POSTTRAUMATIC GROWTH AND SUICIDE IN VETERANS: THE IMPACT OF MENTAL HEALTH STIGMA AND INTERPERSONAL NEEDS

by

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ABSTRACT

CARA L. BLEVINS. Posttraumatic Growth and Suicide in Veterans: The Impact of Mental Health Stigma and Interpersonal Needs. (Under the direction of DR. RICHARD TEDESCHI).

Over the past 20 years, suicide rates within the US military have increased at unprecedented rates. According to Joiner's (2005) Interpersonal-Psychological Theory of Suicide (IPTS), perceived burdensomeness and thwarted belongingness are direct risk factors for suicide, which may be exacerbated by self-stigma. Emerging research suggests that posttraumatic growth (PTG) may contribute to post-combat suicide resiliency; however, little is known about the mechanisms underlying its protective influence. Therefore, in an effort to identify intervention targets, the present study sought to test a model of specific mechanisms of suicide risk and resiliency in post-combat military personnel. Participants included 215 combat veterans of OEF/OIF. Statistical tests of simple mediation models utilizing bootstrapping techniques and analyses in AMOS were used to test the hypothesized model. Self-stigma was positively related to thwarted belongingness, perceived burdensomeness, and PTG. Thwarted belongingness was related to perceived burdensomeness, and perceived burdensomeness was related to suicide risk. PTG was negatively related to thwarted belongingness, perceived burdensomeness, and overall suicide risk. Results suggest that self-stigma may exacerbate suicide risk by increasing a sense of thwarted belongingness and perceived burdensomeness. Results also suggest that PTG may directly and indirectly protect against suicide risk by offsetting the risk conveyed through thwarted belongingness and perceived burdensomeness. Thus, when conducting research with combat veterans at risk

for suicide, it may be beneficial to consider interactive rather than isolated factors, with an emphasis on potential explanatory mechanisms. Further, PTG, belongingness, and burdensomeness may be important variables to consider in suicide prevention efforts.

DEDICATION

This dissertation is dedicated to my husband and best friend, Drew. Your unconditional love and support has been the foundation upon which I discovered a sense of strength, belief, and love for myself which has exceeded anything I ever thought possible. For this, and for so much more, I am forever grateful. This work was completed in loving memory of his sister, Valerie, who was a sister to me, who taught me to be true to myself, and whose legacy I strive to carry forward daily.

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CHAPTER ONE

INTRODUCTION, RATIONALE, AND PURPOSE

Representing the tenth leading cause of death for all Americans and the third leading cause of death for those between the ages of 18 and 45 years old (National Center for Injury Prevention and Control, 2014), suicide remains a significant yet preventable public health problem. In recent years, suicide has become a leading cause of death for U.S. military veterans, claiming more lives than combat and transportation accidents combined (Armed Forces Health Surveillance Center, 2014).

Stigma reduction campaigns aimed at decreasing self-stigma towards mental illness among veterans with posttraumatic stress disorder (PTSD; Ramchand et al., 2011) are frequently utilized suicide prevention strategies within the Department of Defense (DoD). Self-stigma towards mental illness occurs when people experiencing a mental illness or related symptoms self-label as someone who is socially unacceptable and internalize negative stereotypes related to mental illness (Corrigan & Shapiro, 2010). This may lead to diminished self-efficacy, feelings of shame and other deleterious mental health consequences (Kranke, Floersch, Kranke, & Munson, 2011).

Past research has demonstrated that self-stigma towards mental illness can significantly increase one's risk for suicide (Pompili et al., 2003) by reducing an individual's self-esteem (Link et al., 2001; Vogel et al., 2007), increasing feelings of isolation (Manos, Rusch, Kanter, & Clifford, 2009), and lowering both help seeking behaviors (Conner et al., 2010) and treatment compliance (Fung et al., 2007). Military veterans may be particularly vulnerable to the negative consequences of self-stigma, as within military culture there is believed to exist a strong stigma towards mental illness

and negative attitudes toward suicide (e.g., considering it as weak, shameful, sinful, or selfish; Pompili et al., 2003).

Self-stigma may also influence interpersonal factors which contribute to suicide risk. The Interpersonal-Psychological Theory of Suicide (Joiner, 2005; Van Orden et al., 2010) suggests that cognitive-emotional elements of feeling isolated from (i.e., thwarted belongingness), and a liability to (i.e., perceived burdensomeness) others can increase suicide risk (i.e., suicide ideation and attempts). Perceptions of burdensomeness and thwarted belongingness constitute a "desire for death" (Joiner, 2005), and the combination of these two constructs significantly increases suicide risk above and beyond the influence of depression (Monteith, Menefee, Pettit, Leopoulos, & Vincent, 2013), PTSD (Selby et al., 2011), and hopelessness (Anestis, Khazem, Mohn, & Green, 2015).

To date, there is a dearth of research examining the influence of self-stigma toward mental illness on perceived burdensomeness and thwarted belongingness; however, there is some evidence to suggest there may be positive associations between these constructs. Thwarted belongingness and perceived burdensomeness have both been associated with social isolation, depressive symptoms, and low self-esteem (Ma, Batterham, Calear, & Han, 2016; Van Orden et al., 2010), all common correlates of self-stigma towards mental illness (Rüsch et al., 2014a, 2014b). Further, in a study examining suicide risk factors communicated in suicide notes of US Air Force decedents, themes of perceived burdensomeness were communicated simultaneously with self-stigma in 31.6% of cases, while themes of thwarted belongingness were reported simultaneously with self-stigma in 29.6% of cases (Cox et al., 2011). A separate qualitative study of Mexican immigrants demonstrated that self-stigma towards mental illness contributed to

perceptions of thwarted belongingness and perceived burdensomeness in interviews (Kene, Brabeck, Kelly, & DiCicco, 2016). Specifically, individuals with higher levels of self-stigma towards mental illness reported that they felt both like a burden and that they no longer fit in with their families as a result of their mental illness (Kene et al., 2016). Therefore, it is possible that self-stigma towards mental illness increases suicide risk by increasing perceptions of thwarted belongingness and perceived burdensomeness. In other words, the relationship between self-stigma and suicide risk may be mediated by thwarted interpersonal needs such that self-stigma is positively associated with increases in perceived burdensomeness and thwarted belongingness.

In addition to suicide risk factors, considerable research has sought to identify factors which may buffer or protect against outcomes of suicide (see Nock et al., 2013 for review). Suicide protective factors include anything that decreases the probability of suicidality among those at elevated risk (Kleiman & Riskind, 2012; Nock et al., 2013). These protective factors may be particularly important for veterans returning from combat or who have experienced trauma and face the difficult process of coping with, making sense, and deriving meaning from their experience. Specifically, experiences of posttraumatic growth may be particularly important for veterans with PTSD at risk for suicide.

Posttraumatic growth is defined as positive psychological change experienced as a result of the struggle with highly challenging life circumstances (Tedeschi & Calhoun, 1996). Posttraumatic growth occurs in the aftermath of a trauma, following complex cognitive and psychosocial processes that facilitate a rebuilding of ones worldview and narrative in a way that uncovers new strengths and opportunities (Calhoun, Cann, &

Tedeschi, 2010; Stanton, Bower, & Low, 2006; Tedeschi & Calhoun, 2004). Of particular interest to the present study, emerging work suggests that posttraumatic growth may protect individuals at risk for suicide (Bush et al., 2011; Chopko, Palmieri, & Facemire, 2014; Gallaway, Millikan, & Bell, 2011). This finding was originally reported in survivors of a Chinese earthquake (Yu et al., 2010) and has since been replicated in both military personnel (Gallaway et al., 2011; Bush et al., 2011) and police officers (Chopko et al., 2014). While one may superficially interpret these main outcomes as a suggestion that trauma survivors displaying posttraumatic growth are in some way protected against future suicide ideation, the small sample size and cross sectional nature of past studies preclude any presumptions of causality. More research is needed examining mechanisms through which posttraumatic growth may mitigate suicide risk in vulnerable individuals.

It is possible that posttraumatic growth helps offset the negative influences of self-stigma towards mental illness, thwarted belongingness and perceived burdensomeness on suicide risk. Posttraumatic growth represents a positive change in one's identity following traumatic exposure (Calhoun & Tedeschi, 2013; Tedeschi & Calhoun, 2006). The very definition of posttraumatic growth suggests that one must experience both a trauma and associated traumatic distress before one can realize the positive benefits of their experience. In other words, the negative aspects of posttrauma experience, while challenging and difficult to navigate, form a necessary foundation for later growth (Tedeschi & Calhoun, 1996, 2004). Individuals describing posttraumatic growth often report higher degrees of new possibilities and personal strength (Konvisser, 2013) and their trauma narratives reflect an integration of affect and cognition, as demonstrated by intellectual awareness (i.e., talking about the event and their experience)

and emotional awareness (i.e., the ability to identify and label emotional experiences related to and stemming from their experience), which can enable individuals to transform a tragedy into a triumph (Konvisser, 2013). Individuals reporting posttraumatic growth often note that as a result of their experience they have confidence in their ability to handle future difficulties (Calhoun & Tedeschi, 2013; Tedeschi & Calhoun, 2006). Thus, it is possible that posttraumatic growth may help offset the suicide risk conveyed from one's self-stigma toward mental illness in that individuals reporting posttraumatic growth have experienced the reality of symptoms of posttraumatic distress and know it is possible to emerge positively transformed. Therefore, symptoms associated with posttraumatic distress may represent less of something to be ashamed of, and more a challenge to overcome and grow from.

Posttraumatic growth may also help mitigate the cognitive-emotional elements of feeling isolated from and a liability to others (i.e., thwarted belongingness and perceived burdensomeness). Despite the dearth of research connecting belongingness and burdensomeness to posttraumatic growth, a large body of work has examined associations between social support, disclosure, and posttraumatic growth. In their seminal article, Tedeschi and Calhoun (1996) argue that social support and constructive self-disclosure are important to processes of coping with emotional distress and reconstructing meaning systems. Accordingly, studies have illustrated significant positive associations between posttraumatic growth, constructive self-disclosure, and social support (Nenova, DuHamel, Zemon, Rini, & Redd, 2011; Shand, Cowlishaw, Brooker, Burney, & Ricciardelli, 2015; Wolfe & Ray, 2015). This work suggests that having a supportive social network and being able to talk about stressful experiences with close

others is helpful when it comes to managing stress and coping with the strong emotions often experienced in the aftermath of a traumatic event (Calhoun & Tedeschi, 2013; Duffy, Avalos, & Dowling, 2014).

Belonging represents a unique and global type of social support. A large body of literature has suggested that a sense of belonging represents a fundamental part of one's identity (Baumeister & Leary, 1995; Hatcher & Stubbersfield, 2013; Maslow, 1954) and prior research has suggested that belonging concerns both objective and subjective assessment of the quality and quantity of interpersonal interactions (Hatcher & Stubbersfield, 2013). For example, Hagerty and Patusky (1995) explicitly define a sense of belonging as an important element of social support processes that help an individual derive life meaning. Further, Hatcher & Stubbersfield (2013) suggest that as feelings of belonging increase in response to supportive others/environments, self-efficacy increases and individuals may be more likely to perceive that they are worthy and capable of positive contribution to others/groups. Therefore, as social support (an element of belonging) and constructive self-disclosure are important to reports of posttraumatic growth, as a commonly reported outcome of posttraumatic growth is improved relationships with others, and as posttraumatic growth can prompt increased self-efficacy that may enable an individual to recognize their potential to contribute to others/groups, it seems possible that one way posttraumatic growth may reduce suicide risk is through reducing perceptions of thwarted belongingness and perceived burdensomeness.

Rationale and Aim of Current Study

To date, few studies have sought to examine the mechanisms by which posttraumatic growth may protect against suicide risk in veterans with PTSD. It is possible that posttraumatic growth helps to offset the negative influence of self-stigma towards mental illness, thwarted belonging and perceived burdensomeness on suicide risk. Therefore, using structured equation modeling, the proposed study sought to test a path model to examine specific mechanisms by which posttraumatic growth may protect against suicide risk among combat exposed military veterans screening positive for clinically significant symptoms of PTSD (see Figure 1).

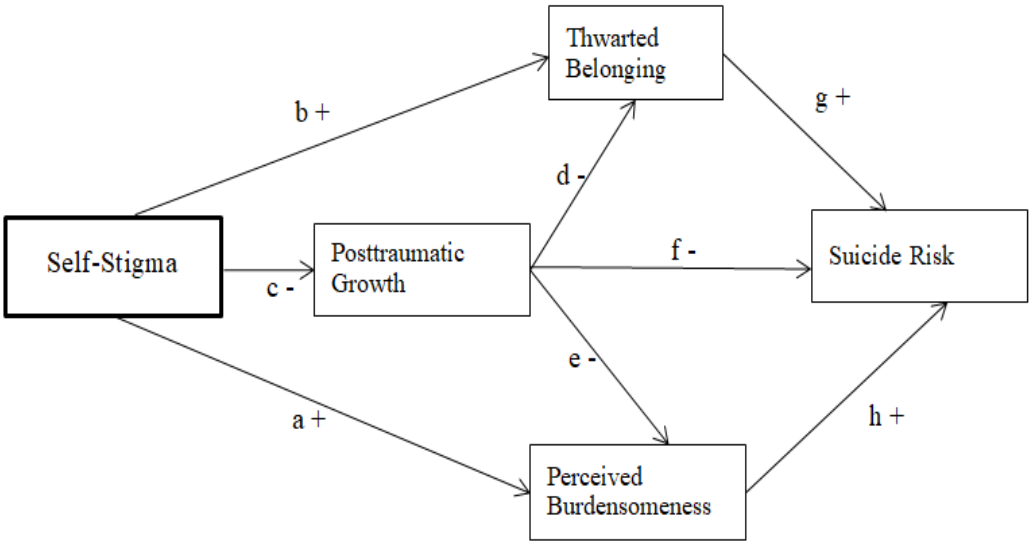

Figure 1. Proposed mediation model with estimated path associations examining the relationship between PTG and suicide ideation via decreased levels of thwarted belonging, and perceived burdensomeness

It was hypothesized that self-stigma towards mental illness would be negatively associated with posttraumatic growth, and positively associated with both thwarted belongingness and perceived burdensomeness. Further, as previous work has identified

thwarted belongingness and perceived burdensomeness as direct suicide drivers in veteran populations (Lehavot, Simpson, & Shipherd, 2016; Pietrzak et al., 2010; Selby et al., 2011; Van Orden et al., 2008, 2012), it was predicted that these variables would be positively associated with suicide risk. Qualitative work has suggested that thwarted belongingness and perceived burdensomeness account for some of the influence between self-stigma toward mental illness and suicide risk (Cox et al., 2011; Kene et al., 2016) and it was hypothesized that thwarted belongingness and perceived burdensomeness would mediate the relationship between self-stigma toward mental illness and suicide risk. Finally, it was predicted that posttraumatic growth would be negatively associated with thwarted belongingness, perceived burdensomeness, and overall suicide risk, thus offsetting the negative influence of these constructs. Further details about the specific procedures used to examine these research questions are included in Chapter 3: Study Methods.

CHAPTER TWO

REVIEW OF LITERATURE

Suicide, or the act of intentionally ending one's own life, represents the 10th leading cause of death in the United States (US), accounting for nearly 2% of the total worldwide burden of disease (World Health Organization, 2007). Every 13.7 minutes someone in the United States completes suicide, equating to more than 105 daily suicides and nearly 40,000 annual suicides (American Association of Suicidology , 2012). The National Survey on Drug Use and Health, a report by the Substance Abuse and Mental Health Services Administration (2012), revealed that in 2011, 85 million US adults experienced suicidal ideation, 2.4 million US adults had a suicide plan, and 1.1 million US adults attempted suicide. Moreover, it is estimated that for every completed suicide, there are at least 25 attempted suicides (American Association of Suicidology, 2012). These jarring statistics representing completed suicides are just the "tip of the iceberg" as suicide ideation and failed suicide attempts typically remain unreported (Nock et al., 2013). Thus, suicidality (i.e., suicidal thoughts, suicidal ideation, suicidal behaviors, suicide plans, suicide attempts, and death by suicide) is not uncommon among the American public, especially for those who are identified as being at risk.

Historically, the prevalence of suicide in the United States has remained relatively stable across age groups (Staal & Hughes, 2002); however, a steadily increasing trend in completed suicides has been noted over the course of the last 15 years (American Association of Suicidology, 2012). Suicide rates tend to fluctuate when the United States encounters a national hardship, including economic instability and during times of war (Andrés, 2006). Following the terrorist attacks of 2001, the United States has remained at

war in Iraq (Operation Iraqi Freedom) and Afghanistan (Operation Enduring Freedom; Batten & Pollack, 2008). These military operations represent the first sustained ground combat undertaken by the United States since the Vietnam War (Hoge et al., 2004) and have overlapped with periods of economic recession. With the presence of both wars and economic downturn, the observed rate of suicide within the United States has increased making suicide among the American public a significant concern.

