War veterans (Horowitz, Wilner, & Alvarez, 1979; Keane, Caddell, & Taylor, 1988; Weathers, Litz, Herman, Huska, & Keane, 1993; Yarvis, Yoon, Amenuke, Simien-Turner, & Landers, 2012). In the current sample, internal consistency was excellent (Cronbach’s α = .96).

Suicide risk was measured using the Suicidal Behaviors Questionnaire-Revised (SBQ-R). The scale is comprised of four items that measure suicidal thoughts and behaviors including the following: suicidal ideation and attempts (i.e., “Have you ever thought about or attempted to kill yourself?”), suicidal ideation within the past year (i.e., “How often have you thought about killing yourself in the past year?”), intent (i.e., “Have you ever told someone that you were going to commit suicide, or that you might do it?”), and the chance of attempting suicide in the future (i.e., “How likely is it that you will attempt suicide someday?”). Participants answer each question using a Likert scale that differs for each question, but all follow the trend that higher scores indicate greater suicide risk, with a minimum score of 3 and maximum score of 18. Suggested cut-off scores of 7 in non-suicidal samples and 8 in clinical samples, represent significant suicide risk (Osman et al., 2001). Internal consistency is acceptable to good in veteran
samples ($\alpha = .76-.84$: Currier, Holland, Drescher, & Foy, 2015; Rudd, Goulding, & Bryan, 2011), and sensitivity (individuals with established suicide risk were correctly identified as positive for suicide ideation or attempts) and specificity (individuals established as non-suicidal were correctly identified as not having suicidal ideation or attempts) are adequate to excellent at .87 and .93, respectively (Osman et al., 2001). In the current sample, internal consistency was good (Cronbach’s $\alpha = .81$).

Depressive symptoms were assessed using the Multidimensional Health Profile-Psychosocial Functioning screening tool (MHP-P) (Ruehlman, Lanyon, & Karoly, 1998). The MHP-P is comprised of 58 items assessing mental health, social resources, coping skills, and life stress. The depression subscale of the mental health scale asks respondents to indicate how they felt over the past two weeks in response to three items (e.g., “How depressed have you felt?) rated on a Likert scale from 1 (“not at all”) to 5 (“very”). Higher scores indicate greater levels of depressive symptoms, with a minimum score of 3 and maximum score of 15. Internal consistency is good in trauma-exposed individuals (Cronbach’s $\alpha = .85$; Williams, McDevitt-Murphy, Fields, Weathers, & Flood, 2011), with test-retest coefficients ranging from .76-.79 in a sample of community adults, over a period of three weeks (Ruehlman, Lanyon, & Karoly, 1998). In the current sample, internal consistency was good ($\alpha = .86$).

**Statistical Analyses**

**Bivariate Analyses**

Pearson’s product-moment correlations were used to examine linear order associations between self-compassion, shame, guilt, PTSD symptoms, and suicide risk (Piovani, 2008). The recommended cut off for multicollinearity ($r > .80$) will be used to determine excessive degree of association (Katz, 2006).
**Serial Mediation Analyses**

We conducted two serial mediation models using Hayes (2013) PROCESS Model 6 to examine the association between self-compassion and suicide risk, and the potential, sequential mediating effects of shame (1\(^{st}\) order mediator) and PTSD (2\(^{nd}\) order mediator) in Model 1, and guilt (1\(^{st}\) order mediator) and PTSD (2\(^{nd}\) order mediator) in Model 2.

Serial mediation models assume that the mediators have direct effects on each other; further, the independent variable influences the mediators serially and, subsequently, the dependent variable. These models may yield both direct and indirect effects.

Results found in simple mediation models are also found in serial models. The total effect (i.e., $c$) is the relation between the independent and dependent variables without controlling for the mediators and accounts for all direct and indirect effects. The direct effect (i.e., $c'$), in contrast, is the relation between the independent and dependent variables while holding the mediators constant. Finally, a total indirect effect (i.e., $ab$) is also calculated; this provides information on the role of all mediating variables in the relation between the independent and dependent variables. These effects are utilized to help provide information about the presence of mediation. Finally, an indirect-only effect is found when $ab$ is significant, but neither $c$ nor $c'$ are significant.

In addition to these results, serial mediation also yields specific indirect effects. A serial mediation with two mediators can have three specific indirect effects. These effects provide information regarding the role of a specific mediator in the relation between the independent and dependent variables in the following ways: 1) though the 1\(^{st}\) order mediator alone ($a_1b_1$), 2) through both the 1\(^{st}\) and 2\(^{nd}\) order mediators in serial fashion ($a_1a_2b_2$), and 3) through the 2\(^{nd}\) order mediator alone ($a_2b_2$). Figure 1 provides a visual and detailed description of the relations tested.
Hayes’ mediation models assess indirect effects without relying on statistically significant relations between the independent and dependent variables. This technique also utilizes bootstrapping, a non-parametric resampling technique that randomly and repeatedly samples data (10,000 times). This process provides estimations of indirect effects without the assumption of normally distributed data, which aids in maintaining power (Preacher & Hayes, 2008). Bootstrapping yields a 95% confidence interval, which aids in determining the significance of indirect effects; significance occurs when the 95% confidence interval does not contain zero.
Figure 1. Indirect Effects: Serial Mediation Model

*Note.* MV = mediator variable. $a_1$ = direct effect of Self-Compassion on Shame (Model 1)/Guilt (Model 2); $a_2$ = direct effect of Self-Compassion on PTSD symptoms; $a_3$ = direct effect of Shame (Model 1)/Guilt (Model 2) on PTSD symptoms; $b_1$ = direct effect of Shame (Model 1)/Guilt (Model 2) on suicide risk; $b_2$ = direct effect of PTSD symptoms on suicide risk; $c$ = total effect of Self-Compassion on suicide risk, without accounting for Shame (Model 1)/Guilt (Model 2) and PTSD symptoms; $c' = $ direct effect of Self-Compassion on suicide risk when accounting for Shame (Model 1)/Guilt (Model 2) and PTSD symptoms; Total Indirect Effect = $a_1b_1 + a_1a_3b_1 + a_2b_2$ (Self-Compassion effect suicide risk through various specific effects); $a_1b_1 = $ specific indirect effect through Shame (Model 1)/Guilt (Model 2); $a_1a_3b_1 = $ specific indirect effect through Shame (Model 1)/Guilt (Model 2) and PTSD symptoms; $a_2b_2 = $ specific indirect effect through PTSD symptoms. Adapted from Preacher and Hayes (2012).
CHAPTER 3

RESULTS

Descriptive Results

Bivariate Correlations

Our bivariate hypothesis, tested utilizing Pearson’s product-moment correlation analysis, was supported, with all study variables significantly associated in the predicted directions (see Table 2). Self-compassion was significantly, negatively associated with shame ($r = -.672, p < .001$), guilt ($r = -.726, p < .001$), PTSD symptoms ($r = -.583, p < .001$), and suicide risk ($r = -.442, p < .001$). Regarding our dependent variable, suicide risk was significantly, positively associated with shame ($r = .374, p < .001$), guilt ($r = .449, p < .001$), and PTSD symptoms ($r = .491, p < .001$). Similarly, PTSD symptoms were significantly, positively associated with shame ($r = .578, p < .001$) and guilt ($r = .590, p < .001$).