Beyond these national statistics, there has been an alarming rise in suicide deaths among United States military personnel and veterans, particularly within the Army, where in 2012, rates of death by suicide peaked to 27 out of 100,00 deaths (Lagana-Riordan, 2015). Notably, more soldiers die annually by suicide than by combat and it has been estimated that, on average, every 36 hours a member of the Armed Forces dies by suicide (Bush, Skopp, McCann,& Luxton, 2011; Department of Defense Task Force on the Prevention of Suicide by Members of the Armed Forces, 2010). The Armed Forces Health Surveillance Center (AFHSC; 2014) currently cites suicide as the leading cause of death among members of the US military, and estimates that suicide accounts for 28.1% of all military deaths (Bryan, Hernandez, Allison, & Clemens, 2013). It is estimated that 95% of all completed suicides in the US military are male and married, 95% are enlisted, 80% are Caucasian, and 47% are under the age of 25 (AFHSC, 2014; Thompson & Gibbs, 2012). Interestingly, while approximately 41% of the military personnel who completed suicide had received outpatient behavioral health services; only 4% of the government's current $53 billion annual medical bill is allocated to mental health treatment (Thompson & Gibbs, 2012).

Current projections estimate that suicide rates will increase to 186 troop suicides

per 100,000 in the Army, 73 per 100,000 in the Air Force, 62 per 100,000 in the Navy, and 45 per 100,000 in the Marines, which far exceeds suicide rates in the civilian population (Thompson & Gibbs, 2012). In 2012, the last year of available data, 34% of US troops who completed suicide communicated their intent to someone, 30% had a failed intimate relationship in the prior month, 20% were prescribed antidepressants, and 14% had injured themselves previously.

Epidemiology of Military Suicide

In 2001, there were 10.3 completed suicides per 100,000 military veterans (Ramchand, Acosta, Burns, Jaycox, & Pernin, 2011) and in 2013, 18.7 per 100,000 veterans completed suicide (Bush et al, 2014). Notably, for the first time in the nation's history, rates of military suicides are greater than those of the general population (matched for age and gender). In fact, veterans are at 33% greater risk for suicide than their civilian counterparts (Bruce, 2010). It has been estimated that up to 15% of military casualties from the wars in Iraq and Afghanistan were due to suicidal behaviors (i.e., self-harm) or completed suicides (Luxton et al., 2011). In more recent years, completed suicide has become more common than combat-related deaths (Luxton et al., 2011).

Approximately 60% of veterans who attempted and completed suicide had been diagnosed with a mood disorder (Bush et al., 2013). Fifty-seven percent of those who died by suicide and 49.8% of those who attempted suicide had one behavioral health diagnosis, 33.0% and 38.0% respectively had two diagnoses, and 14.4% and 12.2% had three or more diagnoses. Among those who died by suicide, the most prevalent of the mood and anxiety disorders included Major Depression (55.2%), Adjustment Disorder (56.7%), other anxiety disorder (51.4%) and Posttraumatic Stress Disorder (PTSD;

40.5%). Among suicide attempters, the most common diagnoses included Major Depression (70.7%) and PTSD (55%; Bush et al., 2013). Approximately 12% of both groups reported sleep disorders, and less than 10% had a history of Traumatic Brain Injury. Regarding substance abuse, 21.2% of those who died by suicide had a history of substance abuse, and 29.0% of attempters also had such a history. Personality disorders were diagnosed among 5.2% of those who died by suicide, and 12.2% of those who attempted suicide (Bush et al., 2013). The presence of specific personality disorders, such as borderline personality disorder, has not been definitively assessed.

According to the 2008-2010 Department of Defense Suicide Event Report, which collects data on military suicides across all branches within 60 days of notification that a death has been confirmed a suicide, 58% of service members who died by suicide (n = 141) and 69.2% of those who attempted suicide (n = 747) sought medical or support services through military treatment facilities, outpatient behavioral health, inpatient behavioral health, substance abuse clinics, and/or family advocacy in the 90 days prior to their attempt or death (Bush et al., 2013). However, 60.8% of service members who died by suicide and 69.6% of those who attempted suicide did not communicate their potential for self-harm (Bush et al., 2013). This indicates that while there is utilization of services, the specific needs of the suicidal service member or veteran are not being adequately addressed.

Suicide Prevention Programs

A number of prevention programs have been implemented to increase awareness, improve utilization of services, and destigmatize issues of mental health among military service members and veterans. Early programs (circa 1984) emphasized leadership involvement and the role of command. In 2000, these programs were redeveloped to increase awareness and vigilance, enhance individual life-coping skills, encourage help-seeking behaviors, integrate programs across all branches of the military, and survey and analyze suicide communications, gestures, attempts, and deaths (Department of Defense Suicide Task Force, 2010). These new programs also strove to incorporate and educate community members such as family support groups, chaplain services, and chain of command to facilitate early identification of those at risk.

Over the years, additional workshops, trainings, and videos were developed and disseminated, including Living Works Education for Applied Suicide Intervention Skills Training, Question, Persuade, Refer, Battlemind training, Comprehensive Soldier Fitness Training, "Shoulder-to-Shoulder, No Soldier Stands Alone", and "Beyond the Front." Specialized teams such as the Mental Health Assessment Teams and Unit Ministry Teams were embedded overseas during the Operation Iraqi Freedom and Operation Enduring Freedom conflicts (Department of Defense Task Force, 2010). A large-scale epidemiological study was initiated in 2008 called the Army Study to Assess Risk and Resilience in Service Members (ARMY STARS) and in 2009 an Army-specific Suicide Prevention Task Force was created to identify suicide warning signs, suicide interventions, and disseminate this information to the military community. Unfortunately, despite these efforts military suicide rates have continued to rise (Department of Defense

Task Force, 2010) highlighting the continued need to identify risk factors that will help clinicians more accurately identify individuals who are at risk of suicide, as well as to help identify those factors which may protect against and prevent suicide.

Assessment of Suicide Risk

Understanding the unique factors that contribute to an individual's suicidal risk is essential for assessing risk, as is cultivating a therapeutic alliance and developing a suicide-focused treatment plan (Jobes, 2006). Rudd and colleagues (2006) highlight the importance of differentiating between factors accrued across a lifetime that may contribute to the overall risk of turning to suicide for resolution of pain or a means of escape versus the acute warning signs of imminent self-harm. There has been an evolution in suicide risk assessment from identifying the characteristics of those who are most likely to die by suicide at the population level (risk factors) to detecting population-based indicators of imminent harm (warning signs).

Suicide Risk Factors

Initially, clinical and research efforts focused on identifying the characteristics, life events, and demographic traits that increase the risk of someone experiencing suicidal ideation, attempting suicide, or dying by suicide. It was proposed that querying for the presence or absence of such factors during routine clinical assessments would result in greater opportunity for early intervention (Hall, Platt, & Hall, 1999). The primary method for determining factors for suicide risk was by evaluating population trends (Suicide Prevention Resource Center & Rodgers, 2011; Rudd et al., 2006). Risk factors have since been described as defined, static, objective constructs (e.g. sex) and/or concrete life events (e.g. divorce) that have no temporal relationship to a suicidal crisis and therefore

do not necessarily warrant immediate intervention (Rudd et al., 2006). According to the Suicide Prevention Resource Center and Rodgers (2011), the most severe risk factors, which have been identified at the population level, include prior suicide attempts, substance abuse, mood disorders, and access to lethal means.

Research indicates that men generally complete suicide more often than women, while women attempt more often (e.g., Maris, 1992; Maris, Berman, & Silverman, 2000). In addition, previous experiences with suicide, particularly a history of previous suicide attempts, predict higher risk of more physically damaging self-injury and higher rates of eventual death by suicide (e.g. Joiner, 2005; Nordstroem, Asberg, Aberg-Wistedt, & Nordin, 1995; O'Connor, Sheehy, & O'Connor, 2000; Soloff, Lynch, Kelly, Malone, & Mann, 2000). This finding persists even when controlling for impulsivity, a factor often linked to suicidal behavior (Lewinsohn, Rohde, & Seeley, 1996). Additionally, the presence of a mental health disorder significantly increases the risk of suicidality and psychological autopsy studies estimate that 9 out of 10 individuals who die by suicide struggle with mental health disorders (Joiner, Brown, & Wingate, 2005).

In addition to developmental, biological, and psychological risk factors, situational factors and stressful life experiences markedly increase vulnerability to suicide (Nock et al., 2013). Acutely stressful experiences (e.g., relationship problems, bereavement, sexual trauma, legal/disciplinary problems, etc.) or more chronic stressors (e.g., physical illness, chronic pain, etc.) predict suicidal behavior and can increase suicide risk up to six-fold (Goldsmith et al., 2002; Harris & Barraclough, 1997). Those who have served in the Armed Forces experience a number of unique stressors that are related to suicidal thoughts and behaviors, including combat exposure (Bryan et al.,

2015), reintegration into civilian life (Kang & Bullman, 2008), and heightened risk for mental health disorders, including depression (Nock et al., 20143) and posttraumatic stress disorder (PTSD; Conner et al., 2014; May and Klonsky, 2016).

Suicide Warning Signs

Warning signs, unlike risk factors, are temporally proximal to a suicidal crisis and indicative of the need for immediate intervention (Rudd et al., 2006). The most severe warning signs include threatening to hurt or kill oneself, acquiring lethal means, and talking or writing about death, dying, or suicide (Rudd et al., 2006). This information can be used to determine venue of treatment (e.g. inpatient vs. outpatient) and what is required to ensure safety (e.g. removal of means).

It is recommended that suicide warning signs be clinically utilized in conjunction with one another as a constellation rather than as stand-alone elements (Rudd et al., 2006) as they typically are descriptions of what are considered to be risky behaviors, are often subjective and unique to the individual, and can be poorly defined. For example, the purchasing of a handgun, which can be considered a risky behavior, is not independently symptomatic of suicidal crisis and does not warrant immediate treatment. Conversely, the purchasing of handgun following a verbal articulation of the desire to die would warrant additional assessment and care. If clinical decisions are made based on individual warning signs, there is the significant possibility of over-pathologizing routine aspects of the human experience, particularly when considering that what is clinically significant for one individual may not be for another (Flower, 2012; Tucker et al., 2015). Using the same example of purchasing a handgun, for one person such a purchase may be representative of a hobby and be viewed as a positive experience. This same act

completed by a person known for having a fear and distrust of firearms likely represents something entirely different. Therefore, the application of warning signs as overarching constructs for the identification of those at risk for suicide is limited (Tucker, Crowley, Davidson, & Gutierrez, 2015). Like risk factors, warning signs are most successfully utilized when applied in the context of an individual client's overall presentation.

Suicide Drivers

Tucker et al. (2015) have recently argued on behalf of assessing an individual's idiosyncratic "drivers" of suicide as a way to more precisely and temporally assess ones risk for suicide. Suicide drivers are an individual extension of a patient's personal suicide warning signs and are comprised on interacting direct and indirect drivers (Jobes, Comtois, Brenner, & Gutierrez, 2011). Direct drivers are those issues that patients say compel them to consider suicide, which may include relational issues, vocational concerns, issues of the self, or any other problem which makes the patient suicidal. Indirect drivers are largely the contextual factors that set the stage for the activation of direct drivers, but which are not immediate and causally related to suicidal risk. For example, a soldier may say that the prospect of losing his marriage makes him suicidal (i.e., direct driver) but notes that his insomnia, recurring symptoms of combat-related PTSD, and conflict with command contribute to conflict with his wife (all could be considered indirect drivers that make him more vulnerable to increased suicidal risk). The current study seeks to examine how PTSD and self-stigma towards mental illness (indirect suicide drivers) influence thwarted interpersonal needs (direct suicide drivers) in US military veterans.

Indirect Drivers of Suicide Risk: Posttraumatic Stress Disorder and Self-Stigma towards Mental Illness

Posttraumatic Stress Disorder

The first indirect suicide driver to be examined in this study is posttraumatic stress disorder (PTSD), which represents one of the most prevalent and debilitating war-related illnesses (Hoge et al., 2004; Seal, Bertenthal, Miner, Sen, & Marmar, 2007). Posttraumatic Stress Disorder was an anxiety disorder that first appeared in the Diagnostic and Statistical Manual III (DSM-III) in 1980. However, the cluster of PTSD symptoms popularized in the DSM-IV were not new and had been alternatively known by a variety of other names, such as shell shock, railway spine, or rape trauma syndrome (Friedman, Resick, Strain, Horowitz & Spiegel, 2011). With the recent publication of the DSM-V (American Psychiatric Association, 2013), PTSD has been redefined in some significant ways. Most notably, PTSD is no longer grouped with the anxiety disorders, but categorized within its own section, Trauma- and Stress-Related Disorders.

Currently, a traumatic event is defined by the PTSD criterion A in the DSM-V. Criterion A outlines potential traumatic stressors such as "threatened death, serious injury, or sexual violence" (American Psychiatric Association, 2013, p.271). Importantly, the DSM-V designates that trauma can occur through direct experience as well as through witnessing or indirectly contacting the event (e.g., being told of a family members accidental death, repeated exposure to aversive event details as a first responder; American Psychiatric Association, 2013). More generally, PTSD is thought to develop when the stress associated with a specific event exceeds the individual's ability to cope with the cognitive and emotional sequelae of the event exposure (Friedman et al., 2011).

Evidence indicates that a broad range of events can be potentially traumatic, such as serious accidents, assault, rape, abuse, physical illness, military combat and natural disasters (National Center for PTSD, 2010). Calhoun and Tedeschi (1999) provide a list of qualities or event characteristics that make events highly stressful or traumatic:

1. The event occurs suddenly or without warning as the ability to prepare for a distressing event can attenuate the stress response.
2. The event is out of the individual's control and he or she experiences it as such (e.g., powerless). Relatedly, blaming others is associated with elevated distress, specifically with respect to cognitive distress as the individual grapples with issues of justice and forgiveness.
3. The event threatens or results in physical harm.
4. The event is perceived as unusual.
5. The repercussions of the event are long-lasting.
6. The individual's stage of development at the time of the event – specifically events occurring before identity formation more frequently result in prolonged distress.

With the publication of the DSM-V, the PTSD diagnostic criteria shifted slightly to include: 1) intrusive and persistent re-experiencing the event; 2) avoiding thoughts, feelings, external reminders; 3) negative cognitive and emotional alterations; and 4) changes in arousal levels and reactivity (American Psychiatric Association, 2013). Symptoms from each of these four categories must be present for more than a month, must contribute to significant impairment and cannot be explained by substance use or another medical condition (American Psychiatric Association, 2013).

Estimates indicate that exposure to highly stressful, potentially traumatic events is quite likely across the lifespan (Bonanno, 2005; Breslau, 2002; Kessler et al., 1995). Projections vary, but conservative estimates indicate that approximately 61% of men and 51% of women will have at least one traumatic occurrence across their lifespan (Kessler et al., 1995), with others claiming that at least one traumatic exposure is unavoidable over the lifetime (Bonanno, 2005; Breslau, 2002). It should be noted that the majority of people exposed to potentially traumatic events do not develop PTSD, with prevalence rate estimates suggesting that 3.6% of men and 9.7% of women are diagnosed with PTSD at any given time (National Center for PTSD, 2010). The estimated lifetime risk for the total population is projected at 8.7% (American Psychiatric Association, 2013). Estimates of PTSD prevalence rates among veterans of Iraq and Afghanistan vary. In one major study of 60,000 Iraq and Afghanistan veterans, 13.5% of veterans screened positive for PTSD (Eberm Barth, Kang, Mahan, Dursam & Schneiderman, 2013), while other studies show the rate to be as high as 20% to 30% (Taniekuan & Jaycox, 2008; US Department of Veteran Affairs, 2016). As many as 500,000 U.S. troops who served in these wars over the past 13 years have been diagnosed with PTSD (Thompson, 2015).

Negative Consequences of PTSD

The negative consequences of posttraumatic stress are varied and have received considerable empirical attention. Individuals with PTSD are more likely to have a mood, anxiety, or substance abuse disorder (National Center for PTSD, 2010). They are also more likely to experience functional impairments across a range of life domains (Kessler, 2000; Seng, Clark, McCarthy, & Ronis, 2006). For instance, Kessler (2000) reported that individuals with PTSD are much more likely to experience academic failure, confront

marital problems, and be unemployed. Evidence further suggests that individuals with PTSD struggle with more physical health issues. For women, infections, cancers, circulatory issues, and respiratory complications are all associated with PTSD (Seng et al., 2006).

More broadly, Calhoun and Tedeschi (1999) suggest four broad categories of distress related consequences associated with major life crises: distressing emotions, distressing cognitions, physical distress, and problematic behavior. With respect to emotional distress, anxiety (Herman, 1992), specific fears (Herman, 1992), sadness/depression (Hodgkinson & Stewart, 1991; Kessler et al., 1995), grief (Hodgkinson & Stewart, 1991), guilt, anger, and general irritability are all associated with major crises (National Center for PTSD, 2010). Furthermore, emotional numbing is also frequently observed in trauma survivors (Flack, Litz, Hseih, Kaloupek, & Keane, 2000).

Distressing cognitions, in the form of shock and psychological numbness (Calhoun & Atkenson, 1991), as well as repetitive intrusions (Thompson, Chung, & Rosser, 1994) and intrusive rumination (Calhoun & Tedeschi, 1999) can result from major crises. Follette and colleagues (2006) note that individuals with PTSD often demonstrate "psychological inflexibility" (Follette, Palm, & Pearson, 2006, p.51), associated with restricted behavior repertoires. Moreover, cognitive schemas are likely to be disrupted in the aftermath of trauma, specifically those schematic assumptions associated with a generally safe and benevolent world (Janoff-Bulman, 1992), the individual's perceived vulnerability (Gluhoski & Wortman, 1996), as well as how stable, predictable and controllable the world is supposed to be (Calhoun & Tedeschi, 1999).

Physical distress can also result from high levels of psychological stress. Specifically, individuals experiencing prolonged physiological stress may also endorse a diversity of bodily discomforts, such as fatigue, tension, and/or gastric symptoms (Tedeschi & Calhoun, 2004). Traumatic exposure has also been observed to moderately increase susceptibility to illness (Herbert & Cohen, 1993). Finally, problematic behaviors associated with traumatic exposure include increased substance use (Jacobsen, Southwick, & Kosten, 2001), isolating behaviors (Hofmann, Litz, & Weathers, 2003), and increased aggression (Kivisto, Moore, Elkins, & Rhatigan, 2009), all of which are known risk factors for suicide (Nock et al., 2013).

PTSD and Suicide

Both a diagnosis of PTSD and sub-clinical symptoms are associated with increased risk for suicidal thoughts and behaviors in community and veteran samples (Asnaani et al., 2014; Cukrowicz et al., 2011; Gill et al., 2014; Jakupcak et al., 2011; Pietrzak et al., 2011; Wisco et al., 2014). PTSD has also been associated with more severe suicidal ideation in deployed military personnel (Bryan et al., 2013) and combat veterans (Rudd et al., 2011), as well as with attempted suicide (Nad et al., 2008) and death by suicide (Boscarino, 2006; Drescher et al., 2003) in combat veterans. Existing models of the link between PTSD and suicide focus on several areas of vulnerability, including comorbidity with other psychiatric symptoms, such as depression (Maris, Berman & Silverman, 2000), types of combat exposure (Maguen et al., 2012), type and number of traumas experienced (LeBouthillier et al., 2015), and use of suicidal behavior as maladaptive means of coping with distress. For example, Dube and colleagues (2001) found a dose–response relation between exposure to adverse childhood experiences (e.g.,

rape, physical abuse) and history of suicide attempts. Similarly, the World Health Organization Mental Health Surveys indicated that there was a significant dose–response relation between number of traumatic events and increased odds for suicidal thoughts and history of suicide attempts (Stein et al., 2010). In a longitudinal study, PTSD symptoms were associated with elevated risk for future suicide attempts beyond the risk associated with depressive symptoms (Wilcox, Storr, & Breslau, 2009), suggesting that PTSD symptoms may be a unique predictor of suicide risk. Similarly, Tarrier and Gregg (2004) found that 38.3% of civilians who reported PTSD symptoms also reported suicide ideation. These findings suggest that risk for suicide may be greater among individuals with a history of trauma exposure and PTSD symptoms.

Mental Illness Stigma

The second indirect suicide driver explored in this study is self-stigma (also called internalized stigma) towards mental illness. As described by Goffman (1963), the basis for stigma is the relationship between an "attribute and stereotype", where the attribute or "mark" informs others of a person's membership in a stigmatized category or group (p. 4). Individuals who possess a stigmatized attribute or characteristic belong to a social category that is labeled by society, stereotyped, and devalued based on possessing the stigmatized attribute (Crocker & Major, 1989; Frost, 2011; Goffman, 1963; Jones et al., 1984; Major & O'Brien, 2005). Link and Phelan (2001) suggest that "stigma exists when elements of labeling, stereotyping, separation, status loss, and discrimination occur together in a power situation" (p. 377). Thus, stigmatization is based on subjective generalizations, labels, and stereotypes which create a social identity that is devalued not only by other groups, but also by society as a whole (Crocker & Major, 1989; Major &

O'Brien, 2005). Indeed, stigma is defined as an attribute or characteristic society deems undesirable, which can lead a person to feel discredited, shameful, and less than whole (Goffman, 1963).

Self-stigma has been described as the method by which one internalizes stigma or the transformational process in which public stigma becomes a part of a stigmatized person's self-concept (Corrigan & Watson, 2002). Self-stigma includes stereotypes, prejudice, and discrimination; however, each of these components is applied to the self (Corrigan & Watson, 2002). Self-stigma develops in relation to social influence and contact (Crocker & Quinn, 2000; Major & O'Brien, 2005). Research suggests that self-concept develops through "reflected appraisals" or the "looking-glass self", such that people become aware of how others view and evaluate them through social contact and interactions (Crocker & Major, 1989). After repeated social experiences, a person may begin to incorporate others' views into his or her own idea of the self and develop ideas and beliefs about the self (i.e., self-concept) based on how he or she is viewed by others (Crocker & Major, 1989). Because stigmatized individuals possess a characteristic or attribute that is devalued by the general public, monitoring and evaluating others' reactions in order to develop ones self-concept can be problematic. For example, stigmatized individuals become aware of the public's devaluation through social interactions and as a consequence of these interactions begin to incorporate the devaluation into their self-concept, which ultimately can lead to negative consequences, such as lower self-esteem and suicide risk (Crocker & Quinn, 2000).

Members of the US military may be particularly vulnerable to the negative influence of self-stigma. Studies have shown that stigma towards mental illness and help-

seeking is strongly ingrained within military culture (Department of Defense, 2007; Schell & Marshall, 2008), and stigma-based perceptions may be a key motive behind a lack of treatment seeking in military service members and veterans with mental health related problems (Office of the Surgeon Multi-National Force-Iraq, 2009). For example, research suggests that more than 30% of troops returning from the Iraq and Afghanistan wars experience some type of mental health problem, including anxiety, depression, and PTSD-related symptoms; however, less than half of those veterans seek treatment (Dingfelder, 2009). Similarly, Hoge, Castro, Messer, McGurk, Cottling, & Koffman (2004) found that of the soldiers and Marines who met the criteria for being diagnosed with a mental health problem, only 38% to 45% indicated an interest in receiving help, and within the previous year, only 23% to 40% reported actually receiving professional help. The troops who scored positively for a mental health problem were twice as likely as other troops to report higher levels of self-stigma toward mental illness and seeking treatment (Hoge et al., 2004).

Self-Stigma and Suicide

Self-stigma towards mental illness has been identified as a prominent risk factor for suicidality in military veterans and is associated with the insufficient rates of mental health treatment seeking by Iraq and Afghanistan war veterans (Stecker et al., 2007). Self-stigma can reduce the chance that a military service member or veteran will seek mental health services, and untreated mental health problems within the military have been associated with significant costs including decreased treatment retention, delayed treatment-seeking behaviors, reduced organizational efficiency, and family disruption (Sibicky & Dovidio, 1986; Westphal, 2007). Self-stigma has been shown to further

exacerbate these problems by reducing self-esteem, increasing feelings of isolation, and leading to outcomes of mental distress and suicide (Ritcher, Otilingam, & Grajales, 2003).

While the profound negative influence of self-stigma on mental health and military suicide rates over the past decade has been extensively explored and discussed (U.S. Army, 2012; U.S. Department of Defense, 2010), mental illness and suicidality continue to be highly stigmatized issues both within the general American public and within the military (Sudak, Maxim, & Carpenter, 2008). In the case of suicide, self-stigma has been identified as a significant risk factor for military/veteran suicide outcomes (Lehavot, Simpson, & Shipherd, 2016; Pietrzak et al., 2010), and it can result in people distancing from the individual in crisis and lowering the likelihood of intervention, potentially compounding the sense of isolation, loneliness, and burdensomeness (Van Orden, Joiner, Hollar et al., 2006). As such, self-stigma toward mental illness continues to be one of the most difficult challenges the Army and VA system face in regard to suicide prevention and treatment (Department of Defense, 2009).

Direct Drivers of Suicide Risk: Perceived Burdensomeness and Thwarted Belonging

As described above, PTSD and self-stigma towards mental illness represent indirect drivers of suicide risk that can activate more proximal, or direct, drivers of suicide risk. Two specific direct drivers which may be particularly relevant to veteran suicide are feelings of thwarted belongingness and perceived burdensomeness.

The Interpersonal Psychological Theory of Suicide (IPTS; Joiner, 2005; Van Orden et al., 2010) posits two interactive drivers of suicide risk: thwarted belongingness

and perceived burdensomeness. Perceptions of burdensomeness and thwarted belongingness constitute what the IPTS refers to as a "desire for death". It is through the combination of thwarted belongingness and perceived burdensomeness that the IPTS attempts to answer why someone would want to die by suicide. The more intense the combination of these factors, the more intense one's suicidal ideation is likely to be.

Thwarted Belongingness

Thwarted belongingness is defined as an unmet need to belong that involves a lack of frequent, positive social interactions, and/or feelings of not being cared about by others (Baumeister & Leary, 1995). The "thwarted" aspect of belongingness indicates that, although some individuals may attempt to meet desires to belong, there may be barriers that prevent them from successfully doing so. Thwarted belongingness is applicable to individuals who genuinely lack social support networks, as well as individuals who have contact with family and friends but feel that they are not genuinely connected to those individuals. Thwarted belongingness strongly predicts suicidal ideation (Van Orden, Witte, Gordon, Bender, & Joiner, 2008; Van Orden, Cukrowicz, Witte, & Joiner, 2012), suicide attempts (Conner, Britton, Sworts, & Joiner, 2007; Hill & Pettit, 2014; Pelton & Cassidy, 2017), and completed suicides (Joiner, Hollar, & Van Orden, 2006; Lester & Gunn, 2012).

Certain aspects of military service may lead to increased feelings of thwarted belongingness, particularly in veterans who have seen combat and, as a result, may have difficulty relating to others (Selby et al., 2011). When veterans return home they may find it hard to express the difficulties of their experiences to their friends and family, or they may feel out of place in civilian life (Selby et al., 2011). Similarly, if they fought in

an unpopular war, many veterans may feel like they are viewed negatively by their community (Koenen et al., 2003; Selby et al., 2011). Taking the life of another may also instill thwarted belongingness. For example, guilt about actions during combat has been linked to more severe PTSD symptoms (Henning & Frueh, 1997) and can contribute to feelings of isolation, a lack of perceived belonging, and suicide ideation (Bryan et al., 2013, 2015; Rogers, Kelliher-Rabon, Hagan, Hirsch, & Joiner, 2017).

Perceived Burdensomeness

The second component of a desire for death is perceived burdensomeness. This domain of the IPTS (Joiner, 2005) involves a sense of being a burden to others and includes perceptions that one has failed to make meaningful contributions to society as well as perceptions that one is a liability to others. It is important to note the "perceived" component, as those who believe they are a burden may feel this way despite objective evidence to the contrary. Perceived burdensomeness has been linked to suicide ideation (Rogers et al., 2017; Van Orden et al., 2008), attempted suicide (Hill & Pettit, 2014; Joiner et al., 2002, 2009; Van Orden et al., 2008, 2010), and death by suicide (Joiner et al., 2002; Selby et al., 2011) in both civilian and military samples.

Military service may influence perceived burdensomeness in several ways. Those service members who are wounded or disabled in combat may experience feeling of loss of purpose (Selby et al., 2011), and upon discharge from the military, individuals may face difficulties transitioning from serving their country to reengaging in a different component of society (e.g., previous occupations and returning to school; Elnitsky, Fisher, & Blevins, 2017) that can lead to a sense of purposelessness, failure, or burdensomeness (Brenner et al., 2008). As with thwarted belonging, another potential

contributor to perceptions of burdensomeness may be survivor guilt, an experience for some veterans who feel like they did not deserve to live through combat or that they should have died alongside their friends. These feelings of guilt may particularly contribute to perceived burdensomeness if the individual's action, or inaction, resulted in the death of a friend, perhaps causing feelings of responsibility or failure. These thoughts may then generalize to other aspects of life, through thoughts like, “I'm just making things worse for everyone, just like during the war…” and contribute to outcomes of suicidality (Selby et al., 2011).

PTSD and Self-Stigma (Indirect Suicide Drivers) May Increase Risk for Perceived Burdensomeness and Thwarted Belongingness (Direct Suicide Drivers).

The Interpersonal Psychological Theory of Suicide (IPTS; Joiner, 2005) suggests that exposure to trauma and associated sequelae may be related both to increased experiences of perceived burdensomeness and thwarted belongingness and to increased overall suicide risk. According to Joiner (2005), disorders associated with exposure to painful or fearsome experiences (i.e., PTSD) and associated symptoms (i.e., depression, social anxiety, phobias, perceptions of being a liability to others) should be most predictive of thwarted belongingness and perceived burdensomeness, and thus, more strongly associated with suicide risk. For example, symptoms of anxiety and depression associated with PTSD (i.e., avoidance, isolation, negative rumination, low mood, etc.) have been associated with increases in thwarted belongingness, perceived burdensomeness and suicide ideation in both civilian and military samples (Davidson et al., 2011).

Several studies have looked specifically at the relationship between PTSD-

specific symptoms, thwarted belongingness, and perceived burdensomeness. For example, increased self-blame (a facet of perceived burdensomeness; Ullman & Najdowski, 2009) and decreased social support (a component of thwarted belongingness; Ullman & Brecklin, 2002) were significantly associated with increased suicide ideation and suicide attempts among female veterans reporting a sexual assault history. Similarly, in a study by Monteith, Bahraini, & Menefee (2017), PTSD symptoms were positively associated with both thwarted belongingness and perceived burdensomeness in a sample of military sexual trauma survivors. A separate study looking directly at PTSD-specific symptoms among combat veterans of the wars in Iraq and Afghanistan found significant positive correlations between thwarted belongingness, perceived burdensomeness and both total PTSD scores and PTSD-specific symptoms of re-experiencing, avoidance, and hypervigilance (Bryan, 2011). While these findings largely generalize to non-military and veteran samples, findings have been inconsistent. For example, in a study examining associations between specific mental health disorders and thwarted interpersonal needs in college students receiving outpatient mental health services, there were no significant relationships between PTSD, thwarted belongingness, or perceived burdensomeness (Silva, Ribeiro, & Joiner, 2015).

Self-Stigma, Perceived Burdensomeness, and Thwarted Belongingness

Previous research has established self-stigma as a risk factor for suicide ideation (McGarrity, Huebner, & McKinnon, 2013; Meyer, 1995); however, less work has sought to examine the specific mechanisms by which stigma may increase suicide risk. It is possible that self-stigma is associated with increased levels of perceived burdensomeness and thwarted belongingness. For example, both thwarted belongingness and perceived

burdensomeness have been associated with social isolation, depressive symptoms, and low self-esteem (Ma, Batterham, Calear, & Han, 2016; Van Orden et al., 2010), all common correlates of self-stigma (Rüsch et al., 2014b, 2014c). While less work has examined the influence of self-stigma on perceived burdensomeness and thwarted belongingness directly, there is some work to suggest there may be positive associations between these constructs.

In a study examining suicide risk factors communicated in suicide notes of US Air Force decedents, themes of perceived burdensomeness were communicated simultaneously with self-stigma in 31.6% of cases, while themes of thwarted belongingness were reported simultaneously with self-stigma in 29.6% of cases (Cox et al., 2011). Likewise, in a separate qualitative study of Mexican immigrants, stigma was highlighted as a contributing factor to thwarted belonging and perceived burden in interviews, such that those individuals with higher levels of self-stigma of mental illness reported that they felt like more of a burden to their families and that they felt more isolated and alone as a result of their mental illness (Kene, Brabeck, Kelly, & DiCicco, 2016). Therefore, it is possible that the relationship between self-stigma and suicide ideation is mediated by thwarted interpersonal needs, such that self-stigma is positively associated with increases in perceived burdensomeness and thwarted belongingness, which further increase risk for suicide in vulnerable individuals.

Suicide Protective Factors & Posttraumatic Growth

In addition to suicide risk factors, suicide warning signs, and suicide drivers, considerable research has sought to identify factors which may buffer or protect against outcomes of suicide (see Nock, et al., 2013 for review). Suicide protective factors (also

called buffering factors, resiliency factors, or moderating factors) include anything that decreases the probability of suicide among those at elevated risk (Kleiman & Riskind, 2012; Nock et al., 2013). Protective factors may be particularly important for veterans returning from combat, have experienced trauma, and face the difficult process of making sense and deriving meaning from their experience.