Regarding covariates, age ($p < .001$) and era of service ($p < .01$) were significantly, negatively associated with suicide risk, suggesting that younger veterans and veterans from earlier conflicts reported greater suicide risk. Additionally, VHA usage was significantly, positively related to suicide risk ($p < .01$), suggesting that veteran-focused medical centers are, indeed, providing healthcare service to veterans with greater severity of suicide risk. Finally, clinical cut-off scores for the PCL-M (i.e., greater than 50) and SBQ-R (i.e., greater than 7) are suggested in the extant literature. In our sample, 168 participants (53%) scored a 50 or more on the PCL-M and 194 participants (61.2%) scored a 7 or more on the SBQ-R.
Table 2
Means, Standard Deviations, and Correlations Among Variables of Interest (N = 317)

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>Min/Max Scores</th>
<th>Self-Compassion</th>
<th>Shame</th>
<th>Guilt</th>
<th>PTSD Symptoms</th>
<th>Suicide Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Self-Compassion</td>
<td>2.72</td>
<td>0.84</td>
<td>1 - 5</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2. Shame</td>
<td>8.18</td>
<td>3.11</td>
<td>3 - 15</td>
<td>-.672</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3. Guilt</td>
<td>9.02</td>
<td>3.06</td>
<td>3 - 15</td>
<td>-.726</td>
<td>.720</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4. PTSD Symptoms</td>
<td>49.66</td>
<td>18.80</td>
<td>0 - 75</td>
<td>-.583</td>
<td>.578</td>
<td>.590</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5. Suicide Risk</td>
<td>8.15</td>
<td>3.31</td>
<td>3 - 18</td>
<td>-.442</td>
<td>.374</td>
<td>.449</td>
<td>.491</td>
<td>-</td>
</tr>
<tr>
<td>6. Depressive Symptoms</td>
<td>9.51</td>
<td>1.86</td>
<td>3 - 15</td>
<td>-.413</td>
<td>.381</td>
<td>.428</td>
<td>.597</td>
<td>.444</td>
</tr>
</tbody>
</table>

Note. Self-Compassion = Self-Compassion Scale - Short Form; shame and guilt = Differential Emotions Scale-IV; PTSD symptoms = PTSD Checklist-Military Version (PCL-M) for DSM-IV; suicide risk = Suicidal Behaviors Questionnaire - Revised (SBQ-R); and depressive symptoms = Multidimensional Health Profile- Psychosocial Functioning (MHP-P). All values are \( p \leq .001 \)
Serial Mediation Analyses

Serial mediation hypotheses were partially supported. Model 1 (Table 3; Figure 2) utilized shame (MV₁) and PTSD symptoms (MV₂) as mediators. For our first model, a significant total effect was observed ($c = -1.18$, $p < .001$, $CI = -1.62$ to -.733). Further, the direct effect of self-compassion on suicide risk was reduced, but remained significant, when shame and PTSD symptoms were added as mediators ($c' = -846$, $p = .002$, $CI = -1.39$ to -.306), indicating significant mediation. The total indirect effect of self-compassion on suicide risk was also significant ($ab = -.333$, $CI = -.670$ to -.022).

As well, significant specific indirect effects were found for two pathways. First, a significant specific indirect effect was found for self-compassion through shame and PTSD symptoms ($a_1a_3b_2 = -.116$, $CI = -.228$ to -.049). Self-compassion was associated with lower levels of shame and, sequentially, decreased levels of PTSD symptoms and, in turn, reduced suicide risk. A significant indirect pathway was also found for self-compassion through PTSD symptoms ($a_2b_2 = -.187$, $CI = -.387$ to -.066). Higher levels of self-compassion were associated with reduced levels of PTSD symptoms and, in turn, reduced suicide risk. The specific indirect effect through shame was not significant.
Table 3
Serial Mediation: Specific Indirect Effects of Shame and PTSD Symptoms in the Relation between Self-Compassion and Suicide Risk (N = 317)

<table>
<thead>
<tr>
<th>Effect</th>
<th>b</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>(ab)</td>
<td>-.333</td>
<td>-.670</td>
<td>-.022</td>
</tr>
<tr>
<td>(a_1b_1)</td>
<td>-.030</td>
<td>-.354</td>
<td>.284</td>
</tr>
<tr>
<td>(a_1a_3b_2)</td>
<td>-.116</td>
<td>-.228</td>
<td>-.049</td>
</tr>
<tr>
<td>(a_2b_2)</td>
<td>-.187</td>
<td>-.387</td>
<td>-.066</td>
</tr>
</tbody>
</table>

Suicide Risk Total Effect Model \(R^2 = .293^*\)

Note. \(a, b, c,\) and \(c'\) represent unstandardized regression coefficients: \(a_1\) = direct effect of self-compassion symptoms on shame; \(a_2\) = direct effect of self-compassion on PTSD symptoms; \(a_3\) = direct effect of shame on PTSD symptoms; \(b_1\) = direct effect of shame on suicide risk; \(b_2\) = direct effect of PTSD symptoms on suicide risk; \(c\) = total effect of self-compassion on suicide risk, without accounting for shame and PTSD symptoms; \(c'\) = direct effect of self-compassion on suicide risk when accounting for shame and PTSD symptoms; \(ab\) = Total Indirect Effect; \(a_1b_1\) = specific indirect effect through shame; \(a_1a_3b_1\) = specific indirect effect through shame and PTSD symptoms; \(a_2b_2\) = specific indirect effect through PTSD symptoms. BCa 95% CI = bias corrected and accelerated 95% confidence interval; 10,000 bootstrap samples; covariates included age, sex, ethnicity, branch of service, era of service, VHA usage, and depressive symptoms. *\(p \leq .001.\)
Figure 2. Illustration of the Indirect Effects of Shame and PTSD Symptoms in the Relation between Self-Compassion and Suicide Risk.

Note. MV = mediator variable. $a_1 =$ direct effect of self-compassion on shame; $a_2 =$ direct effect of self-compassion on PTSD symptoms; $a_3 =$ direct effect of shame on PTSD symptoms; $b_1 =$ direct effect of shame on suicide risk; $b_2 =$ direct effect of PTSD symptoms on suicide risk; $c =$ total effect of self-compassion on suicide risk, without accounting for shame and PTSD symptoms; $c’ =$ direct effect of self-compassion on suicide risk when accounting for shame and PTSD symptoms; Total Indirect Effect = $a_1b_1 + a_1a_3b_1 + a_2b_2$ (self-compassion affects suicide risk through various specific effects); $a_1b_1 =$ specific indirect effect through shame; $a_1a_3b_1 =$ specific indirect effect through shame and PTSD symptoms; $a_2b_2 =$ specific indirect effect through PTSD symptoms. Adapted from Preacher and Hayes (2012). * $p \leq .001$, ** $p \leq .01$
In Model 2 (Table 4; Figure 3), guilt (MV1) and PTSD symptoms (MV2) were examined as mediators. In this model, a significant total effect was observed ($c = -1.18$, $p < .001$, $CI = -1.62$ to -.733). The direct effect of self-compassion on suicide risk was reduced, but remained significant, when guilt and PTSD symptoms were added as mediators ($c’ = -.588$, $p = .043$, $CI = -1.15$ to -.020), indicating significant mediation. The total indirect effect of self-compassion on suicide risk was also significant ($ab = -.591$, $CI = -.991$ to -.226).

Significant specific indirect effects were also found for two pathways. A significant specific indirect effect was found for self-compassion through guilt and PTSD symptoms ($a_1ab_2 = -.100$, $CI = -.220$ to -.033); self-compassion was serially associated with lower levels of guilt and decreased levels of PTSD symptoms and, in turn, reduced suicide risk. Second, there was a significant specific indirect pathway for self-compassion through PTSD symptoms ($a_2b_2 = -.175$, $CI = -.377$ to -.055). Higher levels of self-compassion were associated with lower levels of PTSD symptoms and, in turn, reduced suicide risk. The specific indirect effect through guilt was not significant.
### Table 4
**Serial Mediation: Specific Indirect Effects of Guilt and PTSD Symptoms in the Relation between Self-Compassion and Suicide Risk (N = 317)**

<table>
<thead>
<tr>
<th>Effect</th>
<th>$b$</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ab$</td>
<td>-.591</td>
<td>-.991</td>
<td>-.226</td>
</tr>
<tr>
<td>$a_1b_1$</td>
<td>-.317</td>
<td>-.684</td>
<td>.048</td>
</tr>
<tr>
<td>$a_1a_3b_2$</td>
<td>-.100</td>
<td>-.221</td>
<td>-.033</td>
</tr>
<tr>
<td>$a_2b_2$</td>
<td>-.175</td>
<td>-.377</td>
<td>-.055</td>
</tr>
</tbody>
</table>

Suicide Risk Total Effect Model $R^2 = .324^*$

*Note. $a$, $b$, $c$, and $c'$ represent unstandardized regression coefficients: $a_1$ = direct effect of self-compassion symptoms on guilt; $a_2$ = direct effect of self-compassion on PTSD symptoms; $a_3$ = direct effect of guilt on PTSD symptoms; $b_1$ = direct effect of guilt on suicide risk; $b_2$ = direct effect of PTSD symptoms on suicide risk; $c$ = total effect of self-compassion on suicide risk, without accounting for guilt and PTSD symptoms; $c'$ = direct effect of self-compassion on suicide risk when accounting for guilt and PTSD symptoms; $ab$ = Total Indirect Effect; $a_1b_1$ = specific indirect effect through guilt; $a_1a_3b_1$ = specific indirect effect through guilt and PTSD symptoms; $a_2b_2$ = specific indirect effect through PTSD symptoms. BCa 95 % CI = bias corrected and accelerated 95% confidence interval; 10,000 bootstrap samples; covariates included age, sex, ethnicity, branch of service, era of service, VHA usage, and depressive symptoms. * $p \leq .001.$*
**Figure 3.** Illustration of the Indirect Effects of Guilt and PTSD Symptoms in the Relation between Self-Compassion and Suicide Risk.

Note. MV = mediator variable. $a_1$ = direct effect of self-compassion on guilt; $a_2$ = direct effect of self-compassion on PTSD symptoms; $a_3$ = direct effect of guilt on PTSD symptoms; $b_1$ = direct effect of guilt on suicide risk; $b_2$ = direct effect of PTSD symptoms on suicide risk; $c =$ total effect of self-compassion on suicide risk, without accounting for guilt and PTSD symptoms; $c'$ = direct effect of self-compassion on suicide risk when accounting for guilt and PTSD symptoms; Total Indirect Effect = $a_1b_1 + a_1a_3b_1 + a_2b_2$ (self-compassion affects suicide risk through various specific effects); $a_1b_1$ = specific indirect effect through guilt; $a_1a_3b_1$ = specific indirect effect through guilt and PTSD symptoms; $a_2b_2$ = specific indirect effect through PTSD symptoms. Adapted from Preacher and Hayes (2012). * $p \leq .001$, ** $p \leq .01$, *** $p \leq .05$
CHAPTER 4
DISCUSSION

Suicide is a significant health concern for veterans and may often occur as a result of negative cognitive-emotional sequelae following exposure to a traumatic event (Fanning & Pietrzak, 2013; Jakupcak et al., 2011; Wisco et al., 2017). Yet, the presence of protective factors, such as self-compassion, may help to reduce suicide risk in the context of trauma. In fact, self-compassion may be most salient during times of distress, with beneficial downstream effects on shame, guilt and psychopathology, making it an ideal candidate for therapeutic promotion (Leary et al., 2007; Neff, 2003a; Neff, 2003b).

Overview of Main Findings

Bivariate Analyses

In our sample of United States veterans, we examined the bivariate associations between self-compassion, shame, guilt, PTSD symptoms, and suicide risk. In support of hypotheses, shame, guilt, PTSD symptoms, and suicide risk were significantly, positively related, and all of these variables were negatively related to self-compassion.

To begin, our findings support the well-established linkages between maladaptive cognitive-emotional functioning, psychopathology and suicide risk (Freeman et al. 2000; Held, Owens, & Anderson, 2015; Pietrzak et al., 2010; Wisco et al., 2014; Wisco et al., 2017). Regarding shame and guilt, individuals who perceive themselves in a globally negative way and/or experience feelings of remorse after an act committed/omitted, appear to be at greater risk for suicide. In previous research, it has been suggested that individuals experiencing shame and guilt who attempt suicide, may be attempting to escape from extreme emotions resulting from socially-imposed and self-directed critiques about the self for their perceived role in the
guilt/shame-inducing situation (Hendin, 2004; Kim, Thibodeau, & Jorgensen, 2011; Lopez-Munoz et al., 2017).