One such protective factor that may be particularly relevant to veterans with PTSD is an experience of posttraumatic growth. Posttraumatic growth (PTG) is defined as "positive psychological change experienced as a result of the struggle with highly challenging life circumstances" (Tedeschi & Calhoun, 1996, 2004). Other terms have been used for the phenomenon of posttraumatic growth, including "perceived benefits" or "construing benefits" (Calhoun & Tedeschi, 1991; McMillen, Zuravin, & Rideout, 1995; Tennen, Affleck, Urrows, Higgins, & Mendola, 1992), "stress-related growth" (Park, Cohen, & Murch, 1996), "flourishing" (Ryff & Singer, 1998), and "adversarial growth" (Linley & Joseph, 2004). Coping mechanisms of "positive reinterpretation" (Scheier, Weintraub, & Carver, 1986) "drawing strength from adversity" (McCrae, 1984), and "transformational coping" (Aldwin, 1994; Pargament, 1996) have also been described. The term posttraumatic growth appears to capture the essentials of this phenomenon better than others since (a) it occurs most distinctively in conditions of severe crisis rather than lower-level stress; (b) it is often accompanied by transformative life changes that appear to go beyond illusion; (c) it is experienced both as a process and an outcome; and (d) it often requires a challenging and reconstruction of basic assumptions about one's life that thriving or flourishing do not imply.

The Process of Posttraumatic Growth

Contemporary models of posttraumatic growth were inspired by Janoff-Bulman's (1992, 2004) work on shattered world assumptions and the cognitive and emotional processes that help trauma survivors rebuild their assumptive worlds. Janoff-Bulman (1992, 2004) proposed three posttraumatic growth processes: strength through suffering, existential reevaluation, and psychological preparedness. The latter emphasizes the strength of the rebuilt assumptive world to withstand future shocks to the system, akin to how communities rebuild in the aftermath of earthquakes. Using Janoff-Bulman's (1992, 2004) conceptualization as a starting point, Tedeschi & Calhoun (1996, 2004, 2006) formulated an evolving model of posttraumatic growth. The most recent version describes how several variables increase the possibility of psychosocial growth in the aftermath of trauma (Calhoun, Cann, & Tedeschi, 2010). These variables include (a) cognitive processing, cognitive engagement, or rumination; (b) the disclosure of concerns related to traumatic events; (c) the reactions of others to self-disclosures; (d) the sociocultural context in which traumas and attempts to process, disclose, and resolve trauma occur; (e) the personal dispositions of the survivor and the degree to which they are resilient; and (f) the degree to which events either permit or suppress the aforementioned processes.

A Seismic Event and the Assumptive World

Posttraumatic growth is both a process and an outcome stemming from an individual's engagement with complex cognitive, emotional, and social variables that have the potential to contribute to a greater sense of well-being and life satisfaction in the aftermath of trauma. Research has shown that trauma survivors tend to report

posttraumatic growth across five domains: a greater appreciation for one's life, a greater sense of personal strength, improvements in relationships, recognition of new life possibilities, and spiritual development (Tedeschi & Calhoun, 1996). Posttraumatic growth highlights the capacity for people to respond well to adverse situations and refers to positive changes which may occur following the process of attempting to make sense of a disrupted world. Those experiencing posttraumatic growth do not return to the same baseline which existed prior to trauma, but, rather, emerge transformed with a new benchmark for future resilience trajectories (Tedeschi & Kilmer, 2005). Further, individuals may experience trauma-related distress while simultaneously recognizing some benefit or growth as a result of their trauma.

The seismic nature of traumatic or highly adverse circumstances is central to the model of PTG. In order for posttraumatic growth to be possible, one must encounter a traumatic event considered seismic or significant enough to shake their core beliefs and assumptions about the world (Cann et al., 2010; Tedeschi & Calhoun, 1996, 2004). A metaphor of earthquakes is often used to describe this process (Tedeschi & Calhoun, 1996, 2004). Similar to how an earthquake disrupts the physical environment, traumatic events have the capacity to disrupt, challenge, or even shatter an individual's assumptions or way of understanding the world (Janoff-Bulman, 1992). Therefore, the severity of a traumatic experience can be understood as the degree to which ones assumptive world is challenged.

The more central an event is to one's identity, and the more "seismic" an experience is, the more an individual is caused to question and to develop their fundamental assumptions regarding safety, predictability, identity and meaning (Groleau, Calhoun,

Cann, & Tedeschi, 2013; Tedeschi & Calhoun, 2004). Disruptions to assumptive worlds are generally accompanied by a significant degree of psychological distress (Tedeschi & Calhoun, 2004), which initiates cognitive processes by which one attempts to understand the event and rebuild the assumptive world/core belief structure (Cann, Calhoun, Tedeschi, Triplett, Vishnevsky, & Lindstrom, 2011).

Emotional and Cognitive Processing

Rebuilding a worldview in the aftermath of trauma is both cognitively and emotionally challenging, and the trauma survivor must bring to bear individual coping resources to regulate the emotional reactions and cognitive patterns of rumination that are set off by the event (Calhoun & Tedeschi, 2013). People who face major live stressors often experience high levels of emotional distress that, for some, can be debilitating. For many persons, the level of emotional distress, which tends to be higher in the time initially following a traumatic event, is often accompanied by automatic or unwanted cognitive patterns, which are defined as intrusive rumination (Cann et al., 2011).

Intrusive ruminations consist of automatic processes of coping with negative emotional states that, at the earlier stages of trauma recovery, are more likely to include intrusive thoughts and intrusive images which individuals may perceive as distressing. Intrusive ruminations following a traumatic event are not abnormal; rather, are to be an expected outcome of trauma and may represent an individual's attempt to make sense of their changing life circumstances (Cann et al., 2011). As time passes and an individual's coping mechanisms become more effective at managing the high levels of emotional distress, intrusive ruminations may begin to shift to more intentional or purposeful forms of rumination whereby an individual attempts to understand and make sense of traumatic

events and their implications. This latter form of cognitive engagement is defined as deliberation rumination (Cann et al., 2011).

The model of posttraumatic growth suggests that following a disruption to one's core belief structure, both intrusive and deliberate rumination play distinct roles in the growth process. Evidence suggests that intrusive ruminations relating to traumatic events are positively associated with distress and a failure to cope (Cann et al., 2011). Deliberate or purposeful ruminations relating to traumatic events have been positively associated with posttraumatic growth (Lindstrom, Cann, Calhoun, & Tedeschi., 2013). Higher levels of intrusive rumination are also believed to predict higher levels of deliberate rumination as a way to better understand and bring meaning to a traumatic experience (Calhoun et al., 2010; Cann et al., 2011). For many people who have experienced a highly stressful or traumatic event, the process of deliberate rumination directly relates to outcomes of growth and helps facilitate wellbeing in the aftermath of trauma (Cann et al., 2011).

Notably, while the model of posttraumatic growth highlights the importance of shifting from unwanted to more purposeful forms of event-related rumination, making sense of trauma is not a neat process that can be easily reduced to a formula and there are many recursive and iterative aspects to it. This process is influenced by individual differences and will likely take time. It is also possible that for some individuals, the attempt at adaptation to loss or trauma will never achieve a fully satisfactory psychological outcome (Wortman & Silver, 2001). However, work suggests that the transition from an intrusive type of event-related rumination to a more deliberate type in which individuals begin to focus on making sense of events, consider if certain life goals are still attainable, and question if certain schemas and beliefs (e.g., "my world is safe")

are still valid is particularly important for the possibility of subsequent posttraumatic growth (Cann et al., 2011; Calhoun et al., 2010; Calhoun & Tedeschi, 2013; Tedeschi & Calhoun, 2004).

Disclosure, Social Context, and the Life Narrative

An individual's cognitive and emotional processing of trauma may be assisted by the disclosure of internal processes to supportive others. Previous work has shown that both written disclosure focused on cognitive and emotional aspects of trauma processing (Slavin-Spenny, Cohen, Oberleitner, & Lumley, 2011; Smyth, Hockemeyer, & Tulloch, 2008; Ullrich & Lutgendorf, 2002), as well as verbal disclosure to supportive others (Lindstrom et al., 2013) play an important role in the process of posttraumatic growth.

The degree to which individuals perceive their social contexts as either encouraging and accepting, or inhibiting, is important to a person's disclosure of trauma-related thoughts and feelings. For example, trauma processing may be inhibited when people affected by trauma perceive close others as not wanting to hear about their difficulties (Lindstrom et al., 2013). Alternately, perceiving close others as being open, non-judgmental, and willing to provide and maintain support for as long as it is requested or needed may help facilitate trauma processing and posttraumatic growth (Taku, Tedeschi, Cann, & Calhoun, 2009; Lindstrom et al., 2013). The social context surrounding an individual during the aftermath of trauma is also important. Societal narratives impact the way an individual processes trauma and engages in coping behaviors (Calhoun et al., 2010). The availability of growth themes in both a person's proximate and distal cultures, as well as the ways in which growth is understood,

modeled or reinforced, can affect the individual's experience of growth. For example, the broader United States narrative generally allows for a belief in progress and an assumption that individuals can bring about positive change, which has implications for the development of posttraumatic growth in US military personnel.

When cultural contexts recognize and encourage the acknowledgement of experiences of posttraumatic growth, a trauma survivor might be more open to such possibilities, may be more likely to self-disclose about their experience and receive positive social responses, and ultimately be more apt to experience some form of posttraumatic growth (Calhoun, et al., 2010, 2012; Lindstrom et al., 2013). Alternately, in more collectivist cultural settings, disclosures about one's success or positive qualities associated with the experience of some form of posttraumatic growth may be considered socially inappropriate (Taku et al., 2009). Thus, when cultural contexts recognize and encourage the acknowledgement of experiences of posttraumatic growth, a trauma survivor might be more open to such possibilities, may be more likely to self-disclose about their experience and receive positive social responses, and ultimately be more apt to experience some form of posttraumatic growth. Military members and veterans in particular may heavily consider how their reactions will affect and be viewed by others due to the interdependent culture of their group. These individuals are likely to filter experiences through a lens based on their perception of how peers and leaders might expect them to cope.

As individuals recognize and begin to integrate the experience of posttraumatic growth into their life narratives, the way they understand themselves and their lives can change. Trauma can become incorporated in the individual's own life story as a turning

point that sets the stage for fundamental changes in outlook (Tedeschi & Calhoun, 1996) and individuals may begin to craft their life narrative as one of redemption in the wake of trauma, leading them to consider how the event led to positive changes (Calhoun & Tedeschi, 2013; McAdams, 2006, 2013; Pals, 2006; Pals & McAdams, 2004). At some point, trauma survivors may be able to engage in a sort of metacognition or reflection on their own processing of their life events, seeing themselves as having spent time making a major alteration of their understanding of themselves and their lives. This becomes part of their life narrative and often includes an appreciation for new, more sophisticated ways of grappling with life events.

Posttraumatic Growth and the US Military

Posttraumatic growth is a topic of particular interest and relevance to the US military community (Hoge et al., 2004; Norris & Slone, 2013). Research in military psychology historically focused on PTSD pathology; however, researchers occasionally detected evidence of PTG in combat veterans. For example, in a sample of Vietnam POWs, 61.1% reported positive psychological benefits from their experience, including increased self-confidence and a greater appreciation for life (Sledge, Boydstun, & Rabe, 1990). Similar findings were noted using findings from the National Vietnam Veterans Readjustment Study (Kulka et al., 1990), in which 70.1% of male veterans reported that their experiences in Vietnam were mainly positive, with no evidence that these reports represented pathological defensive denial (Dohrenwend et al., 2004).

Recent scholarship on US military personnel and veterans has involved direct measurement of posttraumatic growth. For instance, Pietrzak and colleagues (2010) found that around 70% of Veterans sampled reported a significant level of growth in at

least one posttraumatic growth domain, and the recent National Health and Resilience in Veterans Study indicated that 75% of Veterans with PTSD display moderate and stable levels of posttraumatic growth over the course of a two-year period (Tsai et al., 2016). Providing additional support for the presence of posttraumatic growth in the military, others have replicated these findings in various active duty and veteran samples over the past decade (Benetato, 2011; Gallaway et al., 2011; Hijazi, O'Brien, & Keith, 2015; Maguen, Vogt, King, King, & Litz, 2006; Tsai, Mota, Southwick, & Pietrzak, 2016). These investigations suggest that there may be a clinical utility of posttraumatic growth in the psychosocial treatment of military personnel, as perceived growth has been associated with lower levels of depression, stress, and suicidal ideation as well as more optimal physical health and psychological functioning (Gallaway et al., 2011; Moore, Varra, Michael, & Simpson, 2010; Tsai et al., 2015; Tsai et al., 2016). Further, Tsai and colleagues (2016) recently found that PTG served as a protective factor for diagnosis and severity of PTSD related to newly experienced traumatic events at a two-year follow-up.

Posttraumatic Growth and Combat Exposure

Military combat exposure has long been understood as a highly challenging experience that can compel people to reconsider their beliefs about life and their expectations for the future, thereby serving as a potential catalyst for posttraumatic growth (Bush et al., 2011), and many veterans returning from combat have reported posttraumatic growth (Bush et al., 2011; Mitchell et al., 2013; Park et al., 2016). Erbes et al. (2005) measured posttraumatic growth in former Prisoners of War (POW) who were taken prisoner during World War II or the Korean War and identified that those POWs with the highest level of trauma exposure reported the highest degree of growth in the

realm of personal strength. This is consistent with the category of changes in one's view of self as described by Calhoun and Tedeschi (2013). Maguen, Vogt, King, King, and Litz (2006) measured posttraumatic growth in a sample of 83 Gulf War I (Operation Desert Shield and Operation Desert Storm) combat veterans and found that the categories of posttraumatic growth experienced by these veterans were significantly predicted by such factors as military status, perceived threat, postdeployment social support, and minority status. Maguen et al. (2006) concluded that multiple factors (including background variables, deployment experiences, combat exposure, and postdeployment experiences) contribute to posttraumatic growth in veterans. Tsai et al. (2015) examined the longitudinal course of posttraumatic growth among military combat veterans over a two year time frame. They identified five different trajectories of posttraumatic growth - consistently low (33.6%), moderately declining (19.4%), increasing PTG (16.8%), dramatically declining (15.7%), and consistently high (14.5%). More than half of the veterans (59.4%) who reported at least "moderate" posttraumatic growth maintained that level of posttraumatic growth at a 2 year follow-up. Posttraumatic stress symptoms, combat experiences, medical conditions, purpose in life, altruism, and gratitude predicted maintenance or increases in posttraumatic growth.

Posttraumatic Growth and Suicide

Recent work has suggested that posttraumatic growth may protect individuals from suicide ideation (Bush et al., 2011; Chopko, Palmieri, & Facemire, 2014; Gallaway, Millikan, & Bell, 2011). This finding was originally reported in survivors of a Chinese earthquake (Yu et al., 2010) and has since been replicated in both military personnel (Gallaway et al., 2011; Bush et al., 2011) and police officers (Chopko et al., 2014).

However, while these initial findings are promising, the literature remains devoid of studies that examine the associations between posttraumatic growth and suicide risk in either civilian or military populations. Further, while one may superficially interpret main outcomes (Bush et al., 2011; Chopko, Palmieri, & Facemire, 2014; Gallaway, Millikan, & Bell, 2011) as a conclusion that trauma survivors displaying posttraumatic growth are in some way protected against future suicide risk, the small sample size and cross sectional nature of past studies preclude any presumptions of causality. Thus, more research is needed examining mechanisms through which PTG may mitigate suicide risk in vulnerable individuals.

Posttraumatic Growth and Suicide Drivers

It is possible that PTG protects against suicide by offsetting the negative influence of both indirect and direct suicide drivers (e.g., self-stigma towards mental illness, thwarted belonging, and perceived burdensomeness). Posttraumatic growth represents a positive change in one's identity following traumatic exposure (Calhoun & Tedeschi, 2013; Tedeschi & Calhoun, 2006) and the very definition of posttraumatic growth suggests that one must experience both trauma and associated traumatic distress before one can realize the positive benefits of their experience. In other words, the negative aspects of posttrauma experience, while challenging and difficult to navigate, form a necessary foundation for later growth (Tedeschi & Calhoun, 1996, 2004). Individuals describing posttraumatic growth often report higher degrees of new possibilities and personal strength (Konvisser, 2013), and their trauma narratives reflect an integration of affect and cognition, as demonstrated by intellectual awareness (i.e., talking about the event and their experience), emotional awareness, and the ability to transform a tragedy

into a triumph (Konvisser, 2013). Individuals reporting posttraumatic growth also frequently report that as a result of their experience, they have confidence in their ability to handle future difficulties (Calhoun & Tedeschi, 2013; Tedeschi & Calhoun, 2006). Thus, it is possible that posttraumatic growth is associated with less self-stigma toward mental illness in that individuals reporting PTG have experienced the reality of symptoms of posttraumatic distress while knowing that it is possible to recover, heal, and transform in positive or meaningful ways. Therefore, symptoms associated with posttraumatic distress may represent less of something to be ashamed of, and more a challenge to overcome and grow from.