Our pattern of results also substantiates previously-noted positive associations between shame, guilt and PTSD (Cunningham, Davis, Wilson, & Resick, 2018). In a cyclical fashion, individuals who experience high levels of shame are more likely to withdraw from others due to a negative self-perception that promotes avoidance and prevents open engagement with others, thereby limiting opportunities for support and exacerbating negative cognitions and emotions (Rangganadhan & Todorov, 2010; Tran & Beck, 2018). Similarly, the experience of guilt may contribute to isolation, perhaps to avoid repetition of mistakes or ruminating on the event (Held, Owens, & Anderson, 2015; Kubany & Watson, 2003).

Finally, we confirm the well-established association between PTSD and suicide risk (Lee et al., 2018; O’Donnell, Logan, & Bossarte, 2018; Wisco et al., 2014). From a biopsychosocial perspective, numerous explanatory pathways for this linkage exist. Physiologically, previous research indicates that the hyperarousal symptoms of PTSD are significant predictors of suicide attempts in veterans exposed to combat (Stanley, Rogers, Hanson, Gutierrez, & Joiner, 2019). PTSD may also exacerbate psychiatric comorbidities, exerting detrimental impact on depression, anger, and substance use (Lineberry & Brady, 2014; McKinney, Hirsch, & Britton, 2017; Wisco et al., 2014), which are all suicide risk factors. Finally, veterans with PTSD may be more impulsive and prone to engagement in risk-taking behaviors (James, Strom, & Leskela, 2014), which are personality characteristics associated with increased suicidal behavior.

On the other hand, regarding protective effects, we provide support for the beneficial association between self-compassion and psychopathology (Litz et al., 2009; Pompili et al., 2013; Wisco et al., 2017), including suicide risk. In general, the linkage between self-compassion
and psychopathology has been infrequently examined, with some noted exceptions in veteran 
(Bryan, Graham, & Roberge, 2015), collegiate (Rabon, Sirois, & Hirsch, 2018), and adolescent 
samples (Zeller, Yuvai, Nitzan-Assayag, & Bernstein, 2015). Broadly, individuals who are kind 
to the self and have a positive self-perception, may also be less likely to have other comorbid 
psychiatric concerns that can contribute to increased suicide risk, such as depression and anxiety 
(Bhar, Ghahramanlou-Holloway, Brown, & Beck, 2008; Neff, Kirkpatrick, & Rude, 2007). 
Perhaps because of the mindfulness component of self-compassion, persons with higher levels of 
self-compassion may be better able to cognitively process, or buffer against, negative thoughts 
(e.g., shame, guilt) that would otherwise exacerbate suicide risk (Lamis & Dvorak, 2014). 

This assertion was supported in our current study, as self-compassion was negatively 
related to shame and guilt. Similar patterns have emerged in past studies with veterans, in which 
self-compassion was helpful in reducing shame (Au et al., 2017) and guilt (Held & Owens, 2015). Veterans with greater self-compassion may be better able view themselves positively and 
kindly, rather than in the self-punitive manner characterized by shame and guilt (Shahar, 2014). 
Such self-kindness, paired with the mindfulness element of self-compassion, may allow veterans 
to consider their previous experiences in a nonjudgmental manner and may facilitate the adaptive 
processing of remorse (Stotter et al., 2013). 

Finally, we confirm a beneficial association between self-compassion and symptoms of 
PTSD, including in veterans (Dahm et al., 2015; Hiraoka et al., 2015). Self-compassion may help 
buffer against PTSD through mindfulness, which may prevent emotional numbing, and through 
self-kindness, which can reduce engagement in negative self-talk and self-criticism (Hoffart, 
Oktedalen, & Tomas, 2015; Valdez & Lilly, 2016). Those who develop self-compassion may be
better able to engage with and process negative emotions in a balanced, non-judgmental way, rather than over-identifying with the emotions (Ehring, Frank, & Ehlers, 2008).

In sum, at the bivariate level, we replicated several well-known associations between cognitive-emotional factors, psychopathological variables, and suicide risk, in our vulnerable sample of U.S. veterans. In our multivariate discussion below, we will explore the serial interrelations between these variables, which suggest a set of potential mechanisms of action linking self-compassion and suicide risk.

**Multivariate Analyses**

Our multivariate hypotheses, which were supported, posit a serial association between self-compassion and suicide risk, with self-compassion exerting an ameliorative effect on negative cognitions and emotions, and psychopathological symptoms, thereby reducing suicide risk (Castilho, Carvalho, Marques, & Pinto-Gouveia, 2017; Dahm et al., 2015; Held & Owens, 2015). Specifically, we found that self-compassion was associated with suicide risk through the following mechanisms: (i) through the total effect of all variables; (ii) indirectly via lower levels of shame/guilt (1st-order mediators) and, sequentially, via decreased PTSD symptoms (2nd-order mediator), in both models; and (iii) indirectly via decreased PTSD symptoms, in both models.

Although our study is the first to examine these factors in a single analytic model, our pattern of results supports previous research examining similar pathways. For example, in a sample of community adults, self-compassion explained a large portion of the variance in negative affect (López, Sanderman, & Schroevers, 2016). In a sample of homeless veterans, self-compassion training resulted in reduced shame and guilt, with a clinically-significant trend in reduction of negative cognitions and mood associated with PTSD (Held et al., 2018). Finally, in a study of OEF/OIF/OND veterans by Forkus, Breines, and Weiss (2019), self-compassion
moderated the association between exposure to morally-injurious events and PTSD, and between morally-injurious events and deliberate self-harm.

These independent findings and established theory offer a strong base of support for our identification of potential mechanisms of action for the linkage between self-compassion and suicide risk. To begin, self-compassion may allow veterans to acknowledge and accept traumatic experiences, including its negative cognitive-emotional consequences, rather than avoiding the confrontation of, and act of working through, trauma and its consequences (Zhang & Chen, 2016). Self-compassion may also promote positive reframing of negative (i.e., traumatic) events, leading to a more adaptive view of the event and, thus, fewer negative thoughts and emotions (Ewert, Gaube, & Geisler, 2018). In the following sections, we will discuss the serial associations between self-compassion and the constructs of shame and guilt, and between self-compassion and PTSD symptoms, and their subsequent effects on suicide risk.

**Mediation via Shame and Guilt, and PTSD.** Regarding shame and guilt, the self-compassionate process of overcoming negative self-perceptions related to, and reducing over-responsibility for, trauma may enable a cascading effect that reduces vulnerability to posttraumatic symptoms. For example, the mindfulness component of self-compassion may be useful in the management of shame-laden memories that can become central to one’s perspective of the self/identity and which are associated with increased severity of PTSD symptoms. These shame-based memories may become a filter through which the individual views the self and world, prompting continuous re-engagement with traumatic memories (Berntsen & Rubin, 2006; Robinaugh & McNally, 2010). Mindfulness may allow individuals to view themselves as an external observer that is separate from emotional experiences, creating needed psychological
distance between shame and identity and promoting a balanced view of one’s emotions (Atkins & Styles, 2015), with beneficial downstream effects for PTSD.