Posttraumatic growth may also help mitigate the cognitive-emotional elements of feeling isolated from (i.e., thwarted belongingness), and a liability to others (i.e., perceived burdensomeness). Despite the dearth of research connecting belongingness and burdensomeness and posttraumatic growth, a large body of work has examined associations between social support, disclosure, and posttraumatic growth. In their seminal article, Tedeschi and Calhoun (1996) argue that social support and constructive self-disclosure are important to processes of coping with emotional distress and reconstructing meaning systems. Accordingly, many studies have illustrated significant positive associations between posttraumatic growth, constructive self-disclosure, and social support (Nenova, DuHamel, Zemon, Rini, & Redd, 2011; Shand, Cowlishaw, Brooker, Burney, & Ricciardelli, 2014; Wolfe & Ray, 2015). It appears that having a supportive social network and being able to talk about stressful experiences with close others is helpful when it comes to managing stress and coping with the strong emotions

often experienced in the aftermath of a traumatic event (Calhoun & Tedeschi, 2013; Duffy, Avalos, & Dowling, 2014).

Belonging represents a unique and global type of social support. A large body of literature has suggested that a sense of belonging represents a fundamental part of one's identity (Baumeister & Leary, 1995; Hatcher & Stubbersfield, 2013; Maslow, 1954) and prior research has suggested that belonging concerns both objective and subjective assessment of the quality and quantity of interpersonal interactions (Hatcher & Stubbersfield, 2013). For example, Hagerty and Patusky (1995) explicitly define a sense of belonging as an important element of social support processes that help an individual derive life meaning. Further, Hatcher & Stubbersfield (2013) suggest that as feelings of belonging increase in response to supportive others/environments, self-efficacy increases and individuals may be more likely to perceive that they are worthy and capable of positive contribution to others/groups. Therefore, as social support (an element of belonging) and constructive self-disclosure are important to reports of posttraumatic growth, and as a commonly reported outcome of posttraumatic growth is improved relationships with others, posttraumatic growth can prompt increased self-efficacy that may enable an individual to recognize their potential to contribute to others/groups, it seems logical that one way posttraumatic growth may reduce suicide risk is through reducing perceptions of thwarted belongingness and perceived burdensomeness.

Study Aims

To date, few studies have sought to examine the mechanisms by which posttraumatic growth may protect against suicide risk in veterans with PTSD. Therefore, the present study expands on previous research suggesting that there is a negative relationship between posttraumatic growth and suicide risk (Bush et al., 2011), by testing a cross-sectional path model that examined specific mechanisms through which posttraumatic growth may protect against suicide risk in combat-exposed military veterans screening positive for clinically significant symptoms of PTSD. The hypothesized model is shown in Figure 1.

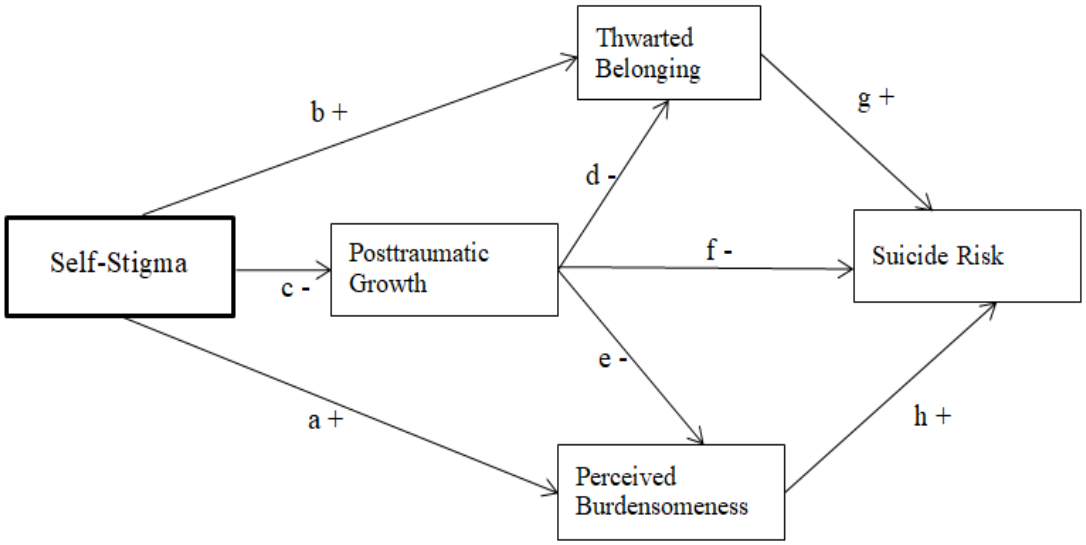

Figure 1. Proposed mediation model with estimated path associations examining the relationship between PTG and suicide ideation via decreased levels of self-stigma towards mental illness, thwarted belonging, and perceived burdensomeness

First, self-stigma towards mental illness was expected to be positively associated with increases in thwarted belongingness and perceived burdensomeness, and negatively associated with reports of posttraumatic growth.

Further, as previous work has identified thwarted belongingness and perceived burdensomeness (Van Orden et al., 2008, 2012; Selby et al., 2011) as direct suicide drivers in veteran populations, it was predicted that these variables would be positively associated with suicide risk.

As past qualitative work has suggested that thwarted belongingness and perceived burdensomeness may account for some of the influence between self-stigma toward mental illness and suicide risk (Cox et al., 2011; Kene et al., 2016), it was expected that thwarted belongingness and perceived burdensomeness would mediate the relationship between self-stigma toward mental illness and suicide risk.

Finally, it was hypothesized that posttraumatic growth would be negatively associated with suicide risk itself and with the suicide risk factors of thwarted belonging and perceived burdensomeness.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

This chapter outlines the research question and hypothesis, provides a description of the study design, presents the survey instruments, defines the sample and setting, details the procedure, and concludes by introducing the data analysis procedures.

Broadly, the purpose of this study was to explore the relationships between indirect suicide drivers (i.e., self-stigma towards mental illness), direct suicide drivers (i.e., thwarted belongingness and perceived burdensomeness) and posttraumatic growth in U.S. military veterans of the wars in Iraq and Afghanistan screening positive for PTSD. A cross-sectional survey design (e.g., data from each participant was collected at one, singular data collection point) was used to investigate relationships between the major constructs that are grounded in theory and have demonstrated preliminary empirical support. A cross-sectional design was preferred in this pursuit as, to our knowledge, this is the first study to assess the specific mechanisms by which PTG may offset the suicide risk conveyed by indirect and direct suicide drivers. As such, sound correlational support provides important, foundational evidence for the potential mechanisms underlying these relationships.

Research Question. Following combat exposure in the wars in Iraq and Afghanistan and significant traumatic distress (i.e., positive screen for PTSD), what are the relationships among self-stigma towards mental illness, thwarted belongingness, perceived burdensomeness, suicide risk, and posttraumatic growth?

Research Hypothesis. The observed model, arising from the data, will demonstrate goodness of fit with the theoretically-grounded proposed model. Specific pathway predictions are as follows:

- Self-stigma towards mental illness is expected to be positively associated with increases in thwarted belongingness and perceived burdensomeness and negatively associated with reports of PTG.
- Thwarted belongingness and perceived burdensomeness are expected to be positively associated with suicide risk (Van Orden et al., 2008, 2012; Selby et al., 2011).
- Thwarted belongingness and perceived burdensomeness are expected to mediate the relationship between self-stigma toward mental illness and suicide risk (Cox et al., 2011; Kene et al., 2016).
- PTG is expected to be negatively associated with overall suicide risk and with the suicide risk factors of thwarted belongingness and perceived burdensomeness.

Model Variables. Below are the conceptual definitions for the primary variables of interest:

- *Self-stigma toward mental illness* – the internalization of negative stereotypes, attributes, or characteristics associated with symptoms of mental illness (Corrigan & Rao, 2012).
- *Thwarted belongingness* – an unmet need to belong that involves a lack of frequent, positive social interactions, and/or feelings of not being cared about by others (Baumeister & Leary, 1995).

• *Perceived burdensomeness* – perceptions that one has failed to make meaningful contributions to society as well as perceptions that one is a liability to others (Joiner, 2005; Van Orden et al., 2008).

• *Suicide risk* – characteristics, life events, and demographic traits that increase the risk of someone experiencing suicidal ideation, attempting suicide, or dying by suicide (Nock et al., 2013).

• *Posttraumatic growth* – "positive psychological change experienced as a result of the struggle with highly challenging life circumstances" (Tedeschi & Calhoun, 2004, p.1).

Setting and Sample

This sample was comprised of combat veterans of the wars in Iraq and Afghanistan, as evidence suggests that suicide risk among veterans, particularly those exposed to combat in the wars in Iraq and Afghanistan, are at increased risk for suicide (Bruce, 2010; Bush et al., 2013; Ghahramanlou-Holloway et al., 2013; Luxton et al., 2011). Female veterans were oversampled as, though they account for the fastest growing population within the military, they are often underrepresented in psychological studies (Middleton & Craig, 2012).

Participants were recruited via Amazon's Mechanical Turk (MTurk), a participant recruitment website that is open to a national population (Buhrmester, Kwang, & Gosling, 2011). MTurk samples are widely used in behavioral science research (Paolacci & Chandler, 2014) and have been found to be more representative of the national population than standard American college samples and other Internet samples (Buhrmester et al., 2011). Inclusion criteria included being 18 years or older, having

English fluency, former service in the US military, and combat exposure as part of their military experience. No specific exclusions were based on combat tour of duty in order to encourage study participation.

Sample size recommendations for path analysis suggest that the sample should have at least 15 participants for each parameter (Cohen, 1992). In the proposed model there are 5 parameters and thus, a minimum sample size of 150 was calculated as necessary to establish adequate power in this study. However, in order to ensure adequate power to run SEM models in AMOS Version 22.0 for SPSS (Arbuckle & Wothke, 1996), a final sample size of 200 was calculated as necessary to establish adequate power in this study.

Procedure

Participants completed study measures once through the MTurk database system. The structure of MTurk allows a researcher to recruit from a diverse, community sample. Females were oversampled. MTurk participants were paid a fee of $1.75 for completing the survey. This is consistent with the payment policies and recommendations of MTurk and consistent with similar studies on MTurk. Participants were informed they could withdraw from participation at any time, but would forfeit their fee per MTurk guidelines.

Informed consent (Appendix A) was obtained with an electronic signature and as part of the consent process all participants were provided with study information and compensation rates. To screen for military service, combat exposure, and clinically significant PTSD symptoms, immediately following the consent participants completed an additional question verifying that they deployed and were exposed to combat. Any

participants indicating that they did not deploy and those reporting that they were not exposed to combat were directed to the end of the survey.

Following consent, participants provided demographic information including age, gender, race, military service information, and history of combat experiences (Appendix B). Participants began the survey battery with a measure of lifetime trauma exposure and PTSD symptomology (Posttraumatic Stress Disorder Checklist-5 (PCL 5); Weathers, Litz, Keane, Palmieri, Marx, & Schnurr, 2013; Appendix C). Then, participants completed a measure of posttraumatic growth (The Posttraumatic Growth Inventory-X (PTGI-X); Tedeschi et al., 2017; Appendix D). Participants then completed a measure of overall suicide risk (Appendix F) after which they received an auto-generated message containing phone, web, and email contact information for the National Suicide Prevention Hotline and the Veterans Crisis Hotline. Next, participants completed measures of direct and indirect suicide drivers, beginning with a measure of a measure of self-stigma towards mental illness (The Internalized Stigma of Mental Illness Scale (ISMI); Ritcher et al., 2003; Appendix G) and then a measure of perceived burdensomeness and thwarted belongingness (The Interpersonal Needs Questionnaire (INQ); Van Orden, Cukrowicz, Witte, & Joiner, 2012; Appendix E). Participants then completed a measure of overall suicide risk (The Suicidal Behaviors Questionnaire-Revised (SBQ-R; Osman et al., 2001; Appendix F). Following completion of the surveys, participants were thanked for their participation and again provided with contact information for the National Suicide Prevention Hotline and the Veterans Crisis Hotline. All participants completing the survey and providing answers to study questions were awarded $1.75 for their participation.

Measures

Figure 2 represents the use of each instrument mapped on top of the proposed model. Five different survey instruments were used in this study, totaling 93 items.

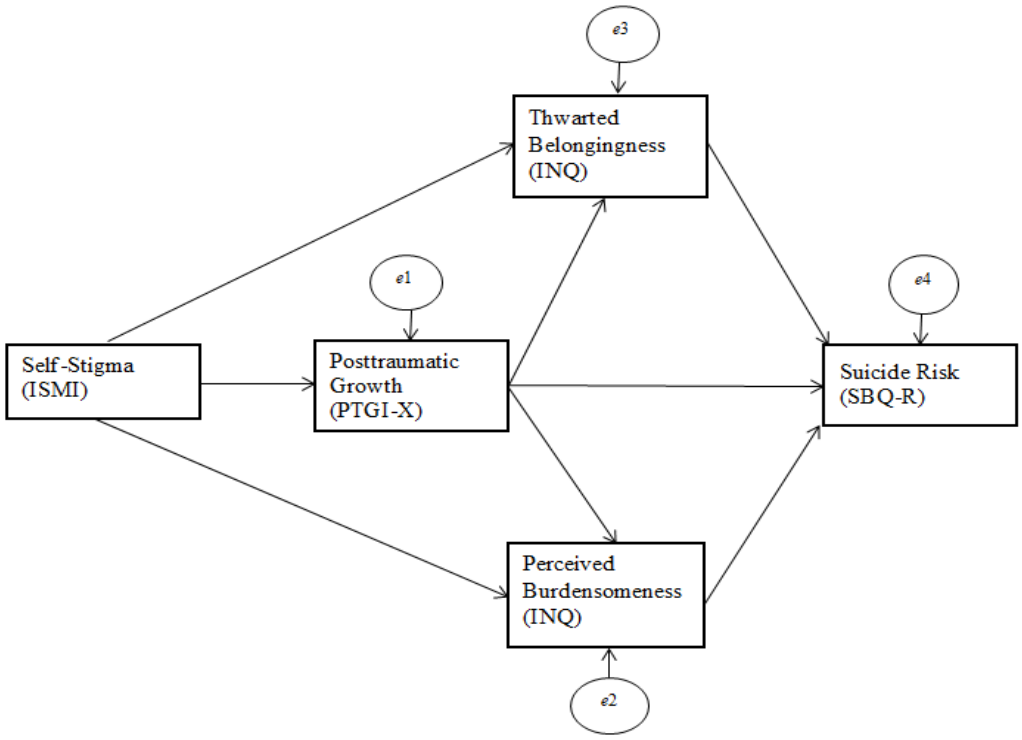

Figure 2. Conceptual Model of the Proposed Study with Assessment Measures

Demographics Questionnaire (Appendix B). Participants provided their age, gender, race, education and household income levels, military branch, active duty status, total length of service commitment, total number of deployments, time since return from deployment, and reported on combat experiences.

Posttraumatic Stress Symptoms (Appendix C). The Posttraumatic Stress Disorder Checklist-5 (PCL 5; Weathers, Litz, Keane, Palmieri, Marx, & Schnurr, 2013) is a 17-item self-report screening instrument based on DSM-V diagnostic criteria for PTSD. Sample items include, “Feeling jumpy or easily startled,” “feeling emotionally numb or

being unable to have loving feelings for those close to you," and "repeated, disturbing dreams of a stressful military experience." Responses are indicated in a Likert-type scale ranging from 1= *not at all* to 5 =*extremely*. The total symptom severity score ranges from 17-85 and is obtained by summing scores from each of the 17 items. Participants who score greater than or equal to 33 and who meet DSM-V criteria for PTSD were identified as screening PTSD positive (US Department of Veterans Affairs, 2017) and were included in the current study. Those participants who scored less than or equal to 32 did not meet DSM-V screening criteria for PTSD (US Department of Veterans Affairs, 2017) and were excluded from the current study.

Posttraumatic Growth (Appendix D). The PTGI-X (Tedeschi et al., 2017) is a 25-item measure designed to assess PTG as a result of a traumatic experience. Items are rated on a 6-point Likert scale (0= *I did not experience this change as a result of my crisis* to 5= *I experienced this change to a very great degree as a result of my crisis*). The PTGI-X contains 5 subscales: Relating to Others (5 items; e.g., "I more clearly see that I can count on people in times of trouble", e.g., "I put more effort into my relationships"), New Possibilities (5 items; e.g., I established a new path for my life", e.g., "New opportunities are available which wouldn't have been otherwise"), Personal strength (5 items, e.g., "I have a greater feeling of self-reliance", e.g., "I know better that I can handle difficulties"), Spiritual Change (5 items; e.g., "I have a better understanding of spiritual matters", e.g., "I have a stronger religious faith") and Appreciation of Life (5 items; e.g., "I have a greater appreciation for the value of my own life", e.g., "I can better appreciate each day"). The PTGI-X yields a total mean score ranging from 0 and 5, with higher scores indicating greater amounts of growth.

Perceived Burdensomeness and Thwarted Belongingness (Appendix E). The Interpersonal Needs Questionnaire (INQ; Van Orden, Cukrowicz, Witte, & Joiner, 2012) is a 15-item scale designed to measure perceived burdensomeness and thwarted belongingness in relation to the Interpersonal Psychological Theory of Suicide. Items are rated via self-report on a 7-point Likert scale (1= *not at all true for me*, 7= *very true for me*). The INQ contains 2 subscales: Thwarted Belonging (9 items; e.g., "I feel disconnected from others", e.g., "I rarely interact with others who care") and Perceived Burdensomeness (6 items; e.g., "I make things worse for others", e.g., "People would be better off if I were gone"). Scores are summed across each subscale, with total scores ranging from 7-63 (Thwarted Belonging) and 6-42 (Perceived Burdensomeness). Higher scores indicate higher perceptions of thwarted belonging and perceived burdensomeness.

Suicide Risk (Appendix F). The Suicidal Behaviors Questionnaire-Revised (SBQ-R; Osman et al., 2001) is a 4-item scale assessing suicide risk across four domains. Question one assesses a lifetime history of suicide ideation/attempt ("Have you ever thought about or attempted to kill yourself") and scores are rated on a 4-point Likert scale (1=*Never* to 4= *I have attempted to kill myself*). Question two assesses the frequency of suicide ideation over the past year (How often have you thought about killing yourself in the past year?") and scores are rated on a 5-point Likert scale (1=*Never* to 5= V*ery Often [5 or more times]*). Question 3 assess the threat of suicide attempt ("Have you ever told someone that you were going to commit suicide, or that you might do it?") and scores are rated on a 3-point Likert scale (1=*No* to 3= *Yes, more than once*). Question 4 assesses self-reported likelihood of future suicidal behavior ("How likely is it that you will attempt suicide someday?") and scores are rated on a 6-point Likert scale (0=*Never* to 6=

Very Likely). Scores are summed and total scores can range from 3-18, with scores greater than or equal to 7 indicating a higher risk for suicide when compared to a general adult population.

Self-Stigma towards Mental Illness (Appendix G). The Internalized Stigma of Mental Illness Scale (ISMI; Ritcher et al., 2003) is a 29-item scale designed to assess self-stigma of mental illness. Items are rated on a 4-point Likert scale (1= *Strongly disagree* to 4= *Strongly agree*). The ISMI contains 5 subscales: Alienation (6 items; e.g., "I feel out of place in the world because I have a mental illness", e.g., "I feel inferior to others who don't have a mental illness"), Stereotype Endorsement (7 items; e.g., "Mentally ill people tend to be violent", e.g., "I can't contribute anything to society because I have a mental illness"), Perceived Discrimination (5 items; e.g., "People often patronize me, or treat me like a child, just because I have a mental illness"), Social Withdrawal (6 items; e.g., "I avoid getting close to people who don't have a mental illness to avoid rejection", e.g., "I stay away from social situations in order to protect my family or friends from embarrassment"), and Stigma Resistance (5 items; e.g., "People with mental illness make important contributions to society", e.g., "Living with mental illness has made me a tough survivor). Stigma resistance items are reverse scored. The ISMI yields a total mean score ranging from 1-4, with higher scores indicating higher levels of self-stigma towards mental illness.

Study Analyses

Data analysis techniques utilized to address this study's research question included descriptive statistics, correlation analysis, and path analysis. SPSS 28.0 (IBM Corp., 2018) was used for descriptive statistics, and the correlation analysis. AMOS 22.0 (IBM Corp., 2018) was used for the path analysis, investigating the relationship between self-stigma, posttraumatic growth, perceived burdensomeness, thwarted belongingness, and suicide risk. Data normality was assessed, attending to the skewness of each variable relative to the standard error. Participants who scored 32 or lower on the PCL-5 (Weathers et al., 2013) and who had incomplete data (i.e., completed demographic questions but did not complete study assessment measures) were removed from the study analyses.

Descriptive statistics included the number of participants completing the survey, the gender and racial breakdown of the sample, education, household income, as well as the average participant age. Military demographics included military branch, rank, service commitment, number of deployments, and most recent return from deployment. The internal consistency for each of the utilized scales is reported in Table 2.

Correlation analysis was used to preliminarily explore both the positive and negative associations between the variables of interest. Prospectively, it was expected that self-stigma towards mental illness would be positively correlated with direct suicide drivers (i.e., perceived burdensomeness and thwarted belongingness) and suicide risk. Self-stigma towards mental illness was also expected to be negatively associated with posttraumatic growth. Further, as previous work has identified thwarted belonging and perceived burdensomeness (Van Orden et al., 2008, 2012; Selby et al., 2011) as direct

suicide drivers in veteran populations, it was predicted that these variables would be positively associated with suicide risk. Finally, as past work has identified posttraumatic growth as a potential protective factor against suicide (Bush et al., 2011; Chopko, Palmieri, & Facemire, 2014; Gallaway, Millikan, & Bell, 2011), posttraumatic growth was expected to be negatively correlated with suicide risk, and negatively correlated with both indirect suicide drivers (i.e., self-stigma towards mental illness) and direct suicide drivers (i.e., thwarted belongingness and perceived burdensomeness).

Path analysis was used to depict the hypothesized paths in the proposed model. Path analysis "is an extension of multiple regression that allows us to examine more complicated relations among variables than having several [independent variables] predict one [dependent variable] and to compare different models against one another to see which one best fits the data" (Streiner, 2005, p.116). Streiner (2005) also cautions that path analysis is not a means of proving causality and should be approached theoretically; used to test models, not build them. Structural equation modeling (SEM) with maximum likelihood estimation in AMOS 22.0 (IBM Corp., 2018) was used to test the relationships among variables.

The proposed model (theoretically derived) was compared with the observed model (data analytically derived) to determine goodness of fit. Three methods of determining fit (Marsh, Balla, & Hau, 1996; Medsker, Williams, & Holahan, 1994) were utilized: Chi-Square, Root Mean Square Error of Approximation (RMSEA), and Comparative Fit Index (CFI). A non-significant chi-square value was desired, indicating no difference between the proposed and observed models. Low RMSEA (<.10; Steiger & Lind, 1980) and high CFI (>.90; Bentler, 1990) values also reflected goodness of fit. No

single statistic was taken to conclusively reflect fit. All three values were interpreted in concert. If good fit was not indicated, the model was respecified using correlational data, significant path coefficients, and modification indices. Specifically paths were added or removed one at a time until all fit criteria are satisfied. Both direct and indirect paths were investigated, with direct paths suggesting a meaningful, directional relationship between two variables and indirect paths indicating that a mediating variable(s) carries an effect from a previous variable onto subsequent variables.

CHAPTER FOUR

RESULTS

This chapter will present this study's results, including the descriptive statistics, correlation analysis and path analysis used to investigate the research question: Following combat exposure in the wars in Iraq and Afghanistan and significant traumatic distress (i.e., positive screen for PTSD), what are the relationships among self-stigma towards mental illness, thwarted belongingness, perceived burdensomeness, suicide risk, and posttraumatic growth? SPSS 25 (IBM Corp., 2018) and AMOS 28.0 (IBM corp., 2018) were used to analyze the data.

Demographic Information. Detailed information on participant characteristics can be found in Table 1. The sample in this study included combat-exposed veterans of the wars in Iraq and Afghanistan screening positive for PTSD. Participants were recruited from Amazon's MTurk (Buhrmester et al., 2011; Paolacci & Chandler, 2014). For the final sample, 296 participants began the survey. A total of 240 participants completed the survey (i.e., answered all study measures in addition to study demographic questions), for a completion rate of 81%. Only those participants indicating posttraumatic distress associated with their combat exposure indicative of a positive screen for PTSD (i.e., at or above a PCL-5 score of 32; Weathers et al., 2013) were included in the analysis. This criterion excluded 25 respondents from the final analyses. Ultimately, 215 respondents completed the entire survey.

Males (57.2%) outnumbered females in this sample, with the majority of respondent identifying as White (64.7%), Latino (25.1%), African-American (8.4%), or Asian-American (1.9%), as is consistent demographics of the broader US military veteran

population. The average participant age was 35.76 (*SD* = 13.02 years) with a range of 18 to 73. Respondents were found to be relatively evenly distributed across educational attainment, with 74 participants holding a Bachelor's degree (34%), 68 with some college experience (32%), and 43 with a graduate/professional degree (20%). A smaller proportion of the sample comprised participants reporting some high school education, but no diploma (8%), or a high school diploma/GED (6%). Income estimates for the previous year indicated that participants came most frequently from households earning between $25,000 and $49,999 (34%), between $50,000 and $74,999 (25%), or between $10,000 and $24,999 (16%).

With respect to military information, the majority of the sample were Army veterans (54%). There was a relatively even distribution across the remaining military branches, with 36 respondents from the Air Force (16.7%), 26 from the Navy (12.1%) and 20 from the Marine Corps (9.3%). On average, participants had served in the military for 7.82 years (*SD*= 6.20 years) with a range of 8 months-34 years. Participants had deployed an average of 2 times (*SD*= 1.10) with a range 1-6 total deployments. On average, it had been approximately 2.25 years (*SD* 2.21) since participants returned to the US from their most recent deployment.

Table 1. *Demographic Information*

Age	*n*(%)
Mean (*SD*)	35.76 (13.02)
Range	18-73
Gender	*n*(%)
Male	123 (57.2)
Female	83 (38.6)
Race	n (%)
Asian/Asian American	4 (1.9)
Black/African American	18 (8.4)
Hispanic/Latino	54 (25.1)
White	139 (34.7)
Education	*n*(%)
Some high school/no diploma	18 (8.3)
High school diploma	12 (5.6)
Some College	68 (31.6)
Bachelor's Degree	74 (34.4)
Graduate or Professional Degree	43 (20.0)
Annual Household Income	*n*(%)
Less than $10,000	11 (5.1)
$10,000-$24,999	35 (16.3)
$25,000-$49,999	74 (34.4)
$50,000-$74,999	54 (25.1)
$75,000-$99,999	21 (9.8)
$100,000+	12 (5.6)
Military Branch	*n*(%)
Air Force	36 (16.7)
Army	116 (54.0)
Navy	26 (12.1)
Marine Corps	20 (9.3)
Military Rank	*n*(%)
Enlisted	162 (75.3)
Warrant Officer	9 (4.2)
Officer	25 (11.6)
Duty Status	*n*(%)
Active Duty	68 (31.6)
Reserves	32 (14.9)
Veteran/Retired	98 (45.6)
Service Commitment (years)	
Mean (*SD*)	7.82(6.20)
Range	8 months-34 years
Number of Deployments	
Mean (*SD*)	2.03 (1.10)
Range	1-6
When Returned from Deployment (years)	
Mean (*SD*)	2.25 (2.21)
Range	2 months – 10 years

N=215

Descriptive Statistics. Descriptive statistics were computed for each major variable using SPSS 25. Each Likert scale demonstrated reasonable to good internal consistency, with Cronbach alphas ranging from .80 to .96 (Table 2). On average, participants reported high PTSD symptom levels, moderate degrees of self-stigma towards mental illness, posttraumatic growth, perceived burdensomeness, and thwarted belongingness. Responses also reflected a high overall risk for suicide as compared to the general US population (scores greater than 7).

Correlations. A bivariate correlation analysis was used to examine the relationships between the major variables of interest (Table 2). While self-stigma towards mental illness was positively correlated to both perceived burdensomeness and thwarted belongingness, there was not a significant correlation between self-stigma towards mental illness and overall suicide risk. This suggests that while self-stigma may ultimately increase ones risk for suicide, it may do so indirectly by influencing other direct suicide drivers. Contrary to our predictions, self-stigma towards mental illness was positively associated with posttraumatic growth.

Both perceived burdensomeness and thwarted belongingness were positively correlated with suicide risk, supporting previous work suggesting that direct suicide drivers increase overall risk for suicide (Joiner, 2005; Van Orden et al., 2011). In addition, posttraumatic growth was found to be negatively correlated perceived burdensomeness, thwarted belongingness, and overall suicide risk, suggesting that posttraumatic growth may protect against suicide both directly and indirectly. However, correlational analysis does not take into consideration factors potentially mediating the

relationship between posttraumatic growth and suicide risk. Path analysis was used to explore the relationships between the variables of interest more comprehensively.

Table 2. *Descriptive Statistics and Zero-Order Correlations*

Variable	α	*M (SD)*	Range	1	2	3	4
1. Self-Stigma towards Mental Illness	.88	2.47(.53)	1-4	--			
2. Posttraumatic Growth	.96	2.56(1.09)	0-5	.16[b]	--		
3. Perceived Burdensomeness	.86	20.10(10.48)	6-42	.50[c]	-.24[c]	--	
4. Thwarted Belongingness	.86	33.47(9.54)	9-60	.14[a]	-.26[c]	.33[c]	--
5. Suicide Risk	.80	7.57(13.79)	3-17	.20[b]	-.09[a]	.34[c]	.19[b]

Note. $n = 215$; [a] $p < .05$, [b] $p < .01$, [c] $p < .001$. α= Cronbach alpha; *M*= Mean; *SD*= Standard deviation

Path Analysis. The path analysis employed a *proposed model* to represent the hypothesized relationships between the primary variables of interest and an *observed model* to illustrate the model resulting from the path analysis. Interpretation of these results are informed by the observed model derived from AMOS, model fit data, and modification indices.

The proposed, theoretically-grounded model (Figure 1) depicts the expected relationships between indirect suicide drivers (i.e., self-stigma towards mental illness), direct suicide drivers (i.e., thwarted belongingness and perceived burdensomeness), posttraumatic growth, and overall suicide risk.

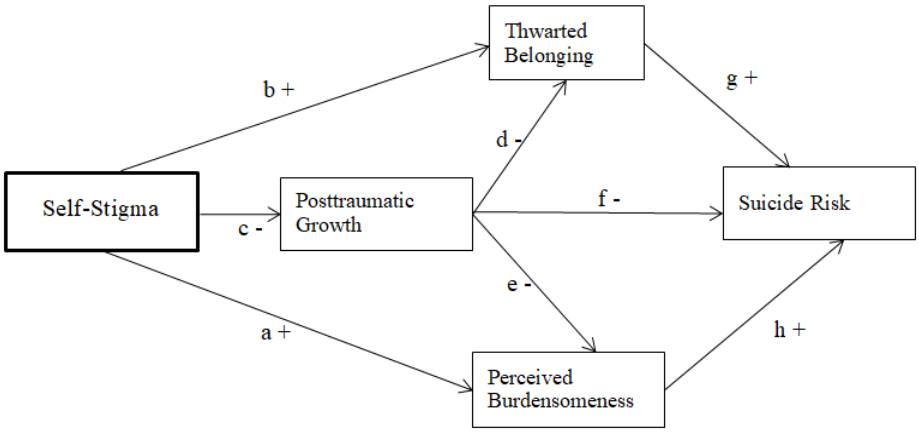

Figure 1. Proposed path model.

The observed model depicts the significant relationships between the primary variables of interest. Broadly, all variables in the proposed model demonstrated significant effects; however, one of the expected pathways was not supported by the data. Specifically, thwarted belongingness did not demonstrate the expected significant, direct effect on suicide risk. Conversely, an alternative, unexpected path emerged from the data analysis. However, this alternative path was theoretically and empirically supported (e.g., Joiner, 2005; Van Orden et al., 2011). Thwarted belongingness was found to have a significant, direct effect on perceived burdensomeness. A full report of the regression coefficients and standard errors for all pathways in each tested SEM model is presented in Table 3.

Table 3. *Regression Coefficients and Standard Errors for All Pathways in Each SEM Model*

Path		Initial Model			Model 2			Model 3		
Variable 1	Variable 2	*β*	*b*	*SE*	*β*	*b*	*SE*	*β*	*b*	*SE*
Stigma	PTG	.16[b]	.33[b]	.14	.16[c]	.33[b]	.14	.16[b]	.33[b]	.14
Stigma	Thwarted Belonging	.19[b]	3.45[b]	1.19	.19[b]	3.45[b]	1.18	.19[b]	3.45[b]	1.18
Stigma	Perceived Burden	.47[c]	9.34[c]	1.17	.47[c]	9.34[c]	1.17	.40[c]	8.03[c]	1.10
PTG	Thwarted Belonging	-.29[c]	-2.56[c]	.57	-.29[c]	-2.56[c]	.57	-.29[c]	-2.56[c]	.57
PTG	Perceived Burden	-.17[b]	-1.62[b]	.56	-.17[b]	-1.62[b]	.56	-.27[c]	-2.59[c]	.55
PTG	Suicide Risk	-.17[b]	-.59[b]	.24	-.18[b]	-.63[b]	.23	-.18[c]	-.63[c]	.23
Perceived Burden	Suicide Risk	.36[b]	.13[b]	.02	.37[c]	.14[c]	.02	.37[c]	.14[c]	.02
Thwarted Belonging	Suicide Risk	.03	.01	.03	--	--	.--	--	--	--
Thwarted Belonging	Perceived Burden		--	--	--	--	--	.35[c]	.38[c]	.06

Note. n = 215; [a] $p < .05$, [b] $p < .01$, [c] $p < .001$. β = Standardized regression coefficient. b= Unstandardized regression coefficient. *SE*= Standard error. PTG= Posttraumatic growth.