Another potential mechanism of action may be self-compassion’s incompatibility with avoidance, a key factor in the maintenance of negative trauma sequelae. Individuals experiencing trauma-related shame and guilt may attempt to avoid these distressing symptoms cognitively and through methods including substance use and self-harm, as evidenced in samples of homeless veterans and individuals exposed to childhood trauma (Held et al., 2018; Holl et al., 2017). Such avoidance, however, may paradoxically contribute to perpetuation and exacerbation of PTSD-related symptoms as it reinforces short-term, immediate relief from negative emotions (i.e., shame, guilt) and, thus, engagement in continuing avoidance, resulting in a failure to adequately address underlying causes of these negative emotions, which may continue to worsen (Marx & Sloan, 2005). Yet, engaging in self-compassion may allow individuals to approach these distressing symptoms without becoming overwhelmed, for example via mindful processing of negative emotions and reduced self-criticism (Neff et al., 2007). Management of cognitive avoidance may also be manifested in a more tangible way. For example, if self-compassion is enacted to reduce shame and guilt, veterans may embrace, rather than withdraw from, social networks, providing a needed source of support that can help to buffer against symptoms of PTSD and suicide risk (Cunningham, Davis, Wilson, & Resick, 2017; Lewis, 2008). Perceptions of social support may also be strengthened if veterans embrace a sense of common humanity, acknowledging that others have experienced similar traumas or emotions (Mott et al., 2013).

Emerging research may provide a neurobiological explanation for our findings. For example, Compassion-Focused Therapy (CFT) is neurobiologically-based, positing that compassion induction decreases shame via reduced activation of the midbrain periaqueductal
gray region, an area activated during the experience of shame (Gilbert, 2014). Additional studies have demonstrated that components of self-compassion, including self-kindness (Long et al., 2010) and mindfulness (Lutz et al., 2015; Wheeler, Arnkoff, & Glass, 2017), activated areas of the brain associated with the experience of shame, guilt (Michl et al., 2014; Takahashi et al., 2008) and PTSD symptoms (Bremner, 2006; Michopoulos, Norrholm, & Jovanovic, 2015). Other physiological pathways may also be involved. For example, the hypothalamic-pituitary-adrenal (HPA) axis is activated in individuals with PTSD symptoms, characterized by increased cortisol and heart rate levels (Michopoulos, Norrholm, & Jovanovic, 2015); yet, collegiate samples who participated in Compassion-Focused Imagery (Rockliff, Gilbert, McEwan, Lightman, & Glover, 2008) or compassion meditation (Pace et al., 2009) had decreased levels of cortisol compared to control groups. Finally, engaging in self-compassion meditation (Arch et al., 2013) or CFT (Matos et al., 2017) resulted in reduced stress responses in both collegiate women and non-clinical adults, and lower levels of shame in the sample of non-clinical adults. Such patterns of findings suggest that self-compassion may exert its beneficial effect on negative trauma sequelae, via a dual influence on both psychological and physiological functioning.

Mediation via Shame and Guilt. Contrary to our hypotheses and past research shame and guilt were not significant independent mediators of the linkage between self-compassion and suicide risk, suggesting that simply reducing levels of shame and guilt, without addressing the symptoms of PTSD, may have less clinical impact. One potential reason for this lack of effect, may be a fear of, or an inability to effectively implement, self-compassion. For example, persons with experiences of early trauma or emotional distress may have pre-existing perceptions of shame and guilt, along with entrenched negative beliefs about self-worth and self-compassion (e.g., not deserving of kindness). As such, these individuals may avoid or be uncomfortable with
self-compassionate responses and may have difficulty with implementation of self-compassion during distressing times (Gilbert, 2009; Gilbert, McEwan, Matos, & Rivis, 2010). This explanation has particular relevance to veterans, as up to 67% of veterans report exposure to traumatic events occurring prior to enlistment in the military (Clancy et al., 2006; Dedert et al., 2009), suggesting a potential group of veterans for whom self-compassion may be less accessible.

Characteristics of military culture, such as hypermasculinity, may also reduce the accessibility and acceptability of self-compassion. In military culture, an ideal service member demonstrates self-constraint and stoicism, and shame may occur if these standards cannot be met (Shields, Kuhl, & Westwood, 2017), directly opposing the benefits of self-compassion. Indeed, the act of being self-compassionate, itself, may be viewed as antithetical to military ideals that require one to be demanding and critical of the self. Further, at a basic level, greater adherence to masculine norms are associated with less self-compassion (Reilly, Rochlen, & Awad, 2014).

Such research, including findings from our current study, suggest that some veterans, perhaps due to past reactivity to trauma or military stoicism, may have difficulty accessing or engaging in self-compassion. As well, although self-compassion is related to less shame and guilt at the bivariate level, it may simply be the case that this is a necessary but not sufficient linkage to prevent suicide; that is, in the context of trauma, PTSD and suicide risk, reduction of shame and guilt may not be the most salient or responsive target for intervention. Finally, as we note below, it may be that suicide risk for veterans is predicated on the traumatic event itself, and on primary symptoms of PTSD, rather than on a limited range of cognitive-emotional consequences (i.e., only shame and guilt), highlighting the complexity of suicide risk but also offering potential points of intervention that are within the scope of PTSD treatment.
Mediation via PTSD Symptoms. Supporting our hypotheses, PTSD symptoms were a significant, independent mediator of the relation between self-compassion and suicide risk. In previous research, self-compassion is beneficially associated with PTSD symptoms across samples, including veterans (Hiraoka et al., 2015; Kearney et al., 2013). Broadly, persons with PTSD symptoms may have difficulty, or an inability, in disengaging from thoughts of their traumatic past. This inability may contribute to over-identification with the past and difficulty evaluating one’s self in a positive manner, leading to depressed mood and increased suicide risk (Janssen, Heame, & Takarangi, 2015). Self-compassion, however, may weaken or prevent this process, allowing veterans to view themselves in a nonjudgmental manner and, thereby, reducing negative self-focused cognitions and promoting an identity not solely based on negative or traumatic past events (Dahm et al., 2015). Similarly, self-compassion, as a self-soothing mechanism, may reduce rumination about a trauma, or one’s role in a traumatic event, with potential beneficial impact on intrusive thoughts, memories and nightmares, and negative mood (i.e., anxiety), as well as suicide risk (Bryan, Morrow, Etienne, & Ray-Sannerud, 2013; Cunningham, Davis, Wilson, & Resick, 2017).

The sub-components of self-compassion may also contribute unique protective effects toward amelioration of symptoms of PTSD. Mindful awareness, for instance, may allow transcendence of a traumatic past and promotion of a focus on the present and future, whereas engagement in self-kindness may reduce self-judgement of inner experiences (e.g., feelings of anxiety, intrusive memories), and such processing is associated with decreased severity of PTSD symptoms (Martin, Bartlett, Reddy, Gonzalez, & Vujanovic, 2018). For example, in a clinical sample, greater self-compassion was related to less trauma-based disturbance of self-organization, including less affect dysregulation and negative self-conceptualization (Karatzias et
In another study, of individuals in treatment for PTSD, less self-judgment and self-criticism were associated with lower levels of PTSD symptoms, as we found in our current study, suggesting that the effect of self-compassion, while useful for reducing such self-punitive beliefs, might also have important downstream effects on a broader array of PTSD symptoms (Hoffart, Øktedalen, & Langkaas, 2015). For example, use of mindful non-judgment was linked to decreased PTSD symptoms, including arousal, avoidance, and intrusive symptoms, in a study comparing combat veterans with and without PTSD and civilians without PTSD (Wahbeh, Lu, & Oken, 2011).

Finally, veterans who engage in self-compassion, particularly the acknowledgment of common humanity, may also have an increased willingness to solicit social support from, and feel social connectedness with, others, thereby combating the social isolation and withdrawal that are characteristic of PTSD (Bistricky et al., 2017; Pietrzak & Cook, 2013). Although previous research has not focused specifically on the linkage between common humanity and PTSD, similar constructs, including social connectedness, are well-established contributors to this disorder. For example, veterans with greater social connectedness, including a secure attachment style and greater perceptions of social support, are more likely to be resilient than distressed (Pietrzak & Cook, 2013). Conversely, in a sample of veterans undergoing residential treatment for PTSD, decreased social connectedness was related to emotional numbing (Sippel, Watkins, Pietrzak, Hoff, & Harpaz-Rotem, 2018).

Mediation in the Context of Depressive Symptoms. Of note, our overall results remained significant after covarying depressive symptoms, illustrating the robustness of our hypotheses. In previous research, depressive symptoms are a strong contributor to suicide risk, with this linkage demonstrated in a variety of populations, including veterans exposed to trauma (Lee et al., 2018;
Sher, 2009). Previous researchers have also highlighted the complicated association between comorbid depressive and PTSD symptoms (i.e., similar diagnostic criteria), which can result in an exacerbation of either or both disorders, as well as increased suicide risk (Conner et al., 2014; Kimbrel et al., 2016). The inclusion of depressive symptoms in analyses often obscures the effect of PTSD, suggesting that the negative cognitions and mood-related symptoms of PTSD that overlap with depressive symptomatology might be a strong contributor to suicide risk (Gradus, 2017). Despite this, our findings suggest that non-depressive elements of PTSD must also be considered in the treatment of suicide risk in veterans and, further, that self-compassion may holistically address a broader range of symptoms in person with trauma, than just depressive characteristics (Germer & Neff, 2015).

Limitations

Despite the novelty of our findings, they must be viewed in the context of several limitations. First, our cross-sectional design precludes exploration of causal associations and, as such, bidirectionality is a possibility. For instance, PTSD symptoms, such as intrusive memories and nightmares, may exacerbate and reinforce the presence of shame and guilt, via the replaying of a traumatic event and the promotion of rumination (Crocker, Haller, Norman, & Angkaw, 2016). As well, the heightened emotional distress following a trauma may initially inhibit use, or decrease levels, of self-compassion, allowing PTSD symptoms to increase in severity and making it more difficult for self-compassion to activate. Indeed, individuals with PTSD symptoms have a greater likelihood of being self-critical and may be unable to prevent ruminative and intrusive thought patterns (Cox, MacPherson, Enns, & McWilliams, 2004; Speckens, Ehlers, Hackmann, Ruths, & Clark, 2007). Despite the need for prospective,
longitudinal research to substantiate our serial mediation models, our analyses were based on theoretical ordering of these variables.

Our use of self-report measures may also be a limitation, as subjective assessments may limit the accuracy of measurement of our constructs. For example, comorbid conditions including depression, anxiety, and acute brain injury have significant symptom overlap with PTSD and may inflate scores on the PCL (McDonald & Calhoun, 2010). Further, use of self-report measures and self-selection recruitment may contribute to respondent bias, including under- or over-reporting of psychological distress (Fisher & Katz, 2000). Factors such as social desirability may also contribute to respondent bias; for instance, veterans with higher levels of social desirability are less likely to endorse PTSD symptoms (Baldwin, 2018; Fisher & Katz, 2000). Other factors, such as self-stigma, may also influence response patterns. Veterans often have higher levels of self-stigma regarding mental illness and treatment seeking and, thus, our sample may be comprised of respondents with less stigma regarding mental illness (Rosen et al., 2011). In future studies, researchers should assess for potentially-biasing variables and should employ alternative modes of assessment, including objective measures such as structured interviews or a review of medical records, to reduce potential respondent biases. Finally, in future research, the PCL-5 should be utilized, given changes to diagnostic criteria for PTSD in the DSM-5 (Pai, Suris, & North, 2017).

Our sample is also predominantly male and White, which may limit the generalizability of our findings to more ethnically and racially diverse groups, as well as to women. Further, our sample was comprised solely of veterans, potentially limiting the generalizability of our findings to other groups, including civilians and even active duty military personnel. However, historically, most veterans are male and White, supporting the applicability of our findings to our
population of interest (U.S. Census Bureau, 2012). Yet, future research is needed to examine our models as they occur across additional military samples, including those with greater diversity. For example, female veterans are more likely to report exposure to military sexual trauma (MST) compared to male counterparts, which contributes to greater risk for PTSD and other disorders, including eating disorders (Breland et al., 2018; Klingensmith, Tsai, Mota, Southwick, & Pietrzak, 2014; Scott et al., 2014). Sexual minorities are at higher risk for suicide compared to cisgender, heterosexual individuals (Yildiz, 2018), including those in the military (Blosnich, Bossarte, & Silenzio, 2012; Blosnich, Mays, & Cochran, 2014; Ray-Sannerud, Bryan, Perry, & Bryan, 2015). As well, veterans belonging to ethnic and racial minority groups may be at an increased risk for suicide due to comorbid risk factors. For example, Native American veterans have higher levels of suicide risk due to comorbidities, specifically substance use (O’Keefe & Reger, 2017). Finally, veterans with a history of mild to severe traumatic brain injury (TBI) are at higher risk for suicide than veterans without TBIs (Brenner, Homaifar, Adler, Wolfman, & Kemp, 2009; Bryan & Clemans, 2013).