To revise the proposed model, paths were added or removed one at a time until all fit criteria across the five indices (i.e. χ^2, CFI, and RMSEA) were satisfied (Streiner, 2005). The progressive, model iterations and their corresponding goodness of fit statistics appear in Table 4.

Table 4. *Summary Statistics for the SEM Tested Models*

							RMSEA 90% CI	
Model		*df*	χ^2	χ^2/df	CFI	RMSEA	Lo	Hi
1.	Proposed Model	2	35.26	17.63	.79	.28	.20	.36
2.	Remove Thwarted Belonging to Suicide Risk	3	35.44	11.81	.79	.23	.16	.29
3.	Add Thwarted Belonging to Perceived Burdensomeness PB	2	.95	.47	1.00	.00	.00	.11

Note. n = 215. *df*= Degrees of freedom. $\chi^{2=}$ Chi-square; RMSEA= Root mean square error of approximation; CFI= Comparative fit index

The observed model (Model Number 3 and Figure 3) demonstrated a good fit to the data on all criteria. The chi-square test was not significant (χ^2= 35.26, df = 2, p = .71), suggesting only marginal differences between the proposed and observed model. A non-significant chi-square test is preferred. The Comparative Fit Index (CFI; Bentler, 1990) was also used to compare a baseline model assuming no relationships between the variables of interest and the observed model. This index also suggested good model fit (CFI = 1.00). Typically, CFI scores range from 0 to 1, with higher scores indicating better fit. A CFI score above .95 is favored (Bentler & Bonett, 1980). Root Mean Square Error Approximation (RMSEA; Steiger, & Lind, 1990) provided further goodness of fit evidence as calculated by a function of the degrees of freedom (RMSEA = < .001). RMSEA scores approaching 0 are preferred, with RMSEA score below .05 considered to represent a good fit (Browne & Cudeck, 1992).

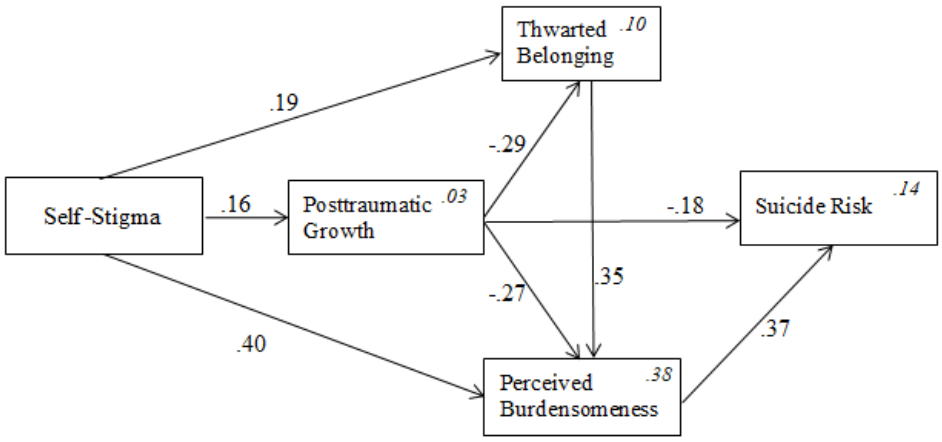

Figure 3. Final path model with standardized path weights connecting self-stigma towards mental illness to suicide risk via posttraumatic growth, thwarted belonging, and perceived burdensomeness. R^2 (variance accounted for) for each endogenous variable shown in italics. All pathways significant at $p < .05$.

Direct Effects. Self-stigma towards mental illness was expected to have positive, direct effects on both thwarted belongingness and perceived burdensomeness and a negative direct effect on posttraumatic growth. This expectation was partially supported. Self-stigma towards mental illness was found to have, as expected, a significant, positive direct effect on thwarted belongingness (β = .19) and perceived burdensomeness (β = .40). Unexpectedly, self-stigma towards mental illness also demonstrated a significant, positive, direct effect on posttraumatic growth (β = .16).

Unexpectedly, there was not a direct effect of thwarted belonging onto suicide risk; however, thwarted belonging exerted a significant positive effect on perceived burdensomeness (β = .35). Perceived burdensomeness, as expected, had a significant, positive direct effect on suicide risk (β = .37). Posttraumatic growth was found to have, as expected, a significant, negative direct effective on thwarted belonging (β = -.29), perceived burdensomeness (β = -.27), and suicide risk (β = -.18). Thus, combat veterans with significant posttraumatic distress who have a higher degree of stigma towards mental illness appear significantly more likely to experience higher degrees of thwarted belongingness and perceived burdensomeness, which in turn, place them at a significantly higher risk for suicide. Conversely, experiences of posttraumatic growth combat veterans with significant posttraumatic distress may offset this suicide risk.

Indirect Effects. To examine how mechanisms related to suicide risk (i.e., self-stigma towards mental illness, perceived burdensomeness, and thwarted belongingness), as well as how posttraumatic growth may offset the risk for suicide conveyed by these variables, standardized indirect effects were calculated using bias-corrected bootstrapping (k = 10,000 samples) to create 95% confidence intervals (CIs) around each.

As shown in Table 5, self-stigma towards mental illness had a small indirect effect on thwarted belongingness through posttraumatic growth (β = -.05). Self-stigma towards mental illness also had a small indirect effect on perceived burdensomeness through posttraumatic growth and thwarted belonging (β = .10). Thwarted belongingness had a positive indirect effect on suicide risk through perceived burdensomeness (β = .13). Posttraumatic growth had an indirect effect on perceived burdensomeness through thwarted belongingness (β = -.27), and on suicide risk through both thwarted belongingness and perceived burdensomeness (β = .06). All indirect effects were statistically significant at $p < .01$.

Total Effects. The total effects of self-stigma towards mental illness onto suicide risk are the sum of the direct and indirect effects through each mediating variable. Examination of total effects reveals the relative contributions of the hypothesized posttraumatic growth and suicide driver mechanisms and outcomes onto suicide risk. Self-stigma demonstrated modest and positive total effects onto both posttraumatic growth (β = .16) and suicide risk (β = .16). Both thwarted belonging and perceived burdensomeness had a positive total effect on suicide risk (β = .13; β = .37, respectively). Posttraumatic growth had a negative total effect on both thwarted belonging (β = -.29) and perceived burdensomeness (β = -.17), as well as onto suicide risk (β = -.12), indicating that posttraumatic growth may be potentially protective against suicide risk. All total effects were statistically significant at $p < .01$.

Finally, the model was found to predict direct suicide drivers and overall suicide risk reasonably well. For overall suicide risk, the model accounted for 14% of the

variance in participant scores, 10% of the variance in thwarted belongingness and 38% of the variance in perceived burdensomeness was accounted for by the model.

Direct, indirect and total effects for all relationships in the observed model are presented in Table 5.

Table 5. *Summary of effects (standardized units) for final model (Model 3)*

		Predictor Variables		
Outcome Variables	Self-Stigma	Posttraumatic Growth	Thwarted Belonging	Perceived Burden
Posttraumatic Growth				
Total Effect	.16	.00	.00	.00
Direct Effect	.16	.00	.00	.00
Indirect Effect	.00	.00	.00	.00
Thwarted Belonging				
Total Effect	.14	-.29	.00	.00
Direct Effect	.19	-.29	.00	.00
Indirect Effect	-.05	.00	.00	.00
Perceived Burden				
Total Effect	.50	-.17	.35	.00
Direct Effect	.40	-.27	.35	.00
Indirect Effect	.10	.10	.00	.00
Suicide Risk				
Total Effect	.16	-.12	.13	.37
Direct Effect	.00	-.18	.00	.37
Indirect Effect	.16	.06	.13	.00

Note: *n*=215.

CHAPTER FIVE

DISCUSSION

The present study investigated the mechanisms by which suicide risk occurs and is mitigated in a military veteran population screening positive for posttraumatic stress disorder (PTSD). Building and expanding upon existing literature (Bush et al., 2011), a cross-sectional, correlational design was employed as a first step in explicating the relative influence of mechanisms and outcomes of stigma towards mental illness and posttraumatic growth onto suicide risk. Specifically, the current study explored the relationships between self-stigma towards mental illness, thwarted belongingness, perceived burdensomeness, suicide risk, and posttraumatic growth outcomes in combat veterans of the wars in Iraq and Afghanistan screening positive for PTSD. Although discrete segments of models of stigma, posttraumatic growth, and suicide risk have been assessed separately in earlier research, this was the first effort to investigate these constructs simultaneously. By employing a path analysis approach, alternative models could be created and evaluated to determine the most appropriate links among the variables involved in the process of responding to trauma.

SEM results provided support for stress-coping models of stigma (Major & O'Brien, 2005) that suggest self-stigma may exacerbate risk for suicide (Rüsch, Zlati, Black, & Thornicroft, 2014). Specifically, in the present study results suggest that among veterans screening positive for PTSD, self-stigma towards mental illness is positively associated with Interpersonal Psychological Theory of Suicide (IPTS; Joiner, 2005) risk factors (i.e., thwarted belongingness and perceived burdensomeness). This is consistent with past research examining the association of stigma and suicide risk. Studies by both

Plöderl et al. (2014) and Kim and Yang (2015) used the IPTS (Joiner, 2005) to investigate suicide ideation in gay and lesbian individuals who had experienced anticipated self-stigma. Plöderl et al. (2014) found that those who have suffered homophobia had higher self-perception of acquired capability for suicide, while Kim and Yang (2015) suggested that stigma might be a predictor of thwarted belongingness and perceived burdensomeness. Results from the present study are the first to replicate these findings within a US military veteran population, highlighting that stigma against mental illness may be a particularly important post-traumatic suicide risk factor to screen for and address in suicide prevention efforts.

Results of the present study also suggest that among veterans experiencing PTSD, the experience of self-stigma towards mental illness may influence experiences of posttraumatic growth. Consistent with Janoff-Bullman's (1992) work on the assumptive world and Tedeschi & Calhoun's model of PTG (1996, 2004), it is possible that the experience of trauma provides a foundation for which one can begin to recognize and question previously held beliefs about oneself and the world, thus challenging and potentially transcending previously internalized stigmatized identities through processes of deliberate rumination, reappraisal, and meaning making (Park & Folkman, 1997; Park, 2010).

The social-cognitive model of self-stigma supports this possibility in that it suggests that the internalization of stigmatizing messages is an ongoing process that results from an individual's continued exposure to, consciousness of, and identification with stigmatizing messages in society (Rusch, Corrigan, Powell, Rajah, Olschewski, Wilkniss, & Batia, 2009; Rusch, Corrigan, Wassel, Michaels, Olschewski, Wilkniss, &

Batia, 2009; Watson, Corrigan, Larson, & Sells, 2007). Thus, it is possible that the veteran's self-stigma towards mental illness was largely unconscious until they encountered that trauma of military combat and experienced related sequelae. The experience of trauma may have caused these veterans to question if previously internalized stigmatized identities were still relevant in the aftermath of trauma. Through processes of deliberately considering and reappraising/reframing beliefs about oneself and the world (Calhoun et al., 2010; Cann et al., 2011; Lindstrom et al., 2013), individuals may come to better understand and bring meaning to both their experience and changed identity in the aftermath of a traumatic experience. Therefore, it is possible that the processes inherent to outcomes of posttraumatic growth also serve to overcome the negative influence of stigma on mental health, making posttraumatic growth and corresponding mechanisms (i.e., intrusive and deliberate rumination, meaning making, and resolution) important variables to consider when working with post-combat veterans. To date, no work has sought to explore this possibility; however, future work should seek to replicate and expand on these findings to determine if the mechanisms implicated in models of PTG extend to the reduction of self-stigma towards mental illness and help offset suicide risk in combat exposed military veterans.

The relationship between stigma, posttraumatic growth, and suicide risk was mediated by both perceived burdensomeness and thwarted belongingness; however, only perceived burdensomeness was directly associated with increased suicide risk. Although both "preconditions" of the IPTS (Joiner, 2005) have been individually correlated with suicide risk, several studies have suggested that the feeling of being a burden to others (perceived burdensomeness) is the key mechanism when both are included in

multivariate or path analyses (Hill & Pettit, 2012; Van Orden et al., 2008; Woodward et al., 2014). Further, although thwarted belongingness is well established as a construct leading to suicide, a psychometric evaluation conducted by Freedenthal, Lamis, Osman, Kahlo, and Guiterrez (2011) suggested that thwarted belongingness may only be a statistically significant predictor of suicidal ideation when in combination with perceived burdensomeness. Other work suggests that perceived burdensomeness may be a better predictor of suicide risk because individuals who self-perceive as a burden to others tend to experience this emotion on an intrapersonal and interpersonal level. Furthermore, there is compelling evidence showing that perceived burdensomeness accounts for greater unique variance on both (current and past) suicide ideation and choice of more lethal means of suicide method when compared to other constructs such as hopelessness (Cukrowicz et al., 2011; Joiner et al., 2009; Joiner et al., 2002; Freedenthal et al., 2011; Marty, Segal, Coolidge, & Klebe, 2012; Van Orden et al., 2006). Therefore, although the military mental health literature has emphasized factors consistent with thwarted belongingness explanations over perceived burdensomeness as contributing to suicide risk (e.g., Hatzenbuehler, Phelan, & Link, 2013; Meyer, 2003; Mustanksi, Birkett, Greene, Hatzenbuehler, & Newcomb, 2014), perceived burdensomeness may be a particularly important construct for clinicians to assess when working with post-combat military personnel and veterans screening positive for PTSD.

Finally, this study also explored thwarted belonging and perceived burdensomeness as specific outcomes of posttraumatic growth, and examined the protective influence of posttraumatic growth on suicide risk. In the best fitting model supported by the current data, posttraumatic growth had statistically significant negative

relationships with thwarted belonging, perceived burdensomeness, and overall suicide risk suggesting that posttraumatic growth may protect against outcomes of suicide risk both directly and indirectly. For example, while stigma was shown to be positively associated with perceived burdensomeness and thwarted belonging, posttraumatic growth was negatively associated with both constructs. This suggests that posttraumatic growth may mitigate the suicide risk conveyed by these two constructs. Therefore, posttraumatic growth may particularly important for post-traumatic suicide resiliency given that it may not only mitigate direct suicide risk in the aftermath of trauma, but also the risk conveyed by direct suicide drivers.

These findings highlight the importance of considering risk and resiliency factors in combination when assessing suicide risk. Overall, findings of the present study suggest a general pattern for the occurrence of suicide risk in the aftermath of trauma and expand existing knowledge of both direct and indirect pathways through which posttraumatic growth may result in post-traumatic suicide resiliency. Specifically, findings suggest that among post-combat soldiers with PTSD, stigma towards mental illness may contribute to suicide risk by both decreasing one's sense of belonging and increasing the perception that one is a burden to others. However, results also suggest that stigma can also serve as a catalyst for positive posttraumatic outcomes (i.e., posttraumatic growth). An example of how this may happen can be seen in the meaning-making processes that same-sex couples employ in negotiating stigma-related stress within romantic relationships (Frost, 2011). This study showed that while some couples emphasize the negative, delimiting, and contaminating effects of stigma on their relationships, other couples may construct meanings of stigma-related stressors as challenges (rather than threats) and may seek to

deliberately consider the origin and impact of stigma in their lives and actively work to make sense of it (a strategy similar to processes of deliberate rumination and reappraisal in posttraumatic growth).

When applied to the current study, Frost's (2011) findings suggest that while there may be a high degree of self-stigma towards mental illness among US military veterans, this self-stigma does not necessarily directly predict negative outcomes. Rather, among those veterans who have engaged in purposeful strategies for making meaning of self-stigma towards mental illness (i.e., purposefully considering the origin of self-stigma, its relevance to the veteran, and its potential consequences), it is possible that they will be more apt to report positive posttraumatic outcomes, be less likely to experience IPTS (Joiner, 2005) drivers, and report a decreased risk for suicide when compared to veterans who have not made meaning of their sources of self-stigma. To date, no research has sought to consider how self-stigma may influence outcomes of posttraumatic growth, how the mechanisms underlying making meaning of stigma may relate/mirror mechanisms inherent to processes of posttraumatic growth (deliberate rumination, reappraisal, event centrality, mindfulness, etc.), and how this may influence overall suicide risk and resiliency in US military veterans; however, these domains represent important areas for future research focused on posttraumatic outcomes and suicide prevention.

These findings also have important clinical implications for the way health professionals approach posttraumatic recovery and target suicide prevention efforts. First, study findings suggest that it may be beneficial to actively work with clients to integrate posttraumatic growth themes into their self-narrative. For example, based on the

model of posttraumatic growth (Calhoun & Tedeschi, 2013; Tedeschi & Moore, 2016), clinicians should seek to normalize intrusive rumination when it presents in clients. However, they should also seek to encourage both emotional regulation and cognitive reappraisal strategies to allow for deliberate rumination about shattered core beliefs. Use of mindfulness as a clinical tool may be particularly useful in helping clients learn to sit with the discomfort which can often accompany intrusive rumination such that they can begin to create space in which deliberate rumination may occur (Hanley, Garland, & Tedeschi, 2016; Tedeschi & Blevins, 2015). Clinicians should also seek to serve as expert companions (Calhoun & Tedeschi, 2013) and explicitly discuss emerging posttraumatic growth themes in order to help clients recognize themes of growth, and to promote a sense of well-being, and belonging.

Currently in mainstream clinical interventions for suicide, there is rarely explicit attention given to positive psychological constructs, such as posttraumatic growth (see Donaldson, Spirity, & Esposity-Smythers, 2005; Rudd et al., 1996). While there is not currently a standardized intervention for posttraumatic growth, interventions designed to enhance posttraumatic growth and subsequently influence suicide resiliency could follow the 8-week psychoeducation and group therapy intervention published by Ramos, Leal, & Tedeschi (2016) or adapt existing suicide prevention interventions (Ghahramanlou-Holloway, Cox, & Greene, 2012; Ghahramanlou-Holloway et al., 2013; Rudd et al., 1996). These interventions provide clients with psychoeducation related to posttraumatic growth, expressive writing exercises, and related journaling homework assignments. Similarly, active and ongoing assessment of stigma toward mental illness and working to incorporate stigma reduction interventions, such as those by Brown et al.,

(2010), Luoma et al., 2012; Lucksted et al., (2011), and Yanos et al., 2012, may be particularly important for reducing suicide risk in US military veterans.

There are several limitations that should be acknowledged in the present study and addressed in future research. First, due to the data's cross-sectional nature, inferences of causality cannot be made. Further, while it is possible that alternative pathways could provide similar findings, and these results should be further explored with experimental and longitudinal, study designs. Second, this study did not analyze findings based on trauma type, rather, sought to look at trauma more generally. Future work should seek to replicate results while distinguishing among different types of traumas as this may have important implications for interventions. Third, the present study did not distinguish between thoughts of suicide rather and behavioral outcomes. Although thoughts and behaviors are strongly related, they are conceptually and clinically distinct. Our findings suggest that posttraumatic growth may decrease thwarted belonging and perceived burdensomeness which theoretically might protect against engaging in suicidal gestures and behaviors. However, this is a hypothesis that awaits empirical examination. Finally, this study utilized only self-report measures of suicide risk which may not be as reliable as interview methodologies.

Despite these limitations, the present study has several notable strengths. This was the first empirical investigation of the joint effects of stigma, posttraumatic growth, and suicide drivers on suicide risk. Study results identified several mechanisms which may be targeted in clinical interventions to explicitly and implicitly influence suicide ideation. Additionally, the inclusion of a sense of perceived burdensomeness and thwarted belonging served as an explicit test of dominant theories of why people commit suicide

(Baumeister, 1991; Joiner 2005; Joiner et al., 2009). This study also utilized a national, community sample of adult veterans which may enhance the generalizability of study findings.

In sum, our findings contribute to various literatures, spanning social, personality, clinical, and counseling psychology. First, our findings support previous work related to the negative influence of stigma on the mental health of US military Veterans. Second, our findings provide additional support to previous studies examining the translational benefits of experiences of posttraumatic growth, and extend this work to show that posttraumatic growth may both directly and indirectly protect against suicide risk through interpersonal-psychological mechanisms. These findings contribute both to the trauma literature and to the suicide risk and protective factor literature by illuminating the value of studying interactive rather than isolated factors, with an emphasis on potential explanatory mechanisms.

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APPENDIX A

INFORMED CONSENT

Informed Consent Page (welcome page) for the on-line survey:

Hello: You are invited to participate in our study on military service and resilience. For this study, you will be asked to complete an online survey containing a series of questions. The survey will include basic background questions as well as questions about your emotions, your psychological health and well-being, prior combat experiences and potential psychological distress you may or may not have experienced related to your military experiences. This study will take approximately 30 minutes to complete. Your participation in this study is completely voluntary.

Foreseeable benefits associated with this project include the following:

- There are no direct benefits to the participants.

- The potential benefits to society involve developing a better understanding of the processes that operate when people experience traumas and make efforts to cope with the consequences of their experiences. With better information about these processes, psychologists may be able to provide more effective support to those who are dealing with trauma. Participants may also benefit from knowing that they have potentially contributed to improving the care of individuals (e.g., fellow service members in the military) with similar problems.

Foreseeable risks associated with this project include the following:

- As is true for all the data collected on study questionnaires, you have the option to not answer these questions. To minimize risk of breach of confidentiality, all data will be de-identified. Only statistical data management personnel who work on the project have access to the database.

- Some of the questions might make you feel uncomfortable or anxious. You do not have to answer any questions that you do not want and can stop completing the questionnaires at any time. Potential distress caused by answering questionnaires is expected to be minimal and subside within minutes to hours of completing the questionnaire. At the end of the survey, you will be provided resources which you can access if you have a negative emotional response to any of the questionnaires.

- Data regarding depressive and trauma symptoms, as well as other health behaviors are sensitive and could result in embarrassment or be damaging to your reputation if disclosed. Although this is a risk, data is anonymous and will be stored securely. Only statistical data management personnel who work on the project have access to the database.

- All risks and discomforts that may be expected by the participant are minor and should not produce any long-term effects. It is anticipated that the risks associated with this study will not be greater than risks of everyday life. However, if you feel uncomfortable answering any questions, you can withdraw from the survey at any point. It is very important for us to learn your responses.

Your responses to the questions in this study will be anonymous unless you reveal intentions to harm yourself. Should you indicate elevated or imminent risk for suicide, you will be contacted via email and asked to contact the experimenters or the crisis hotline within 48 hours.

The online survey system allows the data to be recorded anonymously while still having a separate record that records the workers unique MTurk ID separate record that allows researchers to email you to provide contact information for follow-up with researchers and to provide crisis information.

The data received by the researcher has a random code and worker ID associated with it, but no identifying information. The data are stored during data collection in a secure, encrypted computer file that can be accessed only with a password. Once the study is completed, the researcher will download the data to a UNC Charlotte computer location that also is password protected. Only the researchers will have access to the data. All data will be destroyed 5 years after publication of final reports.

If you have questions at any time about the survey or the procedures, you may contact Cara Blevins by email at cblevi14@uncc.edu or Dr. Richard Tedeschi at rtedesch@uncc.edu. You can also contact the UNCC Office of Research Compliance at 704-687- 1871 and uncc-irb@uncc.edu

Please start with the survey now by checking the Consent Box and then clicking on the Continue button below.

APPENDIX B

DEMOGRAPHIC QUESTIONS

1. How old are you in years? ____

2. Please select your sex.

Male

Female

Other

3. Are you Hispanic or Latino?

Yes

No

4. Which one of the groups below would you say best represents your race?:

White

Black

Asian

Native Hawaiian/Pacific Islander

Native American

Other _____

Don't know/Not sure

5

9. Employment Status

Employed: Military Occupation- Full time/active duty
Employed: military Occupation- Reserves
Employed: non-military occupation (specify)_____
Unemployed

If you are employed, please list your current occupation: _____

10. Do you have any children?

Yes

No

If you do have children, how many do you have? _____

11. Have you ever suspected that that you have depression/anxiety?

Yes

No

12. Have you ever been told by a mental health professional or doctor that you have depression/anxiety? ?

Yes

No

13. Have you ever been diagnosed with a mental illness?

Yes (specify)_____

No

Military Service Information

14. Branch of Military Service

Army

Active Duty

Army Reserves

Army National Guard

Army Veteran

Air Force

Active Duty

Air Force Reserves

Air Force National Guard

Air Force Veteran

Navy

Navy Active Duty

Naval Reserves

Naval Veteran

Marine Corps

Marine Corps Active Duty

Marine Corps Reserves

Marine Corps veteran

Coast Guard

Coast Guard Active Duty

Coast Guard Reserves

Coast Guard Veteran

15. Number of years military service:
    Years_____
    Months_____

16. Current Rank or Rank at Separation_____

17. Did you deploy?

    Yes

    Country_____

    Length of deployment_____

    When did you return from deployment?_____

18. Do you have a history of combat experience?

    Yes

    Country_____

    Length of time (Years)_____(Months)_____

APPENDIX C

THE PTSD CHECKLIST FOR DSM-5 (WEATHERS ET AL., 2013)

Below is a list of problems people sometimes have in response to a very stressful experience. Keeping your worst event in mind, please read each problem carefully and then circle one of the choices below to indicate how much you have been bothered by that problem in the past month.

___Not a bit

___A little bit

___Moderately

___Quite a bit

___Extremely

In the past month, how much were you bothered by:

1. Repeated, disturbing, and unwanted memories of the stressful experience?
2. Repeated, disturbing dreams of the stressful experience?
3. Suddenly feeling or acting as if the stressful experience were actually happening right again (as if you were actually back there reliving it)?
4. Feeling very upset when something reminded you of the stressful experience?
5. Having strong physical reactions when something reminded you of the stressful experience (for example, heart pounding, trouble breathing, sweating)?
6. Avoiding memories, thoughts, or feelings related to the stressful experience?
7. Avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)?
8. Trouble remembering important parts of the stressful experience?
9. Having strong negative beliefs about yourself, other people, or the world (for example, having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)?
10. Blaming yourself or someone else for the stressful experience of what happened after it?
11. Having strong negative feelings such as fear, horror, anger, guilt, or shame?
12. Loss of interest in activities you used to enjoy?
13. Feeling distant or cut off from other people?
14. Trouble experiencing positive feelings (for example, being unable to feel happiness or have loving feelings for people close to you)?
15. Irritable behavior, angry outbursts, or acting aggressively?
16. Taking too many risks or doing things that could cause you harm?

17. Being “superalert” or watchful or on guard?
18. Feeling jumpy or easily startled?
19. Having difficulty concentrating?
20. Trouble falling or staying asleep?

APPENDIX D

THE POSTTRAUMAIC GROWTH INVENTORY-X (TEDESCHI ET AL., 2017)

For each of the statements below, use the scale provided the instructions to indicate the degree to which this change occurred in your life AS A RESULT OF YOUR COMBAT EXPERIENCES.

___I did not experience this change as a result of my crisis

___ As a result of my crisis, I experienced this change to a very small degree

___ As a result of my crisis, I experienced this change to a small degree

___ As a result of my crisis, I experienced this change to a moderate degree

___ As a result of my crisis, I experienced this change to a great degree

___ As a result of my crisis, I experienced this change to a very great degree

1. I changed my priorities about what is important in life.
2. I have a greater sense of harmony with the world.
3. I have a greater appreciation for the value of my own life.
4. I developed new interests.
5. I have a great feeling of self-reliance.
6. I have a better understanding of spiritual matters.
7. I more clearly see that I can count on people in times of trouble.
8. I established a new path for my life.
9. I have greater clarity about life's meaning.
10. I have a greater sense of closeness with others.
11. I am more willing to express my emotions.
12. I know better that I can handle difficulties.
13. I am able to do better things with my life.
14. I am better able to accept the way things work out.
15. I can better appreciate each day.
16. I feel more connected with all of existence.
17. New opportunities are available which wouldn't have been otherwise.
18. I have more compassion for others.
19. I put more effort into my relationships.
20. I am more likely to try and change things that need changing.
21. I have a stronger religious faith.
22. I discovered that I am stronger than I thought I was.
23. I learned a great deal about how wonderful people are.
24. I feel better able to face questions about life and death.
25. I better accept needing people.

APPENDIX E
INTERPERSONAL NEEDS QUESIONNAIRE (VAN ORDEN ET AL., 2012)

The following questions ask you to think about yourself and other people. Please respond to each question by using your own current beliefs and experiences, NOT what you think is true in general, or what might be true for other people. Please base your responses on how you've been feeling recently. Use the rating scale to find the number that best matches how you feel and circle that number. There are no right or wrong answers, we are interested in what you think and feel.

		Not at all true for me			Somewhat true for me			Very true for me
1.	These days, the people in my life would be better off if I were gone.	1	2	3	4	5	6	7
2.	These days, the people in my life would be happier without me.	1	2	3	4	5	6	7
3.	These days, I think I am a burden on society.	1	2	3	4	5	6	7
4.	These days, I think my death would be a relief to the people in my life.	1	2	3	4	5	6	7
5.	These days, I think the people in my life wish they could be rid of me.	1	2	3	4	5	6	7
6.	These days, I think I make things worse for the people in my life.	1	2	3	4	5	6	7
7.	These days, other people care about me.	1	2	3	4	5	6	7

		Not at all true for me			Somewhat true for me			Very true for me
8.	These days, I feel like I belong.							
9.	These days, I rarely interact with people who care about me.	1	2	3	4	5	6	7
10.	These days, I am fortunate to have many caring and supportive friends.	1	2	3	4	5	6	7
11.	These days, I feel disconnected from other people.	1	2	3	4	5	6	7
12.	These days, I often feel like an outsider in social gatherings.	1	2	3	4	5	6	7
13.	These days, I feel there are people I can turn to in times of need.	1	2	3	4	5	6	7
14.	These days, I am close to other people.	1	2	3	4	5	6	7
15.	These days, I have at least one satisfying interaction every day.	1	2	3	4	5	6	7

Note: Items 1-6 are for perceived burdensomeness, items 7-15 are for thwarted belongingness.

APPENDIX F

SUICIDE BEHAVIORS QUESTIONNAIRE-REVISED (OSMAN ET AL., 2001)

1. Have you ever thought about or attempted to kill yourself? (check only one)
    1. Never
    2. It was just a brief passing thought.
    3a. I have had a plan to kill myself, but did not try to do it.
    3b. I have had a plan to kill myself, and really wanted to die.
    4a. I have attempted to kill myself, but did not want to die.
    4b. I have attempted to kill myself, and really hoped to die.

2. How often have you thought about killing youself in the past year? (check only one)
    1. Never
    2. Rarely (1 time)
    3. Sometimes (2 times)
    4. Often (3-4 times)
    5. Very Often (5 or more times)

3. Have you ever told someone that you were going to commit suicide, or that you might do it? (check only one).
    1. No
    2a. Yes, at one time, but did not really want to die.
    2b. Yes, at one time, and really wanted to die.
    3a. Yes, more than once, but did not want to do it.
    3b. Yes, more than once, and really wanted to do it.

4. How likely is it that you will attempt suicide someday? (check only one)
    0. Never
    1. No Chance at all
    2. Rather unlikely
    3. Unlikely
    4. Likely
    5. Rather Likely
    6. Very likely

APPENDIX G

INTERNALIZED STIGMA OF MENTAL ILLNESS INVENTORY (RITSHER, OTILINGAM, & GRAJALES, 2003).

We are going to use the term "mental illness" in the rest of this questionnaire, but please think of it as whatever you feel is the best term for it.

For each question, please mark whether you:

1__strongly disagree

2__disagree

3__agree

4__strongly agree

1. If I had a mental illness, I would feel out of place in the world
2. Mentally ill people tend to be violent.
3. If I had a mental illness, people would discriminate against me
4. I avoid getting close to people who don't have a mental illness to avoid rejection.
5. If I had a mental illness, I would I be embarrassed or ashamed.
6. Mentally ill people shouldn't get married.
7. People with mental illness make important contributions to society.
8. If I had a mental illness, I would feel inferior to others who didn't have a mental illness.
9. If I had a mental illness, I wouldnt socialize as much as I used to because my mental illness might make me look or behave "weird."
10. People with mental illness cannot live a good, rewarding life.
11. If I had a mental illness, I wouldn't talk about myself much because I wouldn't want to burden others with my mental illness.
12. If I had a mental illness , negative stereotypes about mental illness would keep me isolated from the "normal" world.

13. If I had a mental illness , being around people who didn't have a mental illness would make me feel out of place or inadequate.
14. I feel comfortable being seen in public with an obviously mentally ill person.
15. If I had a mental illness, I think that people would often patronize me, or treat me like a child, just because I had a mental illness.
16. If I had a mental illness, I would be disappointed in myself for having a mental illness.
17. Having a mental illness would spoil my life.
18. If I had a mental illness, people could tell that I had a mental illness by the way I look.
19. If I had a mental illness, I would need others to make most decisions for me.
20. If I had a mental illness , I would stay away from social situations in order to protect my family or friends from embarrassment.
21. People without mental illness could not possibly understand me.
22. If I had a mental illness , people would ignore me or take me less seriously.
23. If I had a mental illness, I wouldn't be able to contribute anything to society.
24. Living with mental illness would make me a tough survivor.
25. Nobody would be interested in getting close to me if I had a mental illness.
26. In general, I am able to live my life the way I want to.
27. If I had a mental illness, I could still have a good, fulfilling life.
28. If I had a mental illness, others would think that I can't achieve much in life.
29. Stereotypes about the mentally ill apply to me.