Implications

Despite such limitations, our findings may have important implications for mental health promotion and suicide prevention efforts in U.S. veterans. Treatments targeting our variables of interest may reduce suicide risk for veterans in both individual and group settings, and across various mental health settings, including Veterans Affairs Medical Centers and corresponding Community Based Outpatient Clinic sites.

Individual Therapy. Bolstering already-present trait self-compassion, and developing state self-compassion, may assuage negative sequelae of trauma and reduce suicide risk in veterans; thus, interventions that foster self-compassion and target different sequelae of trauma
(i.e., shame, guilt, PTSD symptoms, and suicide risk) may prove helpful. For example, Mindful Self-Compassion (MSC), developed by Neff and Gilbert (2013) to bolster resilience and combat emotional suffering, focuses on helping individuals develop self-compassion in both a formal (i.e., sitting meditation) and informal (i.e., using cognitive restructuring and acceptance skills in daily living) manner, via training and practice in mindfulness skills. In a veteran sample (Kearney et al., 2013), and in a randomized control trial utilizing community participants (Neff & Gilbert, 2013), engagement in MSC significantly increased levels of self-compassion, and decreased depression and PTSD in veterans.

In addition to MSC, other therapies have been developed that foster self-compassion, including in individuals exposed to trauma. Compassion-Focused Therapy (CFT), for example, is focused on alleviating threat-based processing that contributes to shame and self-criticism, via promotion of self-kindness and cognitive restructuring (Gilbert, 2014; Irons & Lad, 2017; McLean, Steindl, & Bambling, 2018). In a qualitative study of persons diagnosed with PTSD, completion of CFT resulted in increased self-compassion and decreased levels of PTSD (Lawrence & Lee, 2014). Compassion-Focused Imagery, which focuses on mindful breathing and compassionate imagery involving receiving compassion from both the self and others, also reduces levels of self-criticism via promotion of self-kindness and by bolstering feelings of acceptance and warmth, as evidenced in college students (Rockliff et al., 2008). In additional research, therapies and protocols that emphasize mindfulness and self-compassion, broadly, have yielded some benefit for the treatment of trauma symptoms and comorbid negative cognitive-emotional functioning (Rapgay et al., 2014). Overall, studies examining self-compassion and mindfulness as protective factors, indicate that they are linked to less PTSD and guilt in
homeless veterans and adults with PTSD (Au et al., 2017; Held & Owens, 2015), and to reduced PTSD symptoms and increased self-compassion in veterans (Collinge, Kahn, & Soltysik, 2012).

In addition to bolstering self-compassion, interventions targeting shame, guilt, and symptoms of PTSD could also be beneficial in reducing vulnerability to suicide risk in veterans. Although most evidence-based therapies can be utilized to treat PTSD symptoms, several were specifically developed to jointly address these symptoms and potential negative sequelae (i.e., suicide risk), including Cognitive Processing Therapy (CPT) and Prolonged Exposure (PE) (Sharpless & Barber, 2011). For example, in studies of veterans with PTSD and active duty military personnel, CPT is effective in decreasing suicide-specific cognitions (Holliday, Holder, Monteith, Lindsey, & Suris, 2018), suicide ideation (Bryan et al., 2018), and iatrogenic suicide risk (i.e., decreased severity, less new-onset suicidal ideation, and fewer suicide attempts) (Bryan et al., 2016). Similarly, in a sample of veterans who experienced military sexual trauma, completion of CPT resulted in reduced levels of self-blame (i.e., guilt) and, in turn, fewer PTSD symptoms (Holliday, Holder, & Suris, 2018). Finally, in a study of veterans with PTSD, prolonged exposure (PE) resulted in the successful decrease of PTSD symptoms and suicidal ideation (Cox et al., 2016).

Of note, both CPT and PE address emotions and cognitions that are laden with shame and guilt via restructuring and exposure techniques (Paul et al., 2014; Resick, Monson, & Chard, 2014). For example, in a study of female rape victims, both CPT and PE were successful in reducing levels of guilt (Resick, Nishith, Weaver, Astin, & Feuer, 2002) and, in another study of persons exposed to trauma, both CPT and PE were effective in reducing suicidal ideation (Gradus, Suvak, Wisco, Marx, & Resick, 2013). Both CPT and PE are also efficacious in
reducing PTSD symptoms in veterans, compared to treatment as usual conditions (Monson et al., 2006; Nacasch et al., 2007).

Finally, although not designed specifically for the treatment of PTSD, Dialectical Behavior Therapy (DBT) provides intervention strategies that can be used to target the primary factors of our model. In Stage 1 of DBT, patient’s learn skills to increase control over behaviors that threaten their safety, including suicidal behavior and, in Stage 2, patient’s focus on resolution of precipitants of life-threatening behavior, such as PTSD symptoms (Koerner, 2012). These skills include self-compassion (i.e., mindfulness skills, radical acceptance) and emotion regulation, and the practice of such DBT-based skills is associated with decreased PTSD symptoms in females who experienced childhood sexual abuse, in both an inpatient (Krüger et al., 2014) and outpatient setting (Steil et al., 2018), and in women diagnosed with borderline personality disorder (BPD) and PTSD (Harned, Wilks, Schmidt, & Coyle, 2018). Similar results were found in a study of veterans with BPD and PTSD symptoms, who were treated with a combination of prolonged exposure and DBT (Meyers et al., 2017).

**Group Therapy.** Many of these therapeutic approaches have also been developed for administration in a group format, which may help to bolster sense of common humanity and, through empathy from others, may contribute to amelioration of the negative sequelae of trauma exposure. For example, Cuppage, Baird, Gibson, Booth, and Hevey (2018) compared the efficacy of CFT to treatment-as-usual (TAU) (i.e., therapy with their assigned therapists, psychoeducation groups) in a sample of clients from an independent, not-for-profit mental health service, finding that participants who completed 14, three-hour sessions of CFT (i.e., psychoeducation, skills development related to developing a compassionate self, engaging with emotions) reported increased self-compassion and reduced levels of shame. In another study, of
individuals with eating disorders, participants who completed group-based CFT in conjunction with an evidence-based treatment (EBT) for eating disorders, compared to those who only completed the EBT, manifested greater self-compassion and reduced shame (Kelly, Wisniewski, Martin-Wager, & Hoffman, 2017).

Additional group therapy models may also be suitable for addressing the variables encompassed in our study. For example, Mindfulness-Based Cognitive Therapy (MBCT), delivered in a group format, increased mindfulness and self-compassion in individuals with somatic disorders struggling with depression (Schroevers, Tovote, Snippe, & Fleer, 2016). Similarly, female college students who completed three sessions of a group-based self-compassion intervention involving psychoeducation, meditations, and homework assignments, reported greater self-compassion and mindfulness, and decreased rumination (Smeets, Neff, Alberts, & Peters, 2014), as compared to a control group.

In another study, utilizing MBCT modified to address combat-related PTSD, veterans who completed the MBCT protocol, compared to TAU, reported fewer PTSD cognitions related to self-blame (e.g., guilt) and reduced severity of PTSD symptoms (King et al., 2013). Finally, trauma-exposed adults who engaged in an eight-session mindfulness-based stress reduction group reported decreased levels of PTSD symptoms and shame (Goldsmith et al., 2014) and, similarly, veterans engaged in a pilot study combining mindfulness with exposure therapy, reported reduced levels of PTSD symptoms (King et al., 2016).

**Future Directions**

In addition to therapeutic implications, our findings can inform future research and the development of targeted interventions. Given the initial success of therapies aimed at developing self-compassion, future intervention-based studies are needed, including randomized controlled
trials, to more-rigorously examine the beneficial impact of self-compassion on negative trauma sequelae and suicide risk in veterans. To begin, comparison trials may be valuable, examining differences in effects between currently available treatments designed to promote self-compassion (i.e., MSC, CFT), or reduce PTSD (i.e., CPT, PE), and alternative treatments that might be effective, such as DBT. As well, the development of new treatments specifically focused on our variables of interest may be of benefit to suicidal veterans. For example, although the constructs of shame and guilt may be addressed secondarily to PTSD symptoms in some evidence-based interventions (e.g., CPT, Trauma-Focused CBT), very few interventions (e.g., compassion-focused therapy, trauma informed guilt reduction therapy) make shame and guilt the primary focus. Thus, the development of therapeutic strategies targeting these cognitive-emotional factors is warranted (Au et al., 2017; Norman, Wilkins, Myers, & Allard, 2014).

Mindfulness techniques, for instance, paired with exposure and cognitive restructuring, may help to simultaneously promote self-compassion while ameliorating levels of shame, guilt, PTSD, and suicide risk (King et al., 2016; Rapgay et al., 2014).

In future research, alternative manifestations of our variables of interest should be examined such as, for instance, shame and guilt arising from non-traumatic circumstances, or the sequelae of non-military trauma. For veterans and military personnel, however, a nascent construct encompassing the constructs of shame and guilt, referred to as moral injury, has begun to be recognized as a potential factor contributing to distress and psychopathological reactions to trauma, and may be useful to our model (Battles et al., 2018; Kelley, Braitman, White, & Ehlke, 2018; Wisco et al., 2017). Moral injury is conceptualized as the mental health consequences that occur after “perpetrating, failing to prevent, bearing witness to, or learning about acts that transgress deeply held moral beliefs and expectations” and involves shame and guilt, as these
emotions often occur after a morally-injurious event (e.g., killing in combat) (Litz et al., 2009). Of note, veterans may experience shame and guilt in the context of morally-injurious events (e.g., killing civilians caught in crossfire), and these constructs may manifest distinctly from their PTSD symptoms. Indeed, in a study of National Guard personnel, moral injury and PTSD emerged as separate constructs, with shame and guilt loading onto the moral injury factor (Bryan, Bryan, Roberge, Leifker, & Rozek, 2018). Further, in a study by Bryan and colleagues (2018), the interaction of moral injury and PTSD significantly increased the likelihood of suicide ideation and attempts. Given our findings suggesting a beneficial impact of self-compassion on shame, guilt and suicide risk, it may be that self-compassion has a similar effect on moral injury, warranting investigation in future studies.

Similarly, future research is needed to substantiate our models in veterans who have experienced different types and intensities of trauma. For example, military sexual trauma increases severity of PTSD in women who have also experienced combat (Scott et al., 2014) and, comparatively, rates of PTSD for both male and female veterans are greater in those who experience MST versus combat, suggesting that interventions targeting these types of trauma may differ in efficacy (Sexton, Raggio, McSweeney, Authier, & Rauch, 2017). Regarding intensity of symptoms, male veterans experiencing military sexual trauma may manifest exacerbated levels of shame, due to the perceived violation of traditional male gender identity (Jakupcak, Primack, & Solimeo, 2017; Juan, Nunnink, Butler, & Allard, 2017), perhaps making MST-based shame more difficult to resolve. Such patterns suggest trauma-related symptoms may emerge differentially, and with different intensities, based on the type of trauma that occurs, which may also result in unique associations with self-compassion.
Finally, it is important to note that modern technologies, such as virtual reality, are increasingly being developed and used for the treatment of psychopathology, including PTSD. Despite differences in methodological application, cost and availability of equipment, and a dearth of longitudinal and randomized control trials (Gonçalves, Pedrozo, Coutinho, Figueira, & Ventura, 2012; Maples-Keller, Price, Rauch, Gerardi, & Rothbaum, 2017; Price et al., 2015), the use of VR in veterans often results in a decrease and/or elimination of a PTSD diagnosis after completion of treatment, as evidenced in studies of service members exposed to military sexual trauma (Loucks et al., 2018) and combat (Cukor et al., 2015; McLay et al., 2017; Nelson, 2013).

Importantly, VR-based technology may also be applicable to other clinical pursuits, such as the promotion of self-compassion. For example, in a study utilizing VR, female undergraduates with high levels of self-criticism recorded and observed themselves delivering compassionate responses to individuals in distress. This observation of the self, resulted in reductions in self-criticism and increased self-compassion, suggesting that acknowledging the self as compassionate - even from a virtual perspective – may bolster caring attitudes toward the self (Falconer et al., 2014). With cell phones nearly ubiquitous, and immersive technologies such as VR becoming increasingly accessible, particularly given the increased funding for research and dissemination of this technology being provided by the Department of Veterans Affairs and U.S. Department of Defense, future research and clinical efforts might find success in harnessing digital treatments for the promotion of protective characteristics and the reduction of psychopathology and suicide risk (Cukor et al., 2015).

Conclusion

In our sample of U.S. veterans, we found that the sequential associations of shame, guilt, and PTSD, explained, in part, the relation between self-compassion and suicide risk. The
presence of higher levels of self-compassion may prevent the development of negative sequelae of trauma via promotion of self-kindness and reduction of self-criticism, and by encouraging engagement in proactive behaviors (i.e., mindfulness, seeking social support) which, in turn, may reduce vulnerability to suicide risk. Although future longitudinal research is needed to substantiate our findings, our study confirms the benefits of self-compassion for suicide risk and highlights potential mechanisms of action for the compassion-suicide linkage which may be targeted in future interventions with trauma-exposed veterans. As such, healthcare providers working with veterans may want to consider therapeutically bolstering self-compassion, while at the same time ameliorating trauma-based symptoms, as a routine, synergistic approach to suicide prevention.
